

The scope of additive operators: an argument for syntactic event decomposition
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This paper makes a novel argument for event decomposition in the syntax. We provide new evidence for the existence of a propositional node that denotes a result state, based on the observation that additive operators like, e.g., Greek *ke* gives rise to stative presuppositions in sentences with causative predicates (akin to the restitutive presupposition of *again*, cf. von Stechow 1996). We show that such presuppositions are not amenable to alternative semantic analyses, thus providing a more reliable diagnostic for syntactic event decomposition.

Additive operators in Greek are focus operators that are associated with the XP they adjoin to. The semantics of, e.g., *ke DP* is given in (1) (Propositional levels are predicates of eventualities of type *s*, *i* is a variable over eventualities of any type, we reserve the variable *s* for states). Given obligatory association with the DP, (2) gives rise to the presupposition that **John opened something other than the window**.

(1) $[[ke(DP)]] = \lambda P_{e,st}. \lambda i_s. \exists i' \exists x \in [DP]^A \& x \neq [DP] \& P(x)(i'). P([DP])(i)$

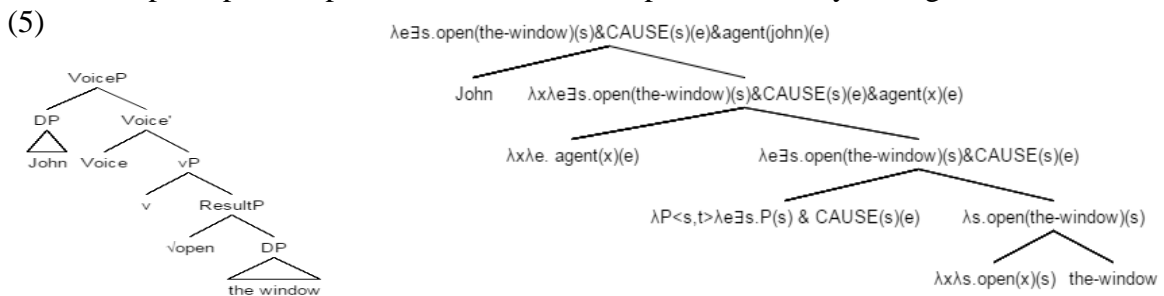
(2) O Janis anikse ke to PARATHIRO. (3) O Janis theli na dhi ke ti MARIA.
 the John opened also the window the John wants subj see also the Mary
 ‘John opened the WINDOW too.’ ‘John wants to see MARY too.’

Whereas the associate of *ke* is uniquely determined by its overt position, its scope can vary. *ke DP* has the type of a generalized quantifier, so Quantifier Raising (QR, as in Heim&Kratzer 1998) to a propositional node may be required. If there is more than one propositional node and movement is allowed, as in (3) above, ambiguity arises. (3) presupposes either that John has seen someone other than Mary (*want* > *ke DP*) or that John wants to see someone other than Mary (*ke DP* > *want*). In summary: (a) The content of the presupposition of *ke* is propositional, (b) it is determined by the syntactic arguments of *ke*, (c) compositional interpretation might require QR, (d) QR targets a propositional node, (e) when more than one such node is available, QR gives rise to ambiguities.

Stative presuppositions. We observe that (2) is licensed in the context in (4) even though the presupposition above is not satisfied. A weaker presupposition must also be available for (2).

(4) Context: John is in a room whose door is always open. He opens the window.

Obligatory association with the DP excludes weaker presuppositions that would arise from association with wider constituents (e.g., association with the clause would derive the weak presupposition ‘something else happened’). Instead, we argue that (2) can give rise to the stative presupposition that **something other than the window was open**. Since we the content of the presupposition of *ke* is determined by its arguments, it follows that there exists a node that denotes a predicate of states and is syntactically accessible. For concreteness, we assume the decomposition of causatives in (5) from Alexiadou, Anagnostopoulou, and Schäfer 2015 (our account is in principle compatible with other decompositional analyses, e.g. Ramchand 2008).



ke DP composes directly with the root and a stative presupposition is derived, which is passed on via presupposition projection, as in (6). (The initial eventive presupposition is derived via QR to VoiceP.) In the absence of a syntactically present ResultPhrase, *ke DP* would necessarily

compose with a constituent that includes the CAUSE component, and only an eventive presupposition would be derived.

- (6) $[[(2)]]^g = \lambda e \exists s: \exists s' \exists x \in D_e \& x \neq \text{the-window} \& \text{open}(x)(s'). \text{open}(\text{the-window})(s) \& \text{CAUSE}(s)(e) \& \text{agent}(\text{john})(e)$

Stative presuppositions also arise with **ditransitive predicates**, as in (7), whose decomposition has also been argued to include a result state, the content of which is determined by the root (see, e.g., Beck&Johnson 2004 in the context of *again*). The stative presupposition of (7) is that **someone other than Mary has a book**, satisfied in a context in which, e.g., Helen has a book not given to her by John. We assume the decomposition in (8). Since the root is a relation of individuals, QR is needed. Since (i) QR needs to target a propositional node, (ii) the content of the presupposition is a state, and (iii) the content of the presupposition is determined by the arguments of *ke DP*, it follows that there exists a syntactic node that denotes a state and is the target of QR. The relevant node here is ResultP. We show that double-object constructions (the $DP_{dat} DP_{acc}$ frame) pattern alike, so that, regardless of other potential differences, both frames must include a propositional node denoting a result state.

- (7) O Janis edose ke sti MARIA ena vivlio.
the John gave also to-the Maria a book
'John gave MARY a book too.'

- (8) $[\text{VoiceP} [\text{DP } o \text{ Janis}] [\text{Voice}' \text{Voice} [\text{vP } v [\text{ResultP}' [\text{DP } ke \text{ sti Maria}] [\text{ResultP}' 1 [\text{ResultP} [\text{DP } ena \text{ vivlio}] [\text{Result}' \sqrt{\text{din-}} t_1]]]]]]]$

- (9) $[[\text{ResultP}'']^g = \lambda s: \exists s' \exists x \in D_e \& x \neq \text{maria} \& \text{have}(\text{a-book})(x)(s'). \text{have}(\text{a-book})(\text{maria})(s)$

An analysis of the ambiguity in terms of scope is confirmed by word-order facts. Fronted objects as in, e.g. (10) only give rise to an eventive presupposition. Fronted objects in OVS orders are fronted topics that take scope in their landing site (Gryllia 2008). If so, the argument of *ke DP* necessarily includes the CAUSE component.

- (10) Ke to PARATHIRO anikse o Janis.
also the window opened the John
'John opened the WINDOW too.'

- (11) $[\text{TopP}' [\text{DP } ke \text{ to parathiro}] [\text{TopP}' 1 [\text{TopP } \text{Top} [\text{CP } \text{anikse } o \text{ Janis } t_1]]]]]$

No semantic alternatives. Restitutive readings of *again* have been analyzed without syntactic event decomposition. E.g., Fabricius-Hansen (FH, 1983, 2001) defines a second *again* based on counter-directionality. A counter-directional entry for *ke*, based on FH, is given in (12).

- (12) $[[ke_c(\text{DP})]] = \lambda P_{e,st}. \lambda i_s. \exists i' \exists x \in [[\text{DP}]]^A \& x \neq [[\text{DP}]] \& P_c(x)(i'): P([[DP]])(i)$

where for $P = \lambda e$. John opened the window in e , $P_c = \lambda e$. the window closed in e

Assuming (12), (2) gives rise to the presupposition that something other than the window closed, as in (13b). This presupposition is too weak; (2) is infelicitous in contexts that satisfy it, but do not satisfy the stative presupposition, like e.g. the context in (13).

- (13) a. $[\text{TP} [\text{DP } ke \text{ to parathiro}] [\text{TP } 1 [\text{TP } o \text{ Janis } \text{anikse } t_1]]]]]$

- b. $[[(14a)]]^g = \lambda e \exists s: \exists e' \exists x \in D_e \& x \neq \text{the-window} \& \text{closed}(x)(e'). \text{open}(\text{the-window})(s) \& \text{CAUSE}(s)(e) \& \text{agent}(\text{john})(e)$

- (14) John was in a room whose door was open. He closed the door and opened the window.
Pedersen (2014) re-interprets FH's approach in terms of scalarity. His analysis predicts that only scalar operators and scalar predicates give rise to Restitutive presuppositions. Stative presuppositions of additives are not amenable to such analyses, since (i) *ke* is a non-scalar additive operator, and (ii) stative presuppositions arise with non-scalar bi-eventive predicates, like, e.g., *mpeno* 'enter' in (15).

- (15) Context: The puppy was born in the kitchen and stayed there for two days. On Wednesday, we opened the door, and the puppy entered the living-room.
To kutavi mpike ke sto SALONI.

the puppy entered also to.the living-room
'The puppy also entered the living-room.'