Conceptual Categories and Linguistic Categories V:
Distinguishing Lexicalized Meaning From Context:
A Monadic Analysis of the Causative Alternation

THE BIG QUESTION:
What factors determine whether a verb will show the causative alternation?

WHAT CONSTITUTES AN ANSWER:
— MUCH PREVIOUS WORK: Providing the appropriate lexical entry to causative alternation verbs.
— OUR PROPOSAL: Not only specifying the contribution of the verb via its lexicalized meaning,
but also identifying the contribution of context.

DESIDERATA OF AN ACCOUNT:
— It should as much as possible not be tailored to individual lexical items.
— It should minimize polysemy, i.e. avoid giving alternating verbs multiple lexical entries.
— It should make the right division of labor between the verb, the event structure, and the context.

1 Uniformly Dyadic Analyses of Alternating Verbs

1.1 The analysis of Levin & Rappaport Hovav (1995) reviewed

(1) Transitive (i.e. causative) break:
Lexical Semantic Rep.: \[ \{ x \text{ DO-SOMETHING} \} \text{ CAUSE} \{ y \text{ BECOME} \text{ BROKEN} \} \]
Linking Rules: \[ \downarrow \downarrow \]
Argument Structure: \( x < y > \)

(2) Intransitive laugh:
Lexical Semantic Rep.: \[ x \text{ DO LAUGH} \]
Linking Rules: \[ \downarrow \]
Argument Structure: \( x \)

• The intransitive—or anticausative—variant is derived from the representation in (1) by a process of lexical binding (see Lecture IV).

(3) Intransitive (i.e. anticausative) break:
Lexical Semantic Rep.: \[ \{ x \text{ DO-SOMETHING} \} \text{ CAUSE} \{ y \text{ BECOME} \text{ BROKEN} \} \]

Lexical Binding: \[ 0 \]
Linking Rules: \[ \downarrow \]
Argument Structure: \( < y > \)
Thus, transitive and intransitive *break* have the same causative lexical semantic representation.

- The assumption that alternating verbs do not lexicalize any specification of the causing event is reflected in the wide range of subjects compatible with the transitive uses of alternating verbs.

(4)  
<p>| | |</p>
<table>
<thead>
<tr>
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<tbody>
<tr>
<td>a.</td>
<td>Blake shattered her car’s windshield.</td>
</tr>
<tr>
<td>b.</td>
<td>The wind shattered the glass.</td>
</tr>
<tr>
<td>c.</td>
<td>The out-of-control vehicle shattered the store window.</td>
</tr>
<tr>
<td>d.</td>
<td>All that banging shattered the window.</td>
</tr>
</tbody>
</table>

- To preclude deriving intransitive variants for agentive verbs like *murder*, the process of lexical binding obeys the constraint in (5).

(5)  
Lexical binding can only apply to externally caused verbs that do not lexically specify any information about the causing event.

- L&RH also posit the further constraint on the lexical binding of the causer argument in (6) to account for data such as (7).

(6)  
Lexical binding cannot apply if the event comes about with the continued involvement of an agent.

(7)  
<p>| | |</p>
<table>
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<tbody>
<tr>
<td>a.</td>
<td>The waiter cleared the counter.</td>
</tr>
<tr>
<td>b.</td>
<td><em>The counter cleared.</em></td>
</tr>
</tbody>
</table>

- L&RH speculate that the two constraints are instantiations of a more general condition requiring that if an event involves an agent, then it be mentioned in the description of that event. Thus, verbs like *murder* will never allow an intransitive use, while verbs like *clear* sometimes will.


This analysis parallels L&RH’s account in important respects.

- Like L&RH, Reinhart takes alternating verbs to be lexically dyadic; that is, the transitive variant is taken to be basic for all causative alternation verbs.

- The class of causative alternation verbs is defined in terms of the thematic role labels of the arguments of the transitive variant (where these roles are given a feature decomposition).

(8)  
\[ V ([+c] (=underspecified cause), [–c,–m] (=theme)) \]

An underspecified cause can be an agent, a natural force, or an instrument; cf. (4).

- There is a lexical rule which derives the intransitive variant from the transitive variant.
Decausativization: Reduction of a [+c] role
\[ V_{\text{Acc}} (\theta_{[+c]}, \theta_j) \rightarrow V (\theta_j) \]
(Reinhart to appear: 27, (52))

• Thus, all verbs lexically specified as ([+c], [–c,–m]) alternate. If they lack either the transitive or intransitive variant in a particular language, this form is considered a “frozen entry”.

• The specification ([+c], [–c,–m]) is the analogue of L&RH’s constraint on detransitivization.

2 Challenges to the uniformly dyadic analyses of the causative alternation

2.1 Contextual factors determining the availability of the intransitive variant

The verb *clear* does not pattern as expected:

— This verb does not require an agent, as shown in (10), and is thus expected to alternate.

(10)  
\[ \begin{array}{ll}
\text{a.} & \text{What they found was that the wipers cleared the windscreen perfectly well. (BNC)} \\
\text{b.} & \text{On the third morning a gust of wind swept out one final flurry and cleared the sky. (BNC BNU)} \\
\text{c.} & \text{... merchant seamen who fought the great naval battles which cleared the seas and made possible future trade with the East ... (BNC FES)} \\
\end{array} \]

— However, the transitive variant lacks an intransitive variant for some choices of themes: the transitive examples with the themes *sky* and *yard* in (11)–(12) allow for an intransitive variant, while the transitive example whose theme is *counter* in (13) does not.

(11)  
The wind cleared the sky./The sky cleared.

(12)  
\[ \begin{array}{ll}
\text{a.} & \text{The strong sun cleared the yard of snow.} \\
\text{b.} & \text{As soon as the yard cleared of snow and became wet, Cosmo didn’t want to poop outside anymore. (http://www.dogforums.com/first-time-dog-owner/53773-dog-wont-go-our.html)} \\
\end{array} \]

(13)  
\[ \begin{array}{ll}
\text{a.} & \text{The waiter cleared the counter.} \\
\text{b.} & \star \text{The counter cleared.} \\
\end{array} \]

2.1.1 A possible solution: Positing two lexical entries

• To preserve the proposal that it is the lexical specification of the transitive variant which determines whether the verb alternates, the verb *clear* could be given two lexical entries:

— an agentive entry, which does not allow an intransitive variant (e.g., (13)).

— a nonagentive entry, which allows for an intransitive variant (e.g., (11) and (12)).

• Other verbs show a similar pattern.
(14)  a. It was the failures of those floodwalls that emptied the lake into the rest of the city . . . (http://www.washingtonpost.com/wp-dyn/content/article/2005/09/20/AR2005092001894.html)
    b. Toyota Hilux conquers the volcano just before its eruption emptied the skies . . . (http://www.globalmotors.net/toyota-hilux...) 

(15)  a. I emptied the tub./The tub emptied.
    b. I emptied the trash bin./∗The trash bin emptied.

(16)  a. A low carb diet may lengthen your life. (http://lowcarbdiets.about.com/b/2010/11/01/)
    b. Intensive care unit infections can lengthen hospital stays. (http://www.kevinmd.com/blog/2009/12/)

(17)  a. I lengthened the skirt and added some ric-rac. (http://madquilter.blogspot.com/)
    b. ∗ The skirt lengthened.

It is possible to propose that these verbs, too, have an agentive and a nonagentive lexical entry.

• The shortcomings of the two lexical entry solution:

— It is not just the choice of theme which determines the availability of the intransitive variant.

In (18), for the same choice of causative variant direct object, it is apparently the interpretation of an UNEXPRESSED ARGUMENT, i.e. what the area gets cleared of, which determines the availability of the anticausative variant.

(18)  a. The police cleared the yard (of debris).
    b. ∗ The yard cleared.

(19)  a. The police cleared the area outside the stadium (of people).
    b. But after the match the area outside the stadium cleared quickly . . .

In the unacceptable (18b), the unexpressed argument is inanimate, while in the acceptable (19b), it is animate and capable of agentive action.

It is likely that this difference in animacy and hence agentivity plays a part in the acceptability contrast and needs to be integrated into the account.

Most importantly, (19b) involves an agentive event which does not involve the expression of the agent, contra the constraint suggested by L&RH.

— Moreover, clearing a table need not be carried out by a human, as shown by (20), suggesting that clear lacks a separate agentive lexical entry.

(20)  The wind was enormous. There was a huge dinner table set-up, and the wind cleared the entire table onto the floor and blew over chairs. It was pretty dramatic, but the actors handled it beautifully. (http://www.sfreporter.com/santafe/article-5480-sfr-talk-the-set-up-man.html)

— The elements of meaning lexicalized by a verb remain constant across all its uses.

• The availability of the intransitive use depends on the choice of argument, as in (11)–(17), or other facets of the context, as in (19).
2.1.2 An alternative solution: Positing a sufficient condition

• The lexical specification could be taken to be a necessary condition on the derivation of the intransitive variant, which must be accompanied by a sufficient condition, such as Horvath & Siloni’s (to appear) “cognitive principle”.

(21) Conceptualization of eventualities cannot disregard participants (roles) whose mental state is relevant to the eventuality. (Horvath & Siloni to appear: 28, (48))

This solution involves the following components:

⇒ Leaving the lexical specification of the rule as in (8).

⇒ Ruling out examples such as (13b) and (17b) by (21), which restricts the choice of thematic forms of a verb used for the description of particular events.

• This solution is unsatisfactory as well:

— It is unclear how to handle examples such as (19b), in which the unexpressed theme, being animate, is also an agent. In these instances, there is an agent in the event, which is left unexpressed, but the example is fine.

— With (21) as a condition on descriptions of particular events, it is unclear what work the lexical specification that the external argument be [+c] does, besides indicating that the verb alternates.

• WHAT IS NEEDED: An account which clearly separates the lexical factors and contextual factors which allow a verb to alternate.

2.2 Internally caused change of state verbs

• For Reinhart, all alternating verbs are lexically specified as ([+c], [–c,–m]), and all verbs thus specified alternate. If they lack either the transitive or intransitive variant in a particular language, this form is considered a “frozen entry”.

EXPECTATION: Gaps in the data should not be systematic.

THE PROBLEM: Internally caused change of state verbs.

• Reinhart does not explicitly recognize this class of verbs, but mentions grow, a member of this class, writing “Chierchia notes that grow, which in English has both entries [i.e. shows the causative alternation], has only the unaccusative entry [i.e. shows the intransitive variant only] in Italian (crescere).”

(22) a. The farmer grew heirloom tomatoes.
b. The heirloom tomatoes grew.

Reinhart offers this example to illustrate the notion of a “frozen entry”: she proposes that the availability of only an intransitive variant in Italian means that the transitive variant has an idiosyncratically a frozen entry; for her, English grow, which has transitive and intransitive uses, is the better behaved verb.
• However, English *grow* does not pattern like standard causative alternation verbs: when transitive, it allows agentive subjects ONLY, as in (22a), and not nonagentive subjects, as *break* does; cf. (4).

(23) * Fertile soil/The wet spring grows heirloom tomatoes.

Thus, *grow* shows a much more restricted set of subjects than is expected on Reinhart’s account.

• *grow* also does not pattern with other internally caused COS verbs: to the extent these allow transitive variants (McKoon & Macfarland 2000, Wright 2001, 2002), it is not with agentive subjects.

• Attested transitive uses of internally caused change of state verbs typically have cause subjects specifying ambient conditions.

(24) * The farmer/the new fertilizer blossomed the fruit trees.

(25) a. Early summer heat blossomed fruit trees across the valley. (LN 1999)
    b. The onset of temperatures of 100 degrees or more, on top of the drought, has withered crops. (NYT 1986)

(Wright 2002: 341)

(26) a. Light will damage anything made of organic material. It rots curtains, it rots upholstery, and it bleaches wood furniture. (LN)
    b. Salt air rusted the chain-link fences. (LN)
    c. Bright sun wilted the roses. (LN)

(Wright 2001: 112)

• These data are problematic for both Reinhart and L&RH.

— Reinhart would expect transitive variants for such verbs, but not with such a limited set of subjects. Reinhart’s feature decompositions of thematic roles do not allow the subjects of such verbs to be restricted simply to ambient conditions; in particular, the [+c] specification will not do.

— L&RH (1995) exclude transitive variants for internally caused COS verbs, except when the verbs describe events that could be construed as either internally or externally caused.

— L&RH recognize that certain verbs can have internally caused and externally caused uses.

For example, they suggest that some verbs of sound emission, which describe the emission of a sound, typically by inanimate entities, but also by animates, can be either internally caused or externally caused, depending on the choice of sound emitter.

(27) VERBS OF SOUND EMISSION: babble, clatter, clink, gurgle, jingle, ping, rattle, ring, rumble, rustle, whir, whistle, . . .

(28) a. The bell buzzed.
    b. The postman buzzed the bell.
(29)  a.  The bees buzzed.
   b.  *The beekeeper buzzed the bees.

— However, Wright’s examples in (25) and (26) do not appear to be involve different senses of the relevant verbs; for instance, the choice of theme is the same as in other internally caused uses of these verbs.

2.3 Variable behavior verbs do not seem to involve polysemy

• Some alternating verbs lack a transitive use for certain choices of theme.

(30)  a.  As the days lengthened, breezes and rain became softer and warmer.
   b.  ?? As the angle of the sun lengthened the days, . . .

• This phenomenon seems to be the inverse of the phenomenon manifested by clear, where some choices of argument appeared to preclude the intransitive, while here some choices of argument seem to preclude the transitive. In both instances, however, the core meaning of the verb seems to remain constant across uses.

• A POSSIBLE SOLUTION: Verbs like lengthen may have both internally and externally caused uses.

• THE PROBLEM: There are intransitive uses of prototypical alternating verbs which lack corresponding transitive variants, yet do not seem to involve internal causation.

(31)  a.  With the 1929 stock market crash, skirts lengthened but kept their narrow silhouette, with longer waistlines.
   b.  *The stock market crash/the depression era lengthened skirts.

(32)  a.  Behind the reef the water deepens quickly and currents are strong. (http://www.vinow.com/waterisland/beaches_wi/)
   b.  *The steep dropoff in the ocean floor deepened the water quickly.

(33)  a.  The skirt narrows at the bottom.
   b.  *The design narrows the skirt at the bottom.

(34)  a.  . . . a few meters later the street widened just enough for use to comfortably let him, and about twenty motorbikes, pass by. (http://travelogue.travelvice.com/indonesia/kuta-beach-traffic-problems/)
   b.  * . . . and a few minutes later, someone widened the street.

(35)  a.  Just after the warranty ran out, my watch broke.
   b.  ?? Just after the warranty ran out, I broke my watch.

• (32)–(35) represent a systematic gap that requires a principled explanation: they primarily involve deadjectival COS verbs used to describe a change of state that takes place along a spatial axis rather than over a temporal axis; for more discussion see Gawron (2009) and Koontz-Garboden (2010).
2.4 The problems for the dyadic analysis summarized

- Certain verbs such as *clear* cannot have an intransitive use for some choices of theme argument.
- Certain verbs such as *lengthen* cannot have a transitive use for some choices of theme argument.
- Internally caused change of state verbs have unexpected transitive, causative uses.

3 Finer-grained lexical semantic classifications

- The uniform dyadic approach to alternating verbs does not seem to offer a satisfactory analysis of the English causative alternation.
- Alexiadou, Anagnostopoulou & Schäfer (2006) offer an alternative non-derivational account of the alternation based on a finer-grained lexical semantic verb classification.

   a. AGENTIVE: *murder, assassinate*
   b. EXTERNALLY CAUSED: *destroy, kill*
   c. INTERNALLY CAUSED: *blossom, wilt*
   d. CAUSE UNSPECIFIED: *break, open*

According to AA&S, the cause unspecified verbs show the alternation in all languages, while across languages the agentive verbs and the internally caused verbs never show the alternation; the externally caused verbs show the alternation only in those languages which have a morphologically marked intransitive variant.

- However, in the classification of roots in (36), the distinction between externally caused and cause unspecified verbs seems simply to have been made to distinguish verbs which do alternate from those which do not—that is, it simply appears to describe the data.
- There is a way to view this distinction as having more than a descriptive basis:
  — In active sentences, externally caused verbs are necessarily transitive and internally caused verbs are necessarily intransitive.
  — Cause unspecified verbs, then, might be taken to be based on roots construable as either internally or externally caused, and accordingly they alternate between intransitive and transitive uses.
- However, this proposal will not work: the intransitive use of an alternating verb need not necessarily be internally caused.
  — In their intransitive use, verbs like *break* very often have the cause specified outside of the sentence, but still in the immediate discourse environment.

(37) a. Getting ready to dine I grabbed the chair, pulled it out, sat down and then the chair broke into kindling while I fell on my hind end.
b. My new guess is that the fumes exploded, blew the bowl out of the microwave, and then the bowl broke on landing.

— However, with internally caused COS verbs a cause is usually NOT specified in the larger context.

- There is further evidence that intransitive break does not describe internally caused events.

Typically when a verb describes an internally caused event, there are tight sortal restrictions on the theme (Wright 2001, 2002; cf. Levin’s (1993) label ‘entity specific’ change of state verbs for internally caused change of state verbs).

(38) a. The tree/bush/flower/hanging plant/cactus blossomed.

However, when a verb like break, which does not describe an entity specific change of state, alternates, the transitive use allows a wide range of objects and by and large this same range is found as subjects of the intransitive use (Fillmore 1970, Hall 1965; though see Lecture IV).

(39) a. Tony broke his vase/window/bowl/radio/toaster/leg/rock/branch.
    b. His vase/window/bowl/radio/toaster/leg/rock/branch broke.

- It is unclear what the SEMANTIC difference is between verbs of destruction such as destroy, which lack intransitive uses, and verbs like break, which alternate.

(40) VERBS OF DESTRUCTION: demolish, destroy, kill, ruin, obliterate, wreck, . . .

For instance, the relation between kill and die often appears to be the same as the relation between transitive and intransitive break, for instance, allowing parallel expressions of causes.

(41) a. The cold killed the plants.
    b. The plants died from the cold.

(42) a. . . . there was additional damage to the portable classroom as the heat broke the classroom windows. (http://www.youtube.com/user/npceditor)
    b. The windows broke from the heat.

4 A monadic analysis of alternating verbs

4.1 All alternating verbs lexically select a single argument

- THE STARTING ASSUMPTION: Alternating verbs lexically select a single argument (contra the uniform base accounts).

- The motivation for the assumption:
• **LEXICAL SELECTION**: If a verb imposes selectional restrictions on an XP, it is lexically selected by it; that is, that argument is part of the verb’s lexicalized meaning.

(43) The number of arguments that a verb lexically selects must equal at least the number of XPs the verb imposes selectional restrictions on.

• The generalization underlying the causative alternation:

(44) a. All verbs which alternate lexicalize a change involving only **ONE** participant. Specifically, these verbs impose **NO** selectional restrictions on the way in which the cause argument participates in the event.

b. No transitive verb which lexically selects its subject argument will alternate.

There appear not to be any counterexamples to the generalization in (44).

• (44) reflects the assumption that verb meaning is built monotonically. A nonderived form of a verb cannot exclude an argument which is lexically selected. Therefore, when a verb lexically selects the subject of its transitive use, it cannot appear in the active form without this argument being expressed.

• (44b) applies to more than change of state verbs.

**EXAMPLE**: The difference between *roll* and *knead*, neither of which is a change of state verb.

— *Knead* lexicalizes a change which **MUST** involve two participants; thus, by (44), it is necessarily transitive in an active sentence.

(45) “To mix and work up into a homogeneous plastic mass, by successively drawing out, folding over, and pressing or squeezing together” (OED).

— Even in its transitive uses, *roll* does not specify the way in which its subject participates in the event, and concomitantly the expression of a cause is not obligatory with this verb.

(46) a. Casey rolled the ball over to the baby (by pushing it/kicking it/blowing on it).

b. The ball rolled over to the baby.

• As formulated, (43) states that a verb lexically selects at least the number of XPs it imposes selectional restrictions on: this formulation is intended to accommodate verbs of destruction.

— As shown in Section 3, verbs of destruction do not specify the nature of the involvement of their subject; nonetheless, they are obligatorily transitive. They lack an intransitive variant, even with a cause specified outside the clause. Thus, they appear to pattern like the agentive transitive *murder*.

(47) a. ∗John was hit by a car while crossing the street, and he killed right away.

b. ∗When the missile hit the factory, it completely destroyed.

(48) ∗The assassin aimed well, the bullet hit him, and he murdered right away.

10
— (48), whose verb *murder* lexically selects an agent subject, is precluded by (44), but (47a) and (47b), with verbs of destruction, are not. Rather, they show that although their verbs impose no selectional restrictions on their subjects, their subjects are nevertheless lexically selected.

- The distinction between internally and externally caused events is *NOT* reflected in the lexical adicity of the verb.

*break, lengthen, blossom,* and *clear* lexically select a single argument, independent of the internally/externally caused distinction.

### 4.2 Contextual factors in the appearance of the cause argument

**QUESTION:** Work in lexical semantics has established that internally and externally caused verbs display differences in their argument realization patterns. If both internally and externally caused verbs have the same lexical entry, how is this difference accounted for?

Since both internally and externally caused COS verbs are lexically monadic, there must be nonlexical factors which determine the appearance/non-appearance/optional appearance of the subject in the transitive variants of these verbs.

#### 4.2.1 Direct causation as a licensing condition on the cause argument

- English allows for the free addition of an argument if it is a direct cause.

(49) **THE DIRECT CAUSATION CONDITION:** A single argument verb may be expressed in a clause with a transitive verb if the subject represents a direct cause of the event expressed by the verb and its argument.

- (50) provides a working hypothesis as to what constitutes direct causation.

(50) “Direct causation is present between the causer and the final causee in a causal chain: (i) if there are no intermediate entities at the same level of granularity as either the initial causer or final causee, or (ii) if any intermediate entities that are present can be construed as an enabling condition rather than an intervening causer.” (Wolff 2003: 5)

- (49) and (50) largely account for the range of causes allowed across verb classes.

— They properly restrict the range of causes available for internally caused COS verbs.

The most direct causes of such changes are natural forces and ambient conditions which trigger or facilitate these changes, as in (25)–(26).

Thus, when there is such a change of state, an agent would have to precede a natural force or ambient condition in the chain of causation.

For the agent to then qualify as a direct cause in this causal chain, the natural force or ambient condition would have to be an enabling condition (part (ii) of (50)), which is not possible as the agent cannot control them.
— It provides insight into the availability of transitive uses of verbs of sound emission.

4.2.2 Broadening the purview of the account: Verbs of sound emission

• This approach receives further support from its ability to illuminate transitivity alternations not always taken to exemplify the causative alternation.

THE EXAMPLE: Those verbs of sound emission which describe the emission of a sound primarily by an inanimate entity. (Verbs (or uses of verbs) describing the emission of a sound by an animate entity via its vocal tract are ignored here.)

• Verbs of sound emission are often said not to show the causative alternation—or, at least, not systematically.

(51)  a. The truck rumbled.
      b. * The driver/the steep ascent rumbled the truck.

(52)  a. The old car rattled.
      b. * The bad driver/the potholes rattled the old car.

(53)  a. The stream babbled.
      b. * The stones babbled the stream.

• L&RH (1995) suggest that this is because these verbs are internally caused: the sound is tied to the nature of the emitter—water gurgles, vehicles with motors rumble, and so on.

• Yet, many of these verbs have causative, transitive uses with both agent and natural force subjects.

(54)  a. Miss Holly, gently whirring the machine, agreed with him. (A. Thirkell, The Headmistress, 1943, p. 224)
      b. They are a gregarious lot — talkative, partial to picnicking on candy and rattling paper in time with the music. (‘Music: Chamber Society’, The New York Times, November 9, 1987)
      c. Outside the nurses were clattering the teacups. (BNC)

(55)  a. The wind crackled the edges [of a piece of paper]. (BNC)
      b. By noon, rain still pinged and rattled her window . . . (J.D. Lamb, A Question of Preference, Kensington, New York, 1994, p. 201)

Thus, these uses cannot be dismissed as ‘spurious’ (L&RH 1995: 115) since they arise quite systematically (Levin, Song & Atkins 1997, Potashnik in press, Song 1996).

• THE GENERALIZATION: Transitive uses of verbs of sound emission arise when the sound emitter is directly manipulated.

— This generalization encompasses verbs lexicalizing externally produced sounds, such as clatter and clink, as well as internally produced sounds, such as buzz and honk.
The verbs *buzz* and *honk* involve the direct manipulation of emitters such as car horns and doorbells—manipulable devices designed to produce a specific sound. (An earlier generalization by Levin, Song & Atkins 1997 could not handle these verbs well.)

— For a sound to be emitted via direct manipulation, direct causation is required, with the production of the sound being brought under the control of an agent or natural force.

— Thus, these transitive uses fall under the Direct Causation Condition.

• Like the verb *clear*, some verbs of sound emission show the causative alternation only for some choices of sound emitter.

(56)  

| n. | The windows rattled./The wind rattled the windows. |
| b. | The old car rattled./*The bad driver rattled the old car. (= (52)) |

— As with *clear*, the monadic analysis handles such data better than a uniform dyadic analysis.

— The uniform dyadic analysis requires positing two instances of each such verb, which does not seem right as the same sound is emitted whether or not the verb–sound emitter combination allows a transitive use.

— On the monadic analysis, a single verb is involved in such examples, with the emitter determining in conjunction with the Direct Causation Condition whether or not a transitive use is available.

4.2.3 Informativity and the expression of causes

• Internally and externally caused verbs are not only distinguished in terms of the range of transitive subjects available to them, but also in terms of their tendency to express the cause altogether (either internal or external to the clause).

• When a change of state verb is used to describe an externally caused event, there is a tendency to express the cause, even if not in the same clause.

• THE REASON: A change is not expected in a state of inertia; therefore, the expression of the cause is informative.

— When a verb does not lexically specify anything about the causing event, a cause argument need not be expressed in a sentence with that verb.

— However, when the event is externally caused, then the likelihood that the cause will be expressed—either in or outside the clause—increases.

— EVIDENCE: Externally caused change of state verbs often appear with the cause explicitly expressed outside the clause, as in (37) and (57).

(57)  

| I sat on the wobbly chair and it broke. |

• In contrast, when a change of state verb describes an internally caused event, the Direct Causation Constraint precludes the expression of most causes. For verbs like *bloom, rust, and wilt*, the cause can be an ambient condition as in (25)–(26).
However, since ambient conditions are understood to be the causes of such events under normal circumstances, the expression of the cause is not at all informative usually (that is, in a state of inertia, flowers will bloom and iron will rust). For this reason, these verbs are usually found with causes expressing unusual ambient conditions, as noted by Wright (2002) as in (58).

(58)  
(a) Early summer heat blossomed fruit trees across the valley. (LN1999)  
(b) Salt air and other common pollutants can decay prints.  
(c) Raindrops selectively erode clay particles. (LN 1982)  
(d) The onset of temperatures of 100 degrees or more, on top of the drought, has withered crops. (NYT 1986)  

(Wright 2002: 341, (6))

Many change of state verbs are not lexically specified as internally or externally caused.

EXAMPLE: Verbs derived from dimensional adjectives, which merely describe a change in the value of a scalar attribute describing some dimension of an entity. Whether the change is internally or externally caused depends on the particular event the verb is used to describe.

(59)  
(a) As the days lengthened, breezes and rain became softer and warmer. (= (30a))  
(b) With time, her hair lengthened.  
(c) The seamstress lengthened my skirt.

— Change of state verbs used to describe a change in dimension along a spatial axis systematically lack transitive variants unless they also describe change along a time axis.

(60)  
(a) Behind the reef the water deepens quickly and currents are strong.  
(http://www.vinow.com/waterisland/beaches_wi/)  
(b) * The steep dropoff in the ocean floor deepened the water quickly.

(61)  
(a) The skirt narrows at the bottom.  
(b) * The design narrows the skirt at the bottom.

(62)  
(a) … a few meters later the street widened just enough for us to comfortably let him, and about twenty motorbikes, pass by.  
(b) * … and a few minutes later, someone widened the street.

The sentences in (60)–(62) (repeated from (32)–(34)) describe a property of the water, skirt, and street, and the cause is irrelevant to this property.

Those sentences that also involve a change over time may have transitive counterparts.

(63)  
(a) The tailored narrowed the skirt at the bottom.  
(b) The city widened the street six feet at the intersection.
4.2.4 The obligatory expression of the external argument

A KEY ASSUMPTION OF THE ACCOUNT: Alternating verbs are inherently monadic.

A PREDICTION: The assumption that alternating verbs are monadic suggests that the intransitive variant will always be available.

THE PROBLEM: This is not always so.

(64) a. *The table cleared.
   b. *The trash can emptied.

HYPOTHESIS: Contextual factors determine the availability of the intransitive variant.

The influence of speaker perspective on variant availability

McCawley (1978) argues that nonlexical properties can control the obligatory appearance of the cause argument with alternating verbs.

(65) a. The door of Henry’s lunchroom opened and two men came in.
   b. The door of Henry’s lunchroom opened and two men went in.
   (McCawley 1978: 246, (1))

McCawley points out that on the most likely interpretation of (65b) the men did not open the door themselves, suggesting the following generalization:

(66) Intransitive open cannot be used if the speaker has witnessed an ACT of opening, unless he has otherwise indicated that the event is part of an act.

The unless clause is needed in (66) for sentences like the following:

(67) I pushed and pushed on the door, and finally it opened. (McCawley 1978: (2); cf. (37))

The Proper Containment Condition

The transitive uses of COS verbs that obligatorily lack intransitive counterparts such as (64) do not, however, involve the perspective of the speaker. Such intransitives are unacceptable no matter what the speaker’s perspective.

PROPOSAL: The obligatory expression of the cause of a change of state in a clause is governed by a discourse condition, initially formulated as in (68).

(68) PROPER CONTAINMENT CONDITION: When a change of state is properly contained within a causing act, the argument representing that act must be expressed in the same sentence.
• Since the argument representing the act is the causer, the transitive variant must be used when this condition is met.

• Thus, (68) is a condition on how certain kinds of events must be described.

• The Proper Containment Condition applies to alternating verbs, which lexically select only a theme, and, thus, can express at least some changes of state with the cause left unspecified in the clause.

• The Proper Containment Condition explains why (69) is not likely to be used to describe opening a window by lifting it: in this scenario the change of state is properly contained in the agent’s action as it is coextensive with it.

(69) The window opened.

• However, if an agent is involved in bringing about a change of state, and the change of state is the consequence of the causing act, as in (70), then according to the Proper Containment Condition, the agent does not have to be expressed.

(70) The kids threw the ball against the window and it broke.

• The Proper Containment Condition also explains why in (71) the (a) sentence is unremarkable, while the (b) sentence is not possible.

(71) a. The milk spilled.
    b. *The milk poured.

— Milk can spill if an agent knocks over a milk container, so that the agent’s action is not coextensive with the event of spilling.

— Pouring milk involves a continuing input of energy on the part of the agent of the action, so the milk’s change of location is properly contained in the action of the agent.

• The Proper Containment Condition is similar to Horvath & Siloni’s cognitive principle (21), repeated here, but it handles examples such as (73), which as noted in Section 2.1.2, are problematic for H&S’s principle.

(72) Conceptualization of eventualities cannot disregard participants (roles) whose mental state is relevant to the eventuality. (Horvath & Siloni to appear: 28, (48))

(73) a. The stadium cleared (of the fans).
    b. The yard emptied (of people).

In (73), the change of state is IDENTICAL to an act of the optionally expressed agentive animates who leave the location, so these animate entities do not have to be expressed.
5 Summary: Causes coming, causes going

- All alternating verbs lexically select a single argument and have no lexical specification as to the nature of the involvement of the cause argument.
- A cause is obligatorily expressed in the active use of a verb, if its root lexically specifies the way the cause is involved in the event.
- When the verb lexicalizes a change involving only one participant, the following conditions govern the addition of a cause argument (not its removal):
  - The added argument must be construed as a direct cause.
  - If the change is not expected in the normal course of events, the cause will normally be expressed, though not necessarily in the same clause.
  - If the change is expected in the normal course of events, the cause will usually not be expressed, whether inside or outside of the clause.
- Even when the verb does not lexicalize the cause of change, the cause may be obligatory under the Proper Containment Condition.

References


Hall, B. (1965) Subject and Object in English, Doctoral dissertation, MIT, Cambridge, MA.


