The roots of strong and weak resultatives in English and Spanish

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Resultatives in English and Spanish

- **Strong resultatives** contain **a separate phrase** that adds a result interpreted as brought about by the verb, which itself does not entail a result (Washio 1997). English allows these (1) while Spanish does not (2).
- The contrast is often related to the fact that Spanish is a **verb-framed language**, whereas English is a **satellite-framed** one (Talmy 1991, 2000).

(1) Strong resultatives: English
   a. The FBI **shot** the robber <u>dead</u>.
   b. The waiter **wiped** the table <u>clean</u>.
   c. The blacksmith **hammered** the metal <u>into a new sword</u>.

(2) Strong resultatives: Spanish
   a. *El FBI **disparó** al ladrón <u>muerto</u>.
   b. *El camarero **fregó** la mesa <u>limpia</u>.
   c. *El herrero **martilleó** el metal <u>en una nueva espada</u>.

- Both English and Spanish allow **weak resultatives** (3)-(4). These involve separate phrases interpreted as **adding specific information about the result** that is encoded in **result verbs** (Rappaport Hovav and Levin 2010).

(3) Weak Resultatives: English
   a. The toast **burned** <u>black/to a cinder</u>.
   b. The lake **froze** <u>solid/into a solid mass</u>.
   c. The candy bar **melted** <u>into a gooey mess</u>.

(4) Weak Resultatives: Spanish
   a. Me **teñí** el pelo <u>de color azul</u>. (GBooks)
      "I dyed my hair blue."
   b. La puerta se **rompió** <u>en mil astillas</u>. (GBooks)
      "The door broke into a thousand splinters."
   c. Un corazón [...] que volvía [...] **destrozado** <u>en mil pedazos</u> (CREA)
      "A heart that would come back in the morning destroyed in a thousand piece."
   d. Lo agarró por la cabeza y lo **quemó** <u>en cenizas</u> con fuego azul. (GBooks)
      "He took him by the head and burned him to cinders with a blue fire."

- In English, result verbs are **flexible between strong and weak resultatives**, e.g., *explode* can form both **strong** and **weak** resultatives (5) (also Yu et al., to appear).

(5) a. Then Desdemona **exploded** <u>into a thousand</u> bats and flew away. (GBooks, strong)
   b. My right passenger window suddenly **exploded** <u>into pieces while driving</u>. (Web, weak)

- The **defining property** of the *explode*-class verbs (including *break, melt, crack, tear* etc.): they independently **entail change**, i.e., a process leading to the result state they define (Beavers and Koontz-Garboden 2020).
- **Result verbs** built on roots defining **property concepts** (e.g., *open, close, cool, warm*) do not independently entail change (Beavers and Koontz-Garboden 2020) and do not form strong resultatives in English.

(6) a. *The dentist **whitened** his teeth <u>clean</u>.
   b. *My son **cleared** his room <u>empty</u>. (Kennedy 2012: 114)
   c. *I **thinned** the soup <u>tasteless</u>. (Rappaport Hovav 2014: 276)
   d. *Kim **dimmed** her eyes <u>sore</u>. (Beavers and Koontz-Garboden 2012: 340)

- The **same flexibility is not observed for Spanish**. Result XPs **must be construed as modifying the result in the verb** (7) (Mateu 2002, McNally and Spalek 2022).

(7) a. Justo antes de que el avión **explote** <u>en mil pedazos</u>. (GBooks)
      "Just before the plane explodes into a thousand pieces."
   b. *Desdemona **explotó** <u>en mil murciélagos</u>.
      "Desdemona exploded into a thousand bats."

- This is **unlikely to be a syntactic effect**. In (7), the same verb *explotar* and PP headed by *en* 'in' are involved. The contrast is purely **a semantic one**.

On the Role of Root Semantics

> - **What leads to the contrast between (5) and (7)**, i.e., English result roots entailing change can form both strong and weak resultatives while Spanish result roots do not?
> - Two points of variation in the **lexical inventories** of English and Spanish:
>   - **Spanish lacks eventive, path-denoting prepositions** as in English *into* and has only stative ones like *en* 'in' (Beavers et al. 2010).
>   - **Result roots** like $\sqrt{\text{BREAK}}$, $\sqrt{\text{BURN}}$, $\sqrt{\text{EXPLODE}}$, $\sqrt{\text{TEAR}}$, $\sqrt{\text{FREEZE}}$ etc. in English and Spanish both entail change (Beavers and Koontz-Garboden 2020) but have **different semantic types**: in English they are **eventive** but in Spanish they are **stative**.

- English PPs of the *into pieces* type are **eventive**, contributing change of state (8-a). Spanish PPs of the *en pedazos* type are **stative** (8-b).

(8) a. $[\![into\ pieces]\!]: \lambda x.\lambda e.\exists s[\text{BECOME}(e,s) \wedge \text{IN-PIECES}(x,s)]$
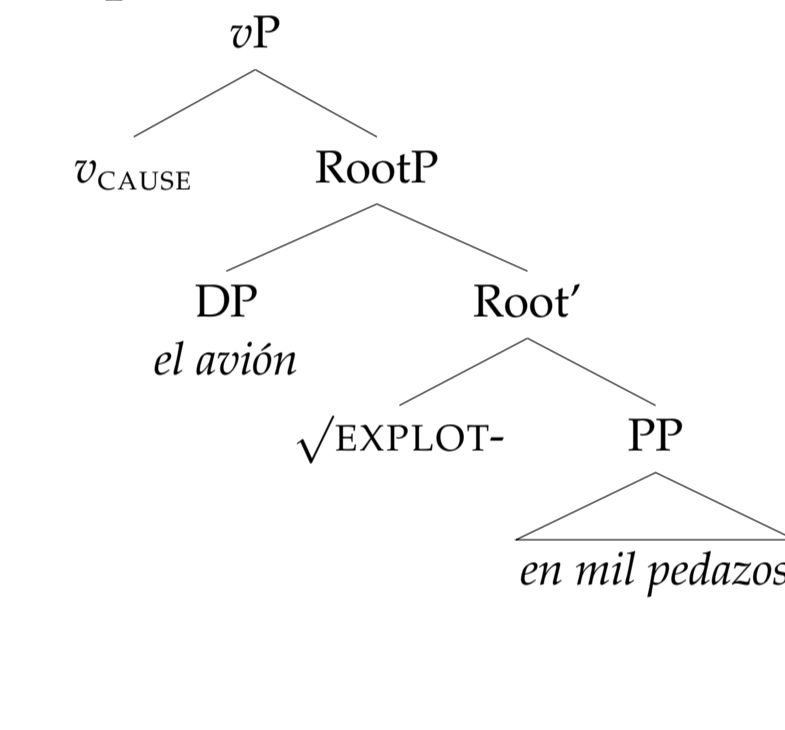   b. $[\![en\ pedazos]\!]: \lambda x.\lambda s.\text{IN-PIECES}(x,s)$

- English result roots are **eventive and entail a result state** (9-a). Spanish result roots are **stative and entail change** (9-b).

(9) a. $[\![\sqrt{\text{EXPLODE}}]\!]: \lambda x.\lambda e.\exists s[\text{BECOME}(e,s) \wedge \text{EXPLODED}(x,s)]$
   b. $[\![\sqrt{\text{EXPLOT-}}]\!]: \lambda x.\lambda s.\text{EXPLODED}(x,s) \wedge \exists e[\text{BECOME}(e,s)]$

(10) English ≈ (5-b)
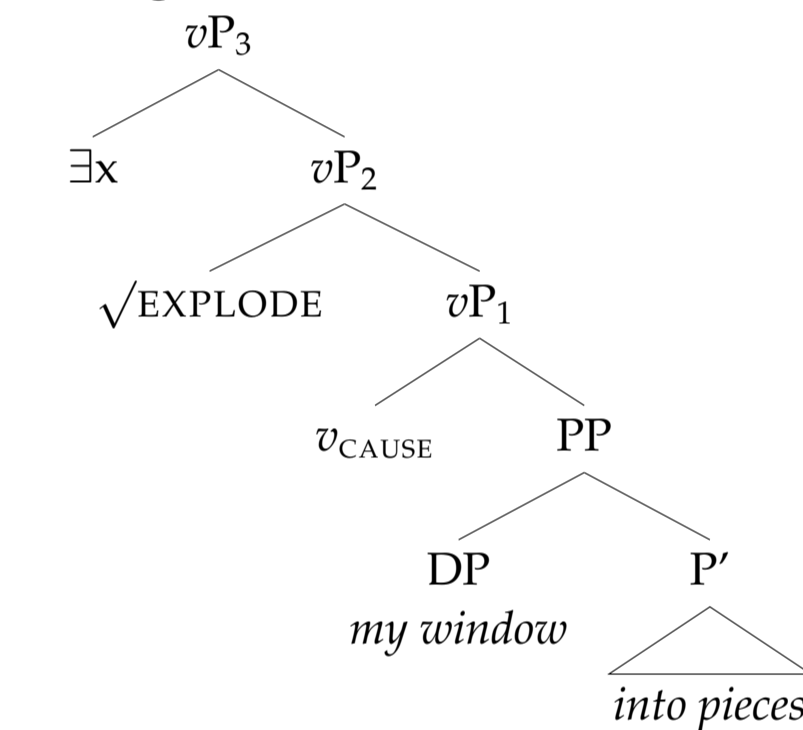
(11) Spanish ≈ (7-a)

(12) English (10)
   a. $[\![vP_1]\!]: \lambda e.\exists e'[\text{CAUSE}(e,e') \wedge \exists s[\text{BECOME}(e',s) \wedge \text{IN-PIECES}(window,s)]]$
   b. $[\![vP_2]\!]: \lambda e.\exists x[\exists s'[\text{BECOME}(e,s') \wedge \text{EXPLODED}(x,s')] \wedge \exists e'[\text{CAUSE}(e,e') \wedge \exists s[\text{BECOME}(e',s) \wedge \text{IN-PIECES}(window,s)]]]$ (E.I., E.C.)

(13) Spanish (11)
   a. $[\![Root']\!]: \lambda x.\lambda s.\text{EXPLODED}(x,s) \wedge \exists e[\text{BECOME}(e,s)] \wedge \text{IN-PIECES}(x,s)$ (P.M.)
   b. $[\![RootP]\!]: \lambda s.\text{EXPLODED}(plane,s) \wedge \exists e[\text{BECOME}(e,s)] \wedge \text{IN-PIECES}(plane,s)$
   c. $[\![vP]\!]: \lambda e.\exists s[\text{CAUSE}(e,s) \wedge \text{EXPLODED}(plane,s) \wedge \exists e[\text{BECOME}(e,s)] \wedge \text{IN-PIECES}(plane,s)$

Predictions and Implications I

- **Key properties of analysis of English versus Spanish:**
  - **English**: the state variables of the result root and the PP are bound by different existential quantifiers, and their individual arguments are not necessarily shared (12-b). **Spanish**: the state variables of the result root and PP are **bound by the same existential quantifier** and **share an argument** (13-c).

- **Strong vs. Weak Resultatives:**
  - English: **state variables can be construed as the same state or different states** since both satisfy existential quantification.
  - If construed as different states, **the state descriptions may refer to distinct, independent properties** (strong resultatives), e.g., (5-a).
  - If construed as the same state, then **they must refer to compatible properties**, i.e. properties whose intersection is non-empty (weak resultatives), e.g., (5-b).
  - There is **no structural or semantic distinction between strong and weak resultatives in English**, i.e., only a single structure and semantic interpretation.
  - Spanish: **the two state descriptions must be conceptually construable as describing the same property**, i.e., only weak resultatives (7-a) are possible.
  - PPs that do not satisfy this semantic constraint, even if headed by the same preposition, are infelicitous (7-b).

Predictions and Implications II

- **Unselected objects**:
  - Spanish: composition in (11) rules out unselected objects; **argument of result root is always argument of the PP** result due to PM.
  - English: result root does not compose with result PP directly; rather, it is **adjoined to the entire vP structure**, and **argument is closed by EC** (Yu et al., to appear). **PP result takes its own argument**.
  - If **existentially closed variable is construed as the same as PP result's argument**, the surface object is interpreted as **'selected'** by the root (5).
  - But **'unselected' objects are also possible** if the existentially closed variable is construed as different from PP result's argument.

(14) a. If steam builds up in a closed container it can **explode** the lid <u>off</u>. (Web)
   b. Weighing many tons, they grind and screech and, in bends of the river, jam up until backrising water **explodes** them <u>free</u>. (GBooks)
   c. I'm pretty certain the only way to get them is to **'explode'** them <u>loose</u>, a grenade should do the trick. (Web)

  - Regardless of its interpretation, **the surface object is always structurally 'unselected'** (10) (Hoekstra 1988, Kratzer 2005, Yu et al., to appear).

Alternative Analyses

- Syntactic approaches to the verb- vs. satellite-framed distinction: the **availability of a syntactic operation of root adjunction to v** (e.g., Mateu 2002, 2012, 2017).
- **Verb-framed languages like Spanish lack the option in (15)** (strong resultatives) and only allow (16) (weak resultatives), while satellite-framed languages like English allow both.

(15) The FBI shot the robber dead.
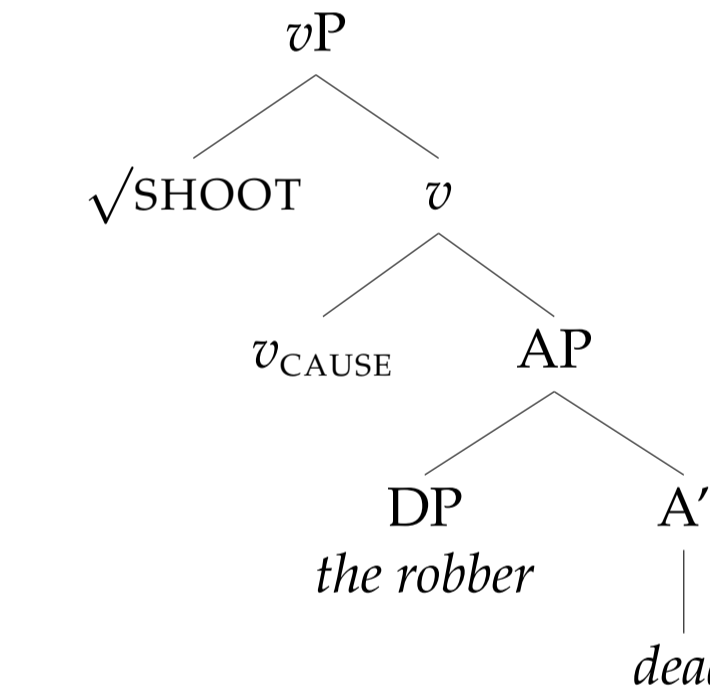
(16) The lake froze solid.
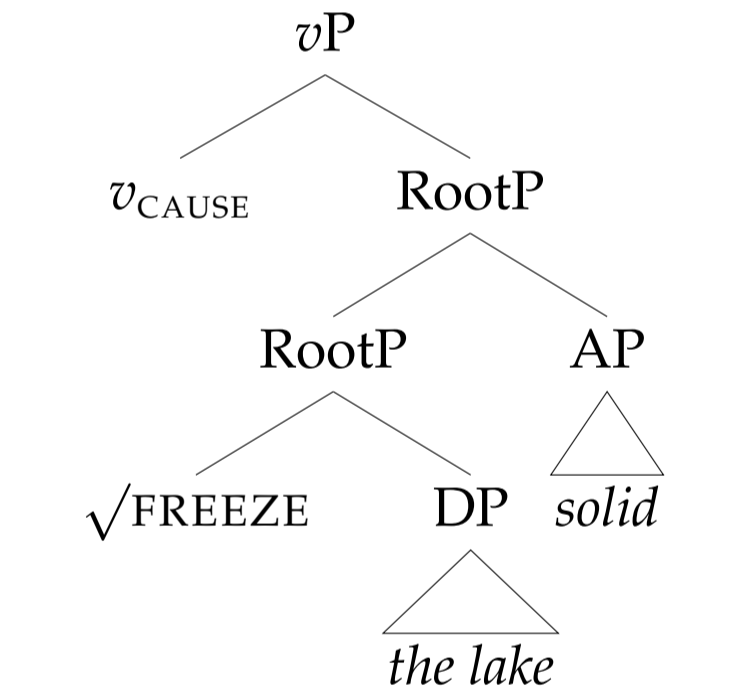
- Such an analysis does not obviously extend to **resultatives with $\sqrt{\text{EXPLODE}}$-class roots**. The sentences in (5) and (7) make use of the **same predicate and preposition**.
- A syntactic analysis relying on the lack of v-adjunction: **not explicit about the contrast in (7)** and **needs to be enriched with an account of the compatibility of the PP with the root**.
- A lack of v-adjunction as a syntactic operation explaining the lack of strong resultatives is also too strong, leading to consequences for other verb-types.
- Folli and Harley (2020): languages must be able to distinguish verb types. **Verbs of creation** independently need v-adjunction; lacking this operation predicts no such verbs in verb-framed languages, which is clearly undesirable.

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