Pragmatic factors facilitate Condition C violations cross-linguistically

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Abstract

Binding Condition C prohibits coreference between a referential expression and a pronoun that c-commands it. Several non-structural factors have been argued to increase the acceptability of Condition C violating coreference interpretations, however. We report the results from a questionnaire study investigating the influence of two pragmatic factors - aspectual backgrounding and the temporal ordering of events - on the acceptability of Condition C violations in English and German. Our results show that coreference interpretations are pragmatically facilitated in both languages, lending support to pragmatic approaches to Condition C. Our results suggest, furthermore, that the relative strength of pragmatic or discourse-level factors may differ even across typologically closely related languages.

Keywords: Condition C, aspectual backgrounding, temporal ordering

Background

Binding Condition C was originally proposed as a syntactic constraint which holds that a referential (R-)expression such as a proper name must be free (Chomsky, 1981). Coreference between an R-expression and a pronoun or another R-expression that c-commands it is prohibited, as illustrated in (1).

However, exceptions to Condition C, with an R-expression and a c-commanding pronoun being able to refer to the same entity or individual as in (2) below, have frequently been noted in the theoretical linguistic literature (see e.g. Grodzinsky & Reinhart, 1993).

(1) *He_i/*$John_i$ said that $John_i$ would win. (Chomsky 1981: 193, ex. 25)

Whilst coreference in (2) is uncontroversial, the degree to which other Condition C violations are considered acceptable seems to vary among speakers and to be influenced by multiple factors beyond syntax. Most of the available evidence is merely anecdotal, however.

(2) He_i is [Colonel Weisskopf]$_i$. (Grodzinsky & Reinhart 1993: 78, ex. 19a)

Harris and Bates (2002, exp.1) carried out a coreference judgement task to examine how clausal backgrounding would affect the acceptability of Condition

C violating coreference readings in English. Either progressive aspect as in (3b) or the past perfect tense were used as a way of backgrounding the main clause.

(3) a ?He$_i$ threatened to leave when Billy$_i$ noticed that the computer
          had died.
     b ?He$_i$ was threatening to leave when Billy$_i$ noticed that the
          computer had died.

Their results showed that coreference in Condition C violating contexts was permitted about 60% of the time in the non-backgrounded condition (3a), and that the acceptance rate rose significantly (to above 70%) when the main clause was backgrounded as in (3b). Harris and Bates concluded that aspectual backgrounding has a similar function as clausal subordination in facilitating coreference readings. Acceptable condition C violations have also been observed in experimental studies on German (Drummer & Felser, 2018; Patterson & Felser, 2019), but the role of pragmatic factors was not examined here.

Several theoretical approaches have tried to account for Condition C violability. While earlier pragmatic approaches (e.g. Bolinger, 1979; Huang, 2000; Levinson, 1991) had difficulty accounting for the role of c-command in coreference computation, Schlenker (2005) provides a theoretical framework that combines syntax and pragmatics-driven approaches. He claims that a referential NP can be used to refer to a pre-introduced referent only when it affects the denotation of the description or provides a pragmatic effect (e.g. by using epithets). These two criteria are evaluated every time a new sentence is processed. Another factor to be considered is the prominence of the entities involved. According to Schlenker (2005: 403), one way of rendering an entity more prominent is to denote it by an expression in a c-commanding position.

From the perspective of pragmatic approaches to Condition C, variation in the acceptability of Condition C violations can be explained by assuming that speakers may perceive the need for using a referential NP differently when it comes to referring to a previously mentioned entity. To our knowledge, the question of whether pragmatic factors facilitate Condition C violations in a similar way across languages has never been examined experimentally.

Methodology

We carried out a questionnaire study to gauge the extent to which aspectual backgrounding (as in 4 and 5) and the temporal ordering of events (6) affect the likelihood of a c-commanding cataphoric pronoun being interpreted as coreferential with an R-expression (such as *Jamie* in (4)) in English and German.

(4) He {crossed/was crossing} the road when Jamie raised his hand to wave goodbye.

(5) She {climbed/had already climbed} up the tree when Cindy saw a giant squirrel.

(6) She met some colleagues {before/after} Emma had lunch with her brother.

61 native German (mean age: 24.8, SD: 7.5) and 61 native English speakers (mean age: 38.1 years, SD: 13.9) completed a web-based antecedent evaluation questionnaire in their native language. The design of the English and German questionnaires was parallel. Ten experimental item pairs were created as in (4) and (5), with either progressive aspect or past perfect used as backgrounding devices. Note that, unlike in English, progressive aspect is not grammaticalized in German but can be signalled explicitly by a prepositional 'pseudoprogressive' construction (e.g. Er war am Arbeiten, lit. 'He was at the work$_{INF}$'). Ten further experimental stimulus pairs were created which contained temporal conjunctions (6). While the conjunction *before* signals that the two events described appear in chronological order, the conjunction *after* signals the reverse order. For each stimulus sentence, participants were asked to indicate whether coreference between a pronoun and a named character was possible.

Results

For the statistical analysis we ran three generalised linear mixed-effects models in *R*, one for every condition pair: 1. *progressive/non-progressive,* 2. *past perfect/non past perfect,* 3. *before/after,* using the *glmer()*-function of the *lme4*-package. All models contained GROUP (ENG, GER) and CONDITION as fixed effects in interaction, with subject and item as random effects. CONDITION was significant for the first two condition pairs ($p<.01$), and GROUP for the third one ($p<.01$). Their interaction was significant for the first and the third model ($p<.01$). Post-hoc tests showed that in both participant groups, both kinds of aspectual backgrounding led to a significant increase in coreference interpretations, confirming and extending previous findings for English (Harris & Bates, 2002). However, the type of temporal conjunction did not reliably affect German speakers' responses, whilst English speakers allowed for significantly more coreference interpretations for *before* than for *after*. In addition, Table 1 shows that English speakers were more reluctant than German speakers to violate Condition C across all conditions (overall coreference acceptance: 38% for English vs. 67% for German).

Table 1. Mean proportions of accepted coreference interpretation per language group and condition (ENG = English, GER = German).

	Condition	Language	Coreference
+backgrounding	+past perfect	ENG	0.62
		GER	0.75
	+progressive	ENG	0.62
		GER	0.75
-backgrounding	-past perfect	ENG	0.23
		GER	0.40
	-progressive	ENG	0.29
		GER	0.59
temporal connectives	before	ENG	0.31
		GER	0.79
	after	ENG	0.19
		GER	0.74

Conclusion

Our results confirm that clausal backgrounding can facilitate Condition C violation, making backwards anaphora easier. Aspectual backgrounding seems to promote coreference in Condition C contexts cross-linguistically, while the temporal ordering of events affected coreference interpretation only in English. Taken together, our results support pragmatic approaches to Condition C but indicate that pragmatic constraints on coreference may vary in strength across different languages even if these are closely related typologically.

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