

# EGG intro semantics week 2

## Aspectual classes

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# Yesterday

- ▶ Davidson's hypothesis that verbs denote predicates of events.
- ▶ Events as particulars (like regular individuals).
- ▶ Consequences for a theory of modification.

# Today

- ▶ Different classes of verb (phrase) as distinguished by their aspectual properties.
- ▶ Attempts to relate those different classes to patterns of lexical decomposition.
- ▶ Aspectual classes in the light of Davidson and Link.

# Zeno Vendler's two distinctions

1. Can a VP appear in the progressive?
  - ▶ I am running a mile.
  - ▶ I am running.
  - ▶ #I am spotting the plane.
  - ▶ #I am knowing the answer.
2. Can a VP be modified by a *for*-PP?
  - ▶ #For how long did he run a mile?
  - ▶ For how long did he run?
  - ▶ #For how long did he spot the plane?
  - ▶ For how long did he know the answer?

$2 \times 2 = 4$  aspectual classes

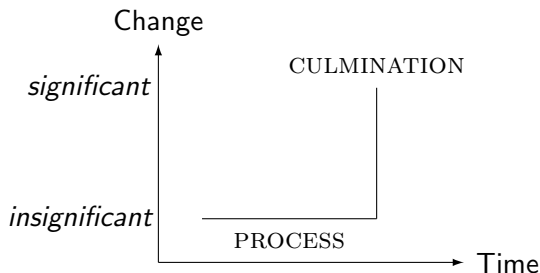
	Progressive?	
	Yes	No
For-PP	Activity	State
Other	Accomplishment	Achievement

- ▶ Further subdivisions are possible (e.g. Davidsonian vs. Kimian states, Carlota Smith's class of semelfactives).
- ▶ Other people make fewer distinctions (e.g. collapse accomplishments and achievements).
- ▶ I like this typology because it is internally complete.

# Semanticizing the taxonomy

- ▶ Vendler's tests are syntactic, but we take them to reflect semantic distinctions.
  - ▶ If you can take the progressive, you're temporally extended.
  - ▶ If you can't take *for*-PPs, you're *telic* (you have a “‘climax’, which has to be reached if the action is to be what it is claimed to be”)
- ▶ Metaphysical claims: we talk as if there are times, we talk as if some events are punctual (even if common sense tells us they aren't really), and we talk as if some events are inherently associated with “climaxes” (endpoints).

# A semantic taxonomy (first pass)



	Extended	Punctual
Atelic	Activity	State
Telic	Accomplishment	Achievement

## A complementary approach: lexical decomposition

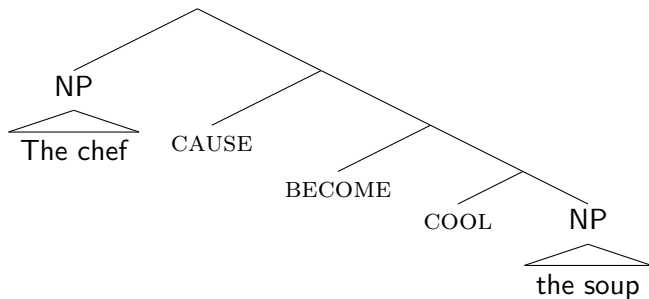
- (1)
- |    |                          |    |                  |
|----|--------------------------|----|------------------|
| a. | The soup is cool         | d. | Bill is dead     |
| b. | The soup cooled          | e. | Bill died        |
| c. | The chef cooled the soup | f. | John killed Bill |

- ▶ Generative semanticists (George Lakoff, James McCawley, Haj Ross) explored a decompositional approach to these patterns.
- ▶ Simpler predicates are embedded under operators like CAUSE, BECOME, or DO.
- ▶ One major prediction: correlations between semantic, morphological, and argument-structural complexity.
- ▶ Also more subtle predictions (e.g. scope of *again*).

- (2) John cooled the soup again.



# Decompositional syntax and semantics



- ▶  $\exists e_1, e_2, P. P(e_1, \sigma x. \text{chef}(x)) \wedge \text{BECOME}(\text{cool}, \sigma y. \text{soup}(y), e_2) \wedge \text{CAUSE}(e_1, e_2)$
- ▶ This raises questions:
  - ▶ Semantics of BECOME. David Dowty handled this one: roughly, an event in which  $\neg P$  is followed by  $P$ .
  - ▶ Semantics of CAUSE. This is tougher. Dowty analysed it counterfactually (following David Lewis).  $e_1$  causes  $e_2$  iff, in the most accessible worlds in which  $e_2$  doesn't happen,  $e_1$  also doesn't happen. Lots of debate here.
  - ▶ Content of  $P \dots$

## Another two distinctions

- ▶ We might try to see if there are links between CAUSE and BECOME, and Vendler's telicity and punctuality.
- ▶ There are, kind of, but you can't straightforwardly map CAUSE and BECOME onto Vendler's distinctions.
  - ▶ BECOME derives telic events, at least in simple cases: the endpoint is when *P* first holds.
  - ▶ CAUSE + BECOME typically derives accomplishments.
  - ▶ But *kill* is as much of an achievement as *die*.
  - ▶ And if I *walk the dog*, my actions cause the dog to walk, but walking the dog is an activity.
  - ▶ *Walk around in circles* is also an action, with no (intuitive) causation.
  - ▶ And *blink* is telic without BECOME.

# This isn't hopeless

- ▶ Even though CAUSE + BECOME don't derive the four aspectual classes, they're not completely unrelated.
  - ▶ BECOME  $\rightarrow$  telic.
  - ▶ Telic + durative  $\rightarrow$  CAUSE + BECOME?
- ▶ In other words, although there are other ways to be telic, and other ways to be causative, and so on, decomposition can help us get a handle on how a Vendlerian endpoint relates to a preparatory process.
- ▶ Gillian Ramchand and many others try to make decomposition do much more than that but that isn't my focus here.

# The progressive

- ▶ Everything we've said so far suggests that if  $\exists e_1, e_2, P, Q. P(e_1) \wedge \text{BECOME}(Q)(e_2) \wedge \text{CAUSE}(e_1, e_2)$ , then  $e_1$  and  $e_2$  are yoked together.
- ▶ That isn't true.
  - (3) a. John was painting a picture but he got distracted and gave up.
  - b. Mary was gathering the guests in the dining room when a fire alarm made everyone leave.
- ▶ A related problem is the *imperfective paradox*:
  - ▶ Be running  $\rightarrow$  have run
  - ▶ Be running a mile  $\nrightarrow$  have run a mile

# Non-culminating accomplishments

- In many languages, simple past accomplishments do not entail that the endpoint is reached.

- (4) a. Namory            ny ankizy    ny mpampianatra,  
         PAST.AV.meet the children the teachers  
         nefa tsy    nanana      fotoana izy  
         but NEG PAST.have time      they  
         “The teachers gathered the children, but they  
         didn’t have time”
- b. k’ul’-ún’-lhkan    ti    ts’lá7-a,    t’u7 aoy t’u7  
         make-TR-1SG.SU DET basket-DET but NEG just  
         kw    tsukw-s  
         DET finish-3POSS  
         “I made the basket, but it didn’t get finished”

# Inertia worlds

- ▶ David Dowty argued that in such cases, the event goes to completion in all *inertia worlds* (basically, possible worlds like the real world, in which nothing interferes in the normal course of events).
- ▶ Roughly,  $\text{PROG}(P)$  is true at an interval  $I$  and world  $w$  iff there is an  $I' \supset I$  and an inertia world  $w'$  s.t.  $P(I')(w')$ .
- ▶ Is this a commitment to possible worlds in our natural language metaphysics? It's at least a commitment that we talk as if things could be otherwise in a variety of ways.

# Measuring out

- ▶ Telic predicates are associated with endpoints.
- ▶ Henk Verkuyl showed that this association is partly lexical and partly compositional. It depends on properties of the predicate and of the arguments.

- (5)
- a. (i) Bill ate an apple  
(ii) Bill ate apples
  - b. (i) Bill rotated an apple  
(ii) Bill rotated apples
  - c. (i) Bill pushed an apple across the table  
(ii) Bill pushed an apple around and around the island

- ▶ Various people (Manfred Krifka, Carol Tenny, Ray Jackendoff) contributed to an explanation of this: (a)telicity is determined by
  - ▶ whether the predicate describes a change, and
  - ▶ the algebraic properties of any arguments involved in that change

# Summary so far

- ▶ Four aspectual classes resulting from two binary distinctions:
  1. Telicity (*for*-PP test)
  2. Durativity (progressive test)
- ▶ Lexical decomposition: CAUSE and BECOME operators.
- ▶ One-way relationships between BECOME and telicity, and culminated processes and CAUSE + BECOME.
- ▶ The progressive, non-culminating accomplishments, and inertia worlds.
- ▶ Measuring out and the interaction of predicates and arguments.



# The algebra of events

- ▶ These last two phenomena imply puzzles that complicate our simple-minded explanation of Vendler's aspectual classes.
  1. The progressive and non-culminating accomplishments: actual events as subparts of inertial events.
  2. Measuring out: aspectual class determined by properties of the argument rather than the predicate.
- ▶ Further analysis will show that these are two sides of the same coin.
  1. Progressives and non-culminating accomplishments denote subevents of inertial events.
  2. Measuring out involves homomorphism between algebraic properties of objects and events.
- ▶ To develop these ideas, we need to deepen the formal similarities between events and individuals, and develop an algebra of events (Emmon Bach).