

Variable Binding in Temporal Adverbial Clauses: Evidence from Ellipsis

The Puzzle: In VP-ellipsis in (1)a, the VP within the temporal adverbial clause (TAC) cannot be an antecedent constituent (AC) for the elided constituent (EC). In contrast, the VP within TAC can be AC for EC in (1)b. The puzzle is why the VP within TAC can be AC for EC only in (1)b. To explain the contrast, we make use of an independently motivated property of TACs, namely, operator movement in TACs (Geis 1970). We argue that this operator movement has a consequence for licensing ellipsis.

The Analysis: To set the stage for presenting our analysis, let us first consider an argument for operator movement in TACs. (2) has two readings (a high reading in (2)a and a low one in (2)b). It has been claimed that they are derived from the LFs in (3), which differ in the base-generated position of an operator (Geis 1970). This account is supported by the fact that a low reading becomes unavailable if an embedded clause in TAC is inside an island, as in (4). Let us now move onto our account of (1). Given operator movement in TACs, the antecedent clause in (1)a is analyzed as the LF in (5)a in which TAC involves variable binding. However, there is no corresponding variable binding in the ellipsis clause in (5)b. Since the parallelism condition in (6) (Rooth 1992, among others) is not met in (5), VP-ellipsis in (1)a is not licensed. We suggest that it is reasonable to assume that there is no operator movement in non-TACs (e.g., *while* in the sense of (1)b and *although*). Given this, there is no variable binding in the antecedent clause in (1)b, as in (7)a. Thus, (6) is met in (7). As in (8), other TACs behave like *while* in (1)a with respect to the ellipsis possibility. We argue that the proposed account can also apply to (8).

Further Arguments: We have argued that VP-ellipsis in (1)a is not licensed because the relevant variable binding is present only in the antecedent clause. Thus, we predict that if a clause within TAC does not involve the relevant variable binding, its VP should be able to serve as AC for EC. This prediction is borne out in (9). Since TAC in (9) provides a high reading, the embedded clause in TAC does not involve operator movement, as in (10)a. Thus, the VP in that clause can serve as AC for EC. Second, we also predict that if both an antecedent clause and an ellipsis one involve the relevant variable binding, a VP within TAC should be able to serve as AC for EC. This prediction is also borne out in (11) whose LFs are illustrated in (12). We argue that (13)a makes the same point. The relevant variable binding relations are created in TAC by operator movement and in the matrix clause by QR of TAC, respectively, as in (13)b.

ACD: We discuss adverbial ACD, which is an argument for QR of TACs adopted above, and present its consequence for the theory of late merger. In (14), TAC modifies the embedded clause, but ellipsis within TAC is resolved by the matrix VP. Thus, (14) is ACD. Fox and Nissenbaum (2003) argue that ACD in (14) is resolved by QR of TAC, as in (15)a. However, if we assume that QR of TAC leaves a copy, just like other types of movement, the parallelism condition is not met, as in (15)b. Fox (2002) resolves the conflict between the QR approach to ACD like (16)a and the copy theory of movement by adopting late merger of a relative clause (RC), as in (16)b (see Fox 2002 for an analysis of RCs and Trace Conversion, which converts copies into definite description. They play a role in producing (16)b). Extending Fox's approach, we argue that ACD in (14) is resolved by QR of *before* and late merger of the complement clause of *before*, as in (17) (see Bhatt and Pancheva 2004 for the proposal that comparatives involve fundamentally the same type of derivation). This analysis is corroborated by a Condition C fact. First, Condition C is obviated in ACD if a relevant R-expression is within RC, as in (18)a (Fiengo and May 1994 and Fox 2002). This is explained by Fox's analysis because the RC is introduced outside of the c-command domain of the pronoun, as in (18)b. Since our analysis also adopts late merger, we predict that Condition C should be able to be obviated in adverbial ACD. This prediction is borne out by (19)a which is grammatical even under the reading in which TAC modifies the embedded clause. Because the complement clause of *before* undergoes late merger, Condition C is not violated, as in (19)b.

Conclusion: We have presented additional evidence from ellipsis in favor of the claim that TACs involve operator movement, and discussed the consequence of adverbial ACD for the theory of late merger.

- (1) a. (Context: The kid was trying to jump out of the window while his father was reading a book.)
The kid kept getting closer to the window while his father was reading a book.
*His mother also was <reading a book>. (the bracketed material indicates an elided constituent.)
b. (Con.: The kid was trying to jump out of the window despite the fact that his father scolded him.)
The kid kept getting closer to the window while/although his father scolded him.
So, his mother also did <scold him>.
- (2) I saw Mary in New York before she claimed that she would arrive. (Geis 1970)
a. I saw Mary in NY prior to the time t such that she claimed at t that she would arrive (sometime).
b. I saw Mary in NY prior to the time t such that she claimed that t would be her arrival time.
- (3) a. high reading: ... before [OP λt . [she claimed [that she would arrive] at t]]
b. low reading: ... before [OP λt . [she claimed [that she would arrive at t]]]
- (4) I saw Mary in New York before she made the claim that she had arrived. (Geis 1970)
- (5) a. antecedent clause: ... while [OP λt . [his father was reading a book at t]]
b. ellipsis clause: *[[his mother also was <reading a book>]]
- (6) For ellipsis of EC to be licensed, there must exist a constituent, which reflexively dominates EC, and satisfies the parallelism condition. A constituent satisfies the parallelism condition if it is semantically identical to another constituent, modulo focus marked constituents.
- (7) a. antecedent clause: ... while/although [his father scolded him]
b. ellipsis clause: [his mother also did <scold him>]
- (8) a. Mary arrived after John ate. *But, Bill didn't <eat>.
b. I have got healthy since I have been going to the hospital. *John also will <go to the hospital>.
- (9) The kid kept getting closer to the window while his father was arguing that Patriots would win.
In fact, they did <win>.
- (10) a. antecedent clause: ... while [OP λt . [his father was arguing at t that [Patriots would win]]]
b. ellipsis clause: [they did <win>]
- (11) John got healthy after he quit smoking. But, Bill got sick after he did <quit smoking>.
- (12) a. antecedent clause: ... after [OP λt_i . [he quit smoking at t_i]]
b. ellipsis clause: ... after [OP λt_j . [he did <quit smoking at t_j >]]
- (13) a. John left before Bill did <leave>.
b. [[before OP λt_i . [Bill did <leave at t_i >]] λt_j . [John left at t_j]]
- (14) Room 1 wants to have dinner before Room 2 does <want to have dinner>.
- (15) a. [[before OP λt_i . Room 2 does <want to have dinner at t_i >] λt_j . [Room 1 wants to have dinner at t_j]]
b. *[[before OP λt_i . R. 2 does <want to have dinner at t_i >]
 λt_j . [R. 1 wants to have dinner at t_j [before OP λt_i . R. 2 does <want to have dinner at t_i >]]]
- (16) a. John read every book that Bill did <read>.
b. [[every book [λx . that Bill did <read the book x >]] λy . [John read [the book y]]]
- (17) [[before OP λt_i . R. 2 does <want to have dinner at [the t_i >]] λt_j . [R. 1 wants to have dinner at [the t_j]]]
- (18) a. You introduced him_i to everyone that John_i wanted you to <introduce him_i to>. (Fox 2002:84)
b. [[everyone [that John_i wanted you to <introduce him_i to>]] [you introduced him_i to [everyone]]]
- (19) a. Sue told him_i to meet Sally before John_i's sister did <tell him_i to meet Sally>.
b. [[before [John_i's sister did <tell him_i to meet Sally>]] [Sue told him_i [to meet Sally [before]]]]]

Selected References

- Bhatt, Rajesh and Roumyana Pancheva. 2004. Late merger of degree clauses. *LI* 35:1-45.
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Geis, Michael. 1970. Adverbial subordinate clauses in English. Doctoral dissertation, MIT.