Aspectual operators and polarity sensitivity

Puzzle. The aspectual operators *already*, *still*, *yet*, and *anymore* exhibit interesting similarities. First, they are either PPIs or NPIs, exhibiting what we may call 'polarity sensitivity 1' (POL1). Second, they all imply: (a) That the positive/negative property they combine with (*be asleep/not be asleep*) is true now; this is what we will call the 'current state' inference (CURR). (b) That the property might not be true at an earlier/later time; this is what we will call the 'other state' inference (OTH). (c) That the property is also true at a later/earlier time; this is what we will call the 'continuity' inference (CONT). And: (d) That the property holds earlier/later than expected; this is what we will call the 'evaluativity' inference (EVAL). Third, they are all degraded in combination with certain predicates, e.g., either *be young* or *be old*, exhibiting what I will argue is a second form of polarity sensitivity, 'polarity sensitivity 2' (POL2).

(1al) Jo ✓is / #isn't **already** asleep. (POL1)

(2al) Tim is **already** asleep.
- a. asleep now (CURR)
- b. not asleep earlier (OTH)
- c. also asleep later (CONT)
- d. asleep earlier than expected (EVAL)

(3al) Jo is **already** #young / ✓old. (POL2)

(1s) Jo ✓is / #isn't **still** asleep. (POL1)

(2s) Tim is **still** asleep.
- a. asleep now (CURR)
- b. not asleep later (OTH)
- c. also asleep earlier (CONT)
- d. asleep later than expected (EVAL)

(3s) Jo is **still** ✓young / #old. (POL2)

(1y) Jo #is / ✓isn't asleep **yet**. (POL1)

(2y) Tim isn't asleep **yet**.
- a. not asleep now (CURR)
- b. asleep later (OTH)
- c. also not asleep earlier (CONT)
- d. not-asleep later than expected (EVAL)

(3y) Tim isn't #young / ✓old **yet**. (POL2)

(1an) Jo #is / #isn't asleep **anymore**. (POL1)

(2an) Tim isn't asleep **anymore**.
- a. not asleep now (CURR)
- b. asleep earlier (OTH)
- c. also not asleep later (CONT)
- d. not-asleep earlier than expected (EVAL)

(3an) Tim isn't ✓young / #old **anymore**. (POL2)

Existing literature and this talk. There is a rich literature on these aspectual operators. However, very little attention has been paid to POL1 (cf., e.g., Israel 1997). And, while there are often solutions for CURR-CONT, there is no clear notion of EVAL. (E.g., in *still*, it is treated either as going back to a separate meaning, cf., e.g., Ippolito 2007, or as an afterthought, cf. e.g. Beck 2020.) Also, there is no mention of or solution for POL2. The goal of this paper is to shed light on especially the polarity sensitivity of aspectual operators. We will offer a solution for CURR-CONT that also naturally captures EVAL, showing that it is the key to POL2 also, and that the general shape of the proposal suggests a plan for how to capture POL1 as well.

Proposal. Let the scale S be the temporal order $<$ (the precedence relation on time intervals; cf. ontology of times in, e.g., Beck 2020 and refs. therein). Given a time (interval) $t \in S$, let $\text{POS}(t)$ be the positive extent of t on S, i.e., the proper subset of S that extends from the bottom of the scale all the way to t ($\lambda t' t' \leq t$), and $\text{NEG}(t)$—the negative extent of t on S, i.e., the proper subset of S that extends from t all the way to the top of the scale ($\lambda t' t' \geq t$) (cf. notion of extents in Kennedy 1997 and refs. therein). Given all these, I propose that the meanings of these particles are as follows: Given an eventuality e with runtime $\tau(e)$ and a topic time t_0, *already/yet* says that there is a time in the positive extent of t_0 that is also in $\tau(e)$, and *still/anymore*—that there is a time in the negative extent of t_0 that is also in $\tau(e)$.

(1) *already:* $\exists t \in \overbrace{\text{POS}(t_0)}^{\{\dots,t_{-1},t_0\}}[t \in \tau(e)]$

(2) *still:* $\exists t \in \overbrace{\text{NEG}(t_0)}^{\{t_0,t_{+1},\dots\}}[t \in \tau(e)]$

So far this guarantees that $\tau(e)$ overlaps with a region in time that is bounded by t_0. Note that it does not yet guarantee that t_0 itself is in $\tau(e)$. However, as a member of the scale S, t_0 has natural scalemates, which naturally derives scalar alternatives (SA). Assume now that these alternatives are factored into meaning via the silent exhaustivity operators O(nly). O is standardly defined as asserting its prejacent and negating the non-entailed SA (Chierchia et al. 2012; Chierchia 2013). If we apply it, we capture OTH:

(3) *already:* $\neg\exists t \in \overbrace{\text{POS}(t_{-1})}^{\{...,t_{-2},t_{-1}\}}[t \in \tau(e)]$ (4) *still:* $\neg\exists t \in \overbrace{\text{NEG}(t_{+1})}^{\{t_{+1},t_{+2},...\}}[t \in \tau(e)]$

Note that the assertion plus OTH together guarantee that t_0 is in $\tau(e)$ (though $\tau(e)$ may extend beyond t_0). Thus, O also ensures CURR:

(5) *already:* O $(\exists t \in \text{POS}(t_0)[t \in \tau(e)])$ (6) *still:* O $(\exists t \in \text{NEG}(t_0)[t \in \tau(e)])$

= $(\exists t \in \text{POS}(t_0)[t \in \tau(e)]) \wedge \neg(\exists t \text{POS}(t_{-1})[\tau(e)])$ = $(\exists t \in \text{NEG}(t_0)[t \in \tau(e)]) \wedge \neg(\exists t \text{NEG}(t_{+1})[\tau(e)])$

$\Rightarrow$ $t_0 \in \tau(e)$ $\Rightarrow$ $t_0 \in \tau(e)$

So far we have captured CURR and OTH. But what about CONT and EVAL? I propose that this is about SA and exhaustification also. In particular, assume the SA are also factored into meaning via the silent exhaustivity operator E(ven). E is standardly defined as asserting its prejacent and imposing two presuppositions, (a) an existential presupposition that at least one SA other than the prejacent is true, and (b) a scalar presupposition that the prejacent is less likely, $\prec_c$, than its SA (Crnič 2012; Chierchia 2013). Now, this definition is usually geared for items that are end-of-scale, such that "its SA" really refers to the full set of SA. Yet our items are not end-of-scale, such that they have both stronger and weaker SA. I propose that, if *O* pitches the prejacent up against its *non-entailed* SA, *E* pitches it up against its *entailed* SA, such that both presuppositions of E refer to the entailed SA—an assumption that I believe is generally true for non-end-of-scale items. But if what is considered is the entailed SA, then both presuppositions of E are satisfied trivially. Using an independently justified assumption (Crnič 2012), I propose that E uses both the prejacent and the SA in an *exact* sense, as if pre-exhaustified with O. The presuppositions now both become informative. The existential presupposition in particular yields CONT (which ensures that $\tau(e)$ is not limited to t_0):

(7) *already:* O $(\ldots t_{+1}) \Rightarrow t_{+1} \in \tau(e)$ (8) *still:* O $(\ldots t_{-1}) \Rightarrow t_{-1} \in \tau(e)$

And the scalar presupposition yields EVAL (which is what makes CURR sound noteworthy):

(9) *already:* O $(\ldots t_0) \prec_c$ O $(\ldots t_{+1})$ (10) *still:* O $(\ldots t_0) \prec_c$ O $(\ldots t_{-1})$

$\Rightarrow t_0 \in \tau(e) \prec_c t_{+1} \in \tau(e)$ $\Rightarrow t_0 \in \tau(e) \prec_c t_{-1} \in \tau(e)$

EVAL in turn helps make sense of POL2: *Jo is **already** #young* is degraded / *Jo is **still** ✓young* is fine because its EVAL meaning says that being young at t_0 is less likely than being young later / earlier, which doesn't match / matches standard assumptions about age increasing with time.

Conclusion and outlook. The aspectual operators *already/still/yet/anymore* are similar in that they all exhibit POL1, CURR, OTH, CONT, EVAL, and POL2. I propose a fully unified account of CURR-POL2. This account matches the existing results for CURR-CONT (see, e.g., Beck 2020 for *still*, who also uses O_{SA} to derive OTH, or this and other accounts of these items that derive CONT via a presupposition) but also offers a solution for EVAL and POL2. Also, the way the existing results are replicated offer an advantage: Most of the existing accounts state the assertive contribution of these operators as being simply of the form $P(e)(t_0)$ (or equivalent). However, here it makes references to a proper interval. This allows us to define proper scalar alternatives, based on an entailment scale, and to take advantage of, e.g., the general workings of E(ven) to derive rather than stipulate, e.g., the source and content of CONT. This also allows us in principle to define proper subdomain alternatives, which makes it possible to contemplate a solution to POL1 in analogy to those from the literature on epistemic indefinites (e.g., Chierchia 2013) or disjunction (Nicolae 2017), as I will discuss.

References

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