

Causation in Semantics and Grammatical Structure

## Week 6: The causative alternation

Prerna Nadathur

November 14, 2019

# Alternating verbs

English has a range of verbs that appear in both transitive and intransitive statements:

- (1) a. The door opened.  
b. Miren opened the door.
- (2) a. The lamp broke.  
b. Miren broke the lamp.
- (3) a. The clothes dried.  
b. Miren dried the clothes.

This pattern is called the **causative alternation** because the transitive variants seem to involve someone or something causing or bringing about the event in the intransitive variants.

# Coincidence or derivational?

**Question:** Why should we analyze the causative alternation?

Facts suggesting that these aren't cases of polysemy:

- ▶ there are some broad general categories: e.g., change of state verbs seem to participate (*melt, break, dissolve*)
  - ▶ also some change of location verbs (*move*)
  - ▶ many deadjectival verbs (*widen, soften, lengthen*; Lakoff 1965)
- ▶ the alternation occurs cross-linguistically, with the same (kinds of) verbs, suggesting it's related to their meaning
- ▶ there's core meaning shared between the variants: the entity is affected/the result state of the claim is the same

So, if we understand why some verbs participate and others do not, we learn something about ways of categorizing meaning, and the ways we conceptualize and differentiate events.

# Goals of an analysis

**Question:** In analyzing the alternation, what is it we are trying to establish?

- i. How are the variants related to one another?
  - ▶ Is the causative meaning basic, or do we have a systematic process for adding causal meaning (as per Lakoff, McCawley)?
- ii. Why do certain verbs participate while others do not?
  - ▶ What is required of an event or of the lexical meaning of a verb?

The answers to questions (i) and (ii) should, ideally, be connected to one another.

# The linguistic representation of causation

More broadly:

- ▶ the parameters governing the availability of alternation tells us something about the kind of causation and the semantic properties of lexical causatives
- ▶ verbs that don't alternate require a periphrastic causative to describe causal situations, so we can also learn something about the specialization of lexical vs. periphrastic causatives
- ▶ looking ahead: the distinction between alternating and non-alternating verbs tells us something about the parameters that linguistic encoding of causation cares about

# Structure of the investigation

Levin & Rappaport Hovav (1994) investigate the basis of the alternation by looking at 'exceptions':

- ▶ **point 1:** there are intransitive verbs that do not have an associated causative (even a suppletive one)
  - ▶ so, it's unlikely that the derivation just involves freely adding a causer
- ▶ **point 2:** there are causative transitive verbs that don't have intransitive variants
  - ▶ so it has to be possible for causal meaning to be encoded in lexical meaning that doesn't decompose further

Idea: we want to see what unifies the 'exceptions', and distinguishes them from the non-exceptions in order to understand what's required of alternating verbs

# Agitivity and intransitivity

**First hypothesis:** only non-agentive intransitives alternate

- (4) a. The children played.  
b. \*The parents played the children.
- (5) a. The audience laughed.  
b. \*The comedian laughed the audience.

**But:** there are agentive verbs which do alternate ...

- (6) a. The soldiers marched to the tents.  
b. The general marched the soldiers to the tents.

...and non-agentive verbs that do not alternate:

- (7) a. The cactus bloomed early.  
b. \*The warm weather bloomed the cactus early.

So, non-agentivity can't even be a sufficient condition for alternation.

# Patterns in the exceptions

Agentivity is neither necessary or sufficient for the alternation, but there are some patterns in the exceptions:

- ▶ Agentive alternating verbs involve **manner of motion**, and require a directional phrase
  - (8) a. The soldiers marched  $\emptyset$ /to the tents.  
b. The general marched the soldiers \* $\emptyset$ /to the tents.
  - (9) a. The horse jumped  $\emptyset$ /over the fence.  
b. The rider jumped the horse \* $\emptyset$ /over the fence.
- ▶ **interim conclusion:** the directional phrase adds information/changes the event structure in a way that is key to the availability of alternation
- ▶ directional phrase turns manner of motion verbs into 'change of position' verbs, so we can roughly characterize alternating verbs as **verbs of change**



# Patterns in the exceptions

There are also some alternating verbs which don't fit the 'change' characterization:

- ▶ **verbs of emission**

- (10) a. The bell rang.  
b. The policeman rang the bell.

- ▶ **verbs of 'position'**

- (11) a. The laundry hung on the clothesline.  
b. Tony hung the laundry on the clothesline.

**Interim conclusion:** change is not necessary for alternation – we are looking for properties shared by these exceptions and the alternating change verbs

(NB: change is also not sufficient for alternation; *bloom*, *decay*, etc)

# Non-alternating causatives

Some causatives don't have intransitive variants:

- (12) a. The baker cut the bread.  
b. \*The bread cut.
- (13) a. Dr. Sheppard killed Roger Ackroyd.  
b. \*Roger Ackroyd killed.

Verbs of creation can be analyzed as causative, but:

- (14) a. Agatha Christie wrote a novel.  
b. \*A novel wrote.
- (15) a. Solomon built this temple.  
b. \*This temple built.

**Interim conclusion:** causal meaning isn't sufficient

- ▶ these situations require two participants
- ▶ whatever introduces the causal notion is embedded in the meaning of the verb, rather than added through some derivational process

## More exceptions

**Point 3:** the types of participants matter, since there are verbs which alternate depending on the features of their arguments

- ▶ some intransitives impose stricter restrictions on transitive variants:

- (16) a. The baby/The doctor burped.  
b. The nurse burped the baby/\*the doctor.

- ▶ some causative transitives are less restricted than intransitive variants:

- (17) a. The wind cleared the sky.  
b. The sky cleared.

- (18) a. The server cleared the table.  
b. \*The table cleared.

# Selectional restrictions

Differences in selectional restrictions matter because:

- ▶ assumption: adding a component of meaning can impose additional selectional restrictions
  - ▶ if an intransitive use of an alternating verb is freer than a transitive use, this suggests that something is added to the intransitive to get the transitive (i.e. the intransitive is the basic form)
  - ▶ if an intransitive is more restricted than the transitive, then the transitive is more likely to be basic
- ▶ so, there might be two different patterns involved in the causative alternation

**Upshot:** we need to ask what differentiates the basically transitive verbs from the basically intransitive ones

- ▶ i.e. what aspect of meaning makes *burp* basically intransitive while *clear* is basically transitive

# Control/responsibility hypothesis

The basic difference has to do with who is in control of a process or responsible for it.

- ▶ L&RH build on a hypothesis from Smith (1970):
  - ▶ intransitive verbs lacking transitive variants describe processes that are not controlled by something external to the affected argument (e.g. *laugh*, *cry*)
  - ▶ alternating intransitives can be controlled from the outside (e.g., *break*)
- ▶ refinement: responsibility, not control
  - ▶ internally controlled eventualities are those in which properties of the affected object are 'responsible' for the process (one argument)
  - ▶ externally controlled eventualities are 'immediately' controlled externally to the affected object (two arguments)

# Internal and external causation

Internally-caused eventualities:

- ▶ agentive intransitives are controlled by the will of the agent:

(19) The children played.

- ▶ non-agentive (and non-alternating) intransitives are due to the properties of the affected object:

(20) a. The flowers bloomed.

b. The firefly glowed. [many verbs of emission]

- ▶ involuntary reactions are also due to inherent properties:

(21) Marin shuddered.

# Internal and external causation

Externally-caused verbs:

- ▶ internal properties might be involved, but process isn't fully determined by them

- (22) a. Antonia broke the vase.  
b. \*Antonia broke the pillow.

- ▶ non-alternating cases involve processes that can't spontaneously occur:
  - ▶ breaking, tearing, and cutting are similar processes, but both breaking and tearing involve certain types of objects, while cutting does not

- (22) a. \*Antonia tore the vase.  
b. Antonia tore the sheet.

- (23) Antonia cut the bread/the sheet/the plank of wood.

# Internal and external causation

The distinction explains the patterns in position verbs:

- (24) a. I leaned the ladder against the wall.  
b. \*I slouched the child against the wall.

Manner of motion and directional phrases:

- ▶ roughly: aimless or undirected motion is perceived as internally controlled

- (25) a. The soldiers marched.  
b. The soldiers wandered.

- ▶ directed motion can be internally or externally controlled, depending on whose goals are involved

- (26) a. The general marched the soldiers to the tents.  
*The general's goal, not the soldiers'*  
b. The soldiers marched to the tents.  
*The soldiers' goal, either as the result of following an order, or because of their own undirected intention*



# The basic generalization

## Conclusion:

- ▶ basic transitives involve external causation, either obligatorily, or in all but certain cases
  - ▶ tables can't become clear due to internal processes, but the process of cloud-clearing is in some sense internal to the sky
- ▶ basic intransitives involve internal causation, either obligatorily, or in all but certain cases
  - ▶ laughing is always internally generated, so there's no transitive causative
  - ▶ burping is usually internally generated (even involuntarily), but babies are a special case

# The basic generalization

## What this doesn't explain:

- ▶ this generalization makes sense of the observations
- ▶ but *why* can't we 'causativize' certain intransitives, for instance to describe a situation where someone acts in order to produce the internal response:  

(27) a. The comedian made the audience laugh.  
b. \*The comedian laughed the audience.
- ▶ whatever licenses transitive uses of, e.g., *burp* isn't simply adding an external causer

# Linking rules

The presence/absence of variants is explained by the fact that internal and external causers occupy the same thematic role with respect to caused changes/processes:

- ▶ so if something is internally caused, the argument slot for 'causer' is already occupied
- ▶ adding an external cause – as in the *laugh* example – doesn't make the internal cause not a causer anymore

**Linking rules:** generalizations about the thematic role-syntax correlations

- ▶ causal situations, whether internal or external, involve an instigator and an affected
- ▶ external: these roles are filled by different objects
- ▶ internal: one object plays both roles
  - ▶ NB: in many languages, 'anticausatives' involve a reflexive pronoun

# Linking rules

**Immediate cause linking rule:** The argument denoting immediate cause is merged as an external argument (subject)

- ▶ 'immediate' causers can be either internal or external
- ▶ lexical causatives involve immediate (external) causers
- ▶ when a typically internally-caused verb is used transitively, we are no longer representing the affected as an immediate cause (or a cause at all)

**Directed change linking rule:** The argument denoting the affected object is merged as an internal argument (direct object)

- ▶ in general, this is a *patient* or *theme* role, as opposed to an *agent/causer* role
- ▶ for internal causation, we need to also assume that arguments are assigned the 'highest' role they fulfill

# Testing the hypothesis

**Important point:** on this hypothesis, verbs that freely alternate are different from intransitive non-alternating verbs in that they describe processes conceived of as having external immediate causes

- ▶ important fact about English: something has to appear in subject position
- ▶ so, even when an alternating verb appears as an intransitive, its subject still is not an agent/causer
  - ▶ when we say that a vase broke, we never mean that it broke itself
- ▶ the subject of internally-caused intransitives will have different properties from the subjects of alternating (externally-caused) intransitives

# Unaccusatives and unergatives

L&RH's hypothesis requires that there are two different kinds of intransitive verbs.

- ▶ this is independently proposed!

## 1. **Unaccusative** intransitives: *fall, last, arrive*

- ▶ roughly, verbs whose subject plays a 'passive' role (undergoes or experiences action, but doesn't produce it)

## 2. **Unergative** intransitives: *run, walk, talk*

- ▶ agentive intransitives: subject instigates action and might or might not undergo change

- ▶ the naming has to do with two different case-marking systems

# Unaccusatives and unergatives

On L&RH's hypothesis:

- ▶ intransitive uses of externally-caused verbs should behave like unaccusatives
- ▶ while intransitive internally-caused verbs should behave like unergatives

Independently, there are tests for which kind of verb we're dealing with, which support L&RH:

- ▶ result states of unaccusatives describe the subject's state

- (28) a. The bag tore open.  
b. \*They laughed hoarse.

- ▶ unergatives can appear in the “way” construction

- (29) a. \*Amundsen froze his way to the pole.  
b. We laughed our way home.

# Consequences of the internal/external causation distinction

**Upshot:** The basic pattern is that externally-caused verbs sometimes appear in the intransitive form (**Question:** when?)

- ▶ when we can construe the event as happening spontaneously
- ▶ when internal properties are relevant

- (30)
- |    |                               |  |
|----|-------------------------------|--|
| a. | The bottle broke.             | <i>it has 'breakable' properties</i>   |
| b. | The lake froze.               | <i>water has relevant properties</i>   |
| c. | The stadium cleared.          | <i>only when we mean that people left the stadium, because then it has the right sort of properties to clear 'spontaneously'</i> |
| d. | *The politician assassinated. | <i>no inherent assassination-relevant properties</i>   |

- ▶ verbs of creation *require* external instigators, and so never have intransitive variants
- ▶ similarly, verbs requiring instruments: *shoot, cut*



# Consequences of the internal/external causation distinction

**Upshot:** Internally-caused verbs will only rarely be able to appear in transitive constructions

- ▶ this depends on the possibility of construing the internal causer as non-agentive in the event
- ▶ (most) verbs of emission transitivity only when the emitter is a device

- (31) a. He shone the flashlight.  
b. \*He shone the moon.

- ▶ we can also explain the directional phrase requirement with manner-of-motion verbs

## Manner of motion verbs

Manner of motion verbs need to be turned into 'directed motion' verbs:

- (32) a. The general marched the soldiers to Versailles.  
b. The soldiers marched to Versailles.

- ▶ formally, the idea is that position translation can be externally directed
- ▶ the goal need not be that of the thing being moved (so the instigation doesn't come from them)
- ▶ authority/control matters: notice that (32a) suggests that the soldiers had no choice, while in (32b) we don't know

- (33) a. I ran the horse to the finish line.  
b. \*I ran the teacher to class.

# Overview

In analyzing the causative alternation in this way, L&RH make the case that the distinction between internal and external causation is something that language represents/is sensitive to.

- ▶ it has consequences for syntactic expression
- ▶ which are associated with ways that we conceptualize events

Internal/external causation is distinct from direct/indirect causation:

- ▶ external causes, according to the linking rule, can be conceptualized as 'immediate' causes
- ▶ a consequence of the analysis is that lexical causatives must represent immediate causes
  - ▶ we could adopt Wolff's (2003) characterization
  - ▶ another way of thinking about why internally-caused verbs don't have transitive variants is that they *always* involve an intervening causer

# Overview

If we associate the causer/external argument relationship with 'causal' meaning, this view is also compatible with the proposal from Neeleman & van de Koot (2012):

- ▶ internally-caused events are such that the 'crucial contributing factor' is necessarily the internal cause
- ▶ adding a periphrastic causative introduces a CCF for instigating the internally-directed change
  - ▶ e.g., since *die* is internally-caused on this view, *causing X to die* involves leveraging properties inherent to *X* – *killing* does not
- ▶ this might help us work out the relevant properties of CCFs

It's not always easy to determine whether something counts as internally or externally caused:

- ▶ what does this tell us about how these events are represented?
- ▶ what is the 'cognitive' difference?
- ▶ what other evidence do we have?