Unaccusativity: At the Syntax-Lexical Semantics Interface

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Chapter 3. The Causative Alternation: A Probe into Lexical Semantics and Argument Structure

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- Levin and Rappaport Hovav (1995) assume that the causative form of break verbs is the basic form in English; the inchoative form is derived by an A-structure operation.
- Principle (8) echoes proposals by Ackerman (1992) and Doron and Rappaport Hovav (1991). The formulation of the principle rests on the assumption that thematic structure is grounded in a subevent decomposition as proposed in Grimshaw (1990), Jackendo. (1976), Levin and Rappaport Hovav (1995), Van Valin and LaPolla (1997), and elsewhere. Assume that two lexemes stand in a semantically transparent morphological relation if the meaning of one is predictable given the meaning of the other and knowledge of the alternation that relates the two. Principle (8) addresses predictability in terms of the notion of specificity of information, echoing earlier proposals by Levin and Rappaport Hovav (1995) and Pinker (1989). **Semantically transparent alternations (in the broad sense: either polysemy or productive morphology) can add or delete generic, but not specific, information about a subevent. Generic here refers to the presence of a subevent in the semantic representation and to its role in the representation. The relevant options in the C&B domain are cause and state change.**
- The causal subevent of break verbs can be removed by A-structure alternations because it is semantically generic (similarly Levin and Rappaport Hovav 1995: 107, 242; Pinker 1989: 106, 198). **There is any number of conceivable ways in which one can break, shatter, tear, or split something—no particular manner of action and no use of a particular kind of instrument, or indeed any instrument at all, is entailed.**

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- Cut verbs, however, are not mirror images of break verbs (cf. Levin and Rappaport Hovav 1995: 295, Note 13). Cut verbs, too, are rather flexible about the action performed and the instrument used (I can cut an orange using anything from a knife or axe to a metal string or laser beam, and I can do it by bringing the blade to bear on the fruit or by dropping the fruit onto the blade from su‰cient height). And at least some cut verbs clearly entail some form of change (if you chop, slice, or cube something, there is no denying that it winds up chopped, sliced, or cubed). What sets cut verbs apart is the notion of contact between the theme and some kind of instrument (including an Agent's body part). Cut verbs specify some property of the instrument or of the way it is used (cf. Koenig et al., forthc.; e.g., cut, slice, hack and saw entail use of some blade-like object, whereas bore, puncture, and prick entail use of a pointy object).
- As Levin and Rappaport Hovav (1995: 103) argue, what blocks cut verbs from producing transparently related inchoative lexemes is the impossibility of referring, however implicitly, to an instrument without referring to a cause (Keyser and Roeper 1984). It is this same impossibility that prevents inchoative forms of break verbs from combining with instrument phrases (though not with causal adjuncts)

Chapter 3. The Causative Alternation: A Probe into Lexical Semantics and Argument Structure

In the previous chapter we argued at length in favor of the existence of a class of verbs with the **syntactic properties attributed to unaccusative verbs** by the Unaccusative Hypothesis: the selection of a direct internal—but no external—argument and, concomitantly, the inability to assign accusative Case. In this chapter and the next two, we will examine the **lexical properties of unaccusative verbs in order to get at the essence of this class of verb**. We will approach the issue from two related perspectives: **the basic adicity of unaccusative verbs and their lexical semantic characterization**. Establishing basic adicity and uncovering those aspects of meaning that determine syntactic classification are fundamental to the development of a theory of the lexical semantic representation of unaccusative verbs.

(1) a. Pat broke the window./The window broke.
b. Antonia opened the door./The door opened.
c. Tracy sank the ship./The ship sank.

The semantic relationship between the two variants is reflected in the fact that **the subject of the intransitive variant and the object of the transitive variant bear the same semantic role**. The causative alternation has been claimed to be an unaccusative diagnostic precisely because this sharing of a semantic role can be explained if the verb in the intransitive variant is unaccusative, so that its subject is a D-Structure object.

In contrast, verbs that are considered prototypical unergatives such as *laugh*, *play*, and *speak* do not participate regularly in the alternation, at least not in English, French, Italian, and Russian.

If, as previous studies suggest, a verb's ability to participate in the causative alternation correlates strongly with an unaccusative classification of that verb, t**hen one way to arrive at the semantic characterization of the unaccusative class is by asking what element of meaning sets causative alternation verbs like *break* apart from nonalternating verbs like *speak*.**

*With respect to the question we address in this chapter, t**here is no reason to believe that all unaccusative verbs have the same adicity and argument structure**.

We conclude that **intransitive verbs can be divided into (at least) three distinct classes with respect to their lexical semantic representation**:

The first class is the class of **unaccusative verbs** whose **lexical semantic representation is basically that of a causative (dyadic) verb** and whose **argument structure consists of a single direct internal argument**.

The second is also a class of **unaccusative verbs**. The members of this second class are shown to have **two internal arguments**.

The third class consists of the **unergative verbs**, a set of verbs that in terms of their lexical **semantic representation are basically monadic** and in terms of their argument structure take a **single external argument.**

In section 3.1 we introduce our version of the **causative analysis** and present evidence for its validity.

Alternating Unaccusative Verbs

We assume that the **alternating unaccusative verbs have a single lexical semantic representation associated both with their unaccusative and transitive forms, and that this is a causative lexical semantic representation**. Thus, terms of its lexical semantic representation verb the *break* of *The window broke* is a dyadic causative verb, just as the verb *break* of *Pat broke the window is*.

We stress that on our analysis **causative verbs do not arise from process a causativization** – they are **inherently causative – but instead undergo a process of detransitivization under certain conditions**.

The following lexical semantic representations for two the types of verbs illustrate kind the of distinction propose.

(5) *break:* [[*x* DO-SOMETHING] CAUSE [*y* BECOME *BROKEN*]]

(6) *laugh:* [*x LAUGH*]

Alternating Unaccusative Verbs

A verb like *break* on both its transitive and intransitive uses has a complex **lexical semantic representation involving the predicate CAUSE**; represents it the meaning such of verbs as **involving two subevents, each an argument of CAUSE**. The two subevents be can characterized as the **causing subevent** and, following Hale and Keyser (1987), the **central subevent** – the event that specifies change the associated with the verb. Each of the arguments of the verb is associated with a **distinct subevent**: **the causer argument is associated the with causing subevent**, and the **passive participant** – that is, **the argument that undergoes change**, the which is often referred as to the **patient or theme – with the central subevent**.

It is due to the nature of this process that such verbs may have external arguments that can be agents, instruments, or natural forces (e.g., *The boy/The rock/The earthquake broke the window*). It is clear that the **intransitive form of *break* must arise from an operation that prevents the causer argument from being projected to the lexical syntactic representation (the argument structure)**.

Thus, we take the **lexical semantic representation** of the intransitive form of the verb *break* **to be causative and dyadic**, but we follow standard analyses in assuming that the **intransitive form of the verb is monadic at argument structure**, **the level of representation that determines the projection of arguments into the syntax**. The unaccusativity of intransitive *break* will follow from the fact that the same linking rule applies to the passive participant whether or not the causer is projected onto the syntax.

Nonalternating Intransitive Verbs

The **lexical semantic representation** associated with a **nonalternating intransitive verb such as *laugh* does not involve the predicate CAUSE**; its representation has only **one subevent**, and it is taken to be **basically monadic**. **The lack of a causative variant** for such verbs is a reflection of the fact that **these verbs do not have the predicate CAUSE and the accompanying causing subevent in their lexical semantic representation**.

Evidence in support of the causative analysis

Selectional restrictions:

It is almost a defining property of the **causative alternation** as we have described it that **the subject of the intransitive use of the verb bears the same semantic relation to the verb as the object of the transitive use**. The shared semantic relations are typically reflected in the existence of common selectional restrictions, a property of these verbs noted by some researchers.

The examples in (7) and (8) suggest that the set of possible objects of transitive break and the set of possible subjects of intransitive break do indeed coincide; specifically, **only certain types of physical objects can break**.

(7) a. Antonia broke the vase/the window/the bowl/the radio/the toaster.
b. The vase/The window/The bowl/The radio/The toaster broke.

(8) a. *Antonia broke the cloth/the paper/the innocence.
b. *The cloth/The paper/The innocence broke.

Evidence in support of the causative analysis

On closer examination, however, it turns out that the **selectional restrictions on the subject of intransitive *break* and the object of transitive *break* are not identical**. For instance, there are senses of the verb break where the overlap in selectional restrictions is not complete, as in the examples in (9), which were inspired by similar French examples in Brousseau and Ritter 1991.

(9) a. He broke his promise/the contract/the world record.
b. *His promise/The contract/The world record broke.

(10) a. Jean opened the door/the window.
b. The door/The window opened.

(11) a. This book will open your mind.
b. *Your mind will open from this book.

It appears that across senses transitive *break* allows a wider range of objects than intransitive break allows subjects. The asymmetry in the selectional restrictions is significant since it provides a guide to **which variant is basic**. We assume that **the basic use of the verb will impose less stringent restrictions on its arguments**, so that in those instances where there are different selectional restrictions on the transitive and intransitive uses, the use with the looser selectional restrictions, if there is one, will be basic.

Evidence in support of the causative analysis

Morphology:

Chierchia points out that **an unaccusative verb that lacks a paired transitive causative use is exceptional on the causative analysis and would be expected to acquire such a use because it derives from a causative predicate and is thus basically dyadic**. Chierchia suggests that an unaccusative verb like ***come***, for example, **which lacks a causative use**, i**s related to a causative verb meaning something like *bring***, but that this causative verb either is not lexicalized or is marked as being lexicalized by a verb that is not related to the intransitive verb morphologically. Citing a personal communication from C. Rosen, Chierchia points out that **unaccusative verbs tend to have what he calls "unstable valency".** That is, "'[t]hey tend to **oscillate in valence from transitive to intransitive and vice versa**, both diachronically and across dialects" (Chierchia 1989:23). For example, Chierchia cites the Italian verb *crescere* 'grow', which in standard Italian is only intransitive, though there are dialects where it has a transitive causative use with the meaning 'raise (children)'.

As an illustration of this point from English, consider the verb *deteriorate*; this verb is generally used only intransitively (*Over the years the roof deteriorated*), but B. Levin once heard her landlord say *The pine needles were deteriorating the roof*. In contrast, **Chierchia points out, similar variation is not expected of unergative verbs, since they are basically monadic**.

Evidence in support of the causative analysis

Certain facts concerning the formation of causatives across languages presented by **Nedjalkov (1969) are not surprising in light of our analysis of the adicity of alternating and nonalternating intransitive verbs**. Nedjalkov looks at the morphological relation between the causative and noncausative uses of the verbs *break* and *laugh* (as well as two other verbs) in sixty languages. Nedjalkov finds that in most of his sample, the **transitive causative form of the verb *break* is morphologically unmarked**, **the intransitive form being identical to the transitive form (19 out of 60 languages) or derived from this form (22 out of 60 languages)**. If verbs such as *break* are appropriately characterized as inherently causative verbs, **then the monadic use is in some sense derived, and indeed morphological marking has a function**: it is needed t**o indicate the nonexpression of the external cause**.

Nedjalkov also considers the verb *laugh*. What is striking is that **Nedjalkov does not cite any languages in which this verb has a causative transitive use identical in form to or morphologically less complex than he intransitive use**. Nedjalkov reports that in **54 of the 60 languages surveyed, the causative form of laugh is morphologically more complex than the noncausative form** (see also Hale and Keyser 1987 for discussion of similar data). **This is in sharp contrast to the verb *break* and consistent with our proposal that *laugh* is basically a monadic verb, whose lexical semantic representation does not involve a causative predicate.**

Evidence in support of the causative analysis

Interpretation:

Since the intransitive use of a verb like ***break*** is analyzed **as containing a cause argument at some level of representation**, it might be expected that **some kind of adverbial modifier could be found that would reflect the presence of this cause**. Chierchia suggests that the Italian phrase da sé ‘by itself’ (in the sense of ‘without outside help’) is such an adverbial. Returning to the alternating verbs, in Italian they are compatible with this adverbial in their intransitive uses, as (16a—b) show:

(16) a. La porta si è aperta da sè.
the door opened by itself
‘The door opened by itself.’
(Chierchia 1989, (42a))
b. La barca è affondata da sè.
the boat sank by itself
‘The boat sank by itself.’
(Chierchia 1989, (42b))

(17) a. The plate broke by itself.
b. The door opened by itself.

This adverbial appears to be modifying a cause, which, given its anaphoric nature, it identifies as the theme argument itself.

It is striking that the **intransitive verbs that do not participate regularly in the causative alternation do not appear with the adverbial**. For instance, the most natural interpretation of the sentence ***Molly laughed by herself*** **is that** ***Molly laughed unaccompanied*** rather than without outside help.

Тесты?

In section 3.2 we consider what **element of meaning distinguishes between intransitive verbs that do and do not participate in the causative alternation**, since this element will play an important part in the semantic determination of unaccusativity. Although, as noted above, the notions of change of state and agentivity have figured in previous accounts, we show that these notions are too coarse. **We propose that a semantic distinction between what we refer to as "internally" and "externally" caused eventualities** can be used to characterize when a superficially intransitive verb is basically dyadic. In section 3.2.5 we show that apparent causative pairs involving unergative verbs do not instantiate the same phenomenon as the causative pairs involving verbs of change of state.

Semantic Characterization of the Alternating Verbs

Our goal is **to find an explanatory relationship between a facet of the meaning of a verb and its ability to participate in the causative alternation.**

We introduce a distinction between verbs describing **"internally"** and **"externally" caused eventualities**, arguing that **this distinction more accurately predicts which verbs do and do not participate in the causative alternation**.

We take as our starting point **Smith's (1970)** insightful discussion of the semantic factors that play a part in determining which **verbs that are used intransitively have transitive causative uses**: by means of a ***notion of control***. Verbs like ***break*** **and** ***open*****, Smith proposes, describe eventualities that are under the control of some external cause that brings such an eventuality about**. Such intransitive verbs **have transitive uses in which the external cause is expressed as subject**.

Verbs like ***laugh***, ***play***, and ***speak*** do not have this property: **the eventuality each describes "cannot be externally controlled" but "can be controlled only by the person engaging in it'**; that is, **control "cannot be relinquished" to an external controller** (Smith 1970:107).

Semantic Characterization of the Internally Caused Verbs

For reasons we explain below, **we do not use Smith's *notion of control*.** Rather, we use a slightly different notion, distinguishing between **internally and externally caused eventualities**.

With an intransitive verb describing an internally caused eventuality, some property inherent to the argument of the verb is "responsible" for bringing about the eventuality.

For **agentive verbs** such as *play* and *speak*, this property is the **will** or **volition of the agent who performs the activity**. Thus, **the concept of internal causation subsumes agency**. **However, an internally caused verb need not be agentive**. For example, the verbs ***blush*** and ***tremble***, which take **animate** – though **nonagentive** – arguments, can nevertheless **be considered to describe internally caused eventualities**, because these eventualities arise from **internal properties of the arguments, typically an emotional reaction**. **These verbs, which do not participate in the causative alternation, also exemplify why the notion of control is inappropriate**: **neither trembling nor blushing is generally under a person's own control**, as shown by the acceptability of examples such as *Carla couldn't help blushing whenever her name was called*.

Semantic Characterization of the Internally Caused Verbs

Verbs with an inanimate —and thus **clearly nonagentive—single argument** may also **describe internally caused eventualities in the sense that these eventualities are conceptualized as arising from inherent properties of their arguments**. In particular, the notion of **internal causation can be straightforwardly extended to encompass a class of nonagentive single argument verbs that we refer to as *verbs of emission***. This set subsumes the verbs that Perlmutter describes as verbs of "**[n]on-voluntary emission of stimuli that impinge on the senses**" (1978:163). The *verbs of emission* can be divided into four subclasses according to **what is emitted: sound, light, smell, or substance**.

(19) a. Sound: burble, buzz, clang, crackle, hoot, hum, jingle, moan, ring, roar, whir, whistle, . . .
b. Light: flash, flicker, gleam, glitter, shimmer, shine, sparkle, twinkle, . . .
c. Smell: reek, smell, stink
d. Substance: bubble, gush, ooze, puff, spew, spout, squirt, . . .

Semantic Characterization of the Internally Caused Verbs

The **eventualities** described by such verbs come about as **a result of internal physical characteristics of their argument**. Consequently, **only a limited set of things qualify as arguments of any specific verb** of emission, **as reflected in the strong restrictions that these verbs impose on possible subjects**. Consistent with their classification as internally caused verbs, ***verbs of emission*** **generally do not have causative counterparts, as illustrated in (20)**.

(20) a. The jewels glittered/sparkled.
b. *The queen glittered/sparkled the jewels.

(21) a. The stream burbled/roared.
b. *The rocks burbled/roared the stream.

(22) a. The stew bubbled.
b. *The cook bubbled the stew.

Verbs of emission, then, pattern with other verbs without causative counterparts even though it seems inappropriate to attribute control to the argument of a verb of emission—the inanimate emitter. Consequently, **we prefer the internally/externally caused verb distinction to the internal/external control distinction**. (For conciseness, we will refer to internally or externally caused verbs, although it is more accurate to say that a verb describes an eventuality that can be conceptualized as either internally or externally caused.

Semantic Characterization of the Externally Caused Verbs

Unlike internally caused verbs, externally caused verbs by their very nature imply **the existence of an "external cause" with immediate control over bringing about the eventuality described by the verb: an agent, an instrument, a natural force, or a circumstance**. Thus, consider the verb ***break***. **Something breaks because of the existence of an external cause; something does not break solely because of its own properties** (although it is true that an entity must have certain properties in order for it to be breakable).

Although it might be possible to conceive of something as breaking spontaneously, even so, it is most natural to describe such a situation by a sentence like *The vase broke by itself*, where, as mentioned in section 3.1, **the external cause is being overtly identified with the theme itself**. In contrast, **internally caused verbs such as *glow*, *sparkle*, *shudder*, and *tremble* cannot appear with the phrase *by itself* in the 'without outside help' sense, consistent with the absence of an external cause**.

(23) a. *The diamond glowed by itself.
b. *Jane trembled by herself.

Semantic Characterization of the Externally Caused Verbs

The **core class of causative alternation verbs** are the verbs of ***change of state***, which **typically describe changes in the physical shape or appearance of some entity**. Jespersen (1927) suggests that the class of verbs that are **found in the causative alternation** can be characterized as the **"move and change" class**, because it includes a variety of verbs of change of state and verbs of motion. The list of alternating verbs can easily be divided into two subclasses along these lines. To the extent that the alternating verbs of motion involve a change of position (though not necessarily a translation through space), the set of "move and change" verbs might be given the unified characterization ***verbs of change***. **There are, however, many more verbs of change of state than verbs of change of position among the alternating verbs, probably because there are few verbs of change of position that need not be agentive, a prerequisite for the classification of these verbs as externally caused.**

(24) a. bake, blacken, break, close, cook, cool, dry, freeze, melt, open, shatter, thaw, thicken, whiten, widen, . . .
b. bounce, move, roll, rotate, spin, . . .

Externally Caused VS Internally Caused

Unlike most **internally caused** verbs, **most externally caused verbs do not impose restrictions on their external cause argument**, taking **agents, natural forces, and instruments as the external cause**.

This difference reflects the nature of internal causation, which involves **causation initiated by, but also residing in, the single argument and hence dependent on its properties.**

In contrast, with externally caused verbs, **the external cause argument sets the eventuality in motion, but it is not necessarily involved in seeing it through (verbs differ in this respect).**

Externally Caused VS Internally Caused

It is in the **nature of internally caused verbs as we have described them that they are inherently monadic predicates**. Similarly, **externally caused verbs are inherently dyadic predicates, taking as arguments both the external cause and the passive participant in the eventuality**.

The adicity of a verb is then a direct reflection of a lexical semantic property of the verb, namely, the number of open positions in the lexical semantic representation.

(27) a. [[*x* DO-SOMETHING] CAUSE [*y* BECOME *STATE*]]
b. [*x PREDICATE*]

Externally Caused Verbs

The proposed analysis of externally caused verbs predicts that there should be no externally caused verbs without a transitive variant. An examination of the range of verb classes in B. Levin 1993 suggests that this is indeed so.

That is, **all externally caused verbs have a transitive causative use, but not all of them have an intransitive use in which the external cause is unspecified**, as illustrated in (28)—(31) with the verbs *cut*, *sterilize*, *write*, and *murder*.

(28) a. The baker cut the bread.
b. *The bread cut.

(29) a. The nurse sterilized the instruments.
b. *The instruments sterilized.

(30) a. Anita Brookner just wrote a new novel.
b. *A new novel wrote.

(31) a. The assassin murdered the senator.
b. *The senator murdered.

Stage-level Predicates VS Individual-level Predicates

Stage-level predicates describe temporary properties or transitory activities of entities; they contrast with individual-level predicates, which describe permanent properties (see also Diesing 1992, Kratzer 1989). The observation that **deadjectival verbs are based on stage-level adjectives supports the claim that only externally caused verbs are found in the causative alternation: individual-level properties typically cannot be externally caused, whereas stage-level properties could be.** (We do not address a larger question that is raised by these data: whether both oppositions are necessary).

Stage-level Predicates VS Individual-level Predicates

The verb ***smarten*** provides a particularly interesting illustration of the constraints on the adjectives that can serve as the base for alternating verbs. Although the adjective *smart* has two senses, ‘intelligent’ and ‘well and fashionably dressed’, **the verb *smarten* is related to the second adjectival sense, reflecting the fact that it is typically only in this sense that the adjective describes a stage-level property, and, hence, a property that might be caused to change.**

Although the adjective ***tough*** can mean either ‘difficult’ or ‘resistant to tearing’, t**he verb *toughen* cannot mean ‘make difficult’.**

Class of Causative Alternation Verbs

Although the major class of causative alternation verbs can be characterized as verbs of change, it is important to point out that external causation cannot be equated with change of state or position.

There are verbs of change of state that lack a transitive causative variant whatever the nature of the external cause argument, as the following examples show. These **verbs are set apart from the alternating verbs of change of state because they describe internally caused changes of state**. That is, **the changes of state that they describe are inherent to the natural course of development of the entities that they are predicated of and do not need to be brought about by an external cause** (although occasionally they can be, and in such instances causative uses of these verbs are found). This class includes verbs such as *flower*, *bloom*, *blossom*, and *decay*, all cited above, and in some languages *blush*, as well as *grow*. **The class of internally caused verbs of change of state is much smaller than the large class of externally caused verbs of change of state.**

(33) a. The cactus bloomed/blossomed/flowered early.
b. *The gardener bloomed/blossomed/flowered the cactus early.
c. *The warm weather bloomed/blossomed/flowered the cactus early.

(34) a. The logs decayed.
b. *The rangers decayed the logs.
c. *The bad weather decayed the logs.

Externally Caused VS Internally Caused

The distinction between internally and externally caused eventualities is also relevant to verbs that are not verbs of change. For example, it explains the behavior of the members of a class of verbs that we call ***verbs of spatial configuration*** with respect to the causative alternation. **This class includes verbs such as *hang*, *sit*, and *stand*, which specify the position of an entity that bears a particular spatial configuration with respect to that position**. Certain verbs of spatial configuration allow a transitive causative use; these include *hang*, *lean*, *lie*, *sit* and *stand*.

The distinction between internally and externally caused eventualities appears to provide the key to their differing behavior. ***Looming* and *slouching* are postures that are necessarily internally caused, unlike *hanging*, *leaning*, *sitting*, or *standing*, which are postures that can be brought about by an external cause.** These examples show yet another way in which the correlation between external causation and change of state is not perfect: there are externally caused verbs that are not verbs of change of state.

(35) a. The laundry hung on the clothesline.
b. Tracy hung the laundry on the clothesline.

(36) a. The ladder leaned against the wall.
b. I leaned the ladder against the wall.

Other verbs in this class, including *slouch*—though rather close in meaning to *lean*—and *loom*, do not.

(37) a. The surly youth slouched against the wall.
b. *I slouched the surly youth against the wall.

(38) a. The bear loomed over the sleeping child.
b. *The giant loomed the bear over the sleeping child.

Externally Caused VS Internally Caused

The distinction between internally and externally caused verbs corresponds roughly to the distinction between unaccusative and unergative verbs. As we show in chapter 4, internally **caused verbs are generally unergative, whereas many unaccusative verbs are derived from externally caused verbs**.

There are two reasons for saying that there is only a rough correspondence between the internally/externally caused verb distinction and the unaccusative/ unergative distinction. First, as we show in section 3.3, **there are unaccusative verbs that are not derived from causative verbs**; these are the verbs of existence and appearance. Second, as we have just shown, **there is a class of internally caused vнerbs of change of state**, and, as we show in section 4.2.1, these verbs are unaccusative.

Consequences of the Internally vs Externally Caused Distinction

The distinction between internally and externally caused eventualities is a distinction in the way events are conceptualized and does not necessarily correspond to any real difference in the types of events found in the world. In general, **the relation between the linguistic description of events and the events taking place in the real world is mediated by the human cognitive construal of events, which is what we take our lexical semantic representations to represent.**

For example, **verbs that are clearly agentive will be internally caused monadic verbs** and will not be found in the causative alternation. However, **there are some events in the world that can be construed as either internally or externally caused. Our account predicts variation both within and across languages with respect to whether verbs describing such events are classified as internally or externally caused.**

Consider the verb ***deteriorate***, mentioned in section 3.1, which is classified as both an internally caused and an externally caused verb in B. Levin 1993. **The change of state specified by this verb can be construed as either internally or externally caused**. There may even be variation among speakers regarding whether a given eventuality that could be described by this verb should be conceptualized as internally or externally caused. For example, as already mentioned, B. Levin once heard her landlord say *The pine needles were deteriorating the roof.*

Haspelmath (1993)

Haspelmath (1993) discusses verbs that tend not to show consistent patterns of behavior across languages. For example, **the morphologically simple form of the verb corresponding to English *melt* tends to be transitive in most languages, the intransitive form being the morphologically derived form, but a few languages show the opposite pattern.** It is likely that this cross-linguistic variation arises because the meaning of a verb such as *melt* is consistent with **its describing either an internally or an externally caused eventuality**. In fact, it should be **possible to verify this prediction by looking at the range of subjects found with melt in various languages**; presumably, in languages **where *melt* is internally caused, it will only be found with ice or ice cream or other substances that melt at room temperature as its subject when intransitive**.

What is important is that the nature of the externally versus internally caused verb distinction leads to expectations about where fluctuation with respect to verb classification both within and across languages may be found. It is **precisely verbs such as *melt*, whose classification with respect to the syntactically relevant meaning components is in some way ambiguous, that would be expected to manifest cross-linguistic variation**. **If certain aspects of meaning determine syntactic behavior, then isolation of the correct syntactically relevant meaning components will help predict which types of verbs are most likely to exhibit cross-linguistic variation**.

Externally Caused VS Internally Caused

A language could choose to have two verbs whose meanings are the same in every respect except that one describes the eventuality as internally caused and the other as externally caused. The verbs *shudder* and *shake* at first glance appear to be synonymous, but **only *shake*, and not *shudder*, shows a transitive causative use**. Given the differing behavior of these verbs with respect to the causative alternation, ***shake* should be externally caused and *shudder* internally caused. Things that *shudder* usually can be thought of as having a "self-controlled" body; they include *people*, *animals*, and, perhaps by forced extension, the *earth*, *engines*, *machinery*, and *vehicles*. In contrast, *leaves*, *teacups*, and *furniture*, none of which can be said to have a "self-controlled" body, can only *shake*.** The narrower restrictions on things that *shudder* reflect the **classification of *shudder* as an internally caused verb. Interestingly, agentivity has nothing to do with the difference between these two verbs.**

Haspelmath, 1993

	total	A	C	E	L	S	A/C	% non-dir.
Russian	31	23	0	5	0	3	46.00	26
German	31	14.5	0	4	11.5	1	29.00	53
Greek	31	13.5	0	0	16.5	1	27.00	56
Rumanian	30	24	1	0	3	2	24.00	17
French	31	20.50	2	0	7.5	1	10.25	27
Lithuanian	31	17.5	6	6	0.5	1	2.92	24
Hebrew	31	20.5	7.5	2	1	0	2.73	10
Arabic	31	17	8.5	3	1	1.5	2.00	18
Georgian	31	9	4.5	15.5	0	2	2.00	56
Armenian	31	16	8.5	5.5	0	1	1.88	21
Swahili	31	11	11	8	0	1	1.00	29
Finnish	28	12	13.5	0.5	0.5	1.5	0.88	9
Udmurt	31	10.5	12.5	4.5	2.5	1	0.84	26
Hungarian	31	7	9	12	0	3	0.78	48
Lezgian	31	8	12	6	5	0	0.66	35
Hindi-Urdu	31	7.5	14	7.5	2	0	0.54	31
Turkish	30	9	17.5	2.5	0	1	0.51	12
Mongolian	31	6	22	2	0	1	0.27	10
Indonesian	31	0	14	17	0	0	0.04	55
English	31	2	0	1	25	3		94
Japanese	31	3.5	5.5	20.5	0.5	1		71
total	636	243	164.5	128.5	69	310		

Abbreviations:
A = anticausative alternation
C = causative alternation
E = equipollent alternation
L = labile alternation
S = suppletive alternation
A/C = ratio of anticausative to causative pairs
% non-dir. = percentage of non-directed pairs

Table 4. Expression types by verb pairs

	total	A	C	E	L	S	A/C
18. 'boil'	21	0.5	11.5	3	6	0	0.04
25. 'freeze'	21	2	12	3	4	0	0.17
29. 'dry'	20	3	10	4	3	0	0.30
1. 'wake up'	21	3	9	6	2	1	0.33
20. 'go out/put out'	21	3	7.5	5.5	3	2	0.41
11. 'sink'	21	4	9.5	5.5	1.5	0.5	0.42
8. 'learn/teach'	21	3.5	7.5	6	2	3	0.47
13. 'melt'	21	5	10.5	3	2.5	0	0.48
31. 'stop'	21	5.5	9	3.5	3	0	0.61
23. 'turn'	21	8	7.5	4	1.5	0	1.07
26. 'dissolve'	21	10.5	7.5	2	1	0	1.40
3. 'burn'	21	7	5	2	5	2	1.40
14. 'destroy'	20	8.5	5.5	5	1	0	1.55
27. 'fill'	21	8	5	5	3	0	1.60
22. 'finish'	21	7.5	4.5	5	4	0	1.67
7. 'begin'	19	5	3	3	8	0	1.67
10. 'spread'	21	11	6	3	1	0	1.83
24. 'roll'	21	8.5	4.5	5	3	0	1.89
16. 'develop'	21	10	5	5	1	0	2.00
15. 'get lost/lose'	21	11.5	4.5	4.5	0	0.5	2.56
21. 'rise/raise'	21	12	4.5	3.5	0	1	2.67
28. 'improve'	21	8.5	3	8	1.5	0	2.67
19. 'rock'	21	12	40	3.5	1.5	0	3.00
17. 'connect'	21	15	2.5	1.5	1	1	6.00
12. 'change'	21	11	1.5	4.5	4	0	7.33
9. 'gather'	21	15	2	3	1	0	7.50
5. 'open'	21	13	1.5	4	2.5	0	8.67
2. 'break'	21	12.5	1	4	3.5	0	12.50
6. 'close'	21	15.5	1	2.5	2	0	15.50
30. 'split'	20	11.5	0.5	5	3	0	23.00
4. 'die/kill'	21	0	3	1	1	16	—
total	636	243	164.5	128.5	69	31	

Table 5. Expression types by verb pairs (Nedjalkov 1969)

	total	A	C	E	L	S	others	A/C
'laugh/make laugh'	60	0	54	6	0	0	0	0
'boil'	60	2	36	5	9	7	1	0.05
'burn'	60	8	19	5	14	14	0	0.42
'break'	60	22	9	8	19	0	2	2.44
total	240	32	118	17	42	21	3	0.27

The verb Haspelmath cites as the Hebrew counterpart of English *burn*, ***saraf***, which shows the morphological causativization pattern expected of an externally caused verb, actually means 'burn' in the **'consume by fire'** sense. **This verb can be predicated of *leaves* or *paper*, but not *flames* or *candles***. There is another Hebrew verb, ***ba'ar,*** which means 'burn' in the sense of **'blaze'** or **'emit heat or light'**. This verb can be predicated of fire, flames, and candles; it is true that some of these entities, such as candles, might sometimes be consumed in the process, but this is incidental. This second verb shows the morphological causativization pattern expected of an internally caused verb.

Indeed, this difference in causativization patterns is what is expected since consumption by fire is an externally caused eventuality, whereas the emission of heat or light by a candle or flame is presumably an internally caused eventuality. In fact, in English too, the verb burn shows the causative alternation only in the 'consume by fire' sense.

(40) a. The leaves burned.
b. The gardener burned the leaves.

(41) a. The fire burned.
b. *The campers burned the fire.

When can externally caused verbs “detransitivize”

and

why is this possibility open to some verbs only for certain choices of arguments

When Can Externally Caused Verbs "Detransitivize"?

In the previous section we proposed that **all externally caused verbs are basically dyadic.** However, although we proposed that the intransitive form of an alternating verb like ***break*** **is derived from the causative form, only a subset of externally caused verbs have such intransitive uses.**

(42) a. The baker cut the bread.
b. *The bread cut. (on the interpretation 'The bread came to be cut')

(43) a. The terrorist killed/assassinated/murdered the senator.
b. *The senator killed/assassinated/murdered.

(44) a. Anita Brookner just wrote a new novel.
b. *A new novel wrote.

When Can Externally Caused Verbs "Detransitivize"?

Smith's observation can also be recast as follows: the transitive causative verbs **that detransitivize are those** in which **the eventuality can come about spontaneously without the volitional intervention of an agent**. In fact, among the transitive verbs that **never detransitivize are verbs that require an animate intentional and volitional agent as subject**. Consider some verbs that never detransitivize, such as the verbs *murder* and *assassinate* or the verbs of creation *write* and *build*. **These particular verbs require an animate intentional and volitional agent as subject.**

(45) a. The terrorist assassinated/murdered the senator.
b. *The explosion assassinated/murdered the senator.

(46) a. Pat wrote a letter to the editor of the local newspaper.
b. *My anger wrote a letter to the editor of the local newspaper.

(47) a. A local architect built the new library.
b. *The windstorm built a sand dune.

When Can Externally Caused Verbs “Detransitivize”?

Since these verbs have meanings that specify that the eventuality they describe must be brought about **by a volitional agent, the change they specify** obviously cannot come about independently.

In contrast, the change specified by alternating verbs such as *break* can come about without the intervention of a volitional agent. Consequently, alternating verbs allow natural forces or causes, as well as agents or instruments, as external causes, and, hence, as subjects.

(48) The vandals/The rocks/The storm broke the windows.

тесты на одуш/неодуш с разными формами? Со “случайно”?

Cut

Next consider the verb *cut*. **This verb cannot be used intransitively to describe the coming about of a separation in the material integrity of some entity**. The behavior of this verb can be understood in the context of the proposed constraint since **what characterizes its meaning is a specification of the means or manner involved in bringing about the action described by that verb**; this specification, in turn, **implies the existence of a volitional agent**. The very meaning of the verb cut implies **the existence of a sharp instrument that must be used by a volitional agent to bring about the change of state described by the verb**. If the same change of state were to come about without the use of a sharp instrument, then it could not be said to have come about through cutting.

A verb like *cut* demonstrates that the set of verbs that do not detransitivize **is not the same as the set of verbs that restrict their subjects to volitional agents**. The verb ***cut*** **allows instruments or agents as subjects; however, *cut* does not allow natural force subjects**.

(49) a. The baker/That knife cut the bread.
b. *The lightning cut the clothesline.

-ize/-ify

Most of these morphologically complex verbs cannot detransitivize, we propose, because they describe eventualities that cannot come about spontaneously without the external intervention of an agent. In contrast, those -ify and -ize verbs that allow for this possibility appear to be precisely the ones that do detransitivize. **The -ify and -ize verbs that resist detransitivization show a narrower range of subjects than those verbs that permit detransitivization; specifically, they appear to exclude natural force subjects**.

(51) a. The farmer homogenized/pasteurized the milk.
b. *The milk homogenized/pasteurized.

(52) a. Carla humidified her apartment.
b. *Her apartment humidified.

(53) a. I solidified the mixture./The mixture solidified.
b. The cook caramelized the sugar./The sugar caramelized.

(54) a. *The weather humidified the apartment.
b. The intense heat caramelized the sugar.

The constraint on detransitivization also explains why **some verbs have intransitive uses only for certain choices of the argument that changes state**: it is only **for these choices that the change can come about without the intervention of an agent**. For instance, in section 3.1 we noted the following contrasts involving the **verb *clear***. Our knowledge of the world tell us that **tables are things that are cleared (typically, of dishes) through the intervention of an animate agent**. The **sky, however, can clear through the intervention of natural forces**, such as the wind. Hence the difference in the possibility of intransitive counterparts. The examples in (55)—(59) show once again that **detransitivization is possible precisely where an externally caused eventuality can come about without the intervention of an agent**. In this sense, **detransitivization is a productive process, since it appears to be possible wherever this condition is met.**

(55) a. The waiter cleared the table.
b. *The table cleared.

(56) a. The wind cleared the sky.
b. The sky cleared.

(57) a. The dressmaker lengthened the skirt.
b. *The skirt lengthened.

(58) a. The mad scientist lengthened the days.
b. The days lengthened.

(59) a. He broke his promise/the contract/the world record.
b. *His promise/The contract/The world record broke.

Haspelmath's analysis

Our study of the factors that influence a verb's transitivity suggests that v**erbs can be classified according to whether or not they describe an externally caused eventuality and according to whether or not they describe an eventuality that can occur spontaneously**.

If the eventuality described by a verb **has an external cause, the verb is basically transitive**; moreover, if , this **eventuality can occur without the direct intervention of an agent, then the external cause does not have to be expressed in the syntax**.

Given the similarities between these two notions, the question arises whether they might be collapsed. In fact, Haspelmath (1993) has independently developed an analysis that resembles the one presented here, except that he does not make a clear distinction between the two notions. **Haspelmath links the likelihood of spontaneous occurrence to intransitivity**, and although he is not explicit about this, i**t appears that he takes spontaneous occurrence to be the opposite of external causation**, **so that if a particular event does not occur spontaneously, then it is externally caused and thus expressed with a transitive verb**. For Haspelmath, those verbs that describe **eventualities that are likely to occur spontaneously will have an intransitive form, and those that are not likely to occur spontaneously will have only a transitive form**. Thus, the verbs *wash* and *decapitate* will have only a transitive form, and the verbs *break* and *laugh* will both have intransitive forms.

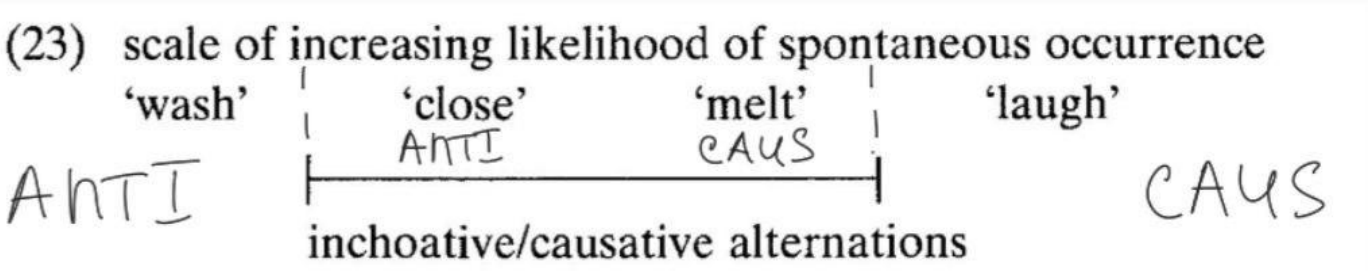
Haspelmath, 1993

A factor favoring the anticausative expression type is the **probability of an outside force bringing about the event**. Conversely, the **causative expression type is favored if the event is quite likely to happen even if no outside force is present**.

Events such as freezing, drying, sinking, going out, and melting occur commonly in nature around us and do not need an agentive instigator.

On the other hand, events such as splitting, breaking, closing, opening, gathering and connecting are typical of the kinds of things that human beings do. In both cases, the correlation is only typical, not necessary.

Direction of derivation: spontaneous vs. caused events



Haspelmath's analysis

It seems to us that **there is evidence that favors the use of both spontaneous occurrence and external causation in the determination of transitivity**, as in our approach. The evidence comes from an observation that Haspelmath himself makes. **He notes that across languages certain intransitive verbs like *break* tend to be the morphologically marked member of a causative alternation verb pair, whereas others like *laugh* tend to be the morphologically unmarked member.**

It turns out, as he notes, that those verbs which like ***break*** **describe eventualities that are both spontaneously occurring and externally caused** are the ones that tend to have the **intransitive form as the morphologically marked one**. Those which like ***laugh*** **describe eventualities that occur spontaneously and are internally caused** tend to have the **transitive member of a causative alternation pair morphologically marked**.

That is, among verbs describing spontaneously occurring eventualities, **it is the status of the eventuality as internally or externally caused that determines the morphological shape of the verb**. This difference justifies the recognition of both notions as contributing to a verb's syntactic behavior and morphological shape. In some sense, Haspelmath's study provides cross-linguistic corroboration of the results we obtained from our in-depth study of English.

The Derivation of the Intransitive Use of Externally Caused Verbs

In the previous section we observed that **alternating verbs do not usually exert any restrictions on the external cause argument: it can be an agent, instrument, circumstance, or natural force. As for verbs that do exert restrictions on the external cause argument—that is, the nonalternating verbs—they appear to exert a rather limited range of restrictions on it.**

Parsons (1990) observes that there appears to be no verb that is lexically specified to take only an instrument as subject. **All verbs that allow an instrument as subject also allow an agent, and some allow natural forces as well.** Taking Parsons's observation further, there is also, as far as we know, **no verb describing an externally caused eventuality that takes only a natural force as subject.** Thus, the only restrictions exerted by verbs on the external cause seem to **involve agency** in some way.

Causative verbs are generally classified as accomplishments in Vendler's (1957) terms, and, as mentioned in chapter 2, **accomplishments are standardly analyzed as complex predicates involving a causing event that brings about some change of state or location** (Dowty 1979, Grimshaw and Vikner 1993, Pustejovsky 1991b). We mentioned in chapter 2 that **resultatives are expressions in which both the causing event and the change of state are specified**, each by a different predicate.

In contrast, **morphologically simple accomplishment verbs usually specify either the causing event or the result state**; for example, **the verb *break* specifies the result state, but leaves the causing event unspecified. In *Pat broke the window***, it is only the change in the state of the window that is specified by the verb; **Pat could have brought this change about by any of a wide variety of activities**.

The Derivation of the Intransitive Use of Externally Caused Verbs

On the other hand, the verb ***cut*** **specifies both the change of state and something about the event leading up to this change of state**. What characterizes **the class of alternating verbs is a complete lack of specification of the causing event**. Thus, the fact that a wide variety of subjects are possible with the alternating verbs is just a reflection of the fact that the causing event is left completely unspecified.

Therefore, we can reformulate the condition sanctioning detransitivization: an externally caused verb can leave its cause argument unexpressed only if the nature of the causing event is left completely unspecified.

The Derivation of the Intransitive Use of Externally Caused Verbs

There is one advantage to the reformulation. If the restriction were against detransitivizing a verb with an agent (sl. 103), we would expect that even a verb like *break*, when used agentively, could not be used in the intransitive form. But this is clearly not the case, as shown by the acceptability of ***I threw the plate against the wall, and it broke***. **If**, however, **we say that the property of *break* that allows it to detransitivize is that it specifies something about the change of state in the passive participant but nothing about the causing event**, then the example conforms to our generalization.

MWA

Unlike the generic sense of the intransitive IPFV *čōbar* ‘it breaks’, t**he N-stem IPFV *minəčbar* requires an agent, implicit or explicit, as the examples below illustrate**:

Hanna finžōna, lōb hačč kaṣtan bax ččubrenne, minəčbar. (Abu Šādi)
This glass, if you want to break it on purpose, it is breakable.

Lōb kīsa, kaṣtan bax čubrenne, minəčbar. (Abu Šādi)
If a glass, you want to break it on purpose, it is breakable.

The use of the adverb *kaṣtan* ‘intentionally, on purpose’ renders *čōbar* inadmissable.

Ana lōb ibʕiṯ nčubrenne, minəčbar. (Abu Šādi, Marīya)
If I want to break it, it is breakable.

***Minəčbar hanna finžōna iza šalfičče ʕal-arʕa/ʕa-xoṯla*. (**Abu Šādi, Marīya)
This glass is breakable if I throw it on ground/against the wall.

Externally Caused Verbs: Lexical Semantic Representation

The **lexical semantic representation of verbs describing externally caused** eventualities consists of **two subevents**, the **causing subevent and the central subevent.** The external cause argument of such a verb in some sense stands in for the causing subevent. Suppose that the **intransitive form of externally caused verbs arises from binding the external cause within the lexical semantic representation, where this binding is interpreted as existential quantification**. The intransitive form will then be interpreted as asserting that the **central subevent came about via some causing subevent, without any specification of its nature**. Suppose, however, that **if the verb lexically specifies something about the nature of the external cause, then it cannot be lexically bound, and the intransitive form of the verb would not be attested**.

Externally Caused Verbs: Lexical Semantic Representation

We suggest that the **binding of the external cause takes place in the mapping from the lexical semantic representation to argument structure**. Just as the binding of a position in argument structure prevents that position from being projected onto the syntax, so the **binding of a position in the lexical semantic representation prevents the projection of that position to argument structure**. **Since the position is not projected into argument structure, there is no argument associated with this position in the syntax**. We can schematize the proposed relation between the lexical semantic representation (LSR below) of *break* and the argument structure of both its transitive and intransitive forms as follows:

(60) *Intransitive* break

LSR	[[*x* DO-SOMETHING] CAUSE [*y* BECOME *BROKEN*]]
	↓
Lexical binding	∅
Linking rules	↓
Argument structure	⟨*y*⟩

(61) *Transitive* break

LSR	[[*x* DO-SOMETHING] CAUSE [*y* BECOME *BROKEN*]]
Linking rules	↓ ↓
Argument structure	*x* ⟨*y*⟩

Externally Caused Verbs: Lexical Semantic Representation

There is evidence that the **operation of binding the external cause must take place before argument structure**. This evidence comes from **comparing** certain properties of the **intransitive form of causative alternation verbs and passive verbs**. As described by Grimshaw (1990), for example, **the operation that derives the passive form** of a verb from an active one **involves binding a position in the lexical syntactic representation of a verb—its argument structure—thereby preventing the expression of that argument in the syntax**.

Thus, **it contrasts with the operation of binding the external cause of a verb such as *break*, which we propose involves its lexical semantic representation**. Although the lexically bound **argument of a passive verb cannot be directly expressed in the syntax**, there is well-known evidence that **the argument is present, nonetheless, in argument structure**. Specifically, its presence is manifested in the sanctioning of ***by* phrases** and the **control of purpose clauses**, as discussed by Roeper (1987), who cites work by Manzini (1983) as the source of the evidence involving purpose clauses.

control of purpose clauses – тесты с декаузативом?

Externally Caused Verbs: Lexical Semantic Representation

(62) a. The ship was sunk by Bill. (Roeper 1987:268, (2b))
b. The boat was sunk to collect the insurance. (Roeper 1987:268, (3b))

(63) a. The window was broken by Pat.
b. The window was broken to rescue the child.

In contrast, the lexically bound external cause cannot license a *by* phrase or control a purpose clause, as is also well known.

(64) a. *The ship sank by Bill. (Roeper 1987:268, (2a))
b. *The boat sank to collect the insurance. (Roeper 1987:268, (3a))

(65) a. *The window broke by Pat.
b. *The window broke to rescue the child.