Scalar Change and Manner/Result Complementarity in Manner of Motion Verbs
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1 Introduction: The nature of lexical meaning and constraints on it

• The question of (im)possible verb meanings has been central in work on lexical semantics, and a goal of lexical semantic theorizing is to explain which meanings possible are ruled out.

• Central to this have been event structural approaches, which take a verb’s meaning consists partly of (a) an “event template” built from universal eventive primitives, and (b) an idiosyncratic “root” filling in real world details of a given verb’s template kill (Dowty 1979, Pinker 1989, Hale and Keyser 1993, Levin and Rappaport Hovav 1995, Wunderlich 1997, Van Valin and LaPolla 1997, Harley 2003, Folli and Harley 2004, Ramchand 2008, inter alia):

  (1) a. kill, [x ACT] CAUSE [y BECOME < dead >] (lexical)
      b. kill, [vP DP x [ vP CAUSE [vP DP y [vP BECOME √dead ]]]] (syntactic)

• Constraints on possible event templates constrain possible verb meanings, but so crucially do constraints on what the root can entail and how roots and templates are combined.

• Rappaport Hovav and Levin (2010) have recently suggested that verbs entail either manner or result but never both simultaneously, the Manner/Result Complementarity hypothesis:

  (2) a. Result verbs: break, crack, kill, ...
      b. Manner verbs: run, swim, laugh, ...

• This follows if a verb’s event structure (i) has one root that (ii) lexically entails (à la Dowty 1991: 552) manner or result but not both. Beavers and Koontz-Garboden (2012) argued that only condition (i) and not (ii) holds, still a predictive theory but with more verb meanings.

• Here we explore the underpinnings of complementarity and the verbs it predicts to exist. In particular, we reexamine “result” as “scalar change” (Rappaport Hovav 2008, Beavers and Koontz-Garboden 2012), and suggest it actually conflates two technically distinct notions.

  – Some diagnostics for scalar change pick out verbs that entail a new state of the patient, a common intuitive understanding of “result” (Beavers 2011, Koontz-Garboden 2010).

  – Most diagnostics, though, pick out scalar change regardless of a new final state.

We propose to distinguish “scalar change verbs”, in which a participant transitions along a scale, from “scalar result verbs”, the strict subset entailing a new final state on the scale.

• We base this on a discussion of the verb climb, which we suggest has at least two distinct senses, one encoding scalar result and the other scalar change, justifying the distinction.

• We then extend this analysis to other manner-of-motion verbs, ultimately suggesting that manner-of-motion verbs are not a homogeneous class: while some are pure manner verbs, some additionally entail scalar change, and a subset of those entail scalar result, calling into question the “manner” vs. “path” verb distinction rooted in Talmy (2000).

• We also discuss the consequences for complementarity and other manner/path distinctions.
2 The result entailments of \textit{climb}

- We first briefly consider the debate of whether \textit{climb} entails upwardness which, though tangential to entailing scalar change, helps establish distinct senses of \textit{climb}.

2.1 Upwardness in \textit{climb}

- That \textit{climb} does not entail upwardness in at least some uses is evidenced by data like (3) with intransitive \textit{climb} and also transitive \textit{climb} with a directional modifier.

(3) a. Bill climbed down the ladder. (Jackendoff 1985: 275, (8))  
b. You climb the ladder down into the crew quarters, and encounter a Protagonist, lying on a cot and brooding. (Levin and Rappaport Hovav 2013: 64)

- However, there is one sense of \textit{climb} that does seem to require upwardness: bare transitive \textit{climb} occurring with a direct object DP but absent any directional modifiers, as in (4).

(4) John climbed the stairs.

- Levin and Rappaport Hovav (2013: 63-64) argue that upwardness here is not a lexical entailment, but follows how agents “typically interact with [the path] object” like stairs or trees.

- However, stairs descending to a basement as in (5a) canonically project downward, and yet this reading is not possible. Further examples are given in (5b,c).

(5) a. #John climbed the basement stairs, quickly reaching the bottom.  
b. #Starting on the 4th floor, John climbed the fire escape ladder, quickly reaching the ground.  
c. #After his stint as the ship’s lookout ended, John exited the lookout perch, climbed the mast, and returned to his cabin below.

- Thus upwardness with bare transitive \textit{climb} is not a pragmatic effect — it is an entailment of a sense irreducible to any other. In sum, there seem to be three distinct senses of \textit{climb}:

(6) a. intransitive \textit{climb}_{itr}, which optionally takes any directional modifier
    b. transitive \textit{climb}_{tr+PP} which obligatorily takes any directional modifier
    c. bare transitive \textit{climb}_{tr}, which occurs with no modifier and requires upwardness

2.2 The nature of scalar change entailments


- In work on manner/result complementarity various “result verb” tests have been proposed (see Beavers and Koontz-Garboden 2012: 336-342), which we start with.

#1 The first test is whether the verb obligatorily requires its theme to be expressed overtly.

(7) a. All last night, Kim scrubbed (floors).  
b. All last night, Kim broke *(vases).

- Unfortunately, \textit{climb}'s theme is its subject, which are obligatory for independent reasons (e.g. the EPP), though we suggest in §4 that related verbs pass the test.
Result verbs, unlike manner verbs, only take XPs compatible with the entailed change in the verb, limiting which result XPs are possible (Rappaport Hovav and Levin 2010: 22-23).

(8) a. Cinderella scrubbed the table clean/shiny.
    b. Cinderella scrubbed her knees sore.
    c. Cinderella scrubbed the dirt off the table.

(9) a. Then the biologists dimmed the room to the level of starlight... (www.findarticles.com/p/articles/mi_m1134/is_2_112/ai_98254950)
    b. *She dimmed the room empty/her hand sore.

- **Definitionally** climb	extsubscript{tr} does not take a result XP, but climb	extsubscript{tr+PP} is superficially what climb	extsubscript{tr} would look like with a goal PP (though lacking upwardness), which is thus possible:

(10) a. In his black-framed glasses and narrow brimmed hat, Neville looked like a beatnik professor as he **climbed the steps onto the stage**. (www.nola.com/music/indexssf/2013/08/ivan_neville_defines_funk_at_t.html)
    b. Soon we **climbed the steep slope away from the river**. (www.macluskie.com/reports/2014/foothillstrail_2014-05/index.html)

- **Conversely**, result XPs that specify other results are unacceptable with climb	extsubscript{tr} or climb	extsubscript{tr+PP}:

(11) a. *Being so weak from his recent illness that even the slightest physical exertion would take its toll on him, John climbed the ladder (to the top) to exhaustion/sleep.
    b. *Thanks to his severe vertigo, John climbed the ladder (to the top) unconscious/to unconsciousness.
    c. *John climbed the ladder (to the top) silly/sick, having gone up so high he got dizzy.

- Climb	extsubscript{itr}, finally, patterns exactly like the others:

(12) [H]e **climbed into the boat**, and the wind stopped. (biblehub.com/mark/6-51.htm)
(13) a. *Being so weak from his recent illness that even the slightest physical exertion would take its toll on him, John climbed to exhaustion/sleep.
    b. *Thanks to his severe vertigo, John climbed unconscious/to unconsciousness.
    c. *John climbed silly/sick, having gone so high he got dizzy.

- **Climb** patterns like a result verb. Yet these tests are indirect, relying on assumptions about how scalar change relates to grammatical encoding. We consider more semantic tests next.

### 2.3 The truth-conditional underpinnings of scalar change

- The most developed semantics of scalar change comes from work on aspect (e.g. Dowty 1991, Tenny 1994, Krifka 1998, Hay et al. 1999, Beavers 2012), where the insight is that scalar change involves an event “measured out” by a scale, with several defining properties.

**#1** The first is just that for any event \( e \) in which there is change along a scale \( s \), there must be a transition along \( s \) from some state \( s_i \) to another distinct state \( s_j \) at some point in \( e \).

(14) #The soup warmed to 100\(^{\circ}\), but it never changed temperature. (transition)

**#2** A second property of scalar change, as discussed by Beavers (2012: 32-34), is that the change along \( s \) culminates \( e \) culminates, i.e. the end of the event is a final transition along the scale.

(15) #Having reached 100\(^{\circ}\), the soup is (still) being warmed to 100\(^{\circ}\). (culmination)
Finally, it is often assumed that the final state \( s_n \) be distinct from the initial state \( s_0 \) (see Beavers and Koontz-Garboden 2012: 336-342 on this as a result test).

(16) #The soup just warmed and it is still the same temperature as it was before. (new result)

- Indeed, \( \text{climb}_{tr} \) has all three properties, meaning it entails scalar change like \textit{warm}:

(17) a. #John climbed the ladder, never budging from his spot. (transition)
   b. #Having completely stopped moving, John is (still) climbing the ladder. (culmination)
   c. #John climbed the ladder and ended up in the exact spot he started. (new result)

- But crucially, nothing about measuring out, i.e. transition and culmination, \textit{require} a new result — one can undergo movement that measures out the event but doubles back.

- Indeed, while \( \text{climb}_{tr+PP} \) entails transition (18a) and culmination (18b), it does not require a new result (18c) (though it is of course compatible with one).

(18) a. #The captain climbed the ladder down, never budging from her initial location.
   b. #The captain, having made it to the top of the mast, was still climbing it up.
   c. The captain climbed the ladder up and down, ending up right where she began.

- \( \text{Climb}_{itr} \) is similar; a result need not obtain, but transition and culmination are required:

(19) a. #John climbed around (the mountain) all day, never budging from his spot.
   b. #Having stopped moving, John is (still) climbing (around) (on the rock wall).
   c. John climbed around (the mountain), eventually stopping in the spot he started in.

- One might suggest that transition is unnecessary since one can climb on a climbing machine, but there is a track constructed in real time and one must go a non-zero distance on it:

(20) a. John climbed all day on the climbing machine, never budging from his spot.
   b. #John climbed all day on the climbing machine and went a total of zero meters.

All \textit{climb}s entail scalar transitions and culmination, but only \( \text{climb}_{tr} \) entails a new result, meaning that “result” verb tests diverge and sometimes pick out different verbs.

- The data suggest that “result” must be broken down into two notions as follows (see the appendix for another argument involving durativity/scalar gradability correlations):

(21) | Scalar change |
<table>
<thead>
<tr>
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<tbody>
<tr>
<td>Scalar result</td>
</tr>
<tr>
<td>Transition on scale during the event</td>
</tr>
<tr>
<td>Culmination to some new final state</td>
</tr>
<tr>
<td>Restricted result XPs</td>
</tr>
<tr>
<td>Object drop disallowed</td>
</tr>
<tr>
<td>Final state distinct from initial state</td>
</tr>
</tbody>
</table>

- What does this mean for manner/result complementarity? First we consider \textit{climb}’s manner properties, building on Beavers and Koontz-Garboden (2012: 343-349)
The manner entailments of climb

- The traditional view is that the manner of climb is clambering (see e.g. Jackendoff 1985: 276), though Geuder and Weisgerber (2008: slides 91-171) and Levin and Rappaport Hovav (2013: 59-61) make a convincing case that this is incorrect, e.g. inanimates can’t clamber:

  (22) The train climbed down the mountain.

- Geuder and Weisgerber argue that climb instead entails that its theme argument exhibits “force exertion against gravity”, i.e. a tendency to resist or defy gravity:

  (23) #The train climbed down the mountain, tumbling end over end the entire way.

- Is this a lexical entailment of climb? Based on the figurative data in (24) Levin and Rappaport Hovav (2013: 65-66) claim that it is not, since here there cannot be gravity.

  (24) a. The prices/cost climbed.
  b. Despite the new measures, the inflation/unemployment rate climbed.
  c. During the recession, the number of foreclosures climbed. (ibid.: 66, (36))

- However, figurativity does not preclude gravity. First, figurative increase scenarios can make reference to figurative gravity, with (25) occurring with climb.

  (25) Oil prices defy gravity, $99?
  Crude oil prices continued their climb toward $100 (€67) a barrel slowly but surely, in a surge that threatens developing economies such as Turkey. (www.icis.com/resources/news/2007/11/23/9081099/in-friday-s-europe-papers/)

- Further, figurative climb conveys defiance of figurative gravity, as seen in comparison to increase, which is neutral to gravity (Geuder and Weisgerber 2008: slides 172-203).

- Suppose the price of a coffee is expected to increase by 10¢ a year and this is the only expectation, thus defining “gravity”. Unlike increase, climb is either unacceptable when the actual increase does not defy gravity, or else it generates a reading of another, implicit gravity.

  (26) We expected the price of a cup of coffee to go up at the reasonable rate of 10¢ a year
  a. ... but instead it increased/#climbed by 1¢ a year.
  b. ... and indeed it increased/#climbed by 10¢ a year.
  c. ... but instead it increased/climbed by $2 a year.

- Levin and Rappaport Hovav’s figurative examples in (24) have a gravity-defying flavor as well, and in at least (24b,c) there is explicit reference to gravity-defying circumstances.

  Figurative climb entails figurative gravity, and thus climb entails manner in all uses.

- If climb entails manner, what does this tell us about manner result complementarity?

  – If the claim is interpreted as complementarity of manner and scalar result, climb entails counterexemplifies it, as do the verbs discussed in Beavers and Koontz-Garboden (2012).
  – Given that all scalar result verbs entail scalar change, defining “result” as “scalar change” does not save complementarity, since the same verbs also counterexemplify this.

∴ Manner/result complementarity still does not hold truth conditionally, but at least now the claim has been clarified with a more sophisticated understanding of “result”.

5
4 Manner of motion verbs

- We now consider some additional consequences for the distinction between scalar change and scalar result verbs within the broader class of motion verbs that includes climb.

- Climb is a manner-of-motion verb (Levin and Rappaport Hovav 2013: 58), which contrast with path verbs à la Talmy (2000). Yet if manner verbs can entail scalar change, then the path vs. manner verb distinction is not clear cut. We argue that this is the case.

- As Bassa Vanrell (2013: 36-37) argues in detail (for Spanish), there are three types of manner-of-motion verbs regarding the expectation of displacement of the theme:

  (27) a. Displacement not expected: dance, float
  b. Displacement expected but not entailed: run, jog, walk
  c. Displacement entailed: slide<sub>itr/tr</sub>, ski<sub>itr</sub>, roll<sub>itr/tr</sub>, drag<sub>itr</sub>

- Bassa Vanrell’s test is whether it was possible to modify each with modifiers meaning in place or without leaving his/her/its spot, which (27c) do not allow:

  (28) a. John danced/floated in place/without leaving his spot.
  b. John ran/walked/jogged in place/without leaving his spot.
  (29) a. #John slid/skied/rolled in place/without leaving his spot.
  b. #John slid/rolled/dragged the logs without them leaving their spot.

- Crucially, undergoing displacement is a defining characteristic of scalar change (transition), meaning in (28c-d) there is scalar change (contra Rappaport Hovav 2014: 273-278).

- Furthermore, these verbs also entail culmination, but not that a new result obtain:

  (30) a. #Having completely stopped moving, John is (still) sliding/skiing/rolling.
  b. #Having stopped them moving, John is (still) sliding/rolling/dragging the logs.
  (31) a. John slid/skied/rolled, ending up in the exact same spot as he started out in.
  b. John slid/rolled/dragged the logs, stopping when they arrived at their original spot.

- This suggests that these verbs are scalar change but not scalar result verbs. Further evidence is that for the transitive ones object drop is not possible:

  (32) a. John dragged the logs.
  b. *All last night, John dragged.
  (33) a. John slid/rolled the coin.
  b. All last night, John slid/rolled. (does not mean John slid/rolled something)

- Thus all tests so far point to these verbs being scalar change but not scalar result verbs. This suggests a broader typology of manner-of-motion verbs that previously proposed:

<table>
<thead>
<tr>
<th></th>
<th>−manner</th>
<th>+manner</th>
</tr>
</thead>
<tbody>
<tr>
<td>−scalar change</td>
<td>N/A</td>
<td>dance, float, walk, jog</td>
</tr>
<tr>
<td>+simple scalar change</td>
<td>circle, move</td>
<td>ski, roll, drag, slide, climb&lt;sub&gt;itr/tr&lt;/sub&gt; + PP</td>
</tr>
<tr>
<td>+scalar result</td>
<td>enter, exit, cross</td>
<td>climb&lt;sub&gt;itr&lt;/sub&gt;</td>
</tr>
</tbody>
</table>

- The existence of classes with both manner and path complicates the canonical manner vs. path verb contrast, raising the question of how they behave in standard contexts supposedly distinguishing them. We discuss one next, namely cooccurrence with result XPs.
5 Rethinking the distribution of result XPs

- Pure manner of motion verbs allow a range of result XPs while pure path verbs do not (e.g. jog/*cross the pavement thin). If all that matters for the result XP test is result in a verb’s meaning, the prediction is that manner+scalar change verbs will pattern like path verbs.

5.1 The basic patterns

- Goal PPs are acceptable with the intransitive manner of motion verbs above, as expected:

(35) a. I went there to get my ski pass then got myself to the top of the mountain, as high as I could, and then skied to the bottom. (www.dailymail.co.uk/travel/article-2589683/Skier-breaks-world-record-skiing-17-countries-21-days.html)

b. A funeral is scheduled for Sunday for a southwest Missouri man who was badly burned after he rolled into a campfire while he slept. (www.azcentral.com/news/articles/20111206man-who-rolled-into-campfire-dies.html)

c. Vincent Jackson caught a 5-yard pass from Glennon as he slid to the side of the end zone to plunge the dagger deep into the heart of Steelers Nation. (www.behindthesteelcurtain.com/pittsburgh-steelers-opinions-reactions-news-updates/2014/9/29/6862423/steelers-defense-nfl-week-4)

- Furthermore, again as expected, other kinds of result XPs are generally unacceptable, though there is some lexical variation, with a few ski and roll examples a bit better than others.

(36) a. *I slid for so long that day that I slid to exhaustion/to sleep.
    b. *John slid unconscious/to unconsciousness when he hit his head on a rock.
    c. *The glacier was so steep that John slid sick/silly.
    d. *Figuring that if he slid fast enough the wind would dry him, John laid down and slid dry, while his friends used towels.

(37) a. *I skied for so long that day that I skied to exhaustion/to sleep.
    b. *Due to lack of oxygen on a high slope, John skied unconscious/to unconsciousness.
    c. *The slope was so winding and dizzying that John skied sick/silly.
    d. *Figuring that the wind would dry him off if he moved fast enough, John jumped on his skis and skied dry, while his friends used towels.

(38) a. *I rolled for so long that day that I rolled to exhaustion/to sleep.
    b. *John rolled unconscious/to unconsciousness when he hit his head on a rock.
    c. *The hillside was so steep that John rolled sick/silly.
    d. *Figuring that the ground would dry him off if he moved fast enough, John laid down and rolled dry, while his friends used towels.

- With transitive manner-of-motion verbs the situation is more complicated. First, all three verbs under consideration easily allow goal PPs, as predicted if they entail scalar change:

(39) a. Stationed just outside the crease in front of the Kings net, Zuccarello slid the puck to the net. (www.cbssports.com/nhl/eye-on-hockey/24584376/gif-mats-zuccarello-miss)

b. On plantations close to the water, slaves rolled the barrels manually to the wharf. (www.serc.si.edu/education/programs/java/guide/colonial.aspx)

c. Soon after, the mob dragged the two mutilated bodies to Al-Manara Square in the city center as the crowd began an impromptu victory celebration. (en.wikipedia.org/wiki/2000_Ramallah_lynching)
However, the results with non-goal XPs are more variable, and here verb choice matter more. *Slide* seems unacceptable with other result XPs, whereas *roll* and *drag* are more acceptable:

(40) a. *Pushing it around as hard as I could, I slid the puck shiny/smooth.
  b. *Knowing that the rink was covered in red paint, I slid the puck red.
  c. *Figuring if it slid very fast friction would remove the water, John slid the puck dry.

(41) a. They **rolled the dough flat**, then passed it to the next men, who flattened it a little more. ([www.pri.org/stories/2014-04-14/secret-matzah-factory-jerusalem-churns-out](http://www.pri.org/stories/2014-04-14/secret-matzah-factory-jerusalem-churns-out))
  b. Once Hashimoto-san has **rolled the dough into a smooth ball**, I think we’re finished - but we’re only just beginning. ([www.stuff.co.nz/travel/destinations/asia/9628457/Tokyo-tempts-your-tastebuds](http://www.stuff.co.nz/travel/destinations/asia/9628457/Tokyo-temps-your-tastebuds))

(42) a. The horses **dragged the logs smooth**. (Washio 1997: 6, (17a))
  b. Knowing dragging would strip off the bark, John dragged the logs bare.
  c. Knowing dragging would knock the bugs off, John dragged the logs clean/bug-free.

Why are we getting these apparent violations of the result XP test, and why do verbs differ?

5.2 The true nature of scalar compatibility and the role of manner in resultatives

First, what scalar “compatibility” explains the test? Perhaps it is compatibility of scalar dimensions, essentially Goldberg’s (1995: 82) Unique Path Constraint (UPC), which covered not just V+XP combinations but XP+XP combinations:

(43) a. She broke the bottle into ten pieces.
  b. He exited out of the house into the back yard.

(44) a. *She carried John giddy. (Simpson 1983: 147, (31))
  b. *I kicked him out of the room black and blue. (Matsumoto 2006: 2, (5c))

Assuming some variant of the UPC underlies the result XP diagnostic, it is not surprising that the diagnostic does not yield clean results, given that the UPC does not to hold categorically (see Levin and Rappaport Hovav 1995: 60-61, Matsumoto 2006, Yasuhara 2013, *inter alia*).

(45) a. *Joe kicked a suitcase open to Bob.
  b. Joe flung the door open right into Bob’s face. (Matsumoto 2006: 7, (22))

Matsumoto (2006: 6, (21)) reenvisions the UPC as the Single Development Constraint: two scalar dimensions are compatible if they “refer to aspects of a single line of development that the [theme] follows”. In (45b) but not (45a) opening leads necessarily to change-of-location.

This predicts that the result XP test should not be categorical. But if it’s solely about scalar compatibility, why do the motion verbs in (40)-(42) differ? Here we suggest manner matters:

- *Drag* and *roll* involve particular sorts of contact/impact between the moving theme and a surface which may naturally or necessarily yield additional possible outcomes.
- Conversely, *slide* involves relatively frictionless contact and thus may license fewer additional possible results (though some may be possible in highly particular contexts).
- *Ski* is similar to *slide* in this regard, and *climb* is unique among the verbs discussed above in having an extremely generic manner involving just resistance to gravity.

In sum, both scalar dimension and manner are relevant for the distribution of result XPs, but this would not have been obvious had the relevant classes of verbs not been identified.
6 Concluding remarks: The uniqueness of motion predicates and path scales

- We argued that there are two closely related senses of “result”: scalar change — the entailment that an individual undergo change along a scale — and scalar result — the subset of cases where the theme has a different state at the end than the beginning of the event.

- This has refined the way we ask questions about manner/result complementarity — though truth conditionally there are still counterexamples — and how we interpret “result” tests.

- There are further properties of the manner-of-motion vs. path contrast that require further study in light of these results that we leave for future work:
  - Manner and path verbs supposedly have different event structures (see e.g. Inagaki 2002, Mateu and Rigau 2002, Folli and Ramchand 2005). What about mixed verbs? (See Beavers and Koontz-Garboden 2012 for some discussion of this beyond motion.)
  - The Talmy typology is based on manner and path verbs behaving different across languages with goal satellites (see Beavers et al. 2010 for an overview). What about mixed classes? (See Zlatev and Yangklang 2004 and Bassa Vanrell 2013 for some discussion.)

- However, the only attested simple scalar change verbs are motion verbs. Why?

#1 The canonical scale of change is a one dimensional scale associated with a directionality, e.g. the temperature scale in different directions defines warm and cool.

- In such cases there is only one way to get from one state to another, and returning to an earlier state involves backtracking, presumably a reflection of how we perceive such properties.

- Path are not like this: they are contextually-defined construct that pick out a configuration of points in otherwise dense, undirected three-dimensional real space relative to a given event.

- There are an infinite number of ways to get from any point to any other point in space, and one can leave a location and return to it without ever technically backtracking by going in an arc that consists of continuous forward motion that just happens to ultimately double back.

#2 Relatedly, path measure phrases are different from measure phrases for other scales. In (46a) the soup must end up 10 degrees warmer, but in (46b) Kim could end up at her initial position.

(46) a. Kim warmed the soup 10 degrees.
   b. Kim walked 10 miles. (OK if she walked 5 miles north and then backtracked)

#3 Finally, violations to the result XP diagnostic/UPC in prior work categorically involve motion as one of the changes (see examples in Goldberg 1995: 81-88, Levin and Rappaport Hovav 1995: 60-61, Matsumoto 2006, and Yasuhara 2013).

- This may be because many actions that lead to changes involve motion, e.g. Dowty (1991: 572) lists movement as a property of prototypical agents as well as prototypical patients, differing only in that movement for agents is not under the control of another participant.

- Compatibility licensing changes along separate dimensions is likely to arise with motion.

∴ Thus the difference between strict scalar change and scalar result arises most robustly in the domain of motion for reasons most likely having to do with real-world considerations of how motion is viewed as distinct from other scalar changes.
A Additional evidence for scalar change — aspectual diagnostics

- As Beavers (2008, 2012) discuss, the durativity of scalar change predicates is contingent (at least partly) on the interpretation of the underlying scale: non-gradable (two point) scales yield punctual predicates and gradable (more than two point) scales yield durative predicates.

(47) a. The settler will cross the border in five minutes.  
    b. The settler will cross the desert in five days.

- Similarly, telic climb predicates allow a punctual reading if the path is interpreted as trivially short and a durative reading if it is interpreted as long, regardless of the specific use of climb:

(48) a. John will climb (up) the step to the next level in five minutes.
    b. John will climb (up) the stairs to the attic in five minutes.

- Atelic climb predicates also show signs of entailing scalar change. These take for modifiers, which require durativity, predicting again an extended path:

(49) #John climbed (around) (the mountain) for five hours, moving exactly one step.

- The other manner-of-motion verbs discussed above are similar:

(50) a.??John slid/skied/rolled for five minutes, barely moving a millimeter.
    b.??John slid/rolled/dragged the logs for five minutes, barely moving them an inch.

- Taken together, the correlations of durativity to path length in both telic and atelic manner-of-motion verbs are additional independent evidence that they entails scalar change.

References


