7.5: Verb meanings

Much of the recent research on lexical semantics has focused on verb meanings. One reason for this special interest in verbs is the fact that verb meanings have a direct influence on syntactic structure, and so syntactic evidence can be used to supplement traditional semantic methods.

A classic paper by Charles Fillmore (1970) distinguishes two classes of transitive verbs in English: “surface contact” verbs (e.g., *hit, slap, strike, bump, stroke*) vs. “change of state” verbs (e.g., *break, bend, fold, shatter, crack*). Fillmore shows that the members of each class share certain syntactic and semantic properties which distinguish them from members of the other class. He further argues that the correlation between these syntactic and semantic properties supports a view of lexical semantics under which the meaning of a verb is made up of two kinds of elements: (a) systematic components of meaning that are shared by an entire class; and (b) idiosyncratic components that are specific to the individual root. Only the former are assumed to have syntactic effects. This basic insight has been foundational for a large body of subsequent work in the area of verbal semantics.

Fillmore begins by using syntactic criteria to distinguish the two classes, which we will refer to for convenience as the *hit* class vs. the *break* class. Subsequent research has identified additional criteria for making this distinction. One of the best-known tests is the causative-inchoative alternation. Break verbs generally exhibit systematic polysemy between a transitive and an intransitive sense. The intransitive sense has an inchoative (change of state) meaning while the transitive sense has a causative meaning (19). As illustrated in (20), hit verbs do not permit this alternation, and often lack intransitive senses altogether.

(19) a. John broke the window (with a rock).

b. The window broke.

(20) a. John hit the tree (with a stick).
b. The tree hit.

Additional tests include “body-part possessor ascension” (21–22), the conative alternation (23–24), and the middle alternation (25). Each of these tests demonstrates a difference between the two classes in terms of the potential syntactic functions (subject, direct object, oblique argument, or unexpressed) of the agent and patient.

(21) a. I {hit/slapped/struck} his leg.

b. I {hit/slapped/struck} him on the leg

(22) a. I {broke/bent/shattered} his leg.

b. I {broke/bent/shattered} him on the leg.

(23) a. Mary hit the piñata.

b. Mary hit at the piñata.

c. I slapped the mosquito.

d. I slapped at the mosquito.

(24) a. Mary broke the piñata.

b. Mary broke at the piñata.

c. I cracked the mirror.

d. I cracked at the mirror.

(25) a. This glass breaks easily.

b. This fence hits easily.

These various syntactic tests (and others not mentioned here) show a high degree of convergence; that is, the class of break verbs identified by any one test matches very closely the class of break verbs identified by the other tests. This convergence strongly supports the claim that the members of each class share certain properties in common. Fillmore (1970: 125) suggests that these shared properties are semantic components: “change of state” in the case of the break verbs and “surface contact” in the case of the hit verbs. Crucially, he provides independent semantic evidence for this claim, specifically evidence that break verbs do but hit verbs do not entail a change of state (26). Sentence (26a) is linguistically acceptable, although surprising based on our knowledge of the world, while (26b) is a contradiction. Example (27) presents similar evidence for the entailment of “surface contact” in the case of the hit verbs.

(26) a. I hit the window with a hammer; it didn’t faze the window, but the hammer shattered.

b. I broke the window with a hammer; it didn’t faze the window, but the hammer shattered.
(27) a. 'I hit the window without touching it.

b. I broke the window without touching it.

Without this kind of direct semantic evidence, there is a great danger of falling into circular reasoning, e.g.: break verbs permit the causative-inchoative alternation because they contain the component “change of state”, and we know they contain the component “change of state” because they permit the causative-inchoative alternation. As many linguists have learned to our sorrow, it is all too easy to fall into this kind of trap.

While break verbs (e.g., break, bend, fold, shatter, crack) all share the “change of state” component, they do not all mean the same thing. Each of these verbs has aspects of meaning which distinguish it from all the other members of the class, such as the specific nature of the change and selectional restrictions on the object/patient. Fillmore (1970: 131) suggests that only the shared component of meaning has syntactic consequences; the idiosyncratic aspects of meaning that distinguish one break verb from another do not affect the grammatical realization of arguments.

Levin (1993) builds on and extends Fillmore’s study of verb classes in English. In her introduction she compares the break and hit verbs with two additional classes, touch verbs (touch, pat, stroke, tickle, etc.) and cut verbs (cut, hack, saw, scratch, slash, etc.). Using just three of the diagnostic tests discussed above, she shows that each of these classes has a distinctive pattern of syntactic behavior, as summarized in (28). The examples in (29–31) illustrate the behavior of touch verbs and cut verbs.16

(28) English transitive verb classes

<table>
<thead>
<tr>
<th></th>
<th>touch verbs</th>
<th>hit verbs</th>
<th>cut verbs</th>
<th>break verbs</th>
</tr>
</thead>
<tbody>
<tr>
<td>body-part possessor ascension</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td>NO</td>
</tr>
<tr>
<td>conative alternation</td>
<td>NO</td>
<td>YES</td>
<td>YES</td>
<td>NO</td>
</tr>
<tr>
<td>middle</td>
<td>NO</td>
<td>NO</td>
<td>YES</td>
<td>YES</td>
</tr>
</tbody>
</table>

(29) body-part possessor ascension:

a. I touched Bill’s shoulder.

b. I touched Bill on the shoulder.

c. I cut Bill’s arm.

d. I cut Bill on the arm.

(30) conative alternation:

a. Terry touched the cat.

b. *Terry touched at the cat.
c. Margaret cut the rope.

d. Margaret cut at the rope.

(31) middle:

a. The bread cuts easily.

b. *Cats touch easily.

Levin proposes the following explanation for these observations. Body-part possessor ascension is possible only for verb classes which share the surface contact component of meaning. The conative alternation is possible only for verb classes whose meanings include both contact and motion. The middle construction is possible only for transitive verb classes whose meanings include a caused change of state. The four classes pattern differently with respect to these tests because each of the four has a distinctive set of meaning components, as summarized in (32).

(32) Shared components of meaning

<table>
<thead>
<tr>
<th>Verb Class</th>
<th>Meaning Components</th>
</tr>
</thead>
<tbody>
<tr>
<td>touch verbs</td>
<td>contact</td>
</tr>
<tr>
<td>hit verbs</td>
<td>motion, contact</td>
</tr>
<tr>
<td>cut verbs</td>
<td>motion, contact, change</td>
</tr>
<tr>
<td>break verbs</td>
<td>change</td>
</tr>
</tbody>
</table>

These verb classes have been found to be grammatically relevant in other languages as well. Levin (2015) cites the following examples: DeLancey (1995; 2000) on Lhasa Tibetan; Guerssel et al. (1985) on Berber, Warlpiri, and Winnebago; Kroeger (2010) on Kimaragang Dusun; Vogel (2005) on Jarawara.

In the remainder of her book, Levin (1993) identifies 192 classes of English verbs, using 79 diagnostic patterns of diathesis alternations (changes in the way that arguments are expressed syntactically). She shows that these verb classes are supported by a very impressive body of evidence. However, she states that establishing these classes is only a means to an end; the real goal is to understand meaning components:

[T]here is a sense in which the notion of verb class is an artificial construct. Verb classes arise because a set of verbs with one or more shared meaning components show similar behavior… The important theoretical construct is the notion of meaning component, not the notion of verb class.

Like Fillmore, Levin argues that not all meaning components are grammatically relevant, but only those which define class membership. The aspects of meaning that distinguish one verb from another within the same class (e.g. punch vs. slap) are idiosyncratic, and do not affect syntactic behavior. Evidence from diathesis alternations can help us determine the systematic, class-defining meaning components, but will not provide an analysis for the idiosyncratic aspects of the meaning of a particular verb.

As noted above, verb meanings cannot be represented as an unordered bundle of components, but must be structured in some way. One popular method, referred to as lexical decomposition, is illustrated in (33). This formula was proposed by Rappaport Hovav & Levin (1998: 109) as a partial representation of the systematic components of meaning for verbs.
like break. In this formula, $x$ represents the agent and $y$ the patient. The idiosyncratic aspects of meaning for a particular verb root would be associated with the state predicate (e.g. *broken*, *split*, etc.).

\[(33) \text{[[x ACT] CAUSE [BECOME [y]]]]}\]


13 Guerssel et al. (1985); Levin (1993).

14 Fillmore (1977); Hale & Keyser (1987); Levin (1993).

15 Fillmore (1970: 125)

16 Examples adapted from Levin (1993: 6–7).

17 Levin (1993: 8)

18 Adapted from Saeed (2009: 268).