An ambiguity account of Degree Achievements: evidence from additive operators

Giorgos Spathas, Leibniz-ZAS

Introduction. We present novel evidence for an ambiguity account of **Degree Achievement (DA)** verbs based, primarily, on the Stative Presuppositions (SPs) generated by focus sensitive additive operators. We show that a successful analysis of the distribution of SPs requires the integration of **event-decompositional and scalar approaches** to DAs, undermining claims that the former are obsolete.

Against ambiguity accounts. Ambiguity accounts; i.e. **event-decompositional accounts** that allow DAs to have both 'positive' ('become A') and 'comparative' ('become A-er') readings, along, roughly, the lines in (1) (cf. von Stechow 1996), have been rejected on the basis of two observations.

- (1) The river widened/ dried.
- a. [v_{BECOME} [the river [POS wide/ dry]]]
 b. [v_{BECOME} [the river [-ER wide/ dry]]]

The first one is that an ambiguity account over-generates, as shown, e.g. by the fact that whereas DAs built on absolute adjectives like *dry* (ADAs) have **positive inferences** ('x became A'), DAs built on relative adjectives like *widen* (RDAs) do not, (2) (Kennedy and Levin 2008, a.m.o.). Event decompositional accounts can only stipulate which adjectives can be related to which verbal structures.

(2) a. The river widened. ⊭ The river is wide.b. The river dried. ⊨ The river is dry.

The second observation concerns *again*-modification. An ambiguity account predicts all DAs to license restitutive presuppositions ('x had been A before.'). However, *again*-modification can be felicitous in the absence of such a previous state (Fabricius-Hansen 2001); for RDAs, it is sufficient that there is a previous event of negative change along the relevant scale, as in (3a) ('x narrowed before'), ADAs require negative change starting from a maximum degree ('x went from dry to wet before'). An ambiguity account like (1) cannot explain why the properties of such reversal presuppositions depend on the RDAs-ADAs distinction, except by stipulation (Pedersen 2014).

- (3) a. Yesterday, the narrow river narrowed even more. Today, it widened again.
 - b. Yesterday, the wet roof became even more wet. #Today, it dried again.

Scalar approaches to DAs. Scalar analyses (Winter 2006, Kennedy and Levin 2008, a.o.) build DAs based on the underlying gradable adjectives, which denote simple **measure functions** (4a). Verbalization turns a measure function into a **measure-of-change (MOC)** function which measures the **degree of change** that an entity undergoes in the course of an event, (4b) and (4c). We assume with Pedersen (2014) that the change is represented as a degree vector; i.e. an ordered set of degrees of the object's event-initial and event-final measurements. A verbal POS operator turns a MOC function into a predicate of individuals by introducing a **standard-of-change** (4d). The measurement of the vector is required to exceed this standard. Crucially, as in the case of the underlying adjective, the standard depends on the boundedness of the relevant scale. For both relative and absolute DAs the standard can be identified with the minimum degree of the scale (the degree of A at the beginning of the event) giving rise to 'comparative readings'. In the case of absolute DAs, the option exists that the standard is identified with the maximum degree in the scale, giving rise to 'positive inferences' and telic readings. Hence, positive inferences for ADAS are predicted without the need of a derivation like (1a).

| (4) | a. [[wide]] | $=\lambda x\lambda e. wide(x)(e)$ |
|-----|--|---|
| | b. [[v _{comp}]] | = $\lambda g \lambda x \lambda e. \langle g(x)(init(e)), g(x)(fin(e)) \rangle$ (cf. Pedersen 2014, (37)) |
| | c. [[[_{vP} v wide]]]] | $= \lambda x \lambda e. \langle wide(x)(init(e)), wide(x)(fin(e)) \rangle$ |
| | d. [[[POS _v [_{vP} v wide]] |]]]] = $\lambda x \lambda e$. <wide(x)(init(e)), wide(x)(fin(e))=""> \geq stnd(wide_{MOC})</wide(x)(init(e)),> |

The felicity of *again*-modification in restitutive and reversal contexts is handled by assuming a **counterdirectional** *again* ($again_{CD}$) that attaches on the MOC function and presupposes negative change along the scale. Given how the standard is identified, ADAs require negative change from a maximum to a non-maximum degree, whereas for RDAs any previous negative change will do (Pedersen 2014).

Additive Stative Presuppositions. Greek additive ke 'also' in (5) associating with an object DP can give rise to a Stative Presupposition (SP). Spathas and Michelioudakis (2017) argues, on the basis of

other verb classes, that SPs depend on the presence of a **syntactically accessible predicate of states** that *ke DP* takes scope over.

(5) $[[ke DP]] = \lambda P_{e,st} \lambda e_s: \exists e' \exists x \in [[DP]]^F \& x \neq [[DP]] \& P(x)(e'). P([[DP]])(e)$

SPs in DAs. Both ADAs and RDAs license SPs. In the case of ADAs, Greek *ke* can give rise to a presupposition according to which **something other than x is maximally A**, as in, e.g., (6). Hence, the additive is licensed in (6), even though the alternative undergoes no change in the context.

(6) John bought a yellow and a red shirt, but dropped both of them near some water. The yellow shirt stayed dry, but the red one got wet. At home ... stegnose ke to KOKINO pukamiso. dried.3SG also the red shirt

dried.3SG also the red shirt dried too.'

In the case of RDAs, Greek *ke* can give rise to a SP according to which **something other than x exceeds the standard degree of A**, as in (7), for the DA build on the relative adjective *akrivos* 'expensive'.

(7) Bread and milk are expensive if they cost more than 1€ (per kilo). John opened a bakery in January and set the price of milk to 1,20€ and that of bread to 0,80€. In February, he raised the price of bread to 1,10€, so that ... akrivine ke to PSOMI ston furno tu Jani. expensive.3SG also the bread in.the bakery the John 'The *bread* became expensive in John's bakery too.'

Scalar analyses, as in (4), fail to license SPs, since they contain no stative component in their syntactic (or semantic) decomposition; the lowest constituent in which ke DP can attach to is (4d), but this only generates an eventive presupposition. Notice that appeal to a counter-directional ke_{CD} that would require something other than the associate to undergo negative change cannot predict the licensing of the additive in (6) and (7), since the alternative individual undergoes no change in these contexts. We conclude that a derivation like (1a) is necessary in order to explain the licensing of SPs.

Proposal. We propose to allow DAs to also be built on the basis of two independently available ingredients, a **measure function and** v_{BECOME} . Next to the derivation in (4), we also generate (8) (ditto for *dry*). *ke DP* scoping below v_{BECOME} generates SPs for both RDAs and ADAs, the only difference being how the standard of the measure function is determined (contextual standard for RDAs, the maximum degree for ADAs, as per Interpretive Economy, Kennedy 2007).

(8) a. [[POS wide]]] = $\lambda x \lambda s. wide(x)(s) \ge stnd(wide)$ b. [[$v_P v_{BECOME}$ [the river [POS wide]]]]] = 1 iff [wide(r)(init(e)) \ge stnd(wide)] = 0 and [wide(r)(fin(e)) \ge stnd(wide)] = 1

Further evidence. Crucial evidence in favour of an ambiguity account comes from the fact that SPs are not licensed in the presence of **degree modification**, even when the resulting predications are telic; (9) is infelicitous in the context of (6) (ditto for RDAs). We assume with Kennedy and Levin (2008) that degree modifiers in the verbal domain require access to MOC, forcing the derivation in (4).

(9) #stegnose stadhiaka/siga-siga/ endelos ke to KOKINO to pukamiso. dried.3SG gradually bit-by-bit completely also the red the shirt 'The red shirt gradually/ bit-by-bit/ completely dried too.'

RDAs transparently **built on the comparative form** of adjectives, like, e.g. *hiroterevo* 'wors-en', also fail to license SPs (data omitted). We take the comparative form to indicate a derivation based on v_{COMP} , as in (4). Scalar analyses that solely rely on derivations like (4) cannot explain the bleeding of SPs.

Inferential patterns. Introducing the derivation in (8) makes no discernible difference to the readings of ADAs. In the case of RDAs, (8) generates a **reading not generated by (4) ('x becomes A')**. If so, a telic reading licensing positive inferences should be available for all RDAs (not just RDAs that can be associated with a conventionalized standard, e.g., *cool*, in Kennedy and Levin 2008). The initial results of a questionnaire show that 3 out of 6 Greek speakers accept positive inferences for RDAs in out-of-the-blue contexts, and all of them accept positive inferences in contexts with explicit arbitrary standards. Similarly, all speakers accept telicity detecting *in*-PPs and result state modifying *for*-PPs (Piñón 1999) in the presence of explicit standards. See Kearns (2007), McNally (2017) for arguments that a Kennedy&Levin-type of account is too restrictive for RDAs.

Conclusions. We have defended an ambiguity account that allows both (i) an event-decompositional derivation with a stative component, and (ii) a 'comparative' derivation that can generate telic readings for ADAs. Unlike previous accounts, we thus explain both the existence and distribution of SPs, as well as known differences between ADAs and RDAs.