What's at issue when Principle C is not-at-issue: Information status and backwards anaphora
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Introduction. In this work we challenge the characterization of Principle C as a hard and fast principle of the grammar, suggesting that a combination of non-syntactic factors, including information status and plausibility, may become decisive in pronominal reference resolution. We report the findings of two complementary experiments showing that speakers accept coconstrual relations in backwards anaphora subject to Principle C more readily when the empirical plausibility of coconstrual is high, and even more so – when the pronoun-name sequence is introduced as part of not-at-issue content of the utterance.

Background. Binding Principle C (Chomsky 1981) imposes a syntactic requirement that a name must not have a coindexed c-commanding antecedent. At the same time, earlier theoretical and experimental research has demonstrated that, in many cases where a pronoun c-commands a name, acceptability of such otherwise syntactically illicit coconstruals varies significantly depending on pragmatic context (Evans 1980, Safir 2004), as in (1), empirical plausibility and structural position of the c-commanding pronoun (Gor & Syrett 2017), as in (2), and increased processing load associated with parsing multiple dependencies (Gor 2017, Syrett & Gor *in press*), as in (3).

(1) Everyone has finally realized that Oscar is incompetent. Even **he**$_i$ has finally realized that **Oscar**$_i$ is incompetent.
(2) The waiter offered **her**$_i$ **Pamela**$_i$'s favorite entrée.
(3) More people wanted her$_i$ to go to Aspen than to Mary$_i$'s hometown.
     …than [~~d many people wanted her$_i$ to go~~] to **Mary$_i$'s** hometown.

Previous experimental research has shown that not-at-issue (NAI) content is processed independently of at-issue (AI) content, and impedes processing less (Dillon et al. 2014, Dillon et al. 2017). Building on these findings, we report novel experimental data demonstrating that information status influences accessibility of coconstrual interpretations with antecedents in syntactically illicit positions, extending to cases where backwards anaphora is introduced as part of AI vs. NAI content.

Experiment 1 was a forced choice task run in lab. 82 speakers of English read sentences with a pronoun and a same-gender name, and were asked to choose between a sentence-internal or sentence-external referent for the pronoun, both of which were introduced with equal prominence during training. Each target sentence featured a pronoun c-commanding a name embedded in a possessive DP, where the empirical plausibility of coconstrual was either low or high (based on the norming task reported in Gor & Syrett 2017), and the pronoun-name sequence was embedded as either AI (matrix clause) or NAI content (sentence-initial temporal clause) (see Table 1).

Table 1. **Sample target items for Exp. 1 with 2 conditions: Plausibility of Coconstrual and AI Status**

Target Item	Plausibility	AI Status
(4) The doctors allowed **her**$_{i/j}$ to visit **Emily**$_i$'s grandfather in the ICU.	high	AI
(5) After allowing **her**$_{i/j}$ to visit **Emily**$_i$'s grandfather in the ICU, the doctors discussed the case with the radiologist.	high	NAI
(6) Mr. Adams allowed **her**$_{i/j}$ to borrow **Pamela**$_i$'s textbook for the quiz.	low	AI
(7) After allowing **her**$_{i/j}$ to borrow **Pamela**$_i$'s textbook for the quiz, Mr. Adams phoned the library about the new textbook.	low	NAI

The NAI status of the adjunct temporal clause relative to the AI matrix clause was confirmed *via* an independent norming task with 21 participants (separate pool) capitalizing on the antecedent targeted by direct rejection or anaphoric *Why?* (Frazier & Clifton 2005; Syrett & Koev 2015; Tomioka 2009). Stimuli for the forced-choice task included 22 target items (2 conditions each, between subjects), with 26 forward anaphora controls and 50 fillers.

Results of Exp. 1 are presented in Fig. 1. As expected, target items with low plausibility of coconstrual yielded a low % of sentence-internal referent chosen. Backwards

Fig. 1. % choice of intra-sentential antecedent for control/target items in Exp. 1
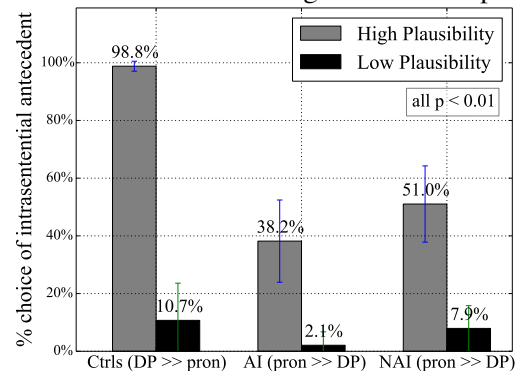
anaphora with high plausibility of coconstrual yielded % higher than predicted by a traditional categorical, syntactically-encoded definition of Principle C. The rate of choosing an intra-sentential antecedent was the highest in cases where syntactically disfavored backwards anaphora was introduced in a NAI clause (51% NAI vs. 38.2% AI). Binomial logistic regression model revealed independent significant effects of plausibility and AI status (both $p < 0.01$).

At the same time, the findings of Exp. 1 raised two open questions. First, temporal clauses introduce presupposed information, which has been also reported to influence processing (Schwarz & Tiemann 2016). Can the findings be generalized to NAI content more generally? Second, Exp. 1 targeted sentence-initial NAI clauses exclusively, and utterance position has been observed to matter for discourse prominence (Anderbois et al. 2013; Syrett & Koev 2015; Göbel 2018; Hunter & Asher 2016). Are the findings exclusive to sentence-initial position (and perhaps related to incremental processing of content)?

Experiment 2 was designed to answer these two questions. We embedded syntactically disfavored backwards anaphora in appositive relative clauses (ARC), which encode NAI content that is not presupposed (Potts 2005, Syrett & Koev 2015), and which can occur in sentence-medial and sentence-final positions. The procedure was identical to that of Exp. 1. The task included 28 target items (2 conditions, between subjects), 25 controls and 57 fillers.

Table 2. **Sample target items for Exp. 2 with 2 conditions: Plausibility and ARC sentential position**

Target Item	Plausibility	ARC position
(8) The doctors, who allowed **her**$_{i/j}$ to visit **Emily**$_i$'s grandfather in the ICU, discussed the case with the radiologist.	high	medial
(9) Mr. Stevens discussed the case with the doctors, who allowed **her**$_{i/j}$ to visit **Emily**$_i$'s grandfather in the ICU.	high	final
(10) Mr. Adams, who allowed **her**$_{i/j}$ to borrow **Pamela**$_i$'s textbook for the quiz, projected the slides onto the board.	low	medial
(11) The headmaster talked to Mr. Adams, who allowed **her**$_{i/j}$ to borrow **Pamela**$_i$'s textbook for the quiz.	low	final

Results of Exp. 2 are presented in Fig. 2. As before, target items with low plausibility of coconstrual yielded a low % selection of sentence-internal referent. With high plausibility test items, coconstrual was chosen in 53.1% of cases for sentence-medial NAI ARC and 58.1% for sentence-final ARC (cf. 51% for NAI temporal clauses in Exp. 1). Binomial logistic regression model revealed no significant effect of ARC position ($p = 0.57$), suggesting that what matters is not *where* the problematic coconstrual is encountered in the sentence, but *how* it is encoded in terms of its information status.

Fig. 2. % choice of intra-sentential antecedent for target sentences in Exp. 2

Conclusions. Our findings make two main contributions. First, we provide further evidence for the interpretive treatment of NAI vs. AI content (Dillon et al. 2014, 2017), demonstrating that syntactically disfavored coconstrual embedded in NAI content is accessed more readily by native speakers than an identically problematic coconstrual introduced as part of AI proposition. Second, we show that speakers' preference for coconstrual in backwards anaphora disfavored by binding constraints depends significantly on non-structural factors. We demonstrate that selection of a referent in such cases is not *solely* determined by a syntactic constraint, but also by empirical plausibility of coconstrual and information status (*qua* AI status). We thus argue that Principle C should not be analyzed as a hard a fast principle of the grammar which causes the parser to ignore all potential antecedents in grammatically illicit positions (i.e., in the c-commanding domain of the pronoun, see Kazanina et. al 2007). Instead, we propose that Principle C is violable, and the syntactic restrictions it imposes may be adjusted by non-structural factors, including empirical plausibility within a discourse context and (not)-at-issue status of the content.