

Manner and Result: Implications for Argument Realization Across Languages

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1 Overview

Fillmore’s “The Grammar of *Hitting* and *Breaking*” (1970) draws attention to the considerable divergences in the argument realization options of the verbs *break* and *hit* in English.

These divergences have been understood in the context of a dichotomy in the English verb lexicon between **manner** and **result** verbs (RH&L 1998).

An open question: Does this dichotomy play a role in understanding the argument realization patterns of verbs in languages beyond English?

Primary goal: To address this question using hitting verbs, showing that the dichotomy makes predictions about expected crosslinguistic similarities and divergences in argument realization.

Why these verbs? Manner verbs are predicted to show more diversity in argument realization in and across languages than result verbs; thus, hitting verbs, as manner verbs, provide a good domain to investigate such predictions and show that they are verified.

Secondary goal: To show certain argument realization principles apply across languages, with differences in how languages encode specific types of events arising from differences in their lexical and morphosyntactic resources—independent differences which hide considerable commonalities.

2 The argument realization of hitting and breaking verbs in English

Fillmore (1970) focuses on *break* and *hit* as representatives of two larger classes of verbs, whose members share elements of meaning and patterns of behavior.

- (1) a. BREAKING VERBS: bend, **break**, crack, fold, shatter, splinter, split, snap, ...
Subtype of change of state verbs: involve a change of state in an entity.
- b. HITTING VERBS: bash, beat, **hit**, kick, pound, punch, slap, smack, tap, whack, ...
Subtype of surface contact verbs: involve (often forceful) contact with an entity, without entailing a change in its state.

Verbs of both types allow transitive uses, optionally accompanied by an instrumental *with* phrase:

- (2) a. The boy broke the window [PATIENT] (with a ball [INSTRUMENT]).
- b. The boy hit the window [SURFACE] (with a ball [INSTRUMENT]).

But hitting and breaking verbs show considerable divergences in their argument realization options.

- (3) Availability of the causative alternation (V-transitive = ‘cause to V-intransitive’):
- a. The boy broke the window./The window broke.
 - b. The boy hit the window./*The window hit.
- (4) Availability of the *with/against* alternation (Fillmore 1977:74–78):
- a. Perry broke the fence with the stick. \neq Perry broke the stick against the fence.
 - b. Perry hit the fence with the stick. = Perry hit the stick against the fence.
- (5) Availability of the conative alternation:
- a. Janet broke the vase/*Janet broke at the vase.
 - b. Carla hit the door./Carla hit at the door.

Generalizations about argument realization in English across transitive uses:

- The **patient** must be the object of a breaking verb.
- The **surface** may, but need not be the object of a hitting verb.

3 Behind hitting and breaking: The manner vs. result verb distinction

3.1 Hitting and breaking revisited

- *hit* and *break* jointly make for a compelling case study because certain events can be described by either verb, yet the verb chosen is significant.

EXAMPLE: A vandal throws a rock at a car windshield and the windshield breaks.

This event could be described with either verb, though each describes a different facet of the event:

- (6)
- a. The vandal broke the windshield with a rock.
 - b. The vandal hit the windshield with a rock.

(a) asserts the window is no longer intact, but is silent about how it happened: it could have been hit, kicked, or punched and various instruments could have been used: rocks, hammers, bats, or sticks.

→ This is because *break* is a change of state verb.

(b) asserts something came forcefully into contact with the window, but is silent as to whether this contact had any effect on it. The verb does not entail that the window broke, though it may have, as it describes an action that often leads to such a change of state.

- (7) The rock hit/#broke the windshield, but luckily it wasn’t damaged.

→ This is because *hit* is a surface contact verb.

- Generalizing, verbs describing events in which physical objects are damaged fall into two classes:
 - verbs like *hit* that describe making surface contact with an object via forceful impact; these MANNER(/means) verbs describe ways of potentially damaging objects;
 - verbs like *break* that describe changes in an object’s “material integrity” (Hale & Keyser 1987); these RESULT verbs describe specific types of damage that often result from forceful impact;

3.2 Beyond hitting and breaking: The pervasiveness of the dichotomy

- The bifurcation among the “verbs of damaging” reflects a more pervasive split in the English verb inventory (L&RH 1991, in press, RH&L 1998, 2010).
- Other apparently “semantically coherent” verb classes of English can be similarly subdivided:
 - Manner verbs: specify a manner of carrying out an action
 - Result verbs: specify the result of an action

	Manner verbs	vs.	Result verbs
— Verbs of damaging:	<i>hit</i>	vs.	<i>break</i>
— Verbs of putting — 2-dim:	<i>smear</i>	vs.	<i>cover</i>
— Verbs of putting — 3-dim:	<i>pour</i>	vs.	<i>fill</i>
— Verbs of removal:	<i>shovel</i>	vs.	<i>empty</i>
— Verbs of combining:	<i>shake</i>	vs.	<i>combine</i>
— Verbs of killing:	<i>stab</i>	vs.	<i>kill</i>

- The verb class defined by the Manner column is grammatically relevant despite the perceived semantic diversity of its members; the same holds of the class defined by the Result column.
- However, the “semantic classes” in the leftmost column are not grammatically relevant; they may be perceived as semantic classes since certain manner verbs and certain result verbs can sometimes describe the same events, just as *break* and *hit* do.

The source of this intuition most likely lies in the observation that:

- Many result verbs lexicalize results that are conventionally associated with particular manners. e.g., *clean* and *clear* lexicalize states that may result from removing stuff from a surface in a prototypical manner.
- Many manner verbs lexicalize manners that are conventionally associated with particular results. e.g., *wipe* and *scrub* lexicalize actions involving surface contact and motion, which are often used to remove stuff from a surface.

HOWEVER, such result verbs don’t entail the manners, nor do such manner verbs entail the results.

- (8) a. I just wiped the counter, but it’s still dirty/sticky/covered in crumbs.
 b. I cleaned the counter by scouring it/wiping it with a sponge/saying “abracadabra”.

- A comparable dichotomy is found in the motion domain, as reflected in Talmy’s classification of motion verbs in terms of “conflation” of meaning components (1975, 1985, 2000):

- Motion and path verbs: e.g., *arrive, ascend, descend, enter, exit*
 e.g., *ascend* specifies a direction of motion, but not the manner in which the motion is effected.
- Motion and manner verbs: e.g., *amble, fly, jog, plod, run, stroll, swim, walk*
 e.g., *jog* specifies a manner of motion, but is neutral as to the specific direction of motion.

→ Path (i.e. directed motion) verbs, then, can be subsumed under result verbs.

- “Manner” and “result” may also apply to verbs that don’t fit easily into larger lexical domains:

- (9) a. MANNER VERBS: cry, eat, exercise, mutter, scribble, shout, squeak, waltz, ...
 b. RESULT VERBS: dry, come, destroy, gladden, melt, widen, ...

3.3 The foundations of the manner vs. result dichotomy

- A proposal concerning the origins of the dichotomy: it arises from a lexicalization constraint.
 - (10) MANNER/RESULT COMPLEMENTARITY: Manner and result meaning components are in complementary distribution: a verb lexicalizes only one. (L&RH 1991, in press, RH&L 2010)
 - (11) LEXICALIZED MEANING: Those components of a verb's meaning that are specified and entailed in all uses of the verb, regardless of context.
- RH&L (2010) propose this distinction is rooted in the notion SCALAR CHANGE (Hay, Kennedy & Levin 1999, McClure 1994, Rappaport Hovav 2008).

PROPOSAL: Result roots lexically specify scalar change and manner roots nonscalar change.

- A SCALE is constituted by a set of degrees—points or intervals indicating measurement values—on a particular dimension (e.g., brightness, depth, height, ripeness, temperature), with an ordering relation. The dimension represents an attribute of an entity, with the degrees indicating the possible values of this attribute (Kennedy 2001, Kennedy & McNally 2005).
- A SCALAR CHANGE in an entity involves a change in the value of one of its scalar-valued attributes in a particular direction on the relevant scale.
- A NONSCALAR CHANGE in an entity is any change which isn't characterizable in terms of an ordered set of degrees—i.e. values of a single attribute—along a dimension representing this attribute.
- Two properties may make a change nonscalar: (i) lack of an ordering relation and (ii) complexity.
- The vast majority of nonscalar change verbs involve a complex combination of many changes at once, so that there is no single, privileged scale of change.

EXAMPLE: The verbs *scrub* and *wipe* each involve a specific pattern of movement of the hand and arm that is repeated an indefinite number of times against a surface. Collectively, these changes do not represent a change in the value of a single attribute, nor is any one element in the sequence of movements a necessary starting point of the activity.

4 The grammatical relevance of the manner vs. result dichotomy

The divergent argument realization patterns of *hit* and *break* are representative of manner and result verbs in general: these verbs differ systematically in both meaning and argument realization. (See Levin 1999, 2006, RH&L 1998 for a theory of event structure that accounts for these options.)

SOME TERMS: PATIENT refers to the argument of a result verb that undergoes the scalar change, while FORCE RECIPIENT refers to the 'passive' argument of a manner verb.

4.1 The argument realization patterns of result—i.e. scalar change—verbs

Result verbs, as scalar change verbs, show a distinctive argument realization property, which is illustrated with transitive change of state verbs, but which extends to other result verbs, e.g., directed motion verbs and intransitive change of state verbs (L&RH 2011).

- (12) THE ARGUMENT REALIZATION PROPERTY OF RESULT VERBS (L&RH 2011):
The patient MUST be realized and CAN ONLY be realized as a direct object.
(cf. Fillmore 1970, 1977, Levin 1993, RH&L 1998, 2005 on change of state verbs)

• The patient must be realized: result verbs aren't found with unspecified objects (RH&L 1998, Wright & Levin 2000, despite questions raised by Goldberg 2001, 2005, Mittwoch 2005), nor with non-patient objects—e.g., in nonsubcategorized NP resultatives or with *out*-prefixation.

- (13) UNSPECIFIED OBJECTS: *Pat broke/dimmed.

- (14) NONSUBCATEGORIZED OBJECT RESULTATIVES:

- a. *The puppy broke his way out of the china shop.
b. *The stagehand dimmed the scene dark.

- (15) *out*- PREFIXATION:

- a. *The two-year old outbroke the three-year old.
b. *The stagehand outdimmed the director.

• The patient must be realized as the object: It cannot be realized as an oblique, nor do these verbs participate in object alternations (Levin 2006).

- (16) CONATIVE ALTERNATION:

- a. Alex broke the vase./*Alex broke at the vase.
b. Sam dimmed the lights./*Sam dimmed at/from the lights.

- (17) POSSESSOR RAISING:

- a. Kelly broke my arm.
b. *Kelly broke me on the arm. (cf. Kelly hit me on the arm)

- (18) *With/against* ALTERNATION:

- a. Sam broke the fence with the stick.
b. Sam broke the stick against the fence. (not a paraphrase of (a))

• No other argument can be direct object, even when having an entailment (e.g., change of location) often associated with direct objecthood.

- (19) a. Sam broke the fence with the stick. (fence breaks; stick moves)
b. Sam broke the stick against the fence. (stick breaks; stick moves)

- (20) a. Sam hit the fence with a stick.
b. Sam hit a stick against the fence. (Fillmore 1977:75)

SUMMARY: Result verbs have severely constrained argument realization options.

4.2 The argument realization patterns of manner—i.e. nonscalar change—verbs

- Manner verbs, unlike result verbs, are not restricted by (12).
- They show more argument realization options, with flexibility in realizing the force recipient.
- The force recipient need not be realized.

— Manner verbs are found with unspecified objects without recourse to generic or repetitive contexts (see section 4.1).

(21) Leslie swept/scrubbed (the floor) this morning.

— Manner verbs are found in nonsubcategorized object resultatives and allow *out*-prefixation.

(22) NONSUBCATEGORIZED OBJECTS:

- a. The child rubbed the tiredness out of his eyes.
- b. Cinderella scrubbed her hands raw.

(23) *out*- PREFIXATION:

- a. Cinderella outscrubbed her stepsister.
- b. The first batter outhit the next batter.

- The force recipient need not be expressed as an object, as shown by object–oblique alternations, as well as object alternations.

(24) CONATIVE ALTERNATION: Kim scrubbed the window./Kim scrubbed at the window.

(25) *With/against* ALTERNATION: Sam hit the fence with a stick/a stick against the fence.

(26) POSSESSOR RAISING: Kelly hit my arm./Kelly hit me on the arm.

- Another argument can be the direct object when it has an entailment (e.g., change of location) associated with direct objecthood.

- (27) a. Sam hit the fence with a stick.
- b. Sam hit a stick against the fence. (Fillmore 1977:75)

SUMMARY: Manner verbs have considerable flexibility in their argument realization options.

5 Implications of the manner/result dichotomy for argument realization across languages

A question: Does the manner/result dichotomy affect argument realization beyond English?

The expected answer: Yes—on the assumption that (12) holds across languages.

The actual answer: Manner and result verbs DO show different argument realization patterns, and as in English, these differences reflect (12).

The prediction for result verbs: Consistent with (12), across languages they should show little flexibility in the options available to them.

The predictions for manner verbs:

- In a given language, manner verbs should show more flexibility than result verbs in their object choices, including the need to take an object at all.
- Across languages, manner verbs should manifest more diversity in their argument realization options than result verbs.

Support for the manner verb predictions: A crosslinguistic study of hitting verbs.

Why hitting verbs? They have not received comparative investigation unlike the breaking verbs.

Support for the result verb prediction: The counterpart of English *break* is always attested among the verbs showing a given language’s instantiation of the causative alternation—a set of verbs that overlaps significantly (Haspelmath 1993, Nedjalkov 1969, Nichols, Peterson & Barnes 2004).

6 The data

In English, hitting verbs allow for alternative realizations of the argument denoting the surface:

While it may be the object, it may also be expressed in a PP or not expressed at all.

It is precisely in the realization of the surface that variation is observed across languages, with the attested options going beyond what English might suggest.

6.1 The attested patterns previewed

- **Surface as object:** Smith hit *the fence*. (English, Vietnamese)

[_{VP} V NPSURFACE-ACC]

- **Surface as oblique:** Smith hit *at the fence*. (English, Hebrew, Ingush, Lhasa Tibetan, Ulwa)

[_{VP} V NPSURFACE-OBL_{loc}] or [_{VP} V [_{PP} P_{loc} NPSURFACE]]

- **Surface as object or oblique depending on animacy:** Smith hit *Jones/at the fence*. (Dutch, German, Russian, Swedish)

- **Surface as oblique with a V-N combination:** The horse gave a kick to *my shin*. (English, Hebrew, Ingush, Lhasa Tibetan, Portuguese, Spanish, Ulwa)

[_{VP} V N NPSURFACE-OBL] or [_{VP} V N [_{PP} P NPSURFACE]]

Choice of case/P (e.g., locative vs. dative) may depend on animacy of surface.

N provides semantic content to distinguish among types of hitting events.

TYPES OF V-N COMBINATIONS:

- V is a light verb: *give slapping* ‘slap’ (English, Hebrew, Italian, Portuguese, Spanish)
- V is a ‘basic’ hitting verb: *hit fist* ‘punch’ (Ingush, Lhasa Tibetan, Ulwa)
- The V-N combination is a cognate object construction: *hit_V hit_N* ‘hit a hit’ (Vietnamese)

6.2 Language-specific case studies

NOTE: Discussions of hitting verbs in still other languages generally support the picture emerging here (e.g., Schaefer & Egbokhare 2004 on Emai, Acton 2012 on Finnish, Masini 2012 on Italian, Chung 2003 on Korean, Kiyosawa & Gerdtts 2010 on Salish, Palancar 1999 on Spanish).

6.2.1 Ulwa (Koontz-Garboden p.c.)

- With *baunaka*, which is used to describe a range of hitting events, including those falling under English *hit*, *kick* and *beat*, as well as *tisnaka* ‘slap’, the surface, whether animate or inanimate, is expressed in a PP headed by locative *kau*.

(28) M raudi L *(kau) bau-t-ida.
M SUBJ L at hit-TA-3SING
‘M hit L.’ (Koontz-Garboden field notes:0405-1024)

(29) Andrew raudi Ulwa uuka *(kau) bau-t-i tung ka.
Andrew SUBJ Ulwa house at hit-TA-PROG walk SENT-KA
‘Andrew’s walking around hitting the Ulwa house.’ (Koontz-Garboden field notes:0405-1025)

These verbs contrast with change of state verbs (e.g., *bahnaka* ‘break’, *dapinnaka* ‘straighten/bend’, *warinnaka* ‘bend’) in their transitive uses: their patient argument does not appear with *kau*.

(30) Aaka bakaka ulni-ki panka (*kau) bah-t-ida.
this child writing-1SING stick at break-TA-3SING
‘This kid broke my pen.’ (Koontz-Garboden field notes:0405-1030)

- Ulwa transitive verbs consist of a precategorial root (e.g., *bau-*, *bah-*) and the transitive class marker *pa* or *ta* (Koontz-Garboden 2009).

— Breaking verb roots may also be found with one of the intransitive class markers *da* or *wa*; thus, such verbs manifest a causative alternation.

(31) Arak-ki-bus bah-w-ida.
gun-1SING break-WA-3SING.
‘My gun broke.’ (Green 2004)

— Hitting verb roots don’t take intransitive class markers (e.g., **bauWANaka/bauDAnaka*) and, thus, lack the causative alternation.

6.2.2 Hebrew (Botwinik-Rotem 2003, Halevy 2008, Gafter p.c., Rappaport Hovav p.c.)

- The surface, whether animate or inanimate, is expressed in a PP headed by locative *be*.

(32) *ba’at* ‘kick’, *dafaq* ‘knock (on door), beat’, *halam* ‘beat/hit’, *hitslif* ‘whip’, *naga* ‘touch’, *paga* ‘hit/collide’, *xavat* ‘swat’, ... (Botwinik-Rotem 2003:10, Halevy 2008:63, 87)

(33) Ha-sus ba'at be Dina/ ba dli.
 the-horse kick.PST.3sm in Dina/ in.the pail
 'The horse kicked Dina/the pail.'

- The verbs *hirbits* 'hit'—the hitting verb most frequently used colloquially—and *satar* 'slap' take animate surfaces only, and then only if expressed in the dative.
- Hitting verbs do not show the causative alternation, in contrast to *break* and other change of state verbs (Halevy 2008:87).
- As in English, hitting, but not breaking verbs allow possessor raising (Halevy 2008:84–86).

6.2.3 Swedish (Lundquist & Ramchand in press)

- The surface must be expressed in a PP when inanimate, but may be an object when animate (Lundquist & Ramchand in press, Viberg 2004:337–338). (Comparable facts hold of German and Dutch; Lundquist & Ramchand in press, de Swart 2010).

(34) a. Jag sparkade *(på) bordet (flera gånger).
 I kicked (on) table.DEF (many times)
 'I kicked (on) the table many times.' (Lundquist & Ramchand in press:(2a))

b. Jag sparkade (på) honom (flera gånger).
 I kicked (on) him (many times)
 'I kicked him many times.' (Lundquist & Ramchand in press:(1a))

(35) *sparka*– 'kick', *slå*– 'hit', *bita*– 'bite', *slicka*– 'lick', *hugga*– 'chop' (Lundquist & Ramchand in press:5)

- An inanimate object is possible only if a resultative phrase is predicated of it or if it is understood as being set in motion due to the force imparted as part of the action denoted by the hitting verb. (This observation extends to at least some other languages whose inanimates aren't usually objects.)

(36) Jag sparkade bollen i må.
 I kicked ball.DEF in goal
 'I kicked the ball into the goal.' (Lundquist & Ramchand in press:(15))

- Swedish shows something like the English *against* construction, with the instrument as object.

(37) Jag högg kniven i bordet.
 I stuck knife.DEF in table.DEF
 'I stuck the knife into the table.' (Lundquist & Ramchand in press:(16))

6.2.4 Russian (Nikitina p.c.)

- The surface is expressed in a PP when it is inanimate: it is the object of the preposition *po*; however, the surface is expressed as an object, bearing accusative case, when animate.

- (38) Petja udaril/ stuknul/ shlepnul Kolju.
 Petja.NOM hit/ knocked/ slapped Kolja.ACC
 ‘Petja hit/knocked/slapped Kolja.’
- (39) Petja udaril/ stuknul/ shlepnul po stolu.
 Petja.NOM hit/ knocked/ slapped on table.DAT
 ‘Petja hit/knocked/slapped the table.’

- Causative uses of *break* and other change of state verbs are transitive and have related anticausative intransitives formed by the addition of a reflexive suffix. Hitting verbs lack such uses.

6.2.5 Ingush (Nichols 1982, 1984, 2011)

- The surface, whether animate or inanimate, is expressed with an oblique case—the dative—and the instrument with the nominative (i.e. absolutive) (Nichols 1984:188, 2011:467–470, 746).

- (40) Cuo mashienaa ghadzh tiexar.
 3s.ERG car-DAT stick-NOM strike
 ‘He hit the car with a stick.’ (Nichols 2011:340, (47))
- (41) Da:s woʃa: bi: bi-ett.
 father-ERG son-DAT fist-NOM beats
 ‘(The) father beats (his) son.’ (Nichols 1984:188, (8))
- (42) *d-ietta* ‘strike (repeatedly), beat’, *haqan* ‘cut, slice, rub (and other lateral motions)’, *quossan* ‘throw, shoot’, *tuoxan* ‘strike’ (Nichols 1984:188–189, 2011:470).

- This case-marking pattern is common across Caucasian (Nichols 1984:188), with languages varying as to whether the oblique case is dative or locative.

- Certain concepts lexicalized by hitting verbs in English are expressed via verb-noun (V-N) combinations (Nichols 1982:447, 1984:188).

— The verb is fairly unspecific and the noun, typically an instrument or body part, specifies the type of hitting event (cf. English *give a kick*).

- (43) *tuop tuoxan*, literally ‘rifle strike’, means ‘shoot’, not ‘beat with a rifle’; *urs tuoxan*, literally ‘knife strike’, means ‘stab’, not ‘hit with a knife’; *cerjg tuoxan*, literally ‘tooth strike’, means ‘bite’; *kur tuoxan*, literally ‘horn hit’, means ‘butt’ (Nichols 1984:189, 2011:341, 468).
- (44) as pʰagalna tuop qüössira.
 I-ERG rabbit-DAT rifle-NOM threw
 ‘I shot at the rabbit with a rifle.’ (Jakovlev, 1940:43; cited in Nichols 1984:189, (12c))

— The surface is again expressed with an oblique case and the instrument with the nominative case.

6.2.6 Lhasa Tibetan (DeLancey 1982, 1995, 2000)

- The counterpart of English *hit* is not transitive: the surface, whether animate or inanimate, takes locative case.

(45) thub=bstan-gyis blo=bzang-la gzhus-song.
 Thubten-ERG Lobsang-LOC hit-PERF
 ‘Thubten hit Lobsang.’ (DeLancey 2000:6, (18))

(46) shing-la sta=re gzhus-pa
 tree-LOC axe hit
 ‘hit the tree with an axe’ (DeLancey 2000:13, (61))

- Locative case is not found on the patient argument of change of state verbs.

(47) thub=bstan-gyis dkar-yol cig bcag-song
 Thubten-ERG cup a break-PERF
 ‘Thubten broke a cup.’ (DeLancey 1982:23, (6))

- Some concepts lexicalized by English hitting verbs are expressed via V-N combinations; the surface is still in the locative case (DeLancey 1995, 2000:13).

(48) nga-s blo=bzang=la rdog=rdyag gzhus-pa yin
 I-ERG Lobsang-LOC kick_N hit/throw-PERF/CONJUNCT
 ‘I kicked Lobsang’ (DeLancey 1995:(20))

(49) thub=bstan-gyis blo=bzang-la mur=rdzog gzhus-song
 Thubten-ERG Lobsang-LOC fist hit-PERF
 ‘Thubten punched Lobsang’ (DeLancey 2000:13, (64))

6.2.7 Portuguese (Amaral p.c., Baptista 2004)

- While there are some hitting verbs (e.g., *bater* ‘hit’), the happenings described by many English hitting verbs are only expressible via V-N combinations. (Comparable data is also found in Italian and Spanish; Masini 2012, Palancar 1999.)

— Portuguese uses the light verb *dar* ‘give’ rather than a general hitting verb.

— Though some simple nouns (*pontapé* ‘kick’, *murro* ‘punch’) can enter into these V-N combinations as the object of the light verb, the noun is often a “predicative violent action noun” formed by adding *-ada* to a concrete noun denoting an instrument or body part that can be used to hit or hurt.

(50) O João deu uma bengalada ao Pedro.
 the John give.PERFPST3s a caning to.the Peter
 ‘John gave a cane-*ada*, i.e., a caning, to Peter.’ (Baptista 2004:36, (18c))

(51) BASES FOR *-ada* NOUNS: *agulha* ‘needle’, *bastão* ‘club, staff’, *bengala* ‘cane’, *chibata* ‘switch, rod’, *faca* ‘knife’, *porra* ‘club’, ... (from Baptista 2004:39–40)

Baptista lists over 40 violent action nouns in *-ada*, and notes that such nouns are productively formed (e.g., the nonce *sapatada* ‘shoe-*ada*’, *cadeirada* ‘chair-*ada*’).

— The surface, if inanimate or a body part, is expressed in a PP headed by the locative preposition *em* surface or, if animate, with the dative.

- (52) O João deu uma bengalada no carro.
 the John give.PERFPST3s a caning in.the car
 ‘John hit the car.’
- (53) a. O João deu [um pontapé] [na perna do Pedro].
 the John give.PERFPST3s a kick in.the leg of.the Peter
 ‘John gave a kick in the leg of Peter.’ (Baptista 2004:32, (2a))
- b. O João deu [um pontapé] [ao Pedro] [na perna].
 the John give.PERFPST3s a kick to.the Peter in.the leg
 ‘John gave a kick to Peter in the leg.’ (Baptista 2004:32, (2b))

- As in other Romance languages, *break* and change of state verbs generally participate in the causative alternation, having related intransitives consisting either of the verb plus reflexive marker or in some instances the bare verb; hitting verbs do not.

6.2.8 Vietnamese (Pham 1999)

- Hitting verbs may express the surface—whether an animate or inanimate entity—as an object; they may also take a cognate object with the surface expressed in a PP.

- (54) Ti da toi.
 Ti kicked me
 ‘Ti kicked me.’ (Pham 1999:232, (10a))
- (55) Ti da mot da.
 Ti kicked a kick
 ‘Ti kicked a kick.’ (Pham 1999:233, (10b))
- (56) Ti da [mot da] [vao toi].
 Ti kicked a kick on me
 ‘Ti kicked me a kick.’ (Pham 1999:233, (10c))

- The relevant verbs are said to “usually involve physical movement of instruments, which can be either body parts or physical objects towards someone or something” (Pham 1999:233); 16 of the 32 verbs listed are repeated here.

- (57) *da* ‘kick’, *dam* ‘punch’, *thui* ‘punch’, *cao* ‘scratch’, *cau* ‘pinch/nip’, *nen* ‘beat’, *quai* ‘beat’, *can* ‘bit’, *danh* ‘hit’, *tat* ‘slap’, *vuot* ‘stroke/fondle’, *liem* ‘lick’, *hon* ‘kiss’, *cu* ‘tickle’, *phang* ‘strike with a stick’, *quat* ‘strike’, ... (Pham 1999:233)

6.2.9 Kimaragang Dusun (Kroeger 2010)

- As in other Philippine-type languages, every sentence has a ‘nominative’ NP whose semantic role is indicated by a voice affix on the verb root.

- Generally, instruments are expressed as the nominative NP when the verb takes the zero-affix allomorph of the instrument voice form together with the transitive prefix *poN-*.

(58) Gibang nopo ot pongoduntung ku dialo, aba no.
 0-poN-duntung
 left only REL IV-TR-punch 1SG.GEN 3SG faint PRTCL
 ‘Even if it is only my left (hand) that I hit him with, he will pass out.’ (Kroeger 2010:10, (20b))

- Hitting verbs may also express the instrument as the nominative NP in the *i-* allomorph of the instrument voice form of the verb; however, now the surface is marked in dative case.

(59) N-i-duntung dialo sid tobon a tonggom yo
 PST-IV-punch 3SG DAT wall NOM fist 3SG.GEN
 ‘He punched his fist against the wall.’ (Kroeger 2010:10, (20a))

Such sentences are comparable to the *against* variant of the English *with/against* alternation: they “describe a particular manner of moving a theme in order to bring it into contact with a surface.” (Kroeger 2010:11)

- Roots of breaking verbs combine with distinct voice affixes to give rise to transitive and intransitive forms—i.e. they show a causative alternation; roots of hitting verbs have only a transitive form.

6.3 The attested argument realization patterns reviewed

- Hitting verbs show a range of argument realization options both within and across languages as summarized in section 6.1.
- These options are distinct from those shown by breaking verbs, which are characterized by the causative alternation.

7 Is there systematicity underlying the attested diversity?

The repeated attestation of some options suggests that there is not wild crosslinguistic variation.

Questions about the attested argument realization patterns:

- What gives rise to the different realizations of the surface?
- What is the reason for the V-N combinations?
- Are there interactions between these two properties?

Preliminary answers to these questions follow, but more investigation of the data is necessary.

7.1 What gives rise to the different realizations of the surface?

A SUMMARY OBSERVATION: Across the languages surveyed, there seems to be some resistance to expressing the surface as a canonical direct object, especially if inanimate.

7.1.1 Why the surface need not be an object

- This observation is foreshadowed in Tsunoda’s transitivity hierarchy (1981, 1985:388–389).

- (60) Tsunoda's Transitivity Hierarchy (simplified):
change of state verbs > surface contact verbs > perception/cognition/emotion verbs

— This implicational hierarchy organizes semantic classes of two-argument verbs according to how likely their members are to be transitive in a language.

— Placement of surface contact verbs recognizes that force recipient isn't the object in all languages.

- By the argument realization property (12), repeated here, an argument that changes state—i.e. shows a scalar change—must be an object; thus, it takes priority over other non-causer co-arguments.

- (61) The patient **MUST** be realized and **CAN ONLY** be realized as a direct object.

- Thus, result verbs show restricted argument realization options, consistent with this property.
- However the surface of a hitting verb does not undergo a necessary scalar change—it does not have a result necessarily predicated of it—so there are no constraints on its realization.

⇒ Thus, in principle it may be an object or an oblique.

- The actual realization of the surface in a given language can be attributed to its choice of semantic determinants of objecthood, as well as the priorities it establishes among them.

7.1.2 Why the surface may be realized as an object

- The surface qualifies as a force recipient—an argument that is impinged upon by a force but does not necessarily undergo a change of state (Croft 1991, RH&L 2001).
- Force recipients, thus, show a weaker degree of affectedness than arguments that undergo a change of state and, hence, show a scalar change, e.g., see Beavers (2011) on degrees of affectedness.
- In some languages, such as English, even this weaker degree of affectedness may qualify as a semantic determinant of objecthood, allowing surfaces to be objects.

7.1.3 Why the surface may be realized as an oblique

- If a language takes a stronger degree of affectedness as the semantic determinant of objecthood, surfaces will not qualify as objects and must be obliques, as in Ulwa (but see section 7.1.4).
- Further, hitting verbs sometimes take a third 'instrument' argument as the object, giving rise to something that looks like the *against* variant of the English *with/against* alternation.

- (62) *With/against* alternation: Sam hit the fence with a stick./Sam hit a stick against the fence.

- In fact, the *against* variant apparently reflects what is a primary argument realization option for such verbs in some languages (e.g., Caucasian languages).
- The label 'instrument' is used for the third argument for two reasons:
 - It may be expressed as the object of the preposition *with*, as in English.
 - The relevant NP may denote an artifact designed to be an instrument.

- However, in a hitting event, this artifact moves into contact with the surface and, thus, also qualifies as a theme in the localist sense (Gruber 1965, Jackendoff 1976, 1983) or a Talmyan figure (1975).
- Thus, the *against* variant in the *with/against* alternation provides a realization of a verb's arguments where a moving argument is given priority over the surface as the object; in such instances, the surface must also be expressed as an oblique.

7.1.4 Why there are animacy effects outside of V-N combinations

- Animate arguments have a special status, which is known to affect their expression elsewhere (e.g., differential object marking).
- In some languages, the semantic determinant of objecthood is apparently a degree of affectedness that is weaker than scalar change, but not as weak as force recipient. Such a notion would encompass animate, but not inanimates surfaces.

WHY? Animate surfaces are considered affected as they are sentient or “experientially affected by the event” to quote Lundquist & Ramchand in (press:6) (also Dowty 1991:596, de Swart 2010).

- An alternate source of objecthood for further investigation: Animates tend to be information structurally prominent, and objects, as secondary topics, may be preferentially used for such NPs (e.g., *give* prefers to express its recipient as first object rather than as object of *to*).
- Also for further investigation: The apparent effect of animacy in Portuguese V-N combinations.

— Is this a general property of such combinations or a property of the type of verb involved?

— Does it arise because inanimates only qualify as spatial goals, while animates also qualify as recipients, as is critical in their expression with English dative verbs (RH&L 2008)?

7.1.5 Summary

- The availability of object and oblique realizations for the surface in and across languages can be attributed to the semantic determinants for objecthood that come into play in the absence of an argument undergoing a scalar change, as well as the priorities among them.
- The surface as a force recipient or, when animate, as a more strongly affected entity and the instrument as a moving entity may both qualify as objects of hitting verbs.

7.2 Understanding the role of V-N combinations

ANOTHER KEY OBSERVATION: Some languages tend to express at least some part of the manner component in a hitting event—typically, an instrument or body part, but sometimes a more abstract notion—outside the verb, either as the complement of a light verb or a basic hitting verb or as a cognate object which reiterates the manner lexicalized in the verb.

7.2.1 The use of V-N combination has repercussions for argument realization

- In languages with V-N combinations, the N is the object.

- Thus, the surface cannot be realized as the object, so an alternate realization is needed, with the precise realization dependent on the verb involved: location if ‘put’/‘hit’, recipient/goal if ‘give’.

7.2.2 Why the manner might be expressed outside the verb

The proposal: Some languages use V-N combinations to augment a small manner verb inventory.

- Some ways in which verb inventories can differ:
 - Whether they are comprised of only 6-12 light verbs.
 - Whether they include property-concepts (i.e. ‘adjectival’ notions).
 - Whether they include a reduced number of manner verbs (in contrast to English).
- Some of the studies consulted suggest that languages that use V-N combinations have a smaller set of hitting verbs—a subtype of manner verbs—than, say, English (DeLancey 2000:13).

EXAMPLE: Only 16 of the 47 bases for Portuguese violent actions nouns listed in Baptista (2004) provide bases for denominal verbs.

- Small manner verb inventories have been documented in the motion domain in various languages: e.g., Basque, Italian, Japanese, Korean, and Spanish (Baird 2008, Cardini 2008, Cifuentes Férrez 2007, 2009, Ibarretxe-Antuñano 2004, Slobin 2000, 2004a, 2004b, 2006, Wienold 1995).
- Wienold (1995:319ff) suggests the reduced manner of motion verb inventory in Japanese, Korean, and Thai reflects a general reduction in the size of the manner verb inventory in these languages.
- Manner of motion verbs in such languages tend to lexicalize the major gaits (e.g., the equivalents of English *walk*, *run*), but not their hyponyms (e.g., *jog*, *sprint* or *amble*, *creep*, *prance*, *strut*), particularly in verb-framed languages (Malt et al. 2008; see also Slobin 2000, Wienold 1995).
- Similarly, the discussions of V-N combinations in the expression of hitting events mention the presence of general hitting verbs (A. Koontz-Garboden p.c. on Ulwa, Nichols 1984:190 on Ingush).
- V-N combinations provide a means of expressing hyponyms of *hit*, including notions that are lexicalized as verbs in English.

7.2.3 Another device for augmenting the lexical inventory: Ideophones

- Another way of augmenting the manner verb lexicon: V-ideophone (mimetic) combinations (Akita 2008, Ibarretxe-Antuñano 2006, 2009, Matsumoto 2003, Slobin 2004b:233-235, Stringer 2011, Sugiyama 2005, Wienold 1995:319-322).
- Ideophones are attested in several manner domains in Japanese, where they make finer distinctions that are lexicalized using independent verbs in English.

MANNER OF MOTION (Shibatani 1990, Wienold 1995)

Ideophone	Verb	Gloss
<i>yochiyochi</i>	<i>aruku</i> ‘walk’	‘toddle, totter’
<i>sutasuta</i>	<i>aruku</i>	‘walk briskly’
<i>burabura</i>	<i>aruku</i>	‘stroll’
<i>tobotobo</i>	<i>aruku</i>	‘trudge along, tread on’
<i>shanarishanari</i>	<i>aruku</i>	‘walk daintily’

CRYING (Wienold 1995:320, Table 7; see also Shibatani 1990:155)

Ideophone	Verb	Gloss
<i>waawaa</i>	<i>naku</i> ‘cry’	cry
<i>mesomeso</i>	<i>naku</i>	weep
<i>kusunkusan</i>	<i>naku</i>	sob
<i>oioi</i>	<i>naku</i>	blubber
<i>shikushiku</i>	<i>naku</i>	whimper
<i>hiihii</i>	<i>naku</i>	pule
<i>yowayowashiku</i>	<i>naku</i>	mewl

Also: manners of laughing (Shibatani 1990:155) and manners of looking (Tsuji-mura 2007:449).

Prediction: In some languages, verb-ideophone combinations allow finer grained distinctions to be made within the hitting domain that express notions lexicalized as verbs in other languages.

- Indeed, Japanese has ideophones which may be combined with a basic hitting verb (e.g., *tataku* ‘hit’, *tutuku* ‘poke’) or a light verb to do precisely this (Kageyama 2007:47).

(63) Yukiko-ga doa-o gongon tatai-ta.
 Yukiko-NOM door-ACC ‘bang’ hit-PST
 ‘Yukiko banged the door.’

Compare English, which has onomatopoeic hitting verbs based on sounds produced through surface contact: *bang, clink, clatter, thud, thump, whack, ...* (Richardson 1983, Stringer 2011:18).

- However, the surface can still be expressed as an object in verb-ideophone combinations because ideophones are adverbial in nature (Kageyama 2007:37) and, thus, do not occupy a nominal “slot” in a sentence.
- The realization of the surface as an object, then, is not just a matter of a language’s argument realization priorities, but also of the availability of this option.

Summary: There is a still incompletely uncovered logic underlying the diversity of argument realization options for hitting verbs.

8 In conclusion: Hitting the high points

- The manner vs. result distinction figures in determining patterns of argument realization across languages, with result, but not manner verbs conforming to (12).
- Much of the crosslinguistic diversity in the encoding of hitting events can be traced to differences in the lexical and morphosyntactic resources available to languages.
- Beavers, Levin & Tham (2010) already make precisely this point with respect to motion events: the crosslinguistic diversity in encoding motion events that has come under the lexicalization pattern rubric is a reflection of how differences in the lexical and morphosyntactic resources of languages are reflected in the encoding options attested for such events.
- In both instances, common abstract argument realization principles are at work, with crosslinguistic differences in event encoding receiving an independent account in terms of language-specific lexical and morphosyntactic properties.

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