

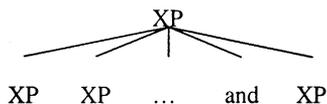
Editorial

Introduction to Coordination: Syntax, Semantics and Pragmatics

This special issue on coordination consists of twelve papers, which address the syntactic nature of coordinate structures (sentential, phrasal and lexical), primarily with the connective *and*, and the kinds of interpretive effects they can achieve in discourse. The collection is the outcome of a conference called *Coordination: Syntax, Semantics and Pragmatics*, which was held at the University of Salford in November 2001, under the auspices of the European Studies Research Institute at Salford and the North West Centre for Linguistics, and with the support of the British Academy and the Linguistics Association of Great Britain.

There are many different issues addressed in the papers, but one recurrent theme concerns the symmetry or asymmetry of the two (or more) coordinated structures at various different levels of analysis, formal and interpretive, and the closely related distinction between coordination and subordination. The (a)symmetry issue is not straightforward since the terms are used in a range of ways and with respect to a range of different properties. For instance, with regard to syntax, it is quite consistent to claim that while there is an asymmetry in the phrasal structure of coordination, the conjuncts are symmetrical inasmuch as they are of the same syntactic category, or at least have the same ‘syntactic status’, and have a range of features in common. Similarly, it is consistent to claim that while the semantics of the word *and* itself results in a proposition $P \& Q$ that is symmetrical (in the sense that it is truth-conditionally equivalent to $Q \& P$), the interpretation that results from online pragmatic processing may be asymmetric (e.g. $P \& \textit{then} Q$). And it cannot be supposed, without argument, that formal symmetry or asymmetry necessarily results in the corresponding property either in the bare semantics or in the final full interpretation.

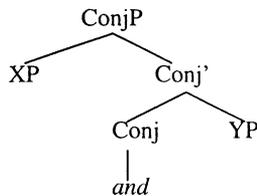
Early syntactic treatments of coordination assumed a flat structure along the following lines, a structure which is taken to be either multi-headed or non-headed:



As syntactic frameworks developed which aimed to reflect general properties of natural language phrase structure, in particular, its hierarchical and endocentric nature, it was mostly assumed that coordinate structures lay outside these generalisations and required special treatment. For instance, within early X-bar syntax, coordination was taken to be an

exception to the general X-bar schema, whose primary motivation was to capture the endocentric relation between a maximal projection and its (unique) head (Jackendoff, 1977); within Word Grammar, it has been analysed differently from all other structures in that the coordinating conjunction (*and*) has no dependency relation to any other word in the sentence (Hudson, 1984, 2003); within Generalized Phrase Structure Grammar, it is exceptional in that it is multi-headed, each conjunct being a head of the phrase (Gazdar et al., 1985).

However, more recent treatments of coordination within Chomskyan grammar (Principles and Parameters theory and Minimalism) have argued for its analysis as a Conjunction Phrase with the familiar asymmetric, single-headed structure of the X-bar schema (Johannessen, 1993, 1998; Kayne, 1994; Radford, 1993). The conjunction (*and*) is the head of the phrase and the conjuncts occupy the specifier and complement positions:



This sort of analysis seems to be supported by certain cases of ‘unbalanced’ coordination where the conjuncts (XP, YP) differ in some of their grammatical properties, for instance, in agreement, case, and/or binding properties. In this volume, the ConjP analysis is assumed by Johannessen, in line with her earlier work, though her primary concern here is to argue for a particular analysis of correlative adverbs (e.g. *either*, *both*), which captures both their displacement properties and their fixed correlation with one particular conjunction (*or*, *and*). Rebuschi also supports the ConjP analysis. He argues for its extension to nominal modification (e.g. *the man who is asleep*), with a linking morpheme (conjoining *man* and *who is asleep*) functioning as the head of the phrase; the morpheme is phonologically realised in some languages, though not in English. This analysis has the advantage of transparently reflecting the semantics of the phrase (the intersection of the set of men and the set of sleepers). However, Borsley provides a range of arguments and data that militate against the ConjP analysis, including a number of cases where it overgenerates and evidence that it misanalyses coordinate structures which have more than two conjuncts but only one overt connective, e.g. *Hobbs*, *Rhodes* and *Barnes*.

Whatever the shortcomings of the ConjP analysis, virtually no-one now would advocate a return to the symmetrical flat structure given above. For one thing, there is well-established evidence, syntactic and prosodic, that the conjunctive element forms a constituent with the following conjunct; so most current analyses across different syntactic frameworks exhibit at least that degree of asymmetry: [XP [and YP]]. However, despite the dominance of asymmetry in structural analyses, there remains a strong pretheoretic intuition that coordinate structures are in some important sense symmetric (the conjoined constituents have the same or equal status), at least when considered alongside standard cases of subordination (where the conjoined constituents plainly differ in status), as the

very terms suggest. Cormack and Smith take this intuition seriously and set out to account for the symmetry of coordinate structures, while at the same time maintaining that grammars can only provide asymmetric structures and that coordination requires no special grammatical devices. Their solution to this apparent paradox derives from an approach which combines a simplified version of Minimalism with Combinatorial Categorical Grammar. They argue that, within this framework, coordinate structures can be analysed as the result of an ambivalence in the lexicon which allows the simultaneous generation of two asymmetric adjunction structures, one head-initial and the other head-final.

Assuming that coordinated conjuncts are in some sense ‘equal’, the next issue is whether this equality is manifest at all levels of analysis—grammatical, prosodic, semantic, pragmatic—and what having ‘equal status’ amounts to at each of these levels. Clearly, equality of grammatical status does not entail sameness of grammatical category, since some category differences between conjuncts are tolerated by coordination, as in *Pat is [a good linguist and very hard-working]* and *Sue walked [slowly and with great care]*. For Hudson (1984, 2003), the conjuncts are equal in that they have the same external dependency relation (in the last example, for instance, both are dependent on *walked*). In accounts which take a more feature-based approach, the conjuncts must have a certain range of syntactic features in common and they project to a category which consists of just those shared features (for instance, Pollard and Sag, 1994). A different approach places no restrictions on the syntactic categories to be conjoined and instead requires identity of the semantic category of the conjuncts (Munn, 1993, 2000), so, for instance, the two conjuncts of the coordinate phrase *a good linguist and very hard-working*, although syntactically unlike, are both one-place predicates, of type $\langle e,t \rangle$, and those of the coordinate phrase *slowly and with great care* both provide manner information and are of type $\langle \langle e,t \rangle, \langle e,t \rangle \rangle$.

As is well known, certain operations of deletion and extraction of material from coordinated conjuncts are possible, as in so-called ‘gapping’ and ‘right node raising’ (RNR) structures, exemplified in (a) and (b) respectively, and the ‘across-the-board’ wh-extraction in (d), while others, such as (c) and (e), are precluded. Here the equality of the conjuncts extends beyond considerations of syntactic or semantic category type to the identity of elements of content:

- a. John likes Mary and Bill [. . .] Sue.
- b. John likes [. . .], and Bill adores, Sue.
- c. *John [. . .] Mary and Bill likes Sue.
- d. Which girl did John talk to [. . .] and invite [. . .] to the party.
- e. *Which girl did John talk to [. . .] and ignored Sue.

The RNR structure in (b), with its distinctive intonation, is the focus of the papers by te Velde and Cann, Kempson, Marten and Otsuka, albeit from the perspective of very different frameworks. Working within the Minimalist framework, te Velde assumes the standard asymmetric SPEC-HEAD-COMPLEMENT phrase structure discussed above, but insists that there are also crucial coordinate symmetries, manifest as shared features (syntactic, semantic, prosodic and phonetic), which are required for both right-edge ellipsis (his term for right node raising) and left-edge ellipsis. He argues that features of the initial conjunct are copied into Active Memory (which is not a component of the grammar, but interfaces

with it) and undergo operations of matching with features of subsequent conjuncts. There are two matching operations: one that interacts with the syntactic cycle in specific ways to license the ellipsis and another that enables recovery of the phonetically unrealised material thereby ensuring that the ellipsed structure can be interpreted. In RNR (but not in left-edge ellipsis) these operations interact closely with the prosodic properties of the structure, which signal phonetic incompleteness.

In contrast to te Velde, Cann et al. emphasise certain asymmetries between the conjuncts in coordinate structures, specifically with regard to the features of complement selection and polarity. They point out that, when there are such disparities in RNR structures, it is properties of the second (the rightmost) conjunct which license features of the right-dislocated constituent. Consider, for instance, the licensing of the negative polarity item *any* in *Mary has watched, but she hasn't enjoyed, any of his movies*, as compared with **Mary hasn't enjoyed, but she has watched, any of his movies*. Their analysis is developed within the Dynamic Syntax (DS) framework of Kempson et al. (2001), which models the on-line processes of linguistic decoding and pragmatic interpretation in terms of the incremental construction of semantic trees. They demonstrate how this left-to-right parsing perspective provides a natural account of the licensing asymmetries of the RNR structure, despite the semantic symmetry of the conjuncts.

Marten's paper develops this theme further, showing how the DS approach allows him to account in a straightforward way for an asymmetric (or partial) agreement relation between verbs and coordinate NPs in Swahili (and in a number of other unrelated languages). In these cases, the verb may agree with only the first conjunct of a conjoined NP subject and so be marked as singular despite the plurality of the subject. Significantly, this phenomenon only occurs when the NP follows the verb. Most existing accounts of partial agreement have been developed within static frameworks, which give little weight to the role of word order and attempt to explain the agreement facts in terms of differences in the location of the conjuncts in hierarchical tree structures (such as ConjP above). Marten argues that the left-to-right processing orientation of the DS framework enables an explanation that hinges on the salient factor of surface linear order and that it is this, rather than any asymmetry intrinsic to the conjuncts themselves, that does the explanatory work.

In his paper on *-ko* coordinate structures in Korean, Chung claims, contrary to other current analyses, that while the final mood affix on the verb in the second conjunct has scope over both conjuncts, pre-final tense and aspect verb affixes have scope only over the second conjunct. As a result, the interpretation of the conjuncts is asymmetric, the first deriving its temporal and aspectual properties, not from the verbal affixes, but from adverbial elements (e.g. *yesterday, already, certainly*, etc.) or from pragmatic considerations. Chung argues that, in order to accommodate these asymmetric cases, *-ko* coordinate structures must be analysed as coordinating functional categories (TP, AspP), rather than VPs or verbal constituents, and as, therefore, having phonetically null tense and aspect affixes on the verbs in non-final conjuncts.

While the issue of conjunct (a)symmetry in syntax is generally seen as a matter of the conjuncts' sameness, or sharing, of features or properties, the question that has dominated much of the semantics/pragmatics research on coordination concerns a different sort of (a)symmetry, one which is defined as a property of a two-place propositional operator. According to this definition, the logical conjunction operator is symmetrical in the sense

that $P\&Q$ is truth-conditionally equivalent to $Q\&P$, and the question raised by Strawson (1952) and Grice (1967, 1975) is how we are to analyse the natural language counterpart of $\&$ in view of the apparent interpretive asymmetry of such sentences as *She handed him the key and he opened the door?* The established Gricean analysis insists that *and* encodes nothing more than the symmetric truth-functional operator $\&$, so the order of the conjuncts is irrelevant to the semantics, and it is processes of on-line pragmatic inference that are responsible for the temporal asymmetry understood in this utterance. Blakemore and Carston agree with this analysis but focus on a different range of cases of sentential coordination with *and*, which do not result in an interpretation with a temporal, or any other, asymmetry between the conjuncts. Working within the relevance-theoretic framework of Sperber and Wilson (1986), they argue for a kind of pragmatic symmetry account, but one in which symmetry is defined not in truth-functional terms, but rather in terms of equivalence of inferential role. Thus, according to them, in all cases of sentential coordination with *and*, including those which are interpreted as expressing an asymmetric conjoined proposition, the conjuncts must play equivalent inferential roles in the derivation of the intended cognitive effect.

The focus of the paper by Asher and Vieu is the different kinds of relations that can be understood to hold between sentences in a discourse in the absence of any linguistic connective explicitly indicating the relation. Using the segmented discourse representation theory (SDRT) approach developed by Asher (1993), they claim that the possible discourse relations fall into two broad groupings, coordinating and subordinating, and that these impose a structure on the discourse. In the case of coordinating relations (e.g. narration), the structure is horizontal (same level); in the case of subordinating relations (e.g. elaboration), it is vertical (hierarchical) and this difference affects possible anaphorical relations across sentences. Verstraete is also interested in the coordination/subordination distinction, but his concern is with how this is encoded within the linguistic system. He adopts a functionalist perspective, looking for pragmatic underpinnings for the formal syntactic criteria that appear to correlate with this distinction in Germanic languages. He claims that the relevant pragmatic factor is the speech act status of clauses: coordinated clauses each express distinct speech acts while subordinate clauses have no independent illocutionary force.

Not all of the papers in the volume are concerned with issues of the symmetry/asymmetry of coordinated conjuncts or the coordination/subordination distinction, nor indeed with the syntax and/or pragmatics of coordinate structures. In his contribution, Artstein looks at the coordination of word parts, a symmetrical relation which seems to provide further evidence against the specifier-head-complement ConjP analysis, though this is not Artstein's concern. He develops a denotative semantic analysis that captures the nonsynonymy (with regard to number) of the following coordinate phrases *physio and psychotherapists* and *physiotherapists and psychotherapists*, and explores phonological constraints on word part conjunction.

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References

- Asher, N., 1993. Reference to Abstract Objects. Kluwer, Dordrecht.
- Gazdar, G., Klein, E., Pullum, G., Sag, I., 1985. Generalized Phrase Structure Grammar. Harvard University Press, Cambridge, MA.
- Grice, H.P., 1967. Logic and Conversation. William James Lectures. Harvard University.
- Grice, H.P., 1975. Logic and conversation. In: Cole, P., Morgan, J. (Eds.), *Syntax and Semantics 3: Speech Acts*. Academic Press, New York, pp. 41–58.
- Hudson, R., 1984. *Word Grammar*. Blackwell, Oxford.
- Hudson, R., 2003. An Encyclopedia of English Grammar and Word Grammar. <http://www.phon.ucl.ac.uk/home/dick/enc-gen.htm>.
- Jackendoff, R., 1977. *X̄-Syntax: A Study of Phrase Structure*. MIT Press, Cambridge, MA.
- Johannessen, J.B., 1993. *Coordination: A Minimalist Approach*. Ph.D. Thesis, University of Oslo.
- Johannessen, J.B., 1998. *Coordination*. Oxford University Press, Oxford.
- Kayne, R., 1994. *The Antisymmetry of Syntax*. MIT Press, Cambridge, MA.
- Kempson, R., Meyer-Viol, W., Gabbay, D., 2001. *Dynamic Syntax: The Flow of Language Understanding*. Blackwell, Oxford.
- Munn, A., 1993. *Topics in the Syntax and Semantics of Coordinate Structures*. Ph.D. Thesis, University of Maryland.
- Munn, A., 2000. Three types of coordination asymmetries. In: Schwabe, K., Zhang, N. (Eds.), *Ellipsis in Conjunction*. Max Niemeyer, Tübingen, pp. 1–22.
- Pollard, C., Sag, I., 1994. *Head-Driven Phrase Structure Grammar*. University of Chicago Press, Chicago.
- Radford, A., 1993. Head-hunting: on the trail of the nominal Janus. In: Corbett, G., Fraser, N., McGlashan, S. (Eds.), *Heads in Grammatical Theory*. Cambridge University Press, Cambridge.
- Sperber, D., Wilson, D., 1986. *Relevance: Communication and Cognition*. Blackwell, Oxford.
- Strawson, P., 1952. *Introduction to Logical Theory*. Methuen, London.

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