

Scalar structure as an aspectual property of state roots

Malka Rappaport Hovav

The Hebrew University of Jerusalem

While the categories of lexical aspect are generally assumed to be compositionally derived (Verkuyl 1972, Krifka 1998, Rothstein 2004, a.o.), it is also known that the aspectual potential of verbs is limited (Ramchand 2008; Rappaport Hovav 2008; Rothstein 2004). We can therefore assume that there is a core element in verbs – the root – which has inherent properties which to a large extent determine the aspectual potential of the structures they head. Harley (2005) associates roots with three basic ontological categories – event, state and thing – the first two being relevant to lexical aspect; see also Levinson (2014.) Harley also suggests that both event and thing-denoting roots come in bounded and unbounded versions. I argue for an aspectual distinction among state roots which give rise to verbs with strikingly different aspectual properties. The distinction is between state roots which lexicalize elements of a scale and those which do not – SCALAR VS NON-SCALAR state roots. Scalar roots are generally associated with property states such as *wide*, *narrow* and *thick*; non-scalar roots express locative relations, with two sub-classes: those giving rise to location-PP verbs e.g. *sit*, *stand* and *lie*; and those giving rise to location-object verbs e.g. *cover*, *obstruct* and *surround*. I illustrate the special aspectual properties of non-scalar state roots with the *cover* class, though the *sit* class shows similar properties.

Both scalar and non-scalar state roots give rise to aspectually variable verbs; I argue that all aspectual types are compositionally derived from stative uses of these verbs, and the aspectual contrast between the two classes emerges best in their stative uses. Scalar-root-based (SRB) verbs show the properties of variable telicity of degree achievements even on their stative uses (Gawron 2006, Koontz-Garboden 2010), whereas non-scalar-root-based (NSRB) verbs do not. (1-5) are stative (as evidenced by the non-habitual simple present).

1. The canyon widens for ten miles. (scalar; atelic;)
2. The road narrows six meters in ten miles/*for ten miles. (scalar + bounded measure phrase →telic; measure phrase modifies verb directly)
3. The snow covers the mountain for /*in half a kilometer. (non-scalar; bounded measure phrase does not telicize the verb)
4. a. Snow covers the mountain *(for) three miles. (measure phrase does not modify verb directly)
b. Snow covers three miles of the mountains. (measure phrase modifies nominal)

gradually, which selects scalar verbs (Piñón 2000) distinguishes the two types of verbs.

5. The road gradually narrows. – ok on the stative reading
7. *The snow gradually covers the mountain. – (ok only on an eventive reading (see below), requires progressive in the present)

Deo, Frances and Kootz-Garboden (2013) argue that SRB verbs always involve a *degree difference* – the difference in degree of the property that an entity holds along some correlated axis. Degree difference is interpreted as change. On their eventive uses the correlated axis is time; there are a number of options for the correlated axis on the stative uses. NSRB verbs lack the degree difference (change) meaning of all these types:

8. a. The canyon widens for ten miles. (correlated axis: spatial extent = becomes wider).
b. Near the northern tip, snow covers the continent. (≠covers more of the continent)
9. a. The plot thickens in the third chapter. (axis: abstract extent = becomes thicker)
b. The book covers the material in chapter 3. (≠ covers more material)
10. a. Ants increase as you move to the south (kind reading)

- b. Moss covers the trees towards waterfall. (≠more moss, or covers more of the trees)
11. a. Cooperation grows with the severity of punishment (functional reading)
 b. Fungus covers the tissue with increased moisture. (≠more fungus or more tissue)
- A final difference between the two classes: SRB verbs show ambiguity with *again* – even on their stative uses (Kootz-Garboden 2010), whereas stative NSRB verbs do not.
12. a. The road widens again. (stative- a. was wide and widened; b. widened and widened)
 b. Snow covers the road again. (stative- two stretches of being covered).

The assumption (AAS, Embick 2009, Ramchand a.o.) that *v* eventivizes a state root needs revision in light of our data. I propose that in the environment of *a*, scalar roots are interpreted as specifying the degree to which a scalar property holds of the entity it is predicated of relative to a contextual standard. In the environment of *v* they are interpreted as specifying a *difference in the degree* to which the scalar property holds of some argument between two points on a correlated structured domain. *v* then introduces the correlated axis, the default one being the temporal one, but the range of stative readings arise from *v* being associated with different correlated axes. This holds for roots which have a scalar structure to them as a lexical property. For non-scalar roots *v* does not introduce such a correlated axis. The basic meaning of *v+VCOVER* is stative, and nonscalar; it does not express change. What does *v* contribute?

A clue to the answer comes from the fact that all locative statives are **interval statives** (Dowty 1979). Dowty suggests that these verbs need the progressive for assertion in the present because they can be judged true only at an interval. All interval statives are lexicalized basically as verbs and there are no non-derived adjectival interval statives. Adjectives are all momentary statives. I suggest that *v* always supplies some kind of an interval. In the absence of a lexicalized scalar property, the categorized verbs denote the holding of the state over an interval of time; in the context of scalar roots they denote the difference value of a gradable attribute between two points on a correlated axis. NSRB verbs have, in addition to a stative reading, and inchoative and a causative reading.

13. a. Snow gradually covered the mountain.
 b. The storm covered the mountain with snow.

These uses are derived compositionally with the addition of syntactic structure. The causative is derived with the addition of Voice (AAS 2015). What provides the scalar structure for the inchoative reading? While *cover* does not have a lexicalized scale, *the spatial extent of the location argument can serve as a spatial extent scale*. Cf. analyses of incremental theme verbs in Kennedy 2012, RH 2008. This explains why degree phrases do not attach directly to the verb but only to the incremental theme:

14. ?This cloth covers the table more than that cloth. (✓ covers more of the table)
 16. ?This hat covers your head too much (✓ too much of your head)
 17. ?The cloth covers the table three inches. (✓ The cloth covers three inches of the table)
 18. ?The cloth covers the table so much, you cannot see the spots. (✓ so much of the table)

Finally, in contrast to SRB verbs (19), NSRB verbs do not have a stative causative (13b).
 19. The band narrows the skirt at the bottom.

There are no causes without change. Causes go with changes, but changes can be stative.

References: Alexiadou, Anagnastopoulou and Schäfer 2015 *External arguments in transitivity alternations*. OUP.
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