On the position of event-internal modifiers in German clause structure

Tibor Kiss, Jutta Pieper & Alicia Katharina Börner

Linguistic Data Science Lab, Ruhr-University Bochum

Word order constraints on adverbials in German clauses have been subject to a long-standing debate. Recent analyses (Frey & Pittner 1998; Haider 2000; Frey 2003) have proposed that word order constraints on adverbials differ from word order constraints on arguments in that the former are subject to intrinsic properties, class membership in particular. To this end, the authors propose different adverbial classes, which give rise to different base positions in German clause structure. We assume that previous analyses of adverbial base positions are problematic from an empirical and a conceptual perspective. Empirically, problems emerge from disregarding lexical variance of adverbials; conceptually, the approaches use intrinsic properties of proposed *adverbial* classes, while the serialization of *arguments* is dealt with in terms of extrinsic properties. Focusing on event-internal adverbials, such as comitatives and instrumentals, we argue that the respective serialization constraints should not be formulated in terms of class-based (intrinsic) properties. We will show that constraints on their serialization should be proposed in terms of extrinsic properties instead, such as *Anaphoricity,* and *Thematic Integration* and present evidence from two experimental studies that the adverbials may occupy various positions depending on the application of *Anaphoricity, Thematic Integration,* and the lexical interpretation of the adverbials. *Thematic Integration* assumes that the internal argument of an adverbial PP can be incorporated into the thematic structure of the modified event. Being integrated into this structure, the syntactic position of the bearer of the thematic role will be determined due to constraints on word order based on thematic ranking. Thematic relations are known to govern serializations in German clause structure at least since Uszkoreit (1986). Whether such an integration takes place, is – however – subject to the interpretation of the adverbial as well. For comitatives and instrumentals, we can show that the distinction between affirmative and privative (abessive) interpretations is relevant. The respective readings and their consequences are illustrated in (1) and (2).

(1) a.

Ich	habe	gehört,	dass	ein	Virologe	**zusammen**
I	have	heard	that	a.NOM	virologist.M.NOM	together
mit	**einem**	**Pharmakologen**		was	getestet	hat.
with	a.DAT	pharmacologist.M.DAT		what.ACC	tested	has

   b. Ich habe gehört, dass ein Virologe was **zusammen mit einem Pharmakologen** getestet hat.

   'I've heard that a virologist tested something in tandem with a pharmacologist.'

(2) a.

Ich	habe	gehört,	dass	ein	Polizist	was
I	have	heard	that	a.NOM	policeman.M.NOM	what.AC
ganz	**ohne**	**einen**	**Kollegen**	überprüft		hat.
entirely	without	a.ACC	colleague.M.ACC	sifted		has

   b. Ich habe gehört, dass ein Polizist **ganz ohne einen Kollegen** was überprüft hat.

   'I have heard that a policeman sifted something without a colleague.'

We will present an experimental study (2-Alternative Forced Choice Study, modelled by a binomial random slope generalized linear mixed model) on *Thematic Integration*, which corroborates the assumption that affirmative comitatives headed by *mit* ('with') show a clear preference to be realized to the left of a (fixed) object (1a), while the opposite holds for privative comitatives, yielding a preference for a serialization of the adverbial PP below the object (2a).

We account for the contrast between (1) and (2) as follows: Both adverbial PPs are realized in positions where they are c-commanded by the phrases towards which they are oriented (the subjects in (1) and (2)), showing the influence of the extrinsic property *Anaphoricity* (which we tested in a separate Likert Scale-study with random slope cumulative link mixed models). But a preference for a position to the left of the object in (1a) is derived because affirmative comitatives introduce an additional role of (co-)agent. This role is integrated into the thematic structure of the modified event, as illustrated in (3), and the bearer of the role – i.e. the adverbial PP – is arranged in order of the thematic hierarchy.

(3) $\lambda e \exists x \exists y \exists z[\text{test}(e) \wedge \text{virologist}(z) \wedge \text{agent}(e, z) \wedge \text{pharmacologist}(x) \wedge \textbf{agent}(e, x) \wedge$
     $\textbf{participate}(e, z, x) \wedge \text{theme}(e, y)]$

The same does not apply to (2). First, we should notice that the privative reading of the adverbial is best captured by representing it through a negated universal quantifier. The privative comitative in (2) differs from the affirmative comitative in (1) in that we do not find an existential presupposition of the internal argument of the preposition. What is more, we also do not find the negation of such a presupposition in (2). These properties are best captured by assuming a negated universal quantification, as is illustrated in (4).

(4) $\lambda e \exists y \exists z[\text{sift}(e) \wedge \text{policeman}(z) \wedge \text{agent}(e, z) \wedge \text{theme}(e, y) \wedge$
     $\forall x[\text{colleague}(x) \Rightarrow \neg\textbf{participate}(e, z, x)]$

We will further discuss that comitatives differ from instrumentals in that the distinction between affirmative and privative readings – although present with the latter as well – does not play a role for instrumentals. We assume that this is due to the nature of the thematic role introduced by instrumentals: while comitatives may introduce a (co-)agent, instrumental adverbials of course mark their internal arguments as *instruments*, regardless of its lexical interpretation (affirmative vs. privative). The resulting phrases thus rank lower in the thematic hierarchy and the preferred position below the object is predicted.

Summarizing our results, we can show that the serialization of adverbial PPs can be derived from the interaction of extrinsic constraints *(Anaphoricity, Thematic Ranking)* with the lexical semantics of the adverbials involved, yielding contrasts between adverbial types (comitatives, instrumentals) that have been predicted to show uniform behaviour by prior proposals. Even within adverbial types such as comitatives, we can observe contrasts in serialization which do not follow from class-based constraints on word order but can be explained by considering the interpretation of the adverbials involved.

Note: The experimental studies can be found (in anonymized form) at https://anony-mous.4open.science/r/word-order-constraints-on-event-internal-modifiers-60EB/RE-ADME.md

References:

Frey, Werner. 2003. Syntactic conditions on adjunct classes. In: Lang, Ewald & Maienborn, Claudia & Fabricius-Hansen, Cathrine (eds.), Modifying adjuncts, 163–209. Berlin: Mouton de Gruyter.

Frey, Werner & Pittner, Karin. 1998. Zur Positionierung der Adverbiale im deutschen Mittelfeld. *Linguistische Berichte 176*: 489–534.

Haider, Hubert. 2000. Adverb placement: Convergence of structure and licensing. *Theoretical Linguistics* 26. 95–134.

Uszkoreit, Hans. 1986. Constraints on order. *Linguistics* 24. 883–906.