Exploring Roots in their Contexts: instrument verbs, manners and results in adjectival participles

Elena Anagnostopoulou, University of Crete
elena@phl.uoc.gr, elena.anagnostopoulou01@gmail.com

1. Outline

- I investigate the behavior of three classes of instrument verbs in two environments forcing “result” and “manner” interpretations, respectively (Rappaport Hovav & Levin 1998, 2010; Rappaport Hovav 2014; Beavers & Koontz-Garboden 2012):

(i) Target state adjectival participles (Kratzer 2000): Result interpretations
(ii) Resultant state adjectival participles (Kratzer 2000): Manner interpretations

Key to the result vs. manner difference: the absence vs. presence of Voice (Anagnostopoulou 2003, Alexiadou and Anagnostopoulou 2008, Alexiadou, Anagnostopoulou & Schäfer 2015), and the obligatoriness vs. optionality of a stative component ST.

<table>
<thead>
<tr>
<th></th>
<th>a. PRT [v [ST ]]</th>
<th>b. PRT [Voice [v (ST) ]]</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Target state participles</td>
<td>Resultant state participles</td>
</tr>
</tbody>
</table>

- I discuss the following classes of Greek instrument verbs (class names taken from Levin’s 1993 labeling of their English translation equivalents) in the two contexts:

  - **Wipe-verbs** qualifying as manner (canonical use in (1b)), must be coerced into result verbs in (1a), e.g. “iron”, “broom”, “sponge”.

  - **Tape-verbs** e.g. “button”, “seal”, “screw” are licit in both (1a) and (1b) without coercion. They are polysemous with a basic manner or result sense which can shift.

  - **Braid-verbs**, e.g. “powder”, “file (nails)”, “dye” (hair), “brush” (hair) are licit in both (1a) and (1b) without coercion. They always qualify as manner, but they also license a result component (cf. Beavers & Koontz-Garboden 2012).

- A structural account for the “manner” vs. “result” distinction in participles:

-Instrument roots are entity roots modifying v. Extending Embick’s (2009) analysis of ‘break’-type verbs: result interpretations arise when \INSTR-v combinations select for a state (ST).

-In participles, manner is either agent-oriented or result-oriented, depending on the syntactic context: resultant states (Voice present, no need for ST) vs. target states (Voice absent, ST obligatory).

2. Target and resultant state adjectival participles: absence vs. presence of Voice, ST obligatory or optional

2.1. Three types of adjectival participles

Previous literature has identified three types of adjectival participles treated in terms of the decomposition structure in (2) (Alexiadou, Anagnostopoulou and Schäfer 2006, 2015, Schäfer 2008):

(2) [VoiceP [vP [Stative P ]]]

a) Adjectival participles without event implications: they involve root attachment of PRT morphology:

(3)

\[
\begin{array}{c}
\text{PRT} \\
\text{RootP}
\end{array}
\]

\[
\begin{array}{c}
\text{Root}
\end{array}
\]


In Greek, they end in –tos: klis-tos ‘closed’ (cf. the door was built closed), anix-tos ‘open’ (cf. the door was built open/*opened).

In this talk, I do not discuss them at all (see Anagnostopoulou & Samioti 2013, 2014, Samioti 2015 for discussion).

b) Adjectival participles denoting transitory and reversible states resulting from prior events. Building on Parsons (1990), Kratzer (2000) calls them ‘target state’.

Diagnostic for target state adjectival participles: modification by ‘still’:
(4) **Target state adjectival participles in German: compatible with 'immer noch’**

<p>| | | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>a.</td>
<td>Die</td>
<td>Geisslein</td>
<td>sind</td>
<td>immer noch</td>
</tr>
<tr>
<td></td>
<td>The</td>
<td>little goats</td>
<td>are</td>
<td>still</td>
</tr>
<tr>
<td>b.</td>
<td>Die</td>
<td>Reifen</td>
<td>sind</td>
<td>immer noch</td>
</tr>
<tr>
<td></td>
<td>The</td>
<td>tires</td>
<td>are</td>
<td>still</td>
</tr>
</tbody>
</table>

c) **Adjectival participles denoting irreversible states resulting from prior events.** Building on Parsons (1990), Kratzer (2000) calls them ‘resultant state’.

**Diagnostic:** incompatibility with ‘still’:

(5) **Resultant state adjectival participles in German: incompatible with 'immer noch’**

<p>| | | | | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>a.</td>
<td>Das</td>
<td>Theorem</td>
<td>ist</td>
<td>(*immer noch)bewiesen</td>
</tr>
<tr>
<td></td>
<td>The</td>
<td>theorem</td>
<td>is</td>
<td>(*still)</td>
</tr>
<tr>
<td>b.</td>
<td>Der</td>
<td>Kinder</td>
<td>sind</td>
<td>(*immer noch)gewaschen</td>
</tr>
<tr>
<td></td>
<td>The</td>
<td>children</td>
<td>are</td>
<td>(*still)</td>
</tr>
</tbody>
</table>

I argue that target and resultant state adjectival participles constitute a diagnostic environment for result vs. manner interpretations because they differ structurally in whether (i) they embed Voice or not and (ii) ST is obligatory or not.

2.2. **Target vs. resultant state adjectival participles: background**


- **Target-state and resultant-state adjectival participles are structurally distinct.** In the former, PRT may only embed vP:

(6) **Target state adjectival participles: PRT attaches to vP**

![Tree diagram]

In the latter, PRT may embed VoiceP:
Resultant state adjectival participles: \( PRT \) attaches to \( VoiceP \)

\[
\begin{array}{c}
\text{PRT} \\
\rightarrow \\
\text{Voice} \\
\rightarrow \\
\text{v} \\
\rightarrow \\
\text{RootP}
\end{array}
\]

- **Two types of languages** (see Alexiadou, Anagnostopoulou & Schäfer 2015 for detailed discussion; see the Appendix 1 for some more on this distinction):

  (8)
  a. **Greek** (Anagnostopoulou 2003), **Russian** (Paslawska & von Stechow 2003, Masha Polinsky, p.c.), **Swedish** (Larsson 2009): **Voice-modifiers in resultant state adjectival participles are freely present.**
  
  b. **German** (Rapp 1997), **English** (McIntyre 2013), **Hebrew** (Meltzer-Asscher 2011): **Voice-modifiers in resultant state adjectival participles are subject to restrictions** (see McIntyre 2015, Gehrke 2015 and Appendix 1 for discussion).

In what follows, I concentrate on Greek, which belongs to the liberal group of languages.

2.3. Target vs. resultant states: a Voice and ST distinction

The basic facts

Verbs like Greek *fuskono* ‘inflate’ are allowed to form target state adjectival passives, and are also allowed to combine with Voice-related modifiers in the absence of ‘still’:

(9) **ok: ‘inflated’ and ‘still’**

a. Ta lastixa ine akoma fusko-*mena*
   
The tires are still inflated

**ok: ‘inflated’ and ‘by phrases’, ‘instruments’ ‘agent-oriented adverbs’**

b. Ta lastixa ine fusko-*mena* apo tin Maria/ me tin tromba/ prosektika
   
The tires are inflated by Mary/ with the pump/ carefully

**NB.** Note that in both (9a) and (9b) the participle ends in –*menos* which is associated with event-implications in Greek.
Observation:

by-phrases, instrument PPs and agent-oriented adverbials are ungrammatical in the presence of the Greek counterpart of still (Anagnostopoulou 2003):

(10) *By-phrases and ‘still’
    a. *Ta lastixa ine akoma fuskomena apo tin Maria
       The tires are still inflated by the Mary
       ‘The tires are still inflated by Mary’

*Instruments and ‘still’
    b. *Ta lastixa ine akoma fuskomena me tin tromba
       The tires are still inflated with the pump
       ‘The tires are still inflated with the pump’

*Agent-oriented adverbs and ‘still’
    c. *Ta lastixa ine akoma fuskomena prosektika
       The tires are still inflated carefully
       ‘The tires are still carefully inflated’

‘Still’ can only co-occur with ‘result-oriented’ event manner-adverbs:

(11) Result-oriented manner adverbs and ‘still’

    Ta lastixa ine akoma fuskomena kala
    The tires are still inflated well
    ‘The tires are still well inflated’

Analysis

(12) a. Target state adjectival passives: PRT attaches to vP and no higher

    PRT
   /   \      vP
     v      RootP
            /   \
         Root

‘kala’/‘well’ in (11) modifies vP in (12a).
b. Resultant state adjectival passives: *PRT may attach to VoiceP*

\[
\text{PRT} \quad \text{VoiceP} \\
\text{Voice} \quad \text{vP} \\
\text{v} \quad \text{RootP}
\]

**By-phrases, instruments, agent-oriented adverbs** in (10) modify **VoiceP** in (12b).

PRT in (12b) = Kratzer’s (2000) Perfect operator which leads to the interpretation that the run time of the verbal event took place before the time denoted by the stativized VoiceP.

(13)  

\[
\begin{align*}
\text{Stem} + \text{object: } & \lambda e \ [\text{prove (the theorem)} (e)] \\
\text{Stativizer: } & \lambda P \lambda t \exists e \ [P(e) \& \tau(e) \leq t] \\
\text{Output after applying the stativizer to stem+object: } & \lambda t \exists e \ [\text{prove (the theorem)} (e) \& \tau(e) \leq t]
\end{align*}
\]

All verbs, even atelic verbs under ‘the job is done’ interpretation (Kratzer 2000) can form resultant state adjectival participles

\[
\rightarrow \quad \text{No need for ST in resultant state participles.}
\]

**Question:**

Why is it that PRT can’t attach to VoiceP in target state participles?

**Answer:**

I propose to combine two independent proposals:

1) The idea that target state participles represent **outcomes of scalar changes**. See Baglini (2011) for a semantic proposal, Gehrke (2015) for some suggestions.

Note that we can formulate generalizations on the kind of scalar verbs that give rise to well-formed target state participles by looking at the types of scales they introduce. See Appendix 2 for some initial observations.

---

1 Baglini and Gehrke claim that all adjectival participles represent outcomes of scalar changes and they argue against the resultant vs. target state classification of participles; I crucially differ in limiting this claim to target state participles which sharply differ from resultant state participles as far as Voice is concerned.
2) The idea that Voice cannot be included in a structure representing a scalar change. Rappaport Hovav (2014):

A defining property of scalar changes is their **simplicity** (change along one dimension). The presence of Voice leads to a complex interaction between the agent, the instrument (if present) and the theme, cumulatively rendering the change **too complex** to qualify as scalar.

→ Obligatory ST and obligatory absence of Voice in target state participles

**Next:**

If absence vs. presence of scalarity is linked to the manner vs. result distinction (Rappaport-Hovav 2014 and related literature, see section 3.1.), then we are led to (14):

<table>
<thead>
<tr>
<th>(14)</th>
<th><strong>Manner/ Result Adjectival Participle Hypothesis</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>a.</td>
<td>Resultant state participles: a diagnostic environment for manner verbs</td>
</tr>
<tr>
<td>b.</td>
<td>Target state participles: a diagnostic environment for result verbs</td>
</tr>
</tbody>
</table>

In the next section, I provide evidence for (14), based on the behavior of denominal instrument verbs in the two types of participial contexts.

**3. Testing the manner/result adjectival participle hypothesis with instrument verbs**

**3.1. A brief summary of the manner-result taxonomy**

Rappaport Hovav and Levin RH&L (1998, 2010); Levin (2006); Beavers & Koontz-Garboden (2012) and related work:

<table>
<thead>
<tr>
<th>(15)</th>
<th>a. Verbs are <strong>classified</strong> as <strong>lexicalizing manner</strong> or <strong>result</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td>b.</td>
<td><strong>Lexicalizing manner</strong>: manner is entailed in any use of the verb</td>
</tr>
<tr>
<td>c.</td>
<td><strong>Lexicalizing result</strong>: result is entailed in any use of the verb</td>
</tr>
</tbody>
</table>

Manner verbs have a simple event structure, consisting of a primitive verbal predicate ACT modified by a manner root. Result verbs have a complex event structure:

<table>
<thead>
<tr>
<th>(16)</th>
<th>means/manner $\rightarrow [x \text{ ACT } \langle \text{MANNER} \rangle] $</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(e.g. jog, run, creak, whistle.....)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>(17)</th>
<th>result (i.e. externally caused) state $\rightarrow $</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$[[x \text{ ACT}] \text{ CAUSE } [\text{BECOME } [y \langle \text{RES-STATE} \rangle]] ]$</td>
</tr>
<tr>
<td></td>
<td>(e.g. break, dry, melt, open, split,.....)</td>
</tr>
</tbody>
</table>
Result verbs allow no unspecified and non-subcategorized objects:

(18) *Kelly broke/dimmed/filled/covered/obtained/inserted.

(19) a. *My kids broke me into the poorhouse.
    b. *The puppy broke his way out of the china shop.

Manner verbs (often) allow unspecified and unsubcategorized objects:

(20) Shelly swept/scratched/hit/carved/sewed/knit.

(21) a. Cinderella swept and scrubbed her way to a new ball gown.
    b. Cinderella swept and scrubbed herself into catatonia.

Manner-result diagnostics (see Beavers & Koontz-Garboden 2012 for discussion):

(22) Result diagnostics
    a. Denial of result
    b. Object deletion
    c. Restricted resultatives

(23) Manner diagnostics
    a. Selectional restrictions
    b. Denial of action
    c. Complexity of action

Additional/related diagnostics are discussed in Levin & Rappaport Hovav (2013, 2014), e.g. whether the instrument is specified or not and whether the result of an action is detectable or not.

3.2. Wipe - instrument verbs in Greek target state and resultant state participles

I will start from the behavior of denominial wipe verbs based on instrument roots:

- How they are formed/ what they mean

(24) INSTRUMENT- verbalizer- verbal inflection

a. SKUP- -iz- o ‘clean a surface without water by means of some instrument’
   ‘BROOM’

b. SFUGAR- -iz- o ‘clean the floor with water and mop’
   ‘SPONGE’

c. SIDER- -on- o ‘iron’
   ‘IRON’

N.B: (24b) more specified than (24a) w.r.t. the surface it applies to, the instrument, the means.
The verbs in (24) clearly qualify as manner verbs w.r.t. object deletion, denial of result, denial of action:

(25) **Object deletion**

a. O Janis skup-is-e/ sfugar-is-e/ sider-o-se
The Janis broom-v-3sgPST/ sponge-v-3sgPST iron-v-3sgPST
‘Janis swept/ swabbed/ ironed’

**Denial of result**

b. O Janis molis skupise/ sfugarise to patoma
The Janis just broom-ed/ sponge-ed the floor
alla den iparxi tipota diaforetiko se afro
but not exists nothing different in it
‘Janis just swept/swabbed the floor, but there is nothing different about it’

c. O Janis molis siderose to pukamiso
The Janis just ironed-ed/ the shirt
alla den iparxi tipota diaforetiko se afro
but not exists nothing different in it
‘Janis just ironed the shirt, but there is nothing different about it’

**Denial of action**

d. #O Janis skup-is-e/ sfugar-is-e/ sider-o-se
The Janis broom-v-3sgPST/ sponge-v-3sgPST iron-v-3sgPST
alla den kunise to daxtilaki tu
but not moved the little finger his
‘John swept/ swabbed/ ironed but he didn’t move a muscle’

- In target state participles, wipe-instrument verbs are licit under coercion into result verbs

In my native Greek, these tolerate still rather easily, but only under coercion. In the presence of *still*, the adjectival participles in (26) are understood to mean “clean”, “un-wrinkled”, i.e. they are licensed under weak endstate (Wittek 2002) interpretations of ‘wiped’, ‘swabbed’, ‘ironed’.

**Wipe verbs incorporating an instrument as target states: coerced**

(26) a. To patoma ine akomi sfuggar-is-meno/ skup-is-meno
The floor is still sponge-v-meno/ broom-v-menop
‘The floor is still swabbed/ wiped (i.e. clean)’

b. To pukamiso ine akomi sideromeno
The shirt is still iron-v-meno
‘The shirt is still ironed (i.e. unwrinkled)’
Greek native speakers **differ in how liberal** they are with this type of coercion.

**Other languages?**

- Not clear:

  a) **whether all languages** with target state adjectival passives allow for this type of coercion (e.g. Ida Larsson p.c. says that it is possible in Swedish, Winfried Lechner, p.c. finds it impossible in German, English speakers seem to allow it, **more data?, more languages?**)  

  b) **whether there is idiolectal variation** in all languages.

- **Target state participles: result AND manner entailed**

In the presence of “still”, denying the weak endstate leads to a contradiction:

**Target state participles under coercion: Weak endstate entailed. Contradictions.**

(27)  

a. #To patoma ine **akomi sfuggarismeno/skupismeno** ki omos ine vromiko  
The floor is still sponge-*meno*/broom-*meno* and however is dirty  
‘The floor is still swabbed but nevertheless dirty’

b. #To pukamiso ine **akomi sideromeno** ki omos ine tsalakomeno  
The shirt is (still) iron-*meno* and however is wrinkled  
‘The shirt is still ironed but nevertheless wrinkled’

Manner is also entailed. The manner component cannot be denied.

**Manner coerced to result and yet manner retained (evidenced by contradictions):**

(28)  

a. #To patoma ine akomi sfuggarismeno alla den xrisimopithike nero/sfuggaristra  
The floor is still sponge-*meno* but not was used water/ a sponge  
‘The floor is still swabbed but water/a sponge was not used’

b. #To pukamiso ine akomi sideromeno alla den xrisimopiithike sidero  
The shirt is (still) iron-*meno* but not was used iron  
‘The shirt is still ironed but an iron was not used’

- **Resultant state participles: Voice and no weak endstate**

**Voice: forces the manner interpretation and makes ‘still’ ungrammatical**
Adding the **agent-oriented adverb** *epaggelmatika* ‘professionally’, which is licensed by **Voice**, makes the presence of “**still**” outright ungrammatical:

**Voice-oriented adverbs force resultant state interpretation (‘still’ impossible)**

(29)  
\[ \begin{array}{ll}
 a. & \text{To patoma ine (*akomi) sfuggarismeno epaggelmatika} \\
 & \text{The floor is (still) sponge-*meno* professionally} \\
 & \text{‘*The floor is still professionally swabbed’} \\
 b. & \text{To pukamiso ine (*akomi) sideromeno epaggelmatika} \\
 & \text{The shirt is (still) iron-*meno* professionally} \\
 & \text{‘*The shirt is still professionally ironed’} \\
\end{array} \]

The clean-ness/unwrinkled-ness etc. of the result can be denied:

**Voice→ manner and no coercion (no contradictions when result is denied):**

(30)  
\[ \begin{array}{ll}
 a. & \text{To patoma ine sfuggarismeno epaggelmatika ki omos ine vromiko} \\
 & \text{The floor is sponge-*meno* professionally and however is dirty} \\
 & \text{‘The floor is professionally swabbed but nevertheless dirty’} \\
 b. & \text{To pukamiso ine sideromeno epaggelmatika ki omos ine tsalakomeno} \\
 & \text{The shirt is iron-*meno* professionally and however is wrinkled} \\
 & \text{‘The shirt is professionally ironed but nevertheless wrinkled’} \\
\end{array} \]

Note that, pragmatically, a professionally swabbed floor, a professionally ironed shirt is expected to be clean/tight. And yet, the result can be denied.

**Canonical interpretation: manner - no result**

The canonical interpretation of these verbs in the (resultant state) participial construction, just as in the verbal construction, is manner and NOT result. Denying the resultant state does not lead to a contradiction in the absence of ‘still’:

**Resultant state participles. No weak endstate. No contradictions**

(31)  
\[ \begin{array}{ll}
 a. & \text{To patoma ine sfuggarismeno/ skupismeno ki omos ine vromiko} \\
 & \text{The floor is sponge-*v-meno*/ broom-*v-meno* and however is dirty} \\
 & \text{‘The floor is swabbed/ swept but is nevertheless dirty’} \\
 b. & \text{To pukamiso ine sideromeno ki omos ine tsalakomeno} \\
 & \text{The shirt is iron-*v-meno* and however is wrinkled} \\
 & \text{‘The shirt is still ironed but nevertheless wrinkled’} \\
\end{array} \]
[Participles might differ in how strongly they implicate a resultant state. I find (31a) more natural than (31b)]

- **Manner – result complementarity?**

Levin and Rappaport Hovav argue for the hypothesis in (32), possibly deriving from the constraint in (33):

(32) *Manner/ Result Complementarity*
Manner and result meaning components are in complementary distribution: a verb lexicalizes only one.²

(33) *The lexicalization constraint*
A root can only be associated with one primitive predicate in an event schema, as either an argument or a modifier (Rappaport Hovav and Levin 2010)

Recall:

(16) means/manner → [x ACT `<MANNER>']
    (e.g. jog, run, creak, whistle…..)

(17) result (i.e. externally caused) state → [ [x ACT] CAUSE [BECOME [ y `<RES-STATE>'] ]]]
    (e.g. break, dry, melt, open, split,…..)

The wipe-data we discussed show:

- **Manner-result complementarity** in resultant state contexts, the canonical contexts for wipe-instrument verbs.

- No manner-result complementarity in target state contexts where wipe-instrument verbs are only licensed under coercion. Neither result nor manner can be denied, i.e. the ‘canonical’ manner meaning is retained and a result component must be added.

3.3. **Tape-verbs and the manner-result distinction**

Denominal tape verbs based on instrument roots:

- **How they are formed/ what they mean:**

---

² This idea is debated. See Beavers & Koontz-Garboden (2012); cf. Ramchand 2008.
(34)   INSTRUMENT- verbalizer- verbal inflection

  a.      KUB-  -on-   o     ‘close using a device (button, zip)
                  / combine using buttons’
             ‘BUTTON’
  b.      SFRAG- -iz-   o     ‘close tight using tape/stamp etc.
               / put a stamp on paper’
             ‘STAMP’
  c.      VID-   -on-   o     ‘screw’
             ‘SCREW’
  d.      KOL-  -a-   o     ‘glue’
             ‘GLUE’
  e.      KLID- -on-   o     ‘lock’
             ‘KEY’

Levin (1993: 163) characterizes their English translation equivalents as manner verbs:

‘…The meanings of these verbs, like those of the ‘shake’ verbs but unlike those of the ‘mix’
verbs, relate to the manner/means in which things are combined, rather than the result of
combining’

They also qualify as manner verbs in English, in that they license resultatives (Levin 1993: 163,
ex. (336)):

(35)   Linda taped the box shut

In Greek, they differ from the ‘wipe-type’ verbs examined in the previous section, in that they easily occur both as target state participles and as resultant state participles:

(36)   a.   To panteloni ine   akomi kumb-o-menon
       The trousers is       still buttoned
                        target state

       b.   To panteloni ine   epaggelmatika kumb-o-menon
       The trousers is      professionally buttoned
                        resultant state

(37)   a.   To kouti ine   akomi sfrag-iz-menon
       The box is       still sealed
                        target state

       b.   To kouti ine   epaggelmatika sfrag-iz-menon
       The box is      professionally sealed
                        resultant state

(38)   a.   I porta ine   akomi klid-o-menon
       The door is       still locked
                        target state
b. To thisavrolakio ine epaggelmantika klid-o-meno resultant state
The safe is professionally locked

No coercion necessary in order to license the result/target state interpretation with tape verbs, unlike wipe verbs.

Diagnostics that would classify them as manner or result verbs seem to point to a mixed behavior:

1) Greek does not have canonical resultatives, so the test cannot be applied

2) Object deletion is impossible with some verbs and possible, to different degrees, with others:

(39) a. O Janisklidose
The Janis locked
b. *O Janis kolise/ kubose
John glued/ buttoned
c. Oli tin proigumeni nixta o Janis ?? kolage/ ?*kubone/ ?*klidone
All last night John glued/ buttoned

(40) a. ?*O Janis vidose/ sfragise
The Janis screwed/ sealed
b. Oli tin proigumeni nixta o Janis vidone/ sfragize
All last night John screwed / sealed (different meaning: ‘was putting stamps’)

→ Inconclusive test

3) All verbs enter the causative alternation (suggestive for ‘result’ behavior):

(41) a. To panteloni kubose
The trousers buttoned
‘The trousers closed by means of a devise (button, zip etc.)
b. I porta klidose/ sfragise
The door locked/ sealed
d. I etiketa kolise
The label glued/sticked
e. To kapaki vidose
The lid screwed

4) Some verbs impose selection restrictions on their subjects (agentivity) and are incompatible with causers (suggestive for ‘manner’ behavior), others not (suggestive for ‘result’ behavior):

(42) a. O Janis / *i piesi kubose to panteloni
The Janis/ *the pressure buttoned the trousers
b. O Janis/ *I skuria/*o vraxos  
   The Janis/ rust  
   klidose tin porta  

The Janis/ the pressure  
locked the door  

c. O Janis/ *i piesi  
   The Janis/*/the pressure  
   vidose to kapaki  

screwed the lid  

(43) a. O Janis/ o vraxos/ i piesi  
   The Janis/ the rock/the pressure  
   sfragise tin isodo  

The Janis/ the pressure  
sealed the entrance  

b. O Janis/ i piesi  
   kolise ta komatia  

The Janis/ the pressure  
glued the pieces (together)  

5) Concomitantly, the denial of action entailment test yields a contradiction in (42) but not in (43).  

6) And the denial of result test, seems to work in the same direction:  

One can say for the Greek verbs in (42) that ‘Janis locked the door/ screwed the lid/ buttoned the trousers but something was wrong with the lock/ the lid/ the zip and there was no result of closing/attaching’, while this is not possible for examples like (43).  

7) Finally, there must be an instrument or a manner invoked in (42) (not necessarily a button, a key, a screw; in (42c) the preferred interpretation implies a particular type of movement), while examples (43) leave unspecified the manner in which the result was achieved.  

Analysis  

By criteria (4)-(7), “button”, “lock” and “screw” qualify as manner verbs while “seal” and “glue” qualify as result verbs.  

And yet, “button”, “lock” and “screw” differ from “wipe verbs” in that:  

1) They enter the causative alternation  
2) They easily form target state participles without coercion  

We can account for the ‘result’ behavior of manner tape-verbs along the lines of Levin & Rappaport’s (2013) treatment of “climb”, i.e. a polysemy analysis.  

Evidence that manner is lost in their result use (in support of the manner-result complementarity hypothesis for these verbs)  

i) Abstract senses meaning ‘closed’/ ‘unmoved’:  

(44) Meta apo polles diapragmatefsis i simfonia epitelus kubose/klidose  
After many negotiations the agreement finally buttoned/locked  

(45) Apo to proi, ine vidomenos stin karekla ke dulevi sklira  
Since this morning, he is screwed on the chair and works hard
ii)  Entailments in target vs. resultant state contexts

     ‘The car’s door is still locked and I can’t enter. This door is very badly designed. A little bit of rust is sufficient to block it’.

vs.

(47)  I porta tu aftokinitu ine eppagelmatika klidomeni ke den boro na bo. # Ine poli kaka ftiagmeni af ti I porta, ligo na skuri asi blokari.
     ‘The car’s door is professionally locked and I can’t enter. This door is very badly designed. A little bit of rust is sufficient to block it’.

iii) In general, even though there is no coercion (in the sense of replacing their actual meaning with a totally different meaning, as with wipe verbs), there is a clear meaning shift in target state participles based on tape verbs, as opposed to resultant state participles:

- In target state participles, “locked”/”buttoned”/ “screwed” mean closed or attached in particular ways, i.e. manner modifies/specifies the result (like resultative adverbs, Parsons 1990, Geuder 2002) and not the manner in which this result was brought about.

- In resultant state participles, manner modifies/specifies the process.

3.4. Braid-verbs and the manner-result distinction

Denominal braid verbs based on instrument roots (the cases I discuss differ from the cases Levinson 2007, 2014; not creation verbs, no implicit individual created):

- How they are formed/ what they mean

(48)  INSTRUMENT- verbalizer- verbal inflection

a.  LIM- ar- o ‘file (nails)’
    ‘FILE’

b.  POU DR- ar- o ‘powder (nose/ face)’
    ‘POWDER’

c.  VOURTS- iz- o ‘brush (hair)’
    ‘BRUSH’
Observation 1:

**Very specific action performed with very specific instrument** (unlike the tape-verbs we discussed and some of the wipe-verbs we discussed).

Same for manner braid verbs like ‘vafo ta malia mu’ (dye (lit. paint) my hair) and ‘kovo ta malia mu’ (cut my hair).

Observation 2:

They easily license **target state** and **resultant state participles** (like tape-verbs and unlike wipe verbs):

(49) a. Ta nixia mu ine akomi limarismena Target state
     My nails are still filed

     b. Ta nixia mu ine epaggelmatika limarismena Resultant state
     My nails are professionally filed

(50) a. I miti mu ine akomi pudrarismeni Target state
     My nose is still powdered

     b. I miti mu ine epaggelmatika pudrarismeni Resultant state
     My nose is professionally powdered

(51) a. Ta malia mu ine akomi vurtsismena Target state
     My hair is still brushed

     b. Ta malia mu ine epaggelmatika vurtsismena Resultant state
     My hair is professionally brushed

Observation 3:

There is no question about the **manner classification of all of these verbs**:  

1) They do not enter the causative alternation  
2) They require an agent (selection restrictions)  
3) They entail an instrument, and a very specific one  
4) The denial of action test yields clear contradictions

Observation 4:

The manner properties are **retained in target state environments**. Instrument is entailed, i.e. the following are contradictions:
Question: Is the result entailed in resultant state vs. target state contexts?

I think there is a contrast in result entailments:

**Target state: result cannot be denied (detectable/observable)**

(53) a. #Ta nixia mu ine **akomi** limarismena, alla den tha
My nails are still filed but you
to katalavenes/ ki omos ine aperiipiita
wouldn’t know/ but they look sloppy
b. #I miti mu ine **akomi** poudrarismeni, alla den tha
My nose is still powdered but you
to katalavenes/ ki omos gializi
wouldn’t know/ but it looks greasy

**Resultant state: result can be denied (not detectable/observable)**

(54) a. Ta nixia mu ine **epaggelmatika** limarismena, alla den tha
My nails are professionally filed but you
to katalavenes/ ki omos ine aperiipiita
wouldn’t know/ but they look sloppy
b. I miti mu ine **epaggelmatika** poudrarismeni, alla den tha
My nose is professionally powdered but you
to katalavenes/ ki omos gializi
wouldn’t know/ but it looks greasy

**Conclusion**

W.r.t. entailments, **braid-verbs** show the same behavior as **wipe-verbs**:

(i) No result entailed in manner/resultant state contexts
(ii) Result + manner in result/target state contexts

**A caveat**

**BUT**, they also differ from ‘wipe’ verbs in three important respects:
(i) No coercion in target state environments: the participles themselves can name the state (no weak endstate necessary).

(ii) No object deletion. The object must be overtly realized:

(55) a. *O Janis limarise/ pudrarise/ vurtsise
    Janis filed/ powdered/ brushed
b. *Oli tin proigumeni nixta o Janis limarize/pudrarize/ vurtsize
    All last night Janis filed/powdered/ brushed

(iii) Weak resultatives (Washio 1997 and literature building on him)

-Greek does not have adjectival resultatives with atelic manner verbs of the wipe class like iron, wipe, swab, hammer (Giannakidou & Merchant 1999, Horrocks & Stavrou 2003, Alexiadou & Anagnostopoulou 2015):

(56) a. *O Janis siderose to pukamiso epipedo
    Janis ironed the shirt flat
b. *O Janis skupise to patoma katharo
    Janis wiped the floor clean

-But it does have adjectival resultatives with braid verbs of the type discussed here, i.e. file, brush, powder (and dye and cut) [not the same type of resultative Levinson 2007, 2014 discusses under the term ‘pseudo-resultatives’]

(57) a. O Janis limarise to nixi konto
    Janis filed the nail short
b. O Janis pudrarise ti miti aspri
    Janis powdered the nose white
c. ?O Janis vurtsise to mali isio
    Janis brushed the hair straight


Informally, in strong resultatives the meaning of V and the meaning of AP are completely independent from each other, while in weak resultatives the meaning of V and the meaning of the AP are not completely independent from each other.

- Potentially, these three differences constitute evidence that these verbs license a result component, i.e. they are (or can be) manner + result, unlike wipe verbs. [cf. Beavers & Koontz-Garboden 2012 for manner of killing verbs].
3.5. Interim summary

We took (14) as a starting point.

(14)  \textit{Manner/ Result Adjectival Participle Hypothesis}

\begin{itemize}
  \item a. Resultant state participles: a diagnostic environment for manner verbs
  \item b. Target state participles: a diagnostic environment for result verbs
\end{itemize}

We tested three classes of instrument verbs in these two contexts, asking the question of whether they qualify as manner or result.

\textit{Results:}

\textbf{Wipe-verbs:} Manner. In target state contexts they are coerced, introducing weak endstates.

\textbf{Tape-verbs.} Some are Manner (lock, button, screw) some Result (seal, glue). Manner ones can acquire result uses, in which case manner entailments are lost (Polysemy). Meaning shift in target state participles, as opposed to resultant state participles. Manner modifies the result (closed/ attached tight), not the process (close, attach making use of an instrument/means).

\textbf{Braid-verbs.} W.r.t. entailments like \textit{Wipe}-verbs:

\begin{itemize}
  \item (i) No result entailed in resultant state contexts
  \item (ii) Result + manner in target state contexts
\end{itemize}

But other criteria (lack of coercion in target states, no object deletion, weak resultatives) indicate that they have (or can have) an additional result component, i.e. they are manner + result.

4. Representing instruments, manners, results in adjectival participles


I will build on Embick (2009) who proposes the following way to account for Root distribution in adjectival passives.

(58)  \textit{Root-types}

\begin{itemize}
  \item a. √DARK-type: Predicate of states
  \item b. √POUND-type: Predicate of events; can’t co-occur with ST
  \item c. √BREAK-type: Predicate of events; must co-occur with ST
\end{itemize}
ST is an ‘empty’ state defined by the modifier of v. Embick calls it a “Proxy ST”. Its meaning is filled by the content of √BREAK expressing a “state caused by a breaking event” (cf. Marantz 2013b for all Roots in English, even for √DARK-type roots).

By contrast, an ‘adjectival’ root of the √DARK type fills the ST position selected by v.

(59)

Structures

a. √DARK-type: complement of v; filling in the ST position

```
  v
 / \   \\
v   v
 √DARK
```

b. √POUND-type: modifier of v and no ST

```
  v
 / \   \\
v   v
 DP  \\
√POUND  v
```

c. √BREAK-type: modifier of v selecting for a “Proxy ST”

```
  v
 / \   \\
v   ST
 √BREAK  v
```

4.2. Accounting for Instrument verbs

- Target states: ST

We saw that target state participles require a state, i.e. they are well-formed with root-types (59a) and (59c), but not with root-types (59b) unless there is coercion (a weak end-state introduced):
v + ST: a cause relation (AAS 2015 for discussion and references)

We also saw that there is no requirement for ST in resultant states.

- **Dealing with Instruments**

  - Intuitively, instruments specify the manner in which a process takes place.

  - Intuitively, instruments name entities/individuals. We want these entities as instruments in events/ as instruments effecting events.

(61) *Instruments*\(^3\)

  a. √IRON, √SPONGE, √BROOM, √SCREW, √GLUE, √BUTTON, √SEAL
      √FILE, √BRUSH, √POWDER = predicates of individuals \(<e,t>\) (sets of things with which you can iron, swab, wipe, screw, glue, button, etc.)

  b. v maps instrument meanings to those events which are effected by these individuals:
     
     \[[v]\] = \(\lambda_{P<e,t}\lambda_{e}\lambda_x. [\text{INST}(x)(e) \land P(x)]\)

     (For any individual x and eventuality e, INST(x) collects the events that x is an instrument of.)

- **Structures for the three classes and which structures are licensed in target states**

  **A. WIPE-type verbs**

  (62)

  a. √WIPE-type Roots: modifiers of v (like √POUND)

\(^3\) I thank Winfried Lechner for (61).
Structure (62a) is selected by Voice, introducing an implicit agent, and then combines with Kratzer’s (2000) **Perfect operator** yielding **resultant state participles**.

**Target state participles** require coercion of wipe-type verbs. This means: √WIPE-roots can **exceptionally** combine with ST, and **ST = a pragmatically accessible state not named by the root.**

b.  

```
  PRT
     PRT v
        v ST
          ST = unwrinkled, clean
```

√SIDER  v  ‘still ironed’
√SKUP   v  ‘still wiped’
√SFUGAR v  ‘still swabbed’

**B. TAPE-type verbs**

We saw that they split into two types: (i) manner and (ii) result as their **basic sense**:

**B.1.** “button”, “lock” and “screw” qualify as basically manner verbs. They will be represented like POUND and IRON:

(63)

```
a.  v
   v DP
      √KOUMB  v  ‘button-v’ = button
      √KLID   v  ‘key-v ‘lock’=lock
      √VID    v  ‘screw-v’ = screw
```

**Target state participles** require ST. This means: √BUTTON-roots combine with ST, and **ST = a state named by the Root.**

23
b. PRT
   PRT v
   v ST

ST = ROOT-ed

√KOUMB v ‘still buttoned’
√KLID ‘still locked’
√VID ‘still screwed’

The fact that ST can be named by the Root (unlike wipe-verbs where a pragmatically accessible state kicks in) correlates with the fact that these verbs enter the causative alternation. Recall:

(64)  a. To panteloni kubose
       The trousers buttoned
       ‘The trousers closed by means of a devise (button, zip etc.)

b. I porta klidose
   The door locked

c. To kapaki vidose
   The lid screwed

B.2. “seal” and “glue” qualify as result verbs. They will be represented like BREAK:

(65)

v

√SEAL v ST DP
√GLUE

C. BRAID-type verbs

Finally, braid-type verbs (i.e. what I called ‘braid-verbs’ following Levin 1993 and crucially not Levinson 2007, 2014) are as in (66), at least in target state participles (compare to (63b) and (65)):

(66) PRT
   PRT v
   v ST

ST = ROOT-ed

√LIM v ‘still filed’
√VOURTS ‘still brushed’
√POUDR ‘still powdered’
What needs to be decided:

- Whether they are manner verbs (i.e. they lack ST) in contexts other than target states, as lack of result-entailments in resultant state participles seems to suggest, i.e. whether they behave like B.1. (lock, button, screw).

- Whether they are manner + result verbs (i.e. they always combine with ST, like B.2. ‘glue’ and ‘seal’), as weak resultatives seem to suggest.

- They are not entirely like B.2., though, because instrument is still entailed [possible way out to say that the roots in (66) are categorized, Kiparsky 1982, but see e.g. Harley & Haugen 2007].

5. Summary

- Due to their structural properties (presence vs. absence of Voice, optionality vs. obligatoriness of ST), adjectival participles expressing resultant states vs. target states constitute contexts bringing out manner vs. result senses of verbs.

- I investigated three classes of instrument verbs in these contexts:
  
  o WIPE-verbs (class A: manner)
  o TAPE-verbs (class B: B1 (basic sense manner) and B2 (basic sense result)
  o BRAID-verbs (class C: manner + result)

- With the exception of class B2 (glue, seal), they are all manner verbs which nevertheless license a ST component in target states:
  
  o Class A: ST = weak endstate pragmatically accessible (coercion)
  o Class B1: ST = named by the root (and manner modifies ST)
  o Class C: ST = named by the root (manner modifies process + ST)

- I proposed an analysis in the system of Embick (2009), pointing to a limitation of this system (how to characterize the differences between C and B1/ B2).

Some References


Appendix 1: Two types of Voice languages
1) In Greek (Anagnostopoulou 2003), Russian (Paslawska & von Stechow 2003; Masha Polinsky p.c.), Swedish (Larsson 2009), Voice-related modifiers may occur freely in adjectival passives, just as in verbal passives:

Agent PPs
(1) Ta keftedakia ine tiganis-mena apo tin Maria
   The meatballs are fried by the Mary
   'The meatballs are fried by Mary'

Instrument PPs
(2) Ta malia tis basilisas ine xtenisma
   The hair the queen GEN are combed
   me xrisi xtena
   with golden comb
   'The hair of the queen is combed with a golden comb’
Agent-oriented, manner adverbs

(3) To thisavrofilakio itan prosektika anigmeno
   The safe was cautiously opened
/skopima paraviasmeno
/deliberately violated
‘The safe was cautiously opened/ deliberately opened’

II) In English, German, Hebrew, Voice-related modifiers are subject to restrictions. McIntyre (2015) building on Rapp (1997), Meltzer-Asscher (2011) and McIntyre (2011) formulates the “State Relevance Hypothesis” in (4):

(4) **State Relevance Hypothesis**: In adjectival passives in e.g. German, English, Hebrew, event-related satellites are unacceptable unless they contribute to the description of the state expressed by the participle or of the theme during the interval \( i \) during which this state holds. They are most acceptable if they provide information which can be inferred solely by the inspection of the theme during interval \( i \).

This derives contrasts like the following:

(5) a. Some of the text is underlined with a highlighter pen/ blue pencil/ *short pencil
    b. This text is written by a moron/ non-native speaker / *tall person

Gehrke (2015) formulates the following hypothesis in order to derive the observed restrictions on modifiers in German and English:

(6) **Event-Kind Hypothesis**: Events embedded in adjectival participles refer to uninstantiated kinds, not tokens.

As a result, the licit modifiers are subject to the restriction in (7) (McIntyre 2015, (15) based on Gehrke’s proposal):

(7) **Non-Referential Satellite Hypothesis**: DPs/NPs in satellites adjectival passives refer to types, not tokens, of entities and are discourse-opaque

As a result of (7), the satellite-internal nominals are by preference indefinite and are not good targets of anaphora:

(8) a. Der Brief ist mit einem/*diesem Stift\(_k\) geschrieben. *Er\(_k\) gehört dem Mörder
    The letter is written with a/*this pen. It belongs to the murderer
    b. Der Ordner ist mit einem/\(^*\)diesem Passwort gesichert.
    The folder is with a/the passwort protected

As a result of (4) and (6), the counterparts of the Greek examples in (1)-(3) are ungrammatical in English and German. Consider, for instance, (9):

(9) a. *Ihre Haare sind mit einem goldenen Kamm gekämmt
    Her hair is with a golden comb combed
b. *Der Safe war vorsichtig/ vorsätzlich geöffnet
The safe was cautiously/on purpose opened
‘The safe was cautiously opened/ opened on purpose’
c. *The text seems written by John. He wouldn’t have gone home without finishing it

And, conversely, the counterparts of e.g. ungrammatical examples like (8a) are grammatical in Greek:

(10) To gramaine grameno me af to stilo k. Pro aniki ston dolofono
The letter is written with this the pen. Pro belongs to-the murder
‘The letter is written with this pen. It belongs to the murder’

Alexiadou, Anagnostopoulou & Schäfer (2015) argue extensively for two points:

i) The State Relevance Hypothesis, in its strict form, is relevant for Greek target state participles. They require that the referent introduced by satellites is present in the state denoted by participles:

(11)
By-phrases introducing referents present in the state

a. To stadio ine akomi perikiklomeno apo tin astinomia
The stadium is still surrounded by the police
‘The stadium is still surrounded by the police’

Instruments introducing referents present in the state

b. O skilos ine akomi demenos me skini
The dog is still tied with leash
‘The dog is still tied with a leash’

Manner adverbs modifying the state directly

c. O skilos ine akomi demenos sfixta
The dog is still tight tied
‘The dog is still tight tied’

d. To stadio ine akomi filagmeno prosektika
The stadium is still guarded carefully
‘The stadium is still carefully guarded’

This is so, because participial morphology attaches to vPs that become stativized/adjectivized. The external argument can then be introduced, but it is necessarily interpreted as the Holder of the state denoted by the adjectivized participle (cf. Meltzer-Asscher’s 2009 analysis of Hebrew). Alternatively, examples like (11) represent what McIntyre (2013) calls ‘situation-in-progress’ participles. These are adjetival according to the usual formal criteria, but like verbal participles hold over the same time interval as the corresponding active sentences, thus necessitating an altogether different analysis.

ii) Neither the State Relevance Hypothesis (in its weak form) nor the Event-Kind Hypothesis hold for Greek resultant state participles, and, therefore, event- and Voice-related modifiers attach much more freely. There is an independent difference between Greek and English/German which can account for this, namely that the events embedded adjetival participles in Greek have a spatio-temporal manifestation, i.e. they refer to event tokens. Evidence for this comes from the observation that spatial and temporal modification is not as restricted in Greek as in German and English:
(12) a. Das Klavier ist offenbar (*vor kurzem) gestimmt und klingt viel besser
   The piano is obviously (recently) tuned and sounds much better
b. To piano ine profanos prosfata kurdismeno ke ixi poli kalitera
   The piano is obviously recently tuned and sounds much better

(13) a. Ich würde den Tee nicht trinken. */*?? Er ist vor einer Woche aufgebührt
   I wouldn’t drink the tea. It is made a week ago
b. Den tha epina to tsai. Ine ftiagmeno prin apo mia vdomada
   Not would drink-I the tea Is made before from a week
   ‘I wouldn’t drink the tea.’ ‘It is made a week ago’

(14) a. To forema ine sideromeno sto spiti
   The dress is ironed at home
b. To vivlio ine grameno stin Ellada ke stin Germania
   The book is written in Greece and in Germany

Appendix 2: Scalar changes and target state participles


(15)

<table>
<thead>
<tr>
<th>Scale type</th>
<th>Two valued</th>
<th>Multipoint</th>
<th>Multipoint</th>
<th>Multi-point</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Upper bound</td>
<td>Lower bound</td>
<td>Open</td>
<td></td>
</tr>
<tr>
<td>Adjectival property base</td>
<td>dead</td>
<td>flat</td>
<td>wet</td>
<td>long</td>
</tr>
<tr>
<td>De-adjectival verb</td>
<td>die</td>
<td>flatten</td>
<td>wet</td>
<td>lengthen</td>
</tr>
<tr>
<td>De-verbal Property base</td>
<td>cracked</td>
<td>thawed</td>
<td>all deverbal</td>
<td>streched</td>
</tr>
<tr>
<td>Verb</td>
<td>crack</td>
<td>thaw</td>
<td>scalar properties</td>
<td>are lower</td>
</tr>
</tbody>
</table>

Table (15) includes the following distinctions:

1) Verbs expressing scales associated with multi-valued attributes vs. verbs that lexicalize a two-point scale (Beavers 2008).
2) Multi valued scalar verbs are further divided into three subclasses:
   a) Open scale verbs associated with predicates like long, wide, or stretch, shrivel with no maximal value.
b) Upper bound close scale verbs with a maximal degree based on predicates such as flat, empty, clear, dry, straight, freeze, thaw.
c) Close scales with a lower bound which represents a non-zero degree of the measured property, e.g. wet, impure.

It seems that only certain subtypes of scalar verbs in table (15) yield states that can be conceptualized as transitory and reversible.

class 2c verbs are optimal inputs for target state participle formation,
class 2a verbs are impossible inputs,
class 1 and 2b verbs are sometimes licit and sometimes excluded, depending on various factors, among them also Embick’s (2009) “competition for use” effect (i.e. dry blocking dried, empty blocking emptied).