Coordination

Caterina Mauri (University of Pavia)

1. The notion of coordination relation

As Langacker (1987: 472) points out in his discussion on coordination, two coordinated elements "have to be parallel in certain respects not yet fully understood". At the basis of any definition of coordination lies some idea of symmetry, which is what distinguishes it from dependency relations. The property of being symmetrical has been interpreted in a number of different ways in the literature, but the crucial demarcation line can be drawn between approaches defining coordination at a formal, syntactic level and approaches adopting a functional definition.

Formal approaches focus on the identification of an abstract formal structure that defines coordination universally. Scholars like Johannessen (1998), Camacho (2003) and Rebuschi (2005) consider coordinate structures as headed constructions. In particular, coordinate structures are treated like conjunction phrases, in which the coordinator is the head, the first conjunct the specifier, and the second conjunct the complement. As Borsley (2005) points out, this conception is widely accepted within Principles and Parameters theories, but it is rejected within other frameworks. Borsley (2005) himself rejects the idea that coordinate structures are conjunction phrases and argues that they are rather to be analyzed as adjunct phrases. This different conception of coordination is held by Bresnan (2000), Yuasa and Sadock (2002) and Cormack and Smith (2005). Generative approaches aim at the identification of the formal structure characterizing coordination, regardless of the conceptual relations expressed and of the cross-linguistic variation in the coding of such relations, which are instead central topics in functional approaches.

In this chapter a functional perspective will be discussed, which defines coordination in functional terms and assigns great value to the variation attested in the world's languages. For this reason the debate within the generative framework and the relevant literature will not be addressed further here (see Borsley 2005 and Cormack and Smith 2005 for a detailed discussion on the formal approaches to coordination).

The aim of this chapter is to provide an overview of the main semantic and morphosyntactic features characterizing coordinating constructions from a functional-typological approach, with a focus on the variation attested in the world's languages. In this section the notion of coordination will be defined and analyzed. In section 2 we will examine the semantic and morphosyntactic properties characterizing coordination in the world's languages, and section 3 will focus on some relevant typological patterns.

Coordination is defined as a conceptual situation in which two entities, properties or states of affairs are linked and conceived as functionally parallel (cf. Dik 1968: 25-29). However, such functional parallelism may occur at different levels. A number of scholars have focused on the *semantic* parallelism underlying coordination (e.g. Schachter 1977: 89, Haspelmath 2004: 34). Haspelmath defines as coordinate construction any syntactic construction "in which two or more units of the same type are combined into a larger unit and still have the same semantic relations with the other surrounding elements". The identification of coordination on the basis of a semantic parallelism is especially adequate when the coordinated entities are not states of affairs (henceforth SoA), unless they are subordinated. If two non-subordinated SoAs are coordinated to each other, their functional parallelism is better described in terms other than the semantic relations they have with the surrounding elements.

Haiman (1985: 99) and Langacker (1987: 483) focus their attention of the *conceptual* parallelism underlying coordination, rather than on the semantic one. According to Langacker (1987: 483), "the essence of coordination is the conceptual juxtaposition of co-equal structures" and all the main properties of coordination follow from this conceptual symmetry. Given two joined elements, they

may have autonomous profiles or they may show an asymmetry, so that the profile of one of them is overridden by that of the other. The former (parallel) configuration corresponds to a coordination relation, the latter (non-parallel) to a dependency relation, in which the element with an autonomous profile is denoted by the head or, in case of clausal subordination, by the main clause (Langacker 1987: 436). The conceptual parallelism as described by Langacker subsumes any type of coordination established between any type of elements (entities, SoAs, properties), but it is difficult to find independent evidence for the identification of co-equal autonomous profiles regardless of the morphosyntactic level.

There is indeed one more level at which two coordinated elements may be identified as functionally parallel, namely the level of *pragmatics*, at which information is inserted into the net of communicative intentions and assumptions of speaker and hearer, and may thus be topical, focal, asserted, asked or ordered. As Cristofaro (2003: 29-50) argues in her typological survey of subordination, it is possible to establish a correspondence between the conceptual (non-)parallelism of two given SoAs and the assertive (non-)parallelism of the clauses expressing them.

Let us briefly take into account the main issues that have to be dealt with when analyzing coordination from the point of view of pragmatics. First, there are two possible configurations in which two linked SoAs are pragmatically parallel: it is possible to coordinate two subordinate clauses, which are by definition non-asserted, or two independent clauses, which are instead both asserted. Second, coordination may be established between declarative clauses, requests, orders, wishes, and so on. In other words, two coordinated independent clauses may have illocutionary forces other than assertion, like interrogative or imperative illocutionary force. Finally, coordination may be established between entities or properties, whose pragmatic dimension is not that of illocutionary force, but rather of topic and focus.

The equivalence between conceptual and pragmatic dimension can be thus framed as follows for coordination. Two coordinated entities, properties or SoAs require the same informational status, because any asymmetric communicative organization could not co-exist with a symmetric

conceptual one. Therefore, two SoAs standing in a coordination relation will be uttered in clauses having the same illocutionary force (cf. Mauri 2008a: 37-44), while two coordinated properties or entities will occur in phrases being part of the same topical or focal part of the sentence. The pragmatic criterion provides us with concrete tests for identifying coordinating constructions across languages, independently of their morphosyntactic properties. It is indeed possible to pinpoint (i) the presence of illocutionary force by means of tests such as tag questions, whereby two coordinate clauses should either result as both at issue or both presupposed (Mauri 2008a: 37-44), (ii) the topical or focal behavior by means of tests such as dislocations and cleft sentences, whereby if two elements are linked by a coordination relation, they should not be able to be dislocated or focalized separately (cf. Coordinate Structure Constraint by Ross 1967 and the discussion in Schachter 1977 and Deane 1991).

The functional parallelism inherent to coordination is thus the result of a close interrelation between the semantic and conceptual symmetry of the linked elements and the symmetry of their communicative status. A coordination relation can be thus defined at the functional level as a relation established between functionally equivalent entities, properties or SoAs, that is, elements having the same semantic function, autonomous cognitive profiles, and the same informational status. Every construction expressing a coordination relation will be considered a coordinating construction and will be analyzed on the basis of its morphosyntactic properties..

2. Semantic and morphosyntactic features of coordination

2.1 Main types of coordination relation: combination, contrast and alternative

Two elements linked in a coordination relation may stand in different semantic types of relations. The three basic relations that have been traditionally identified as coordinating ones are combination ((1), *conjunction*), contrast ((2), *adversativity*), and alternative ((3), *disjunction*).

(1) *It is summer and everybody goes on holidays / I love apples and pears.*

(2) *The summer ends but many people are still on holiday / I don't want tea, but coffee.*

(3) *Are you coming to the cinema tonight or do you relax at home?/ You may have tea or coffee.*

Combination, contrast and alternative do not exhaust the list of possible coordination relations. Dik (1968: 277-79), for instance, includes certain types of causal relations within the set (the ones conveyed by constructions with *for* in English, *car* in French and *denn* in German).[i] However, the three relations of combination, contrast and alternative can arguably be described as the three basic types of symmetric links that may be established between two independent SoAs (see Mauri 2008a: 46-48), entities or properties.

Within the literature on coordination, a number of scholars have developed fine-grained analyses of the major semantic subtypes of coordination (Haspelmath 2004 and 2007, Payne 1985 and Lang 1984, among others). The classifications made by Payne (1985) and Lang (1984) are based on formal abstractions and are basically formulated in logical terms. Haspelmath (2004) identifies the various subtypes of coordination on the basis of the lexicalized constructions attested across languages. Mauri (2008) uses the three parameters of temporality, conflict and aim discussing coordination relations among clauses. Let us now briefly go through the main subtypes of combination, contrast and alternative that have been recognized as typologically relevant, both for clausal and nominal coordination.

Combination of SoAs may be SEQUENTIAL ('asymmetric and' according to Lakoff 1971: 126, e.g. *He opened the window and jumped*), characterized by the location of the linked SoAs along the same time axis at successive points, so that they are interconnected as parts of the same overall sequence of events. SIMULTANEOUS combination (*overlap*, Longacre 1985: 243, e.g. *She was dancing and clapping her hands*), on the contrary, is characterized by the absence of a reciprocal

order in which the SoAs occur, since they occupy the same point on the time axis. In case the location of two combined SoAs along the time axis is simply not relevant to the combination itself, the relation is said to be ATEMPORAL (Longacre 1985: 241 calls it *coupling* or non-temporal underlying 'and' relation, e.g. *Birds have wings and fishes have fins*, cf. additive vs. non-additive conjunction, Halliday and Hasan 1976).

Combination of entities, on the other hand, is characterized by a major distinction between natural and accidental combination (Haspelmath 2007, Wälchli 2005). In NATURAL combination, the entities "habitually go together and can be said to form some conventionalized whole or conceptual unit" (Mithun 1988:332). Typical examples of natural conjunction are 'mother and father', and 'husband and wife'. In case some formal distinction is made between natural and accidental combination, this often consists of the lack of an overt coordinator or of an intonation break in natural conjunction. Elements linked in natural conjunction are formally very close to each other, to the point that they may occur as parts of a compound word (cf. *co-compound*, Wälchli 2005). As pointed out by Haspelmath (2007), this can be explained in terms of economy: since the conjuncts in natural conjunction occur together very frequently, the relation between them is quite predictable and overt marking is redundant. ACCIDENTAL combination, on the other hand, involves entities that are not expected to cooccur, but rather their combination is motivated by specific circumstances of the speech act.

Contrast may only be established between SoAs and properties, and the conflicting relation can be due to a semantic opposition, a correction or the denial of some expectation (cf. Haspelmath 2007, Lang 1984, Rudolph 1996). If two SoAs or properties are set against each other because they show somehow antithetic features, the relation is said to be OPPOSITIVE (e.g. *Paul is tall whereas John is small*). Lakoff (1971: 131-136) talks about this relation in terms of 'semantic opposition' and describes it as characterized by a component of symmetric 'and' (i.e. atemporal combination) together with a presupposition of difference in meaning. The order in which the two SoAs are presented may be reversed without affecting the general meaning of the assertion. If the conflict is

determined by the substitution of an explicitely denied state of affairs with a new one, the contrast is said to be CORRECTIVE. This notion is quite uncontroversial in the literature on coordination, because this type of contrast is clearly distinguishable from all others and can be easily identified across languages. A number of languages, especially within Europe, have dedicated markers coding this type of contrast, like German *sondern* or Hungarian *hanem*. Finally, if the contrast is generated by the denial of some expectation it is said to be COUNTEREXPECTATIVE. As Lang (2000: 245) puts it, the assertion of the second SoA is in contrast to "an assumption that may be either read or inferred from previous information" (Lang 2000: 246).

Regarding alternative, the crucial distinction is that between simple and choice-aimed alternative (see Mauri 2008a: ch. 5, Mauri 2008b), which may hold between SoAs, entities or properties. Speakers may establish an alternative relation in order to assert or elicit information about the block of linked elements (i.e. the whole set of options that the relation delimits) or in order to receive information about the individual elements. In the first case, the speaker's intention is to talk about the set of options, and this type of alternative is called SIMPLE ALTERNATIVE: the speaker does not elicit any choice, but s/he simply depicts a set of possibilities. In the second case, the speaker's aim is to ask for information about the individual elements, and this type is called CHOICE-AIMED ALTERNATIVE, because the speaker asks the hearer to make a choice. The two types of alternative relations are frequently coded by means of different constructions across languages, as illustrated by the Somali example in (4), where *amá* is used to express simple alternative (4a), while *misé* is used for the choice-aimed one (4b).

(4) Somali, Cushitic, Afro-Asiatic

(a) *Amá wuu kéeni doonaa amá wuu sóo.díri 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)

The relations of combination and alternative may be negated, generating what Payne (1985: 4) calls REJECTION. It is frequent across languages to find specific constructions to express rejection, such as e.g. English *neither… nor…*, Latin *neque… neque…*, German *weder… noch…* These constructions are normally closely linked to the strategies that languages use to express negation (cf. Bernini and Ramat 1996), and may originate from both basic conjunctive and disjunctive constructions (as instantiated by Latin and English, respectively). As Haspelmath (2007) points out, this is connected with the logical equivalence between disjunction with wide scope negation 'not (X or Y)' and conjunction with narrow scope negation 'not X and not Y', and languages seem to mirror this functional equivalence at the morphosyntactic level.

2.2 Syntactic domain of coordinating constructions

As already pointed out, coordination relations may be established between different types of elements, ranging from SoAs to entities, and at the morphosyntactic level this translates into different linguistic units that may be linked in a coordinating construction (clauses, verb phrases, adjectival phrases, noun phrases, etc.). The set of syntactic types that may be linked in a given coordinating construction constitutes its SYNTACTIC DOMAIN.

It is frequent to find languages using different coordinating constructions for different types of coordination relations (conjunctive, disjunctive, adversative constructions), but languages may also show different coordinating constructions for different syntactic levels. In other words, we may find conjunctive or disjunctive constructions in different syntactic domains.

As highlighted by Haspemath (2005), it is rather frequent to find distinct constructions for combination between entities (NP conjunction) and combination between events (i.e. VP or clause

conjunction). A similar distinction is attested for disjunction, though more rarely, while it is of course not possible for adversative constructions, which basically only link states of affairs and properties. An example from Korean is provided in (5), where different constructions are attested for NPs (5b,d) and clauses (5a,c) both for conjunction and disjunction.

(5) Korean, isolate (Ho-min Sohn 1994: 118-125)

(a) *na-nun ilpon-ey ka-(ss)-**ko** Minca-nun mikwuk-ey ka-ss-ta*
I-CTOP Japan-to go-(PST)-and Minca-CTOP America-to go-PST-DECL
'I went to Japan and Minca to America.'

(b) *Minca-**wa/hako/lang** Yongho-nun umak-ul culki-n-ta*
Minca-and Yongho-CTOP music-ACC enjoy-IND-DECL
'Minca and Yongho enjoy music.'

(c) *Yongho-ka wa-ss-**kena** Minca-ka wa-ss-ta*
Yongho-NOM come-PST-or Minca-NOM come-PST-DECL
'Either Yongho or Minca came.'

(d) *na-nun pap-**ina** cwuk-ul mek-keyss-ta*
I-CTOP rice-or gruel-ACC eat-FUT-DECL
'I will eat rice or gruel.'

There are also languages distinguishing between different types of clauses, using dedicated coordinating constructions for relative and main clauses (cf. Yoruba, Rowlands 1969: 201-3). Payne (1985: 5) proposes an implicational cline that constrains the possible ranges of coordinators: S – VP – AP – PP – NP. The prediction is that individual constructions are restricted to cover contiguous categories, e.g. S and VP, or AP, PP and NP.

2.3 Morphosyntactic properties

2.3.1 Explicit coding of the relation

Coordinate constructions may be characterized by an overt coordinator, i.e. an explicit connective encoding the coordination relation at issue (syndetic coordination), or they may lack such an explicit linking device and simply consist in juxtaposition (asyndetic coordination, cf. Mithun 1988 for a detailed exemplification and discussion on the role of intonation). In case of syndetic coordination, coordinators can be analyzed on the basis of their morphosyntactic properties (distributional features, morphophonological complexity) or on the basis of their semantic properties.[ii]

As far as distributional properties are concerned, coordinating constructions may either have a single coordinator (monosyndetic) or two coordinators (bisyndetic), which may be prepositive (preceding the coordinand) or postpositive (following the coordinand). In case of coordination among more than two elements, we may find the obligatory omission of the connective in all but the last element or its obligatory repetition in each coordinated element.

A further dimension of variation of coordinators concerns their morphophonological complexity. The morphophonological complexity of the attested markers is measured on the basis of the following parameters: syntactic bondedness, number of syllables and number of morphemes, distinguishing respectively between free vs. bound marker, mono- vs. poly-syllabic marker; mono- vs. poly-morphemic marker. As exemplified in Table 1, the complexity of every marker consists of the sum of these parameters.

	Free	**Polysyllabic**	**Polymorphemic**
Hebrew *–ve*	--	--	--
Italian *o*	+	--	--
German *sondern*	+	+	--
French *tandis que*	+	+	+

Table 1. *Morphophonological complexity of the attested coordinating markers*. + = presence of the given feature; – = absence of the given feature.

Finally, coordinators may be analyzed on the basis of their *semantic domain*, i.e. the set of coordination relations that they may express. On the basis of this parameter, coordinators may be classified as DEDICATED (monofunctional) or GENERAL (multifunctional). The concept of dedicated marker is absolute, since it applies to those cases where a given construction can be used only in one specific situation. On the contrary, the concept of general marker is scalar, since the degree of generality of the markers may vary, depending on the number of coordination relations that they cover. An example of dedicated markers has already been provided in (4), from Somali, where the two specific coordinators *amá* and *misé* are employed for the expression of simple and choice-aimed alternative, respectively. The translation provided in (4) shows that the correspondent English disjunctive marker *or* is instead general, since it may cover both types of alternative. German provides a further case, with the adversative connective *sondern* being used only for corrective contrast, and *aber* being used only for counterexpectative relations. On the other hand, Italian *ma*, French *mais*, English *but* are general because they may be used for both corrective and counterexpectative contrast.

The semantic domains of coordinators are best described by means of semantic maps and conceptual spaces (cf. Haspelmath 2003, Malchukov 2004, Mauri, forthcoming), because they identify multifunctional (general) and monofunctional (dedicated) markers and allow to describe the attested polysemy patterns. [iii] A discussion in terms of semantic maps is provided in section 3.1.

2.3.2. (A)symmetry of the construction

Although traditional definitions of coordination define it on the basis of its syntactic parallelism, the analysis of cross-linguistic variation reveals that coordinating constructions are frequently characterized by some asymmetry. In this chapter we will focus on the parallelism of the forms encoding the linked entities or SoAs, taking into account possible differences concerning (i) verb forms for clause coordination and (ii) inflectional properties for nominals.

In clause coordination, the syntactic parallelism of the construction depends on whether the linked SoAs are coded by means of the same verb form (parallel construction) or by means of different verb forms (non-parallel construction, Mauri 2008: 65-69). Following Stassen (1985) and Cristofaro (2003), we distinguish balancing and deranking verb forms (Stassen 1985: 76-83). A verb form is defined as balanced when it may occur as it is also in independent declarative clauses taken in isolation, whereas it is analyzed as deranked if it cannot be found in such clauses, because it lacks certain distinctions (such as tense, mood, aspect or person agreement) or it is a special form not allowed in independent clauses (Cristofaro 2003: 50-60). At the clause level, a syntactically parallel coordinating construction is characterized by the same coding strategy for both SoAs, either balancing or deranking, while a syntactically non-parallel coordinating construction is characterized by different coding strategies for the two SoAs, one balancing and the other deranking (see (5a) from Korean, where the verb forms suffixed by *–ko* and *–kena* cannot receive modal specifications and depend on the second verb).

Traditionally, non-parallel clausal coordinations have been described for conjunctive constructions (see Johannessen 1998, Haspelmath 2004). However, such asymmetric strategies are also attested to express contrast and alternative relations, even though less frequently. Example (5c) instantiates a case of non-parallel clausal disjunction in Korean.

Clausal asymmetric coordinations have been widely discussed in the literature, under a number of different perspectives. Lehmann (1988: 184-185) describes a continuum going from the highest degree of elaboration (i.e. coordination as traditionally defined), to the highest degree of compression, exemplified by embedded nominalized clauses without explicit linking. Asymmetric constructions such as (5a,c) find a position in the continuum on the basis of the values they show for each single parameter. Van Valin (2006) suggests a different solution and, instead of positing a continuum, establishes a new category which specifically identifies cases like (5a), namely *co-subordination*, characterized by syntactic dependency but no embedding (cf. Longacre 1985: 263-

284, *chaining structures*). Some typological patterns concerning the non-parallelism of conjunctive, disjunctive and adversative constructions will be discussed in section 3.3.

Coming now to noun phrase coordination, asymmetric constructions are characterized by nominals inflected in different cases or by some dependency strategy, typically a comitative one. Asymmetric coordination between noun phrases is only attested for combination relations. Stassen (2001) distinguishes between '*and*-languages', showing different strategies for NP combination and accompaniment relations (frequent in northern and western Eurasia, India, northern Africa, New Guinea, Australia and Meso-America), and '*with*-languages', employing the same asymmetric strategy for accompaniment and conjunctive relations (frequent in sub-Saharan Africa, East Asia, Southeast Asia and the Pacific Islands, as well as in northern North America and lowland South America). An example of *with*-language is provided in (6).

(6) Nkore-Kiga, Niger-Congo, Bantoid (Taylor 1985: 58)

n-ka-za-yo	***na***	*Mugasho*
1SG-REC.PST-go-there	and/with	Mugasho

'Mugasho and I went there./ I went there with Mugasho.'

The morphosyntactic non-parallelism shown by this type of construction is in most cases a residue of the recurrent diachronic path developing conjunctive coordinators from originally comitative strategies. The diachronic link between the two functions is clearly motivated by the functional contiguity between the two conceptual situations. As a result of the diachronic process, a number of morphosyntactic parallel features tend to arise, such as plural agreement on verbs, and the possibility to link more than two entities (whereas comitative strategies may only involve two, see Haspelmath 2007: 29-33 for a detailed discussion).

3. Coordination across languages: some typological patterns

After discussing the main morphosyntactic and semantic features characterizing coordination across languages, let us now focus on coordination between clauses and examine three typological issues. In section 3.1 some implicational patterns concerning the morphosyntax and semantics of overt coordinators will be presented and in section 3.2 the coding map of coordination relations will be described, highlighting the close connection between semantic domain and morphophonological complexity of coordinators. Section 3.3. deals with the implicational patterns attested in the analysis of non-parallel coordinating constructions, showing that certain coordination relations are more likely to be coded by means of asymmetric constructions than others. Finally, section 3.4. identifies the 'And-But-Or' language type, to which English, Italian and French (among others) belong, and it will be argued that it is a rather unfrequent type in the world's languages, with a particular concentration in Western Europe.

3.1 Implicational patterns in the coding of coordination relations

A typological survey based on the exam of 74 languages (Mauri 2008a) has shown that 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. In particular, if in a given language a contrast relation generated by the denial of an expectation is expressed by simple juxtaposition, this strategy will also be available for contrast relations generated by opposition and correction (a).

(a) **The combination-contrast coding implication**:

Syndesis for sequential, simultaneous, atemporal combination, oppositive contrast, corrective contrast → Syndesis for counterexpectative contrast.

In alternative relations, on the other hand, if no marker is used in the expression of a simple alternative, then no marker will be used for an alternative where a choice is required (b).

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

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

Implications (a) and (b) may be explained with reference to the principle of syntagmatic economy, according to which what is already inferable from the context needs no further specification (cf. Haiman 1985: 159). The coding of the various types of combination, contrast and alternative is connected to the degree to which every relation can be inferred from the context. Specifically, the more a relation is easy to infer, the less it needs to be overtly marked (see Mauri 2008a: ch. 6 for a detailed discussion and exemplification).

Furthermore, cross-linguistic data also show that the degree of semantic specificity and semantic basicness of a coordinating construction is closely connected to the morphophonological complexity of the coordinating marker used, as shown by hierachies (c) and (d).

The hierarchy in (c) states that dedicated markers encoding a specific contrast relation (counterexpectative, oppositive or corrective contrast) are at least as complex as the general markers used for contrast relations (but not for combination relation), i.e. markers employed for corrective and counterexpectative contrast, such as English *but* or French *mais*. These general contrast markers are in turn at least as complex as dedicated and general markers used to express at least one combination relation.

(c) **The combination-contrast coding complexity hierarchy**:

Dedicated and general marker for combination relations > general marker expressing contrast relations > dedicated marker for a contrast relation.

The implication in (d) states that 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.

(d) **The combination-alternative coding complexity implication**:

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

Implications (c) and (d) may be explained on the basis of the economic principle of *form-function asymmetry*, according to which the more general a connective is (i.e. the more relations it may express), the lower is its degree of morphophonological complexity (cf. Kortmann 1997: 123-36, Zipf 1949: 66-133). On the one hand, frequency of use is a consequence of multifunctionality. The higher is the number of relations a marker may express (i.e. the more general it is), the higher is the number of contexts where it may occur and, consequently, the more frequent it will be in discourse. Its phonological substance will thus be eroded, leading to morpho-phonologically simple forms. Therefore general markers, expressing more than one coordination relation, tend to be structurally simpler than dedicated ones (cf. implication (c)). On the other hand, frequency in discourse may also be the consequence of a basic semantics. The more basic and semantically unspecified a conceptual relation is, the more it tends to correlate with high frequency of use. Since combination is the simplest coordination relation, it is the most frequently attested in discourse (Ohori 2004: 61), and this is why 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 (cf. implications (c) and (d)).

Finally, the exam of the attested semantic domains by means of semantic maps allows for a thorough analysis of how the three coordination relations at issue are related to each other.

Conjunctive and adversative coordinators show recurrent overlapping polysemy patterns across languages, pointing to the combination-contrast conceptual space exemplified in Fig.1. The top of Fig.1 shows the order in which the different relations follow each other in the conceptual space. Below, some of the attested semantic domains are shown.

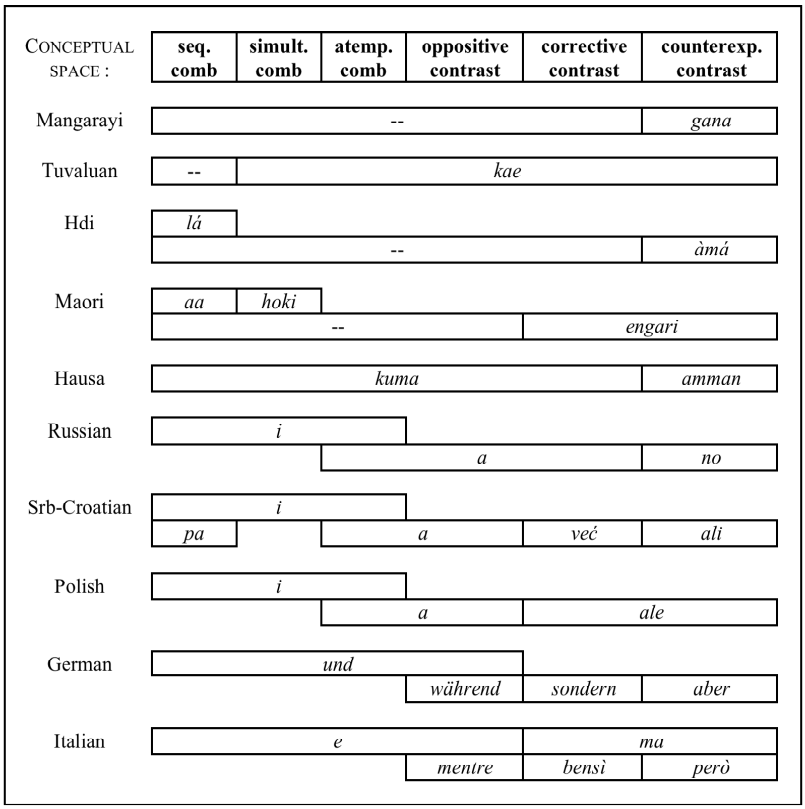

Fig.1: *Combination-contrast conceptual space and individual semantic maps.* – = no overt marker.

If a coordinating marker is used to express more than one combination or contrast relation, it will convey relations that are contiguous on the conceptual space. A detailed discussion of the reasons underlying the respective order in which the relations are located on the conceptual space in Fig. 1

is provided in Mauri (2008b: chapters 4 and 6). It suffices here to point out that the closeness of two relations on the space is due to their functional proximity. The functional proximity of two relations depends (i) on whether they share some conceptual features, (ii) on the frequency with which they are associated in discourse and (iii) on the degree to which they can be easily inferred from each other.

Combination and alternative relations, on the other hand, tend to be coded by means of completely different markers, thus showing a reduced semantic overlap. This is basically due to the fact that combination and contrast relations imply the cooccurrence of two SoAs,[iv] while an alternative relation implies the *non*-cooccurrence of the linked SoAs, which are instead presented as replaceable possibilities. Therefore combination and alternative relations are functionally very distant from each other.

Yet, in languages with no overt equivalent to *or*, combination and alternative are expressed by means of the same construction, namely alternative is systematically conveyed through the combination of possibilities. In such cases, the potential (rather than actual) status of each combined SoA is obligatorily marked by means of some irrealis markers (like the conditional marker *mo* in (7a) or the dubitative adverb *am´* 'perhaps' in (7b)).

(7) Wari', Chapacura-Wanam (Everett and Kern 1997: 162)

(a) *mo ta pa' ta' hwam ca, mo ta pa' ta' carawa ca*
COND realis.future kill 1SG:realis.future fish 3SG.M COND realis.future 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’)

In other words, in order for an alternative relation to be conveyed, either a connective coding the alternative relation or some overt irrealis marker is necessary (see Mauri 2008b for further discussion). If no overt connective of alternative is used, each SoA must display an irrealis marker and is therefore presented as possible, rather than occurring or realized, and the relation of alternative is inferred from the combination of two irrealis SoAs.

3.2 The hierarchical coding map of coordination relations

A hierarchical map summarizing the results described in the preceding section is proposed in Fig.2, based on (i) the functional proximity between the various coordination relations, as manifested in the attested multifunctionality patterns, and (ii) their different degrees of semantic specificity and inferrability, as manifested in the attested implicational patterns of coding complexity. The coding map (see Mauri, forthcoming, for a comparison between semantic maps and coding maps) is structured along two perpendicular axes of increasing semantic specificity having their origin in the combination relation. Contrast and alternative are represented as further semantic specifications of the basic relation of combination. Along the horizontal axis, a combination of SoAs may be specified in terms of some discontinuity (Givón 1990: 849) producing a contrast, or it may be specified in terms of the irreality of the SoAs it links, producing a set of alternative possibilities. The vertical axis, on the other hand, is meant to show the specifications internal to each coordination relation (i.e. the sub-types of combination, contrast and alternative at issue). The further away from both the vertical and 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 more semantically specified a relation is, the less it is easy to infer from simple juxtaposition.

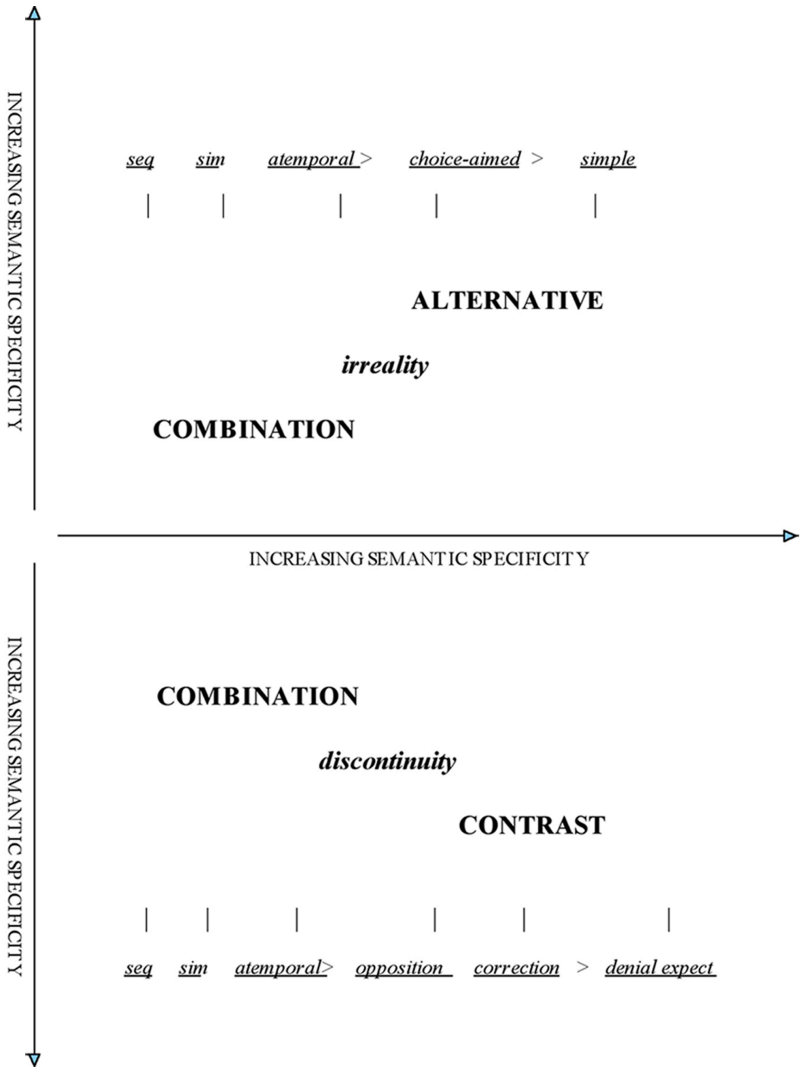

Fig.2: *The twofold hierarchical coding map of coordination relations.*

The coding map in Fig.2 predicts a number of phenomena. First, the order in which coordination relations occur from left to right mirrors the attested multifunctionality patterns. Therefore, it

predicts that if a construction is used for more than one coordination relation, it will be used for relations that are contiguous along the horizontal axis of the space.

Second, based on the increasing degree of semantic specificity, 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, as a consequence, it will be more likely to be expressed by means of overt markers. Conversely, the closer a relation is to the origin of the axes, the easier it will be to infer and, as a result, it will be also more likely to be expressed by means of asyndetic constructions (cf. implications (a) and (b)).

Third, the more basic and semantically unspecified a relation is, the more it correlates with a high frequency of use, and the markers coding it tend to undergo phonological erosion. Therefore, the closer a relation is to the origin of the axes in Fig.2, the simpler will be the morphophonology of the markers coding it; the farther it is from both the vertical and the horizontal axis, the more complex will be dedicated markers coding it (cf. implications (c) and (d)).

3.3 Implication of coordination parallelism

Coordination relations show a strong tendency to be coded by means of parallel constructions. Syntactic (non-)parallelism is traditionally explained with respect to two functional principles: iconicity of independence and syntagmatic economy (cf. Cristofaro 2003: chapter 9 and Haiman 1985: chapter 2 and 4). According to the principle of iconicity of independence, the less independent two concepts are, the less independent are the expressions coding them (Cristofaro 2003: chapter 9). According to the principle of syntagmatic economy, on the other hand, information that is available in the context does not need to be further specified, as shown/argued in the preceding section. The presence of a deranked verb form may depend on the fact that the relation established between the two SoAs predetermines their relative temporal location, so that tense, aspect and mood specifications can be made explicit for just one SoA.

The cross-linguistic tendency to code coordination relations by means of parallel constructions is therefore due to the fact that combination, alternative and contrast do not predetermine any semantic properties of the linked SoAs and are established between conceptually independent SoAs, which are not interconnected and not presented one in the profile of the other. However, there are remarkable exceptions, and it is possible to identify the implicational pattern (e), constraining the attested non-parallel cases.

(e) **The coordination parallelism implication**:

Non-parallel construction for non-sequential combination, contrast relation, alternative relation → non-parallel construction for sequential combination.

In a given language, if a non-parallel construction is used to express a contrast relation, an alternative relation or a non-sequential combination (simultaneous or atemporal), a non-parallel construction is also available to express sequential combination.

Therefore, there seems to be one type of coordination relation that behaves differently from the others, namely sequential combination, and such differentiation can be explained in terms of syntagmatic economy, since the relation of sequential combination indeed predetermines the respective temporal location of the SoAs. All languages showing a non-parallel construction only for sequential combination use an overt marker encoding the sequential temporal meaning (e.g. *-Ip* in Turkish (8)). The presence of an overt marker coding the temporal relation makes the successive temporal location of the SoAs explicit. Therefore, if one of the SoAs is located in time, i.e. coded by means of a balanced verb form, the temporal location of the other SoA is recoverable from the context and may therefore be coded by means of a deranked form (further discussion is provided in Mauri 2008a and 2008c).

(8) Turkish, Altaic (Kornfilt 1997: 110)

Hasan *iş-e* *gid-ip* *ev-e* *dön-dü*

Hasan work-DAT go-*Ip* home- DAT come-PST

'Hasan went to work and came back home.'

3.4 And-But-Or languages

In this final section a further generalization will be made, identifying what will be called 'And-But-Or' language type (see Mauri 2008a: 289-293). 'And-But-Or' languages are characterized by the following set of features:

(9)
1. syndetic constructions for the three basic coordination relations;
2. internally parallel constructions for the three basic coordination relations;
3. free markers coding combination, contrast and alternative;
4. a general marker used for both temporal and atemporal combination ('And'), a general marker used for both choice-aimed and simple alternative ('Or'), a general marker used for counterexpectative and corrective contrast ('But') and no general markers used only for atemporal combination and opposition.

'And-But-Or' languages are particularly frequent in Europe. To this language type belong most Romance languages except for Rumanian, Spanish and Catalan (i.e. Italian, Sardinian, Portuguese and French), Irish, all Germanic languages except for German, Icelandic, and Swedish (i.e. Norwegian, Danish, Dutch, Luxembourgish and English), only one Slavic language (Czech), and Greek.

Outside Europe, the set of features characterizing 'And-But-Or' languages turns is not common. Of course, many languages show individual coding patterns which are also attested in 'And-But-Or' languages, like the use of parallel constructions or the use of free coordinating markers. Yet, the co-existence of all features in (9) is not widespread and its occurrence in a number of adjacent languages of different families and sub-families in Europe is thus an interesting phenomenon, which might point to some areal considerations. The fact that many European 'And-But-Or' languages are genetically related to each other suggests that this coding pattern may also derive from the patterns attested in the ancestor languages. However, more research needs to be done in this direction.

Notes

---

[i] The conclusive relation (*I was tired, so I decided to go to bed*) and the correlative relation (*The more I travel, the more I want to do it*) could also been argued to be coordination relations.

[ii] For a diachronic survey on the grammaticalization of coordinating connectives, see Giacalone Ramat and Mauri, forthcoming.

[iii] 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 organization of the functions on a conceptual space represents universal relations among constructions coding these functions, thus allowing for the identification of restrictions on the cross-linguistic variation.

[iv] See Mauri (2008a: chapter 3) for a detailed discussion on the contraposition of the two dimensions of cooccurrence and non-cooccurrence, as associated respectively to combination and alternative relations.

References

Borsley, Robert D. (2005), 'Against ConjP'. *Lingua* 115: 461-482.

Bresnan, Joan (2000), *Lexical-functional Syntax.* Oxford: Blackwell Publishers.

Camacho, José (2003), *The Structure of Coordination: Conjunction and Agreement Phenomena in Spanish and Other Languages.* Studies in Natural Language and Linguistic Theory 57. Dordrecht: Kluwer Academic Publishers.

Cormack, Annabel and Neil Smith (2005), 'What is coordination'. *Lingua* 115: 395–418.

Cristofaro, Sonia (2003), *Subordination.* Oxford: Oxford University Press.

Deane, Paul (1991), 'Limits to attention: a cognitive theory of island phenomena'. *Cognitive Linguistics* 2, 1-63.

Dik, Simon (1968), *Coordination. Its implications for the theory of general linguistic*. Amsterdam: North-Holland Publishing Company.

Giacalone Ramat, Anna and Caterina Mauri. Forthcoming. 'The grammaticalization of coordinating interclausal connectives'. In H. Narrog e B. Heine (eds), *Oxford Handbook of Grammaticalization*, Oxford: Oxford University Press.

Givón, Talmy (1990), *Syntax: a functional-typological introduction*, volume II. Amsterdam-Philadelphia: John Benjamins.

Haiman, John (1985), *Natural syntax*. Cambridge: Cambridge University Press.

Halliday, M. A. K. and Ruqaiya Hasan (1976), *Cohesion in English.* London: Longman.

Haspelmath, Martin (2003), 'The geometry of grammatical meaning: Semantic maps and cross-linguistic comparison', in M. Tomasello (ed.), *The New Psychology of Language*, Vol. II: *Cognitive and functional approaches to language structure*. Mahwah, NJ: Erlbaum, pp. 211-242.

Haspelmath, Martin (2004), 'Coordinating constructions: an overview', in M. Haspelmath (ed), *Coordinating Constructions*, Amsterdam: John Benjamins, pp. 3–39.

Haspelmath, Martin (2005), 'Nominal and Verbal Conjunction', in M. Haspelmath, M. S. Dryer, D. Gil and B. Comrie (eds) *The World Atlas of Language Structures.* Oxford: Oxford University Press, pp. 262-265.

Haspelmath, Martin (2007), 'Coordination', in T. Shopen (ed), *Language typology and linguistic description* (2nd edition). Cambridge: CUP, pp. 1-51.

Johannessen, Janne B. (1998), *Coordination*. Oxford: Oxford University Press.

Kornfilt, Jaklin (1997), *Turkish*. London, New York: Routledge.

Kortmann, Bernd (1997), *Adverbial subordination. A typology and history of adverbial subordinators based on European languages*. Berlin/New York: Mouton de Gruyter.

Lakoff, Robin (1971), 'If 's, And's, and But's about conjunction', in C. J. Fillmore and D. T. Lagendoen (eds), *Studies in Linguistic Semantics*. New York: Holt, Rinehart and Winston, Inc., pp. 115–150.

Lang, Ewald (1984), *The semantics of coordination.* Amsterdam: John Benjamins.

Lang, Ewald (2000), 'Adversative connectors on distinct levels of discourse: a re-examination of Eve Sweetser's three-level approach', in E. Couper-Kuhlen and B. Kortmann (eds), *Cause, Condition, Concession, Contrast*. Berlin, New York: Mouton de Gruyter, pp. 235-256.

Langacker, Ronald W. (1987), *Foundations of Cognitive Grammar.* Stanford, California: Stanford University Press.

Lehmann, Christian (1988), 'Towards a typology of clause linkage', in J. Haiman and S. Thompson, (eds), *Clause combining in grammar and discourse.* Amsterdam: John Benjamins, pp. 181–225.

Longacre, Robert E. (1985), 'Sentences as combinations of clauses', in T. Shopen, (ed), *Complex constructions*, 2nd volume of *Language typology and syntactic description*. Cambridge: Cambridge University Press, pp. 235-86.

Malchukov, Andrej (2004), 'Towards a Semantic Typology of Adversative and Contrast Marking'. *Journal of Semantics*, 21, 177-198.

Mauri, Caterina (2008a), *Coordination Relations in the Languages of Europe and Beyond.* Berlin, New York: Mouton de Gruyter.

Mauri, Caterina (2008b), 'The irreality of alternatives: towards a typology of disjunction'. *Studies in Language* 32-1, 22-55.

Mauri Caterina (2008c), 'The parallelisms of clausal coordination'. *Revue de Sémantique et Pragmatique* 24, 145-175.

Mauri, Caterina (forthcoming), 'Semantic Maps or Coding Maps? A unified account of the coding degree, coding distance and coding complexity of coordination relations', in *Linguistic Discovery* (special issue, eds. M. Haspelmath, A. Malchukov and M. Cysouw).

Mithun, Marianne (1988), 'The grammaticization of coordination', in J. Haiman and S. Thompson (eds), *Clause combining in grammar and discourse*. Amsterdam: John Benjamins, pp. 331-60.

Payne, John (1985), 'Complex phrases and complex sentences', in T. Shopen (ed), *Complex constructions*, 2nd volume of *Language typology and syntactic description*. Cambridge: Cambridge University Press, pp. 3-41.

Ross, John R. (1967), *Constraints on variables in syntax*. Ph.D. thesis, MIT.

Rebuschi, Georges (2005), 'Generalizing the antisymmetric analysis of coordination to nominal modification'. *Lingua* 115: 445–459.

Rowlands, E. C. (1969): *Teach Yourself Yoruba*. London: The English Universities Press.

C M 29/8/11 22:45
Formattato: Rientro: Sinistro: 0 cm

Rudolph, Elisabeth (1996), *Contrast. Adversative and concessive expressions on sentence and text level*. Berlin, New York: Walter de Gruyter.

Schachter, Paul (1977), 'Constraints on coordination'. *Language* 53, 86-103.

Sohn, Ho-Min (1994), *Korean*. London, NewYork: Routledge.

Stassen, Leon (1985), *Comparison in universal grammar*. Oxford: Basil Blackwell.

Stassen, Leon (2001), 'Noun phrase coordination', in M. Haspelmath, E. König, W. Österreicher and W. Raible (Eds), *Language Typology and Language Universals. An International Handbook*. Berlin, New York: Walter de Gruyter, pp. 1105–1111.

Taylor, Charles (1985), *Nkore-Kiga.* London: Croom Helm.

Wälchli, Bernhard (2005), *Co-compounds and natural coordination*. Oxford: Oxford University Press.

Yuasa, Etsuyo and Jerry Sadock (2002), 'Pseudo-subordination: A mismatch between syntax and semantics'. *Journal of Linguistics* 38: 87-111.

Zipf, George K. (1949), *Human behavior and the principle of least effort*. Cambridge MA: Addison-Wesley.