Objecthood and Object Alternations

Beth Levin
Stanford University

Revisit English object alternations—and, concomitantly, verb classification—in the context of recent work on the nature of verb meaning and the representation of events; specifically, pursue the implications of the picture of objecthood in Levin (1999) for object alternations.

The proposal: “Genuine” object alternations have a single source: they arise due to the argument expression options available to verbs whose “roots” (i.e., core meanings) are basically associated with a simple event structure (e.g., means/manner verbs).

The origins of object alternations:
Having roots basically associated with simple event structures makes alternations possible; the nature of the verb roots themselves determines attested alternations (in conjunction with a language’s morphosyntactic resources).

Larger context: Object alternations are tied to other transitivity-related phenomena. The same event structure also allows for transitive verbs whose objects aren’t patients or whose near-synonyms/translation equivalents aren’t transitive (Levin 1999).

What are object alternations?
Descriptively, these alternations are argument alternations where an apparently triadic verb maintains the same association of an argument with subject, but can express either of its other two arguments as its object, with the third usually expressed as an oblique.

1. Locative Alternation — ‘putting’ subtype:
   b. Jack sprayed the wall with paint.
2. Locative Alternation — ‘removing’ subtype:
   a. Jack wiped crumbs off the counter.
   b. Jack wiped the counter.
3. Material/Product Alternation:
   a. Martha carved a toy out of the piece of wood.
   b. Martha carved the piece of wood into a toy.
4. Image Impression Alternation:
   a. Taylor embroidered peonies on the jacket.
   b. Taylor embroidered the jacket with peonies.
5. With/Against Alternation:
   a. Sam hit the fence with a stick.
   b. Sam hit a stick against the fence.
(6) Body-Part Possessor Ascension:
   a. Terry slapped me on the back.
   b. Terry slapped my back.

Caveat: Assume following L&RH (2002) that the dative alternation is not an object alternation in that the first object in the double object construction is not a true “object” (Baker 1997, Hudson 1992, Marantz 1993, Maling 2001).

Some Distinguishing Properties of English Object Alternations

• Verbs from only some semantic classes show object alternations:
  Change of state verbs (e.g., break, crack, dim, widen) don’t, nor do verbs of putting (e.g., insert, put), taking (e.g., take, obtain), or filling (e.g., cover, fill).

(7) a. Lee broke the fence with the stick.
    Lee broke the stick against the fence. (Can’t mean: ‘Lee broke the fence’)
   b. Corey shortened the dress.
      * Corey shortened an inch off the dress
   c. Shannon put/*filled the groceries into the bag.
      Shannon filled/*put the bag with the groceries.
  d. Shawn obtained the rare metal from Transylvania.
      * Shawn obtained Transylvania of the rare metal.

• Verbs that allow object alternations in English also allow nonsubcategorized objects.

(8) a. Cinderella swept and scrubbed her way to a new ball gown.
    Cinderella swept and scrubbed herself into catatonia.
   b. Drew sewed her fingers sore.
      Drew sewed her way to a job in the fashion industry.

(9) a. * My kids broke me into the poorhouse.
     * The puppy broke his way out of the china shop.
   b. * The stagehand dimmed the scene dark.
      * The stagehand dimmed his way off the set.
   c. * The waiter filled the table wet.
     * The waiter filled his way to a maître d’ position.

Could say that the label “object alternation” is applicable to a wider range of phenomena:
any alternate choice of object.

• Verbs showing object alternations often allow unspecified or oblique “objects”.

   b. Leigh wiped/scratched/hit (at) her arm.
      Dale sewed/knit (at/on) the scarf.
      Cameron carved (at) the whistle.
• Some verbs show various object alternations—and, concomitantly, a range of objects—
others show few, if any, object alternations, though they allow nonsubcategorized objects.

(11) a. Lee wiped the counter.
    Lee wiped the liquid off the counter.

b. Lee wiped the table with the cloth.
    Lee wiped the cloth over the table.

(12) a. Alex scratched the tree.
    Alex scratched her name on the tree.

b. Alex scratched her name off the tree
    Alex scratched the tree.

(13) a. Kelly sewed bows on the costume.
    Kelly sewed the costume with bows.

b. Kelly sewed the lining to the skirt.
    Kelly sewed the lining and skirt together.

c. Kelly sewed the piece of silk into a ball gown.
    Kelly sewed a ball gown out of the piece of silk.

(14) a. Kim pushed the cart into/against/out of the store.
    *Kim pushed the store with/of the cart.

b. Kim pushed her way to the front of the line.

Object Alternations: An Informal Account

The key insight:
Object alternations are found with two-argument means/manner verbs verbs (typically,
aspectually activity or semelfactive); such verbs have a simple event structure.

What are means/manner verbs? They are best introduced by example.
• Among verbs of motion, there are verbs that differ with respect to the manner of motion:
  amble, crawl, creep, fly, jog, limp, run, saunter, swim, walk.
• Among verbs of sound, there are verbs that differ with respect to the way in which the
  sound is produced: buzz, creak, gargle, jingle, roar, rustle, screech, whistle.
• Verbs of surface contact can be differentiated by the nature of the contact with
  the surface and the instrument used: rake, rub, scratch, scrub, sweep, wipe.

Means/manner verbs describe actions that are often performed to bring about some result,
though they do not lexically entail a result (Talmy 2000).
Often illustrated by being contrasted to verbs describing accomplishment of relevant result;
e.g., there is such an association between surface contact smear and the result verb cover.

The upshot: Apparently “semantically coherent” verb classes fall into two subclasses
whose members differ as to whether they are means/manner verbs or result verbs.

<table>
<thead>
<tr>
<th>— Verbs of Removal:</th>
<th>Means/Manner</th>
<th>vs.</th>
<th>Result</th>
</tr>
</thead>
<tbody>
<tr>
<td>— Verbs of Putting:</td>
<td>shovel</td>
<td>vs.</td>
<td>clear</td>
</tr>
<tr>
<td>— Verbs of Combining:</td>
<td>smear</td>
<td>vs.</td>
<td>cover</td>
</tr>
<tr>
<td>— Verbs of Killing:</td>
<td>shake</td>
<td>vs.</td>
<td>mix</td>
</tr>
<tr>
<td>— Verbs of Killing:</td>
<td>stab</td>
<td>vs.</td>
<td>kill</td>
</tr>
</tbody>
</table>
Basic assumptions about event structure and its mapping to syntax:
— Verb meaning is bipartite: An idiosyncratic core meaning ("root"), an event structure.
— Event structures distinguish complex events from simple events.
— Event structure-to-syntax mapping preserves facets of the event structure.

Why do simple event verbs show object alternations?
— Side-effect of a well-formedness condition on the event structure-to-syntax mapping:
  There must be at least one argument XP in the syntax per event structure subevent.
— This condition requires simple event verbs to have a single argument—the actor/subject.
— This condition imposes no requirements on these verbs’ objects;
  they may have objects, if appropriate licensing is available.
— Sources of objects: Arguments licensed by the root alone and/or by additional predicates
  which augment a verb’s simple event structure to give a complex event structure.

Bottom line: Object alternations are epiphenomena of the interaction of
  certain types of roots, simple event structures, and principles of argument licensing.

The bipartite view of verb meaning
Many current lexical semantic theories distinguish two facets of verb meaning:
The structural and the idiosyncratic.
(c.f. Grimshaw’s (1993) “semantic structure” vs. “semantic content” distinction)

Structural: linguistically analyzed information;
primary determinant of verb behavior (e.g., the expression of arguments);
defines grammatically-relevant semantic classes.
(Thematic cores (Pinker 1989), templates, constructions, or event structures)

Idiosyncratic: linguistically atomic information;
distinguishes among the members of a semantic class of verbs.
(Bootstrap, core meanings or, more recently, roots)

Bipartite view of verb meaning meshes with and gains support from perception that the
verb lexicon is organized into grammatically relevant semantically coherent verb classes.
Such an organization presupposes that a verb’s meaning can be factored into two parts:
— A part shared by all members of the same verb class.
— A part that distinguishes among the members of a class.

(15) Verbs of change of state: bend, break, crack, dry, empty, freeze, harden,
lengthen, melt, open, warm, widen, ...

The components of verb meanings (e.g., RH&L 1998)
• A set of basic event structure templates:
The most important distinction is whether an event structure is complex,
consisting of two subevents, or simple, consisting of a single subevent (L&RH 1999).

(16) a. Complex event structure:
e.g., [[ x ACT<\text{MANNER}> ] CAUSE [ BECOME [ y <\text{STATE}> ] ] ]
b. Simple event structure:
e.g., [ x ACT<\text{MANNER}> ]
• An open-ended set of roots:

Each root has an ontological categorization, chosen from a fixed set of types
(e.g., state, thing, place, manner, instrument, ...)

INTEGRATING A ROOT INTO AN EVENT STRUCTURE

These two components of meaning aren't randomly associated.
Evidence: Denominal verbs demonstrate clear associations between meaning of base noun
and meaning of related verbs, as pointed out by Clark & Clark (1979).
Associations are probably not linguistic, but rather reflect general cognitive principles.

(17) a. If N names a container, V means 'put something in that container'.
    *bag, bottle, cage, garage, pen, pocket, stable, ...*

b. If N names a thing/stuff, V means 'put that thing/stuff someplace'/
   'provide someplace with that thing/stuff'.
   *butter, carpet, diaper, garland, harness, saddle, salt, ...*

c. If N names an instrument, V means 'use that instrument for its purpose'.
   *bicycle, brush, microwave, rake, shovel, spear, staple, ...*

Canonical Realization Rules: Specify the basic event structure template(s) associated
with a verb on the basis of the ontological type of the associated root.

(18) a. instrument → [ x ACT<INSTRUMENT> ]
    (e.g., brush, hammer, saw, shovel, ...)

b. manner → [ x ACT<MANNER> ]
    (e.g., jog, run, creak, whistle, ...)

c. externally caused state (L&RH 1995) →
   [ [ x ACT ] CAUSE [ BECOME [ y <STATE> ] ] ]
    (e.g., break, dry, harden, melt, open, ...)

Roots are integrated into templates either as arguments or as modifiers of predicates;
roots are italicized and in angle brackets; notated via subscripts when modifiers.

The Licensing of Arguments

The root participates in determining number and status of arguments

As means/manner verbs, run and pound should have same event structure template,
despite having a different number of arguments: one for run, two for pound.

(19) a. Pat ran.

b. Leslie pounded the metal.

Why? Difference must reflect the nature of the associated roots.
Each root must specify the minimum number of participants in associated event:
e.g., an event of running minimally involves the runner.
e.g., an event of pounding minimally consists of a pounder and a surface.
(see also Goldberg 1995; Grimshaw 1993; van Hout 1996)
THE LICENSING OF ARGUMENTS

Grimshaw (1993) makes a distinction between two types of NP arguments:
STRUCTURE arguments are required by the event structure template.
CONTENT, CONSTANT, or ROOT arguments are required by nature of the root.

Most participants associated with roots are paired with event structure positions.
Subjects of run and pounded realize such event structure positions.
However, not all root participants are paired with event structure positions.
The object of pounded exemplifies such a PURE ROOT PARTICIPANT.
(cf. Van Valin’s (1990) multiple-argument activities with one macrorole)

(20) a. Pat ran
\[ x \text{ACT}_{<RUN>} \]
b. Leslie pounded the metal.
\[ x \text{ACT}_{<POUNDED>} \]

CONSEQUENCE: Two types of NP arguments in the syntax:
— Those that realize a root participant associated with an event structure position.
— Those that realize a root participant with no place in event structure (underlined).

EVIDENCE THAT EVENT STRUCTURE IS INDEPENDENT OF NUMBER OF ARGUMENTS

This approach assumes that certain one- and two-argument verbs have the same event structure; that is, their roots are associated with the same event structure template.

SUPPORTING EVIDENCE: Means/manner verbs display same behavior independent of number of arguments, i.e., whether their roots are associated with one or two participants.
— Actor is always the subject (i.e., one-argument means/manner verbs are unergatives)
   This argument realizes a root participant paired with an event structure position.
— These verbs are found in English resultative constructions, including the way construction, even when they don’t easily allow “unspecified” objects.

(21) ONE-ARGUMENT VERBS:

a. Reflexive Resultatives:
   We curled up together like lost children who have finally CRIED themselves quiet. (K. Kijewski, Katwalk, St. Martin’s, New York, 1989, p. 68)
   ... she started to RUN the hangover out of her system. (V. McDermid, Open and Shut, St. Martin’s, New York, 1991, p. 10)

b. Way Constructions:
   I GRUMBLED my way to the living room to do my stretches. (S. Paretsky, Burn Marks, Delacorte, New York, 1990, p. 114)

(22) TWO-ARGUMENT VERBS:

a. Reflexive Resultatives:
... Sophie had swept and scrubbed herself into a state when she could hardly move. (D. Wynne Jones, Howl's Moving Castle, Greenwillow, New York, 1986, p. 43)

... Sauerbrun would kick himself into the NFL record book with 120 punts over the course of the 16-game season ... (S. Mickes, "Murray Ready to End Davis' Reign", The Advocate, Baton Rouge, LA, October 10, 1997, p. 1D)

b. Way Constructions:

... I whacked my way through juicy green kiwi, fat, ultra-red strawberries, and pineapple so sweet you wondered why they'd let it leave Hawaii. (D.M. Davidson, Dying for Chocolate, Bantam, New York, 1992, p. 7)

... a family of mice scratched their way into the insulation, preparing a winter nest. (L. Wallingford, Cold Tracks, Walker, New York, 1991, p. 137)

... it pecked and crept its way along the branch and disappeared into its own hole. (W. Cather, A Lost Lady, 1923; Vintage, New York, 1990, p. 18)

The Contribution of Event Structure to Argument Expression

The two types of event structure vary as to number of structure participants:

• Complex event structures (i.e., two subevents): two structure participants, one per subevent, realized as subject and object.

• Simple event structures (i.e., one subevent): one structure participant, realized as subject; any other arguments are licensed only by root, one of these may be realized as object.

(23) a. Complex event structure:
   e.g., [ [ x ACT ] CAUSE [ BECOME [ y <STATE> ] ] ]

b. Simple event structure:
   e.g., [ x ACT<MANNE> (y) ]

A verb's behavior reflects its event structure

Consequence: The nonactor argument does not always have the same status.

• When a complex event verb has a root associated with two participants, its nonactor argument realizes a structure participant.

• When a simple event verb has a root associated with two participants, its nonactor argument realizes a pure root participant.

(The actor argument of both is associated with a structure participant.)

Predict: Differences in the behavior of the nonactor arguments of the two verb types reflecting different status.

Evidence: Differential behavior of surface contact and change of state verbs (RH&L 1998)

These two classes of transitive verbs have roots associated with two participants, but due to their different event structures, they contrast as to nature of their second argument:

— Lexically simple change of state verbs (break, dry, open, ...) → complex events
   Nonactor argument is a structure participant.

— Surface contact verbs (wipe, rub, scrub, sweep, ...) → simple events
   Nonactor argument is a pure root participant.

Surface contact verbs show more argument expression options than change of state verbs: (RH&L 1998, Wright & Levin 2000; notwithstanding questions raised by Goldberg 2001)
— Surface contact verbs allow unspecified objects without recourse to generic or repetitive contexts, change of state verbs don’t.
— Surface contact verbs take nonsubcategorized objects, change of state verbs don’t.

(24) Unspecified Objects:
   a. Leslie swept/scrubbed (the floor) this morning.
   b. *Kelly broke again tonight when she did the dishes.

(25) Nonsubcategorized Objects:
   a. The child rubbed the tiredness out of his eyes.
       Cinderella scrubbed her hands raw.
   b. *The clumsy child broke the beauty out of the vase.
       *The clumsy child broke his knuckles raw.

EXPLAINING THE DIFFERENCES: VERB BEHAVIOR REFLECTS EVENT COMPLEXITY

A principle governing the event structure-to-syntax mapping:

THE ARGUMENT-PER-SUBEVENT CONDITION (L&RH 1999)
There must be at least one argument XP in the syntax per subevent in the event structure.
(Grimshaw & Vikner 1993; van Hout 1996; Kaufmann & Wunderlich 1998; RH&L 1998)

Thus, differences in event complexity and argument status underlie observed differences in the behavior of surface contact verbs and change of state verbs.

• Since a change of state verb has a complex event structure with two subevents,
  it must have two arguments by the Argument-Per-Subevent Condition.
  Its object must realize the structure participant of the second subevent.

CONSEQUENCES: No unspecified objects; choice and interpretation of object is fixed:
  get uniform semantics (patient), determined by its event structure position.

• Since a surface contact verb has a simple event structure and, hence, only one subevent,
  only one argument, the actor, is required by the Argument-Per-Subevent Condition,
  though its root is associated with two arguments.
  The other argument, a pure root participant, does not fall under this condition.

CONSEQUENCES: When left unexpressed, get unspecified object interpretation;
  other than “normal” objects fine; no reason for object to have consistent semantics.

The Challenges of Object Alternations Reexamined

The properties of simple event verbs that give rise to the change of state/surface contact verb contrasts are at the heart of object alternations.

PREDICTION: Verbs must basically have a simple event structure to show such alternations.
  That is, object alternations reflect event complexity, or, rather, “simplicity”.
WHY? Such verbs have only a single structure participant, realized as the subject;
  thus, they have flexibility as to object choice.

HOW WOULD OBJECT ALTERNATIONS ARISE?
An object alternation should be possible if there are two nonactor “arguments” associated with the alternating verbs and there are two distinct ways of expressing both simultaneously.
Alternating verbs basically have a simple event structure

- Verbs known to alternate are basically means/manner verbs (e.g., they don't entail a result); that is, they have simple event structures.

(26) a. Locative Alternation (adding): dab, smear, splash, spray, sprinkle, stuff, ...
b. Locative Alternation (removing): rake, rub, scrub, shovel, sweep, wipe, ...
   (these are a subset of the surface contact verbs)
c. Image Impression Alternation: emboss, embroider, engrave, paint, stamp, ...
d. Material/Product Alternation: carve, knit, sculpt, sew, weave, whittle, ...
e. with/against Alternation: beat, hit, pound, tap, whack, ...

- Denominal verbs named after instruments show object alternations, but not those named after things/stuff or containers. Only the former, as means/manner verbs, have simple event structures.

(27) a. Tracy shoveled snow off the sidewalk.
   Tracy shoveled the sidewalk.
b. Robin brushed oil on the bread.
   Robin brushed the bread with oil.

(28) a. Devon saddled the horse with a Western saddle.
   *Devon saddled a Western saddle on the horse.
b. Lindsay buttered the toast with unsalted butter.
   *Lindsay buttered unsalted butter on the toast.

- Verbs with stative roots associated with three arguments also show object alternations; again, these are verbs with simple event structures.

(29) Tony admired them for their integrity.
   Tony admired the integrity in them.
   Tony admired their integrity.

Do material/product alternation verbs present a problem for the analysis?

Event complexity is sometimes defined aspectually, as telicity or accomplishmenthood.

If so, some object alternation verbs would have complex event structures,
e.g., material/product alternation verbs, such as carve, knit, or sew.

- If such verbs had complex event structures, they should pattern like change of state verbs with respect to critical properties, e.g., unspecified and nonsubcategorized objects. But they actually pattern like surface contact verbs, which have a simple event structure.

(30) a. Cameron carved/knit/sewed.
b. ... she could, and did, KNIT her way serenely through all the complications which murder produces ... (P. Wentworth, Pilgrim's Rest, 1946; Harper-Perennial, New York, 1993, p. 12)
L&RH (1999, to appear) argue aspectual definitions of “complex event” are not relevant to the Argument-Per-Subevent Condition.

Their alternative: An event whose subevents aren’t necessarily temporally dependent.
Evidence: Change of state verbs (i.e., lexical causatives) and resultatives.

By this definition, an event of carving a cat out of a chunk of wood is not complex, even if it were said to have two subevents: an event of using a knife on the wood and an event of a cat shape emerging.

Why? These subevents are necessarily temporally dependent.

The licensing of alternate object choices

Having a simple event structure is necessary, but not sufficient, for object alternations; e.g., push and read do not show object alternations though simple event verbs. Showing object alternations requires that alternate object choices be licensed.

A sketch (actual details of how licensing works need further investigation):
There are two interacting sources of licensing:
— Roots that are inherently associated with two or three participants
— Nonverbal predicates that allow a verb’s simple event structure to be augmented to a complex event structure, while also licensing structure participants.

Template augmentation (RH&L 1998):
Event structure templates may be freely augmented up to other possible templates.

Simple event verbs are candidates for template augmentation, since the result is a possible event structure: a complex event structure.

An example: The removing form of the locative alternation.

Assume wipe describes a process; its root is basically associated with an actor and a surface. wipe does not entail a particular result (Talmy 2000), though wiping is a means of removing stuff from a surface; wipe’s event structure can be augmented via the addition of a predicate to give a complex removing event, with an added predicate licensing the stuff argument, and the “normal” (location) object appearing in a newly introduced result clause.

(31) a. Kelly wiped the table.
   \[ \{ x \ \text{ACT}_{<W I P E>} \ y \} \]

b. Kelly wiped the crumbs off the table.
   \[ \{ x \ \text{ACT}_{<W I P E>} \ y \} \ \text{CAUSE} [ \text{BECOME} [ z \ \text{NOT AT} <P L A C E>] ] \]

Some verbs may have roots which are basically associated with three participants; for example, the locative alternation verb pack: actor, stuff, container. Either the stuff or container can be expressed as object: pack the clothes or pack the bag. Locative alternation arises when all three arguments are expressed, as there are two appropriate predicates to license a third argument: with and a spatial PP.

(Patterns of optionality and obligatoriness of arguments reflect the fine semantics of the roots; thus, smear’s root says something about the nature of the stuff and how it is applied, but not about the surface.)
Accounting for Properties of Object Alternations

- Why don't change of state verbs, putting verbs, etc., show object alternations?

These verbs have a complex event structure and, thus, two structure participants. Their objects have their source in a specific event structure position, so no alternations.

- If object alternations have a unified source, why is there diversity in the alternations and the semantic classes of verbs showing them?

The variants in the alternations typically denote complex events, consisting of
- a causing subevent—containing the verb's root—and a result subevent;
- the result is typically a conventional result of the causing subevent (Talmy 2000).

Result subevents come in various types: removal, addition, creation, ...

The various types of object alternations reflect different types of results.
- Locative alternation: Addition or removal
- Material/product and image impression alternations: Creation

Each type of result subevent is brought about by particular (conventional) activities. Concomitantly, there are associated classes of means/manner verbs,
- describing modes of removing, adding, creating, ...

- Why do some verbs show more object alternations than others?

Although object alternation verbs have simple event structures, in the alternations
- they are found in complex event structures, built on these simple event structures,
- each characterized by a particular type of result.

Thus, only verbs with roots describing means/manners that can be used to obtaining
- various types of results can show multiple alternations.

EXAMPLE: *sew* has such a root, since sewing can be used to create an object,
- “impress” an image, cover a surface, or attach things.

A verb whose root describes a means/manner used only to obtain a very specific result,
- such as *vacuum*, will not show a range of object alternations.

A verb whose root describes a means/manner which is not used to obtain a particular result,
- such as *read*, will not show object alternations.

- Why do object alternation verbs also take nonsubcategorized objects?

Object alternation verbs can take nonsubcategorized objects, because nonsubcategorized object arise for the same reason that alternate objects choices do:
- They are found with simple event verbs (L&RH 1999); arise from the lack of restrictions Argument-Per-Subevent Condition imposes on objects of such verbs.

That is, both are constrained by the same argument realization conditions.

The distinctive property of nonsubcategorized objects in resultatives:
- They are necessarily licensed by an additional result predicate and not by the root, together with conditions on what is construable as a unitary event.

Nonsubcategorized objects often bear a relation to the verb that can be otherwise expressed via an adjunct (Jackendoff 1990, Sato 1987); that is, they are rather loosely associated with the event denoted by the verb.

(32)  a. The gang drank the pub dry.
    The gang drank in the pub.
b. The cows ate the field bare.
   The cows ate in the field.
c. The dog barked the neighbors awake.
   The dog barked at the neighbors.

• Why do stative verbs show few object alternations?

Many object alternations arise from conventional associations between means/manner verbs and particular results, with a result predicate playing a key role in argument licensing.

Stative verbs, by their very nature, are not conventionally associated with particular results; thus, a result predicate is not available to license any arguments.

To show object alternations their roots must be associated with three participants and there must be some other way of licensing the expression of all three simultaneously.

Yet, few stative verbs have sufficient root participants.

In the attested object alternation, the stative verb has two root participants and a third participant is introduced as the possessor of one of the root participants.

• Why do some verbs “show” only one variant of an alternation?

(33) a. Ashley filled the bucket with water.
    * Ashley filled water into the bucket.

b. Ashley poured water into the bucket.
    * Ashley poured the bucket with water.

These verbs have roots that are basically associated with complex event structures, though their roots describe the same type of results as characterize certain object alternations. Thus, they do not show object alternations, though they have similar semantics.

EXAMPLE: *fill is really a verb of change of state, with a root of ontological type “state”, not a means/manner root, as required for object alternations.

Conclusions

• Object alternations have a more unified analysis than their semantic variety suggests: they arise because simple event verbs do not restrict their potential objects.

• The semantic heterogeneity of object alternations reflects the availability of distinct types of results, while the semantic range of verbs showing a particular alternation reflects the range of means/manners for achieving each result type.

• These results hinge on—and thus support—a partial dissociation of the complexity of an event from the number of arguments it involves.

• These results underscore an asymmetry between subjects and objects: subjects arise from structure participants and, thus, do not show the broad semantic range that objects, which may arise from structure or pure root participants, do.
Selected References:


(beth.levin@stanford.edu)