On the syntactic symmetry of coordinate structures

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Abstract

This paper examines the syntax of coordinate structures, focusing on the debate between asymmetric and symmetric approaches. Asymmetric theories argue that the first conjunct heads the coordination and determines its distribution. They seem to be supported by examples where predicates like *annoy* and *depend* govern mixed-category coordinations (e.g., NP and CP). Through acceptability judgement experiments, we challenge this argument on the basis of an alternative analysis where such structures involve a coordination of a PP and a CP. Using the Thermometer Method, we find that 2 out of 8 tested predicates (e.g., *annoyed*) accept CP complements as readily as PP complements, while others show reduced acceptability but not outright ungrammaticality. Additionally, the difference in acceptability between purportedly grammatical PP&CP coordinations and ungrammatical CP alone is marginal. These results debunk a key argument for asymmetric theories and provide empirical support for symmetric approaches to coordination.

Keywords: coordinate structures, symmetry of coordination, Thermometer Method, acceptability judgement task

Syntax of coordinate structures

Some of the most prominent approaches to the syntax of coordinate structures in generative linguistics (e.g., Munn 1993 and Zhang 2009) and in corpus linguistics (Universal Dependencies; de Marneffe et al. 2021) are asymmetric: the first conjunct is assumed to head the coordinate structure and determine its distribution. The main argument for such approaches is based on a few examples from Sag et al. (1985), including (1)–(2).

(1) Pat was annoyed by [[NP the children's noise] and [CP that their parents did nothing to stop it]].

(2) You can depend on [[NP my assistant] and [CP that he will be on time]].

In (1), '(annoyed) by' governs a coordination of an NP and a CP, even though it is only compatible with an NP ("…annoyed by the children's noise" is fine), and not with a CP ("…annoyed by that their parents…" is bad). In (2), a similar pattern is observed for 'depend (on)'. This is assumed to provide an argument for asymmetric approaches to coordination: apparently only the category of the first conjunct determines the distribution of the coordinate structure.

Acceptability judgement experiments

The aim of this paper is to debunk the above argument. We report the results of acceptability judgement experiments which show that sentences such as (1)–(2) may have a different syntactic structure than indicated by bracketing in (1)–(2), one that does not support that argument. For example, (1) may be analysed as in (3), i.e., as involving a coordination of a PP and a CP.

(3) Pat was annoyed [[PP by the children's noise] and [CP that their parents did nothing to stop it]].

On this analysis, the purported asymmetry vanishes: the coordinate structure occurs in a position in which both conjuncts are fine alone: both (3') and (3") are acceptable.

(3') Pat was annoyed [PP by the children's noise].
(3") Pat was annoyed [CP that their parents did nothing to stop it].

A series of experiments – to be described in detail in a full-length publication – followed the Thermometer Method (Featherston 2008, 2009), where an open-ended scale is presented with two anchor items visible throughout the experiment: one that is relatively unacceptable (assigned a score of 20) and one that is relatively acceptable (assigned a score of 30). To better assess the absolute acceptability of test items, experiments also included standard items proposed in Gerbrich et al. 2019 as a subset of fillers. The standard items are a set of 15 sentences grouped into 5 classes, A—E, based on their level of acceptability. Each class has 3 members: sentences in class A and B are grammatical, ones in C are marginal, and ones in D and E are ungrammatical. Additionally, we applied a set of exclusion criteria based on reaction time (Juzek 2015: 249–251), comprehension questions, linguistics background, and responses to extremely grammatical and ungrammatical fillers.

In the first experiment, we checked whether predicates such as 'annoyed' and 'depend' take CP complements; only if they do not, does the argument go through. We tested 8 predicates discussed in the relevant literature: 'annoyed (by)', 'ashamed (of)', 'familiar (with)', 'account (for)', 'depend (on)', 'speak (about)', 'suffer (from)', 'talk (about)'.

Out of these 8 predicates, 'annoyed (by)' and 'ashamed (of)' turned out to be as acceptable with CP complements as they are with PP complements (both $p > .05$), so they do not provide any support for asymmetry. The remaining 6 predicates exhibited varying degrees of acceptability with CP complements, and all were statistically significantly less acceptable with CP complements than with PP complements. However, the CP variants of these predicates were statistically significantly higher not only than that of standard items E, but also than that of standard items D. Therefore, it cannot be concluded that these six predicates categorically reject CP complements.

In the second experiment, we compared directly the acceptability of the purportedly fully grammatical PP&CP coordinations ("…depend on… and that…", as in (2) above) with the acceptability of the purportedly ungrammatical CP alone ("…depend that…", as in (4) below). We focused on the 6 predicates that survived the first experiment, excluding 'annoyed (by)' and 'ashamed (of)'.

(4) You can depend [CP that he will be on time].

For 'account (for)', the difference between PP&CP and CP items was not statistically significant, contrary to the prediction of the asymmetric account. For the other 5 predicates, CP items were significantly less acceptable than those involving the PP&CP coordination. However, in all cases, the acceptability difference between PP&CP and CP was relatively small and the average acceptability of CP items was closer to that of grammatical B items or marginal C items, rather than to the ungrammatical D or E items. Therefore, the difference between PP&CP and CP cannot be interpreted as a clear-cut distinction between grammaticality and ungrammaticality.

Conclusion

In summary, our experimental results reveal that CP complements are not categorically ungrammatical for the tested predicates, with some showing relatively high acceptability. Moreover, the observed difference between PP&CP coordination and CP alone does not support a strict binary distinction between grammatical and ungrammatical structures. These findings weaken the empirical foundation of asymmetric theories of coordination, indirectly adding support to symmetric approaches to coordination, recently advocated in Przepiórkowski 2022 and Neeleman et al. 2023.

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