Non-identity readings of ATB-gaps: ATB vs. conjunction reduction

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1. Overview: Non-identity readings (NI-Rs) of ATB-constructions may not involve ATB-syntax (= structures with both gaps related to the same antecedent). I argue that NI-Rs involve conjunction reduction of two full wh-questions. **2. ATB:** A coordinate structure has an ATB-syntax if there is a single antecedent that is related to a gap in each conjunct/disjunct, see (1).

(1) [$_{CP}$ *Which book$_j$* did Lisa [buy __$_j$ on Tuesday] and [read __$_j$ on Friday]]

Note that antecedent sharing is a crucial property of ATB-representations, since it explains why ATB-gaps must be identical in reference (which is why (2) but not (3) is a good answer to (1)).

(2) Lisa bought and read *Syntactic Structures*.

(3) #Lisa bought *Syntactic Structures* on Tuesday and read *Aspects* on Friday.

It is because of the identity requirement that (1) needs an ATB-syntax (i.e. antecedent-sharing) and cannot be analyzed as conjunction reduction (CR) of two independent wh-questions.

(4) [$_{CP1}$ *Which book$_j$* did Lisa buy __$_j$ on Tues.] and [$_{CP2}$ ~~*which book$_i$* did Lisa~~ read __$_i$ on Friday]

The structure in (4) poses questions about ellipsis licensing, but its syntax is unremarkable: It involves two independent steps of wh-movement, which don't violate the CSC (as ATB does), nor do they require a special representation of antecedent-sharing. However, the CR-analysis fails to capture the core property that the two gaps in (1) have to be identical (in (4), the gaps are bound by distinct wh-phrases, i.e. gap-identity is not enforced). **3. Non-identity:** Given this, it is surprising that some have argued that gap-identity is not a general property of ATB-representations (Munn 1999; de Vries 2017). In contrast to (1), the question in (5) does not require the two gaps to be identical, which is why (6) is a good response to this question.

(5) Which book does Lisa hate ___ and Tony like ___?

(6) Lisa hates *Syntactic Structures* and Tony likes *Aspects*.

Munn (1999) argues that NI-Rs teach us about the nature of ATB: Even though the correct ATB-syntax relates both gaps to a shared antecedent, it must be flexible enough to allow referential mismatches. Specifically, an ATB-syntax must allow functional readings (e.g. Heim 2018), paraphrased as in (7). In the base position in each conjunct, the argument slot of the (<e,e>-type) function variable (the function variable being bound by the shared wh-phrase) is saturated by an individual variable *pro* that can be independently bound by a higher DP in each conjunct (e.g. the subject), creating mismatches in the interpretation of the gaps.

(7) Which function *f* that maps individuals to books is such that Lisa hates the book that *f* maps *her* to and Tony likes the book that *f* maps *him* to.

4. An alternative: Note that Munn takes for granted that the NI-Rs of (5) involves an ATB-syntax, i.e. the antecedent-sharing representation that captures gap-identity in (1). The point I want to raise is that this is not a necessary conclusion. The strongest indication that we are dealing with an ATB-syntax is the presence of an identity requirement on the gaps. In the absence of such a requirement, the *prima facie* simpler analysis involves CR of a wh-phrase in the second conjunct. At a first glance, the CR-analysis gives us exactly what we need to capture NI-Rs readings. For example, (6) is exactly the type of answer we would expect as a response to a question like (8) if we *do not* omit the part that is striked through. The default hypothesis should thus be that (8) *is in fact* the LF that underlies (5).

(8) [$_{CP1}$ *Which book$_j$* does [$_{TP1}$ Lisa hate __$_j$]] and [$_{CP2}$ ~~*which book$_i$ does*~~ [$_{TP2}$ Tony like __$_i$]]

(9) [$_{CP}$ *Which book* does [[$_{TP1}$ Lisa hate ___] and [[$_{TP2}$ Tony like ___]]

Before we accept any implications for the syntax of ATB (e.g. that ATB-gaps can contain non-identical variables), we need to make sure that we are dealing with ATB to begin with. **5. Predictions:** CR-syntax (8) differs from ATB-syntax (9) in two ways: a.) CR involves *CP-coordination*, ATB involves TP-coordination; b.) In CR, the *wh-phrases scope below conjunction*, in ATB, the wh-phrase scopes above it. I will focus on a.). **6. Scope:** Bassi &

Bondarenko (2020) observe that CP- and TP-coordination behave differently in embedded environments: CP-coordination scopes *above* and TP-coord. scopes *below* the embedding verb.

(10) Does Gary know that [TP1 Declan sang] or [TP2 Anne danced]? (*know > or*)
Factive presupposition: Declan sang *or* Anne danced.

(11) Does Gary know [CP1 that Declan sang] or [CP2 that Anne danced]? (*or > know*)
Factive presupposition: Declan sang *and* Anne danced.

The factive presupposition of *know* is *disjunctive* when it embeds TPs, but *conjunctive* when it embeds CP-disjuncts: (10) asks about Gary's knowledge of a disjunctive claim, so disjunction scopes below *know*. (11) asks disjunctively about two knowledge claims, i.e. whether Gary knows A (that Declan sang) or Gary knows B (that Anne danced). The disjunction is not part of the knowledge claim itself (*or > know*) and therefore doesn't contribute to the presupposition.

(12) Does Gary know which man Bill killed on Tuesday or Fred married on Wednesday?
Presupposition of identity reading (*know > or*): There is a man who was either killed by Bill on Tuesday *or* married by Fred on Wednesday.
Presupposition of non-identity reading (*or > know*): There is a man who was killed by Bill on Tuesday *and* there is a man who was married by Fred on Wednesday.

(13) Does Gary know which man Bill killed on Tues. or which man Fred married on Wed.?

We can now test whether NI-Rs involve CP or TP coordination: (12) has an ATB-reading with an identity-construal in which disjunction scopes below *know*. E.g., assume we know only that either Jones got killed by Bill on Tuesday or he was able to marry Fred the following day. (12) would ask whether Gary knows this disjunctive fact. (12) also has a NI-R that presupposes that there was both a man that was killed by Bill on T. *and* a man that married Fred on W. (since Fred cannot marry a corpse, the men are non-identical). The question asks whether Gary can identify the victim of Bill's killing or the person that Fred married (or both). Since both facts are presupposed, this reading has disjunction scope above *know*, i.e. there is a parse that involves CP-conjunction (+CR) that results in a NI-R for the two gaps. Indeed, the reading is what we get if we explicitly coordinate two wh-questions (13), supporting the idea that CR might be behind the NI-R. Crucially, (12) seems to lack a NI-R with low-scoping (TP-)disjunction, which should have the following presupposition: There is a pair of men x and y such that Bill killed x on Tuesday *or* Fred kissed y on Wednesday. There appears to be no construal of this kind. The conclusion is supported by (14): If TP-disjunction is continued with the phrase *but not both*, the inference we get is that not both disjuncts are true (→ *There is an x s.t. it is not the case that x was* <u>both</u> *kissed by Bill* <u>and</u> *x was married to Fred*). This inference we only get under gap-identity. CP-disjunction triggers the inference that the subject doesn't know both facts (→ *Lisa doesn't know both facts*), which we get only under NI-R.

(14) Lisa knows which man Bill kissed __ or Fred married __ *but not both*.

7. Asymmetric coord.: Bjorkman (2013) observes that TP-conjunction is correlated with asymmetric and CP-conjunction with symmetric coordination. The two conjuncts in (15)-(16) describe temporally ordered events (marriage=motivation for the killing). Only in the identity construal in (15) does the order of the conjuncts need to match the temporal order of events, i.e. (15) involves *asymmetric* TP-coordination and NI-R (16) is *symmetric* CP-coordination.

(15) Scenario: *After Jane found out that Bert had married Susan, she killed him out of jealousy.*
    a. #The police told me who Jane killed __ and Susan married __ .
    b. The police told me who Susan married __ and Jane killed __ .

(16) Scenario: *After hearing that Lisa had married Bill, Tom took revenge by killing Bill's sister.*
    a. The police told me who Tom killed __ and Bill married __ .
    b. The police told me who Bill married __ and Tom killed __ .

8. Implications: The conclusion that NI-R pattern with CP-conjunction/CR suggest that ATB-structures do *not* have readings derived from independent binding into each gap, which would have required an ATB-syntax with contentful representations of each gap. If there are no

genuine NI-Rs with ATB-structures, this favors analyses that rule this out by making at least one gap contentless (e.g. null operator theoreis like Munn (1993)).