
2 Lexicalization patterns: semantic structure in lexical forms

LEONAKD TALMY

0.0 Introduction¹

This chapter addresses the systematic relations in language between meaning and surface expression. Our approach to this has several aspects. First, we assume we can isolate elements separately within the domain of meaning and within the domain of surface expression. These are semantic elements like 'Motion', 'Path', 'Figure', 'Ground', 'Manner', and 'Cause', and surface elements like 'verb', 'adposition', 'subordinate clause', and what we will characterize as 'satellite'. Second, we examine which semantic elements are expressed by which surface elements. This relationship is largely not one-to-one. A combination of semantic elements can be expressed by a single surface element, or a single semantic element by a combination of surface elements. Or again, semantic elements of different types can be expressed by the same type of surface element, as well as the same type by several different ones. We find here a range of typological patterns and universal principles.

We do not look at every case of semantic-to-surface association, but only at ones that constitute a pervasive pattern, either within a **language** or across languages. Our particular concern is to understand how such patterns compare across languages. That is, for a particular semantic domain, we ask if languages exhibit a wide variety of patterns, a comparatively small number of patterns (a typology), or a single pattern (a universal). We will be interested primarily in the last two cases, as well as in the case where a pattern appears in no languages (universal exclusion). Our approach can be summarized as in this procedural outline:

- (1) ('entities' = elements, relations, and structures: both particular cases and categories of these)
 - a. Determine various semantic entities in a language.
 - b. Determine various surface entities in the language.

- c. Observe which (a) entities are expressed by which (b) entities – in what combinations and with what interrelations – noting any patterns.
- d. Compare findings of this sort across languages, noting any patterns.

This outline sketches the broad project of exploring meaning-surface relations. But our present undertaking is narrower in several ways. First, there are two directions for exploring meaning-surface relations, both of them fruitful. One direction is to hold a particular semantic entity constant and observe the surface entities in which it can appear. For example, one could observe that the semantic element 'negative' shows up in English as a verb-complex adverb (will not go), as an adjective (no money), as an adjectival derivational affix (unkind), and as a verbal incorporated feature (doubt); in Atsugewi as a verb requiring an infinitive complement (miPi:p 'to not'); and in some languages as a verbal inflection. The other direction is to hold constant a selected surface entity, and to observe which semantic entities are variously expressed in it. The present chapter explores in only this second direction.

Within this limitation, we narrow our concerns still further. One can examine surface entities of different morpheme count for the meanings that appear in them. At the small end of the scale are the 'zero' forms. Thus, by one interpretation, there is a missing verbal expression in English constructions like *I feel like [having] a milk shake* and *I hope for [there to be] peace*, or in German ones like *Wo wollen Sie denn hin gehen/fahren/ . . . ?* 'Where do you want to go?'. One might conclude that such missing verbal meanings come from a small set, with members like 'have', 'be', and 'go'. Alternatively, one could investigate the meanings that are expressed by surface complexes. A comparatively lengthy construction might encode a single semantic element. Consider the approximate semantic equivalence of the construction *be of interest to* and the simple verb *interest*, or of *carry out an investigation into* and *investigate*. However, this chapter looks only at the middle size levels – single morphemes and, to a lesser extent, words (composed of root and derivational morphemes).

In particular, we will investigate one type of open-class element, the verb root, the topic of section 1, and one type of closed-class element, the 'satellite', defined and treated in section 2. These two surface types are vehicles for a connected set of semantic categories. Our aim in these sections is to set forth a class of substantial meaning-in-form language patterns, and to describe the typological and universal principles that

they embody. The conclusion in section 3 compares the advantages of the approach adopted here and extends this to the issue of informational foregrounding and backgrounding. And, finally, the Appendix in section 4 tabulates and augments the meaning-form relations described in the text.³

0.1 Characteristics of lexicalization

We outline now some general characteristics of lexicalization, as part of this chapter's theoretical context. A meaning can be considered associated with surface forms mainly by three processes: lexicalization, deletion (or zero), and interpretation. We can contrast these three in an example where no one process clearly applies best. Consider the phrase *what pressure* (as in *What pressure was exerted?*), which asks 'what degree of pressure' – unlike the more usual *what color*, which asks for a particular identity among alternatives. We could account for the 'degree' meaning by lexicalization: *pressure* here differs from the usual usage by incorporating an additional meaning component: *pressure* = degree of *pressure*, (or, alternatively, there is a special *whar* here: *whar*, = *whar*, degree 08. Or we could assume that some constituent like *degree of* has been deleted from the middle of the phrase (or that a zero form with the meaning 'degree of now resides there). Or else, we could rely on a process of semantic interpretation, based on present context and general knowledge, to provide us with the 'degree' meaning.⁴

In general, we assume here that lexicalization is involved where a particular meaning component is found to be in regular association with a particular morpheme. The study of lexicalization, however, must also include the case where a set of meaning components, bearing particular relations to each other, is in association with a morpheme, making up the whole of the morpheme's meaning. In the clearest case, one morpheme's semantic makeup is equivalent to that of a set of other morphemes in a syntactic construction, where each of these has one of the original morpheme's meaning components. A familiar example here is the approximate semantic equivalence between *kill* and *make die*. However, such clear cases are only occasional: it would be unwise to base an approach to lexicalization on semantic equivalences solely between exant morphemes. What if English had no word *die*? We would still want to be able to say that *kill* incorporates the meaning component 'cause' (as we would for the verb (to) *poison* 'kill by poison', which in fact lacks a non-causative counterpart for 'die by poison'). To this end, we can establish a new notion, that of a morpheme's *muge*: a particular selection of its semantic and syntactic properties. We can then

point to usage equivalences between morphemes, even ones with different core meanings, and even across different languages. To consider one example, there is a usage equivalence between **kill** and **make appear**. **Kill** includes in its meaning the notion 'Agent acting on Patient' ('causative') and, syntactically, takes an Agent **subject** and Patient object; this usage is equivalent to that of **make**, which incorporates the notion 'Agent-to-Patient relation', in construction with **appear**, which incorporates the notion 'Patient acting alone' ('non-causative') and takes a Patient subject. Such relationships can be represented, for **cases** involving both lexical (L) and grammatical (o) morphemes, as:

- (2) usage of $t?$ = usage of \sim in construction with G
 (e.g. $L_2 = \text{kill}$, $L_1 = \text{appear}$, and $o = \text{make}$)

We can say here that L_2 incorporates the meaning of o and that L_1 either does not incorporate it or incorporates a meaning complementary to it. In the special case where a single morpheme can function equally as L_1 or L_2 , we can say that it has a **range of usages**. For example, there is a usage equivalence between **break₂** and **make break₁**, as seen in **I broke the vase** and **I made the vase break**, so that **break** can be said to have a **usage-range** covering both the causative and the non-causative. An equivalent way of characterizing such a usage-range is as in (3). As an example of this, the causative/non-causative usage-range of **break** equals the causative usage of **kill** plus the non-causative usage of **appear**.

- (3) usage-range of L_3 = usage of L_2 + usage of L_1
 where L_2 and L_1 are related as in (2)

One terminological note: we will refer to the meaning-in-form relation with three terms. They are 'lexicalization' from McCawley (e.g. 1968); 'incorporation' as used by Gruber (1965); and 'conflation', a term that was coined for this purpose by the author (Talmy 1972) and that has now gained general currency. These terms have different emphases and connotations that will become clear as they are used below, but all refer to the representation of meanings in surface forms.

0.2 Sketch of a motion event

A number of the patterns looked at below are part of a single larger system for the expression of motion and location. We will here provide a sketch of this system. A fuller analysis appears in Talmy (1975).

To begin with, we treat a situation containing movement or the maintenance of a stationary location alike as a 'motion event'. The basic

motion event consists of one object (the 'Figure') moving or located with respect to another object (the referent-object or 'Ground'). It is analyzed as having four components: besides 'Figure' and 'Ground', there are 'Path' and 'Motion'. The 'Path' (with a capital P) is the course followed or site occupied by the Figure object with respect to the Ground object. 'Motion' (with a capital M) refers to the presence *per se* in the event of motion or location (only these two motion states are structurally distinguished by language). We will represent motion by the form 'move' and location by 'be_L' (a mnemonic for 'be located').⁵ In addition to these internal components a Motion event can have a 'Manner' or a 'Cause', which we analyze as constituting a distinct external event. All these semantic entities can be seen in the following sentences:

- (4)
- | | | |
|-----------|---------------------------------|---|
| | Manner: | Cause: |
| motion: | The pencil rolled off the table | The pencil blew off the table |
| location: | The pencil lay on the table | The pencil stuck on (to) the table (after I glued it) |

In all four sentences, **the pencil** functions as the Figure and **the table** as the Ground. **Off** and **on** express Paths (respectively, a path and a site). The verbs in the top sentences express motion, while those in the bottom ones express location. In addition to these states of Motion, a Manner is expressed in **rolled** and **lay**, while a Cause is expressed in **blew** and **stuck**.

The terms 'Figure' and 'Ground' are taken from Gestalt psychology but we give them a distinct semantic interpretation here: the Figure is a moving or conceptually movable object whose path or site is at issue; the Ground is a referent-frame, or a referent-point stationary within a referent-frame, with respect to which the Figure's path or site is characterized.⁶

1.0 The verb

In this study of the verb, we look mainly at the verb root alone. This is because the main concern here is with the kinds of lexicalization that involve a single morpheme, and because in this way we are able to compare lexicalization patterns across languages with very different word structure. For example, the verb root in Chinese generally stands alone as an entire word, whereas in Atsugewi it is surrounded by many affixes that all together make up a polysynthetic verbal word. But these two languages are on a par with respect to their verb roots.

Presented first are three lexicalization types for verb roots that

together constitute an apparently exhaustive typology. Any language uses **only** one of these types for the verb in its most characteristic expression of Motion. Here, 'characteristic' means that: (i) It is **colloquial** in style, rather than literary, stilted, etc. (ii) It is **frequent** in occurrence in speech, rather than only occasional. (iii) It is **pervasive**, rather than limited, that is, a wide range of semantic notions are expressed in this type.

1.1 Motion + Manner/Cause

In a motion-sentence pattern characteristic of one group of languages, the verb expresses at once both the fact of Motion and either its manner or its cause. A language of this type has a whole series of verbs in common use that express **motion** occurring in various manners or by various causes. There may also be a series of verbs expressing **location** with various manners or causes, but they are apparently always much fewer. The semantic-to-surface relationship here can be represented as follows:

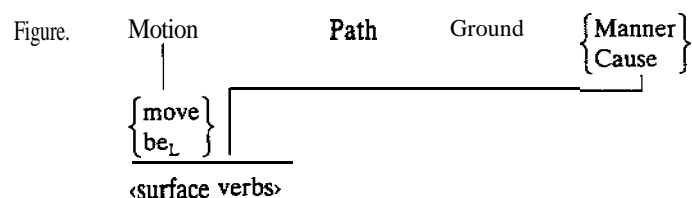


Figure 2.1 Manner or Cause conflated in the Motion verb

Language families that seem to be of this type are Chinese and apparently all branches of Indo-European except (post-Latin) Romance. English is a perfect example of the type:

(5) English expressions of Motion with conflated Manner or Cause

be_L + Manner

- a. The lamp *stood/lay/leaned* on the table
- b. The rope *hung* across the canyon from two hooks.

move + Manner

non-agentive

- c. The rock *slid/rolled/bounced* down the hill
- d. The gate *swung/creaked* shut on its rusty hinges
- e. The smoke *swirled/squeezed* through the opening
- f. I *slid/rolled/bounced* the keg into the storeroom

- g. I *twisted/popped* the cork out of the bottle

self-agentive

- h. I *ran/limped/jumped/stumbled/rushed/groped* my way down the stairs

- i. She wore a green dress to the party

move + Cause

non-agentive

- j. The napkin *blew off* the table

- k. The bone *pulled loose* from its socket

agentive

- l. I *pushed/threw/kicked* the keg into the storeroom

- m. I *blew/flicked* the ant off my plate

- n. I *chopped/sawed* the tree down to the ground at the base

- o. I *knocked/pounded/hammered* the nail into the board with a mallet

To a speaker of a language like English, such sentences may seem so straightforward that they offer little to ponder. How else might such propositions be colloquially expressed? But in fact there are languages with very different patterns of expression. Even a language as seemingly kindred as Spanish can express virtually none of the above sentences in the way that English does, as is demonstrated below.

Some indication can be given of the type of conflation pattern involved here by paraphrases that represent the separate semantic components individually - i.e., that 'unpack' the sentences. The Manner or Cause notions conflated in the verbs are then best represented by separate subordinate clauses, as in the following:

(6) Unconflated paraphrases of English Motion expressions

be' + Manner

- a'. (The lamp lay on the table =)

The lamp was-located on the table, lying there

- b'. (The rope hung across the canyon from two hooks=)

The rope was-located [extended] across the canyon, hanging from two hooks

move + Manner

non-agentive

- c'. (The rock rolled down the hill =)

The rock moved down the hill, rolling [the while]

****The canoe glided on that spot of the lake for an hour.***

Comparably, throw is semantically much like **kick**, in referring to a distinct motion event caused by a prior body action: **I threw the ball across the field with my left hand.** But it has no usage parallel to **kick** referring to the body action alone – i.e., to swinging an object around with one's arm without releasing it into a separate path. By contrast swing itself is generally restricted to this latter **sense**, parallel to **kick**, and cannot be used in a sentence like *I swurtg the ball across the field with my left arm to express consequent motion through space.

All these forms fit – and can further illustrate – the lexicalization formulas of (2) and (3). When plugged into (2), the forms immediately above exhibit not only usage equivalence but also semantic equivalence. Thus, the usage and meaning of **throw** (L₁) is the same as that of swing (L₁) when this form is in construction with the largely grammatical sequence (6) *causer* **move by** . . . -ing ('throw' = 'cause to move by swinging'). And as for **kick**, this form is seen to possess a range of usages because it can be plugged into both sides of formula (2): **kick** = **cause to move by kicking**; or, equivalently by formula (3), **kick** (L₁) has usages equaling the usage of **throw** (L₂) taken together with the usage of **swing** (4)."

In the languages that have it, the conflation pattern being described here normally applies far beyond the expression of simple Motion. It extends as well to Motion compounded with mental-event notions (13A), to Motion compounded with other specific material in recurrent semantic complexes (13B), to embeddings involving more than one Motion event (13C), and to metaphoric extensions of Motion (13D). Below, small caps indicate a posited 'deep' or 'midlevel' morpheme, one that represents a basic semantic element or a specified semantic complex. As an underlying main clause verb, it conflates with an element (usually the verb) from the accompanying subordinate clause. Again, virtually none of these additional forms can be expressed as such in languages like Spanish.

(13) Extensions of the Motion conflation pattern in English

(F = Figure, G = Ground, A = Agent, (to) AGENT = (to) cause agenthly, AMon = agentively Cause to Mo%, Sr&l Caps = a deep or midlevel morpheme)

A. conflation involving Motion compounded with mental-event notions

a. GO: [A] AGENT himself [Le., his whole body, = F] to MOVE

She WENT to the party, wearing a green dress.

3 She wore a green dress to the party.

Similarly: I read comics all the way to New York.

b. GET: [A,] INDUCE [AZ] to GO

I GOT him out of his hiding place, by luring/scaring him
 1 lured/scared him out of his hiding place.

Similarly: I talked him down off the ledge.

I prodded the cattle into the pen.

C. URGE: [A,] AIM to INDUCE [AZ] to GO

1 URGED him away from the building, by waving at him.

3 I waved him away from the building.

Similarly: I beckoned him toward me.

B. conflation involving Motion in other recurrent semantic complexes

d. GIVE: [A,] AMOVE [F] into the GRASP of [A₂]

I GAVE him another beer, sliding it
 ⇒ I slid him another beer.

e. PLACE: [A] AMOVE [F to G] with limb motion but without body translocation

1 PLACED the painting down on the table, it lying there.
 ⇒ I laid the painting down on the table.

Similarly: I stood/leaned/hung the painting on the chair/against the door/on the wall.

f. COVER: [F] BE_L all-over [G]

Paint COVERED the rug, BEING in streaks/dots
 ⇒ Paint streaked/dotted the rug.

C. double conflation: example of a lexical triplet

g. Could you GIVE me the flour,

having first AMOVED it down off that shelf,
 having first reached, to it with your free hand?

⇒ Could you GIVE me the flour,
 having first reached, it down off that shelf with your free hand?

⇒ Could you reach₃ me the flour down off that shelf with your free hand?

D. conflation involving metaphoric extensions of Motion non-agentive

h. 'MOVE': [F] MOVE metaphorically (i.e., change state)

He 'MOVED' to death, from choking on a bone.
 (⇒ He died from choking on a bone. —or:)
 ⇒ He choked to death on a bone.

- i. BECOME: 'MOVE' in the environment: Adjective

The shirt **BECAME** dry, from flapping **in** the wind.
 (⇒ The shirt dried from flapping **in** the wind. —or:)
 ⇒ The shirt flapped dry **in** the wind.

Similarly: The **tinman** rusted stiff.

The **coat** has worn **thin** in spots.

The twig **froze** stuck **to** the window.

- j. FORM: [F] 'MOVE' into EXISTENCE (cf. the phrase come *into existence*)

A hole **FORMED** **in** the table, from a cigarette burning it.
 ⇒ A hole burned **in** the table from a cigarette.

agentive

- k. 'A_{MOVE}': [A] AGENT [F] to 'MOVE'

I 'A_{MOVED}' him to death, by choking him.

(⇒ I killed him by choking him. —or:)

⇒ I choked him to death.

Similarly: I rocked/sang the baby to sleep.

- l. A_{BECOME} = MAKE₁: 'A_{MOVE}' in the environment: Adjective

I **MADE**₁ the fence blue, by painting it.

⇒ I painted the fence blue.

- m. A_{FORM} = MAKE₂: [A] AGENT [F] to 'MOVE' into EXISTENCE (cf. the phrase *bring into existence*)

I **MADE**₂ a cake out of fresh ingredients, by baking them.

⇒ I baked a cake out of fresh ingredients.

Similarly: I knitted a sweater out of spun wool.

I **hacked** a path through the **jungle**.

Mandarin Chinese is the same type of language as English. It conflates Manner or Cause with Motion in its verbs. But the parallel goes further. It also has the same double usage for a single verb form:

- (14) a. Wǒ yòng zuó jiǎo tī₁ le yī xià qiáng
 I use(-ing) left foot kick PERF one stroke wall
 'I kicked the wall with my left foot'
- b. Wǒ yòng zuó jiǎo bǎ qiú tī₂ g u ò le cǎo-chǎng
 I use(-ing) left foot OBJ ball kick across PERF field
 'I kicked the ball across the field with my left foot'

1.2 Motion + Path

In the second typological pattern for the expression of Motion, the verb root at once expresses both the fact of Motion and the Path. If Manner

or Cause is expressed in the same sentence, it must be as an independent, usually adverbial or gerundive type constituent. In many languages – for example Spanish – such a constituent can be stylistically awkward, so that information about Manner or Cause is often either established in the surrounding discourse or omitted altogether. In any case, it is not indicated by the verb root itself. Rather, languages of this type have a whole series of surface verbs that express motion along various paths.¹¹ This conflation pattern can be represented schematically as in Figure 2.2.

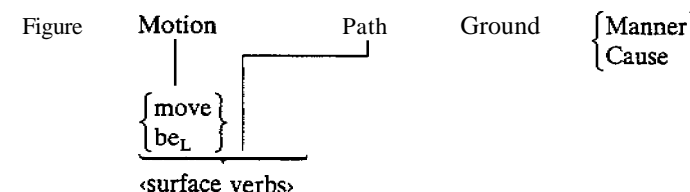


Figure 2.2 Path conflated in the Motion verb

Language families that seem to be of this type are Semitic, Polynesian, and Romance. Spanish is a perfect example of the type. We draw on it for illustration, first with non-agentive sentences, and point out how pervasive the system is here:

- (15) Spanish expressions of Motion (non-agentive) with conflation of Path

- a. La botella **entró** a la cueva (flotando)
 the bottle moved-in to the cave (floating)
 'The bottle floated into the cave'
- b. La botella **salió** de la cueva (flotando)
 the bottle moved-out from the cave (floating)
 'The bottle floated out of the cave'
- c. La botella **pasó** por la piedra (flotando)
 the bottle moved-by past the rock (floating)
 'The bottle floated past the rock'
- d. La botella **pasó** por el tubo (flotando)
 the bottle moved-through through the pipe (floating)
 'The bottle floated through the pipe'
- e. El globo **subió** por la chimenea (flotando)
 the balloon moved-up through the chimney (floating)
 'The balloon floated up the chimney'

- f. El globo *bajó* por la chimenea (flotando)
the balloon moved-down through the chimney (floating)
'The balloon floated down the chimney'
- g. La botella se *fué* de la orilla (flotando)
the bottle moved-away from the bank (floating)
'The bottle floated away from the bank'
- h. La botella volvió a la orilla (flotando)
the bottle moved-back to the bank (floating)
'The bottle floated back to the bank'
- i. La botella le *dió vuelta* a la isla (flotando)
the bottle to-it gave tum to the island (floating)
(= 'moved-aroundl')
'The bottle floated around the island'
- j. La botella cruzó el canal (flotando)
the bottle moved-across the canal (floating)
'The bottle floated across the canal'
- k. La botella *iba* por el canal (flotando)
the bottle moved-along along the canal (floating)
'The bottle floated along the canal'
- l. La botella *andaba* por el canal (flotando)
the bottle moved-about about the canal (floating)
'The bottle floated around the canal'
- m. Las dos botellas se *juntaron* (flotando)
the two bottles moved-together (floating)
'The two bottles floated together'
- n. Las dos botellas *se separaron* (flotando)
the two bottles moved-apart (floating)
'The two bottles floated apart'

In its agentive forms as well, Spanish shows the same pattern of conflating Path in the verb. Again, Manner or Cause, if present, is expressed in an independent constituent. We can see this for Manner:

- (16) Spanish expressions of Motion (agentive) with conflation of Path
- a. *Metí* el barril a la bodega rodándolo
I moved in the keg to the storeroom rolling it
'I rolled the keg into the storeroom'
- b. *Saqué* el corcho de la botella retorciéndolo
I moved out the cork from the bottle twisting it

(or: *Retorcí* el corcho y lo saqué de la botella)
I twisted the cork and it I moved out from the bottle
'I twisted the cork out of the bottle'

And we can see it for Cause:

- c. *Tumbé* el árbol serruchándolo // a hachazos / con
I felled the tree sawing it by ax chops with
una hacha
an ax
'I sawed // chopped the tree down'
- d. *Quité* el papel del paquete cortándolo
I moved off the paper from the package cutting it
'I cut the wrapper off the package'

Among such agentive forms, those that refer to the placement or removal of a Figure object – the 'putting' verbs – together comprise a subsystem that, again, involves different verb forms for the separate indication of distinctions of Path, as seen in Table 2.1.

Table 2.1. Spanish 'putting' verbs, differing according to distinctions of Path (A = Agent, F = Figure object, G = Ground object)

A poner F en G	A put F onto G
A meter F a G	A put F into G
A subir F a G	A put F up (on)to G
A juntar F ₁ & F ₂	A put F ₁ & F ₂ together
A quitar F de G	A take F off G
A sacar F de G	A take F out of G
A bajar F de G	A take F down from G
A separar F ₁ & F ₂	A take F ₁ & F ₂ apart

Notice that English does use different verb forms here, *put* and *take*, in a way that at first suggests the Spanish type of Path incorporation. But an alternative view is that these are simply suppletive forms of a single more general and non-directional 'putting' notion, where the specific form that is to appear at the surface is determined completely by the particular Path particle and/or preposition present. This single 'putting' notion involves an Agent moving a Figure with respect to a particular location by the action of some body part(s) without the whole body moving through space (and, hence, is distinct from the 'carrying' notion of *carry/take/bring*). In expressing this notion, English uses *put* in conjunction with a Yo'-type preposition (*I put the disk into/onto the stove*), *take* with a 'from'-type preposition except when *up* is present (*I*

took the dish off, out of the stove), pick with a 'from'-type preposition in the present of **up (1 picked the dish up off the chair), and** move with an 'along'-type preposition (**1 moved the dish further down [the ledge]**). As further evidence of their purely formal character, these distinctions of verb form are effaced when there is Manner conflation. Thus, beside a different-verb pair of sentences such as **I put the cork into/took the cork out of the bottle** is the same-verb pair **I twisted the cork into/out of the bottle**, where the Manner verb *twist* supplants both *put* and *take*. Comparably, beside **I put the hay up onto/took the hay down off the platform** is **I forked the hay up onto/down off the platform**. Thus, it can be seen that any Path information borne by the English 'putting' verbs is less than and no different from that expressed by the particles and prepositions occurring in the same sentence and, accordingly, they can be readily supplanted under the Manner conflation typical of English. On the other hand, the Spanish 'putting' verbs express the bulk of Path distinctions – the only prepositions used with this subsystem are *a*, *de*, and *en* – and so are central, unsupplanted features in the Spanish sentence, as is typical for *that* language.

English does have a certain number of verbs that genuinely incorporate Path, as in the Spanish cotiation type, for example: **enter, exit, pass, rise, descend, return, circle, cross, separate, join**–. And these verbs even call for a Spanish-type pattern for the rest of the sentence. Thus, Manner must be expressed in a separate constituent as in **The rock passed by our tent in its side/in sliding** by contrast with the usual English pattern in **The rock slid past our tent**. But these verbs (and the sentence pattern they call for) are not the most characteristic of English. In fact, the majority (here all except *rise*) are not original English forms but rather borrowings from Romance, where they are the native type.

1.3 Motion + Figure

In the third major typological pattern for the expression of Motion, the verb expresses the fact of Motion together with the Figure. Languages with this as their characteristic pattern have a whole series of surface verbs that express various kinds of objects or materials as moving or located. This conflation type can be represented schematically as in Figure 2.3.

This pattern can first be illustrated close to home, for English does have a few forms that conform to it. Thus, the non-agentive verb (to) **rain** refers to rain moving, and the agentive verb (to) **spit** refers to causing spit to move, as seen in (17).

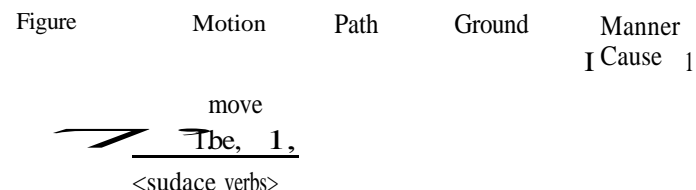


Figure 2.3 The Figure conflated in the Motion verb

- (17) a. **It rained** in through the bedroom window [non-agentive]
 b. **I spat** into the cuspidor [agentive]

But in the languages for which this pattern is characteristic, there are scores of Motion + Figure verbs with the most colloquial and extensive of usages. Atsugewi, a Hokan language of northern California, is an example *par excellence* of this type. The following verb roots are just a sampling:

- (18) Atsugewi verb roots of Motion with conflated Figure
- | | |
|--------|--|
| -hp- | 'for a small shiny spherical object (e.g. a round candy, an eyeball, a hailstone) to move/be-located |
| *,* | 'for a smallish planar object that can be functionally affixed (e.g. a stamp, a clothing patch, a button, a shingle, a cradle's sunshade) to move/be-located |
| -caq- | 'for a slimy lumpish object (e.g. a toad, a cow dropping) to move/be-located |
| -swal- | 'for a limp linear object suspended by one end (e.g. a shirt on a clothesline, a hanging dead rabbit, a flaccid penis) to move/be-located |
| -qput- | 'for loose dry dirt to move/be-located' |
| -sta+ | 'for runny icky material (e.g. mud, manure, rotten tomatoes, guts, chewed gum) to move/be-located |

qese verb roots can also have an agentive meaning. For example, **-staq-** has the further meaning option: '(for an Agent) to move runny icky material'. Thus, such verb roots typically function equally in the expression of events of location, of non-agentive motion, and of agentive motion. Each of these usages is now exemplified with *-si&-*, here in referring to guts (an instance of 'runny icky material'). Each example gives both the morphophonemic and the phonetic form (the

superscript vowel represents a special morphophoneme of this language):

(19) Atsugewi expressions of Motion with conflated Figure

- a. **locative suffix:** -ik· 'on the ground'
instrumental prefix: uh- 'from "gravity" (an object's own weight) acting on it'
inflectional affix-set: '- w- -^a '3d person subject (factual mood)'
 /'-w-uh-staq-ik·-^a/ ⇒ [w'ostaqik·a]
 Literal: 'Runny icky material is located on the ground from its own weight acting on it'
 Instantiated: 'Guts are lying on the ground'
- b. **directional suffix:** -ict 'into liquid'
instrumental prefix: ca- 'from the wind blowing on the Figure'
inflectional affix-set: '- w- -^a '3d person subject (factual mood)'
 /'-w-ca-staq-ict-^a/ ⇒ [cwastaqicta]
 Literal: 'Runny icky material moved into liquid from the wind blowing on it'
 Instantiated: 'The guts blew into the creek'
- c. **directional suffix:** -cis 'into fire'
instrumental prefix: cu- 'from a linear object, moving axially, acting on the Figure'
inflectional affix-set: s- '- w- -^a 'I - subject, 3d person object (factual mood)'
 /s·'-w-cu-staq-cis-^a/ ⇒ [scustaqc^ha]
 Literal: 'I caused it that runny icky material move into fire by acting on it with a linear object moving axially'
 Instantiated: 'I prodded the guts into the fire with a stick'

1.4 Manner/Cause, Path, and Figure in a typology for Motion verbs

The three basic conflation patterns for Motion verbs that languages exhibit, in an apparently exhaustive typology, is summarized in Table 2.2. Subcategorization of these three types, based on where the remaining components of a Motion event are expressed in a sentence, is treated later.

Because it is apparently exhaustive, this typology raises questions about the non-occurring combinatory possibilities. It can be seen that one Motion-event component, the Ground, does not by itself conflate

Table 2.2. *The three typological categories for Motion verbs*

Language/language family	The particular components of a Motion event characteristically represented in the verb root
Romance Semitic Polynesian Nez Perce Caddo	Path + fact-of-Motion
Indo-European (all?) except Romance Chinese	Manner/Cause + fact-of-Motion
Atsugewi (and apparently most northern Hokan) Navajo	Figure + fact-of-Motion

with the Motion verb to form any language's core system for expressing Motion. Conflations of this sort may not even form any minor systems. Sporadic instances of such a conflation do occur, however, and can provide an idea of what a larger system might be like. The verb root -plane in the (Ameritan) English verbs *emplane* and *deplane* can be taken to mean 'move with respect to an airplane', that is, to specify a particular Ground object plus the fact of Motion, without any indication of Path. It is the separate prefixal morphemes here that 'specify particular Paths. What a full system of this sort would have to con- is the provision for expressing many further Paths, say, as in *circumplane*, 'move around an airplane', and *transplane*, 'move through an airplane', as well as many further verb roots that participated in such formations, say, (fo) heme 'move with respect to a house', and (ro) *liquid*, 'move with respect to liquid'. But such systems are not to be found. It is not clear why the Ground component should be so disfavored. One might first speculate that, in discourse, the Ground object of a situation is the most unvarying component and therefore the one least needing specification. But on further consideration, the Figure would seem to be even more constant, yet it forms the basis for a major typological system. One might next speculate that the Ground object is the component least salient or accessible to identification. But there seems nothing more obscure about airplanes, houses and liquids (to pick some likely Ground objects) than, say, about notions of Path, which do form the basis for a major typological system.

Explanation may next be sought in a concept of hierarchy: the different conflation types seem to be ranked in their prevalence among

the world's languages, with conflation of Path as the most extensively represented, of Manner/Cause next, and of Figure least so. It may therefore be the case that Ground conflation is also a possibility, but one so unlikely that it has not yet been instantiated in any language (that has come to attention). However, while great disparity of prevalence for the different conflation types would be most significant if proved by further investigation, it would then itself require explanation, so that the present mystery would only have moved down a level.

There are further combinatorial possibilities to be considered. Among these: two components of a Motion event conflating with fact-of-Motion in the verb root. Minor systems of such conflation do exist. For example, the Ground and Path together are conflated with Motion in a minor system of agentive verbs in English, with forms like **shelve** 'cause-to-move onto a shelf (I **shelved** the book) and **box** 'cause-to-move into a box' (I **boxed** the apples). (The particular Paths occurring in this system appear to be virtually limited to the contact-forming 'into/onto' type; exceptional, thus, is **quarry** 'cause-to-move out of a quarry', as in *We quarried the granite*, and the verb **mine** with a similar sense, *We mined the bauxite*.) Another minor system of agentive verbs in English conflates the Figure and Path together with Motion: **powder** 'cause facial powder to move onto' (*She powdered her nose*), **scale** 'cause the scales to move off of' (I **scaled** the *filh*).

Conflation systems of this multi-component sort apparently never form a language's major system for expressing Motion. The reason for such a prohibition seems straightforward for systems observing finer semantic distinctions: these would entail an enormous lexicon. There would have to be a distinct lexical verb for each fine-grained semantic combination – for example, beside **box** meaning 'put into a box', there would have to be; say, a verb **foo** 'take out of a box', a verb **baz** 'move around a box', etc., and further verbs for the myriad of Ground objects other than a box. Such a system would be infeasible for language, whose organization relies less on large numbers of distinct elements and more on combinatorial devices that operate with a smaller set of elements. However, one can imagine another kind of multi-component conflation system, one with fairly broad-band referents and hence fewer total elements, acting as a kind of classificatory system, that contained verbs with meanings like 'move to a round object', 'move from a round object', 'move through/past a round object', 'move to a linear object', 'move from a linear object', etc. A system such as this would indeed be feasible for language, yet also seems prohibited, and an explanation here, too, must be awaited.

x.5 Aspect

'Aspect' can be characterized as the 'pattern of distribution of action through time'. The term 'action' as used here applies to a static condition – the continuance of a location or state – as well as to motion or **change**. In Figure 2.4 are **some** of the **aspect-types** lexicalized in verb roots, with both non-agentive and agentive English verbs exemplifying each.

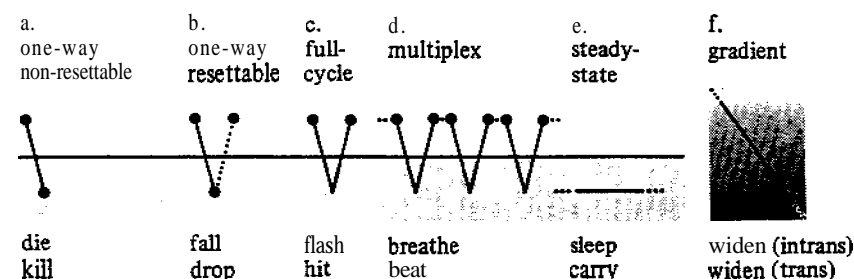


Figure 2.4 Aspectual meanings lexicalized in verb roots

Various grammatical tests demonstrate the distinctness of these types and of the verb roots incorporating them. The resettable type of a one-way verb is distinguished from the non-resettable type by its compatibility with iterative expressions, as in *He fell 3 times*; the non-resettable verbs cannot occur here: **He died 3 times*. The same one-way form is distinguished from a full-cycle form by its ability to appear in sentences like *He fell and then got up*, which the latter cannot do: **The beacon flashed and then went off*. A gradient verb can appear with adverbs of augmentation, as in *The river progressively widened*, unlike a steady-state verb: **She progressively slept*. And so on.

Sometimes all that distinguishes two verb forms which otherwise have the same core meaning is a difference in incorporated aspect. In certain sectors of their usage, this is the case with *Learn*, which (for many speakers, though not for all) incorporates a completive aspect, and *study*, which is steady-state. The semantically comparable verb *teach* has a lexicalization range covering both of these aspect-types:

(20)	completive aspect	steady-state aspect
	We learned/*studied French in 3 years	We *learned/studied French for 2 years
	She taught us French in 3 years	She taught us French for 2 years

Lexicalized aspect figures in the analysis of a language in several ways. First, aspect generally seems to be part of the intrinsic meaning of verb

roots.¹² It is doubtful that any verb root can have a meaning wholly neutral to aspect – even in languages where the root is always surrounded by aspect-specifying inflections.

Second, a verb root's intrinsic aspect determines how it interacts with grammatical elements that also have aspectual meaning. Many of the latter appear only with verb roots of a particular aspect-type, operating on them to yield a different aspect-type as a resultant. For example, in English the grammatical form **keep-ing** operates on a one-cycle verb of the (c) type to yield a multiplex aspectual meaning of the (d) type. This shift takes place for flash in the beacon **keepflashing**. Similarly, we can make the reverse change from the (d) type to the (c) type with the abstract grammatical form VdWY \downarrow [-+ Deriv], – that is, by using a construction that has the verb root in a derived nominal form. This is what happens to the verb root *breathe* (with an inherent multiplex meaning) in *the* sentence **She took a breath** (with a 'once only' meaning).¹³

Third, different languages have different patterns of aspect incorporation in their verbs. For example, we will see in Section 1.7 how verbs referring to states are lexicalized in some languages with the (b) 'one-way' aspect-type – with the sense of entering into the states – while for the same states other languages will use the (e) 'steady-state' aspect-type. And fourth, aspect incorporation can correlate with surrounding factors. For example, it seems generally that a language with a ready indication indicating 'multiplexity' has few verb roots like English **beat**, **wagflap**, **breathe** with inherent multiplex aspect. Rather, the verb roots by themselves refer to one cycle's worth of the action, and take the inflection to signal multiplexity. One language apparently like this is Hopi (Whorf 1956), and another is Amerindian Sign Language (Ehssa Newport, personal communication).

1.6 Causation

By one analysis, there are quite a few distinct types of causation lexicalized in verbs (see Talmy 1976a). The number is appreciably greater than the usually recognized two-way distinction between 'non-causative' and 'causative'. Some verbs incorporate only one causation type while others demonstrate a range of incorporations. A number of such types are listed below, in order of increasing complexity or deviation from the basic (except for the interposed type of (zrg)). All but two of these types can be illustrated with the verb **break**; other verbs are given to illustrate types (h) and (i). Most of these types are here named for the kind of element that acts as the verbal subject:¹⁴

- (21) Different types of causative meaning incorporated in the verb root
- a. The vase broke – autonomous event (not causative)
 - b. The vase broke from a ball's rolling into it – resulting-event causation
 - c. A ball's rolling into it broke the vase – causing-event causation
 - d. A ball broke the vase (in rolling into it) – instrument causation
 - e. I broke the vase in rolling a ball into it – author causation (i.e. with result unintended)
 - f. I broke the vase by rolling a ball into it – agent causation (i.e. with result intended)
 - g. I broke my arm when I fell (= My arm broke [on me] when I fell) – undergoer situation (not causative)
 - h. I walked to the store – self-agentive causation
 - i. I sent him to the store – inductive causation (caused %wCY)

The autonomous (a) type presents an event as occurring in and of itself, without implying that there is a cause (such causes as there may be fall outside of attention).¹⁵ In the (b) 'resulting-event causation' type, on the other hand, this main event has resulted from another event (expressed in a subordinate clause or a nominalization) and would not otherwise have occurred. English verbs that incorporate both these causation types but no others are **die**, **fall**, **drift**, **disappear**, **sleep**.

While the (b) type focuses on the main event as *result* from another event, the (c) 'causing-event' type focuses on the latter (now the subject) as **causing** the main event.¹⁶ And the instrumental (d) type focuses on just that object within the causing event that actually **impinges** on the affected elements of the resulting event.¹⁷ English has very few verbs that incorporate the (c) or (d) types without also incorporating the (e) and (f) types. One example, though, is **erode** as in *The river's rushing along it/ The river/ ? *The scientists eroded that section of land*.

In both author (e) and agent (f) causation, an animate being wills a bodily action that leads (through a variously sized chain of causal

events) to the main event referred to.¹⁸ In the author type, the being intends all these events except the final one; in the agent type, the final one, to a, is intended. English verbs associated with the author type and only slightly or not at all with the agentive are *spili*, *drop*, *knock (down)*, and bimorphemic *mislay*. *Strictly* agentive verbs are *murder*, *throw*, *persecute*.

The undergoer in the (g) type is like an author in that he does not intend the event mentioned. But he also has not intentionally undertaken any actions that culminate in that event. Rather, the event is conceived of as occurring independently of the undergoer, but as affecting his subjective state, usually adversely. Many languages express the undergoer in an oblique constituent, as does Spanish:

- (22) Se me quebró el brazo
 'The arm broke itself [to] me' = 'I broke my arm'
 Se me perdió la pluma
 'The pen lost itself [to] me' = 'I lost my pen'

English does have this construction (with on: My arm broke on me). But it also has verbs that allow the undergoer as subject (I *broke* my arm, I *caz@* my sweater on a nail, I *developed* a wart in my ear) as well as ones that require it that way, like *lose* and *forger*. We can contrast the agent, author, and undergoer types with the *three* verbs in I *hid/misZaid/lostr my pen* somewhere *in the kitchen*. *These* verbs all have a similar core meaning, one involving an object's becoming not findable. But each incorporates a different causation type:

- (23) $\left\{ \begin{array}{l} \text{to AGENT} \\ \text{to AUTHOR} \\ \text{to UNDERGO} \end{array} \right\}$ that NP become not-findable approx. $\left\{ \begin{array}{l} \text{to hide} \\ \text{to mislay} \\ \text{to lose} \end{array} \right\}$ NP

The *self-agentive* (h) type is like the agentive except that the animate being's bodily action is itself the final and relevant event, not just a precursor. Often, the whole body is moved through space as a Figure. In their usual usage, the English verbs go, *walk*, *run*, *jzump*, *trudge*, *recline*, *crouch*, etc., incorporate this type. The verb *rol2* can incorporate several different causation types, among them the self-agentive, and so permits a contrastive example:

- (24) a. The log rolled across the field
 - autonomous event

- b. The boy rolled the log across the field
 - agent causation
 c. The boy rolled across the field on purpose
 - self-agentive causation

In the inductive (i) type, something (whether a thing, an event, or another Agent) induces an Agent to intentionally carry out an act.¹⁹ Some English verbs incorporating this type are: *send*, *drive (off)*, *chase (away)*, *smoke (out)*, *lure*, *attract*, *repel*, *sic . . . on*. The verb set . . . *upon* has a range that permits a contrastive example:

- (25) a. The dogs set upon us - self-agentive causation
 b. He set the dogs upon us - inductive causation
 (caused agency)

Our method for distinguishing causation types rests on finding verbs that incorporate only one type or that have ranges differing by only one type (or, at least, ranges which overlap in enough different ways). For example, *we can try* to use each of the verbs *die*, *kizl*, *murder in every* one of the causative types listed in (21):

- (26) a. He died/*killed/*murdered yesterday (i.e.: 'He underwent death')
 b. He died/*killed/*murdered from a car hitting him
 c. A car's hitting him *died/killed/*murdered him
 d. A car *died/killed/*murdered him (in hitting him)
 e. She unintentionally *died/killed/*murdered him
 f. She *died/killed/murdered him in order to be rid of him
 g. *He* *died/*killed/*murdered his plants (i.e.: 'His plants died on him')
 h. He *died/*killed/*murdered (i.e.: 'He killed himself by internal will')
 i. She *died/*killed/*murdered him (i.e.: 'She induced him to kill [others]')

From (26) we can derive the summary in Table 2.3 where we see just the acceptable usages. From the different acceptability patterns here, we can establish that the agentive (f) is a type *by* itself (it alone accommodates *murder*) and that there are at least distinctions between the (a/b) set of types (*die* but not *kill* ranges over these), the (c/d/e) set of types (*kiD's* range minus the agentive (f), already isolated), and the (g/h/i) set of types (suiing none of the verbs). We can now seek cases

Table 2.3. *Acceptable types of causative usage: die, kill and murder*

	die	kill	murder
a	✓		
b	✓		
c		✓	
d		✓	
e		✓	
f		✓	✓
g			
h			
i			

that exhibit distinctions within these clusters of types. The (g) type can be separated out by the **fact** that it alone accommodates the verb *lose* (in its 'not findable' **sense**), as we could demonstrate with **an array** of sentences like that above. Besides, (g) has already been distinguished from (h) and (i) in that **break** can incorporate it but not the latter two types. These themselves are distinguished in that only (h) accommodates **trudge** and only (i) accommodates **sic**, . . . **un**. And so **on**.

We can establish more conclusively that a verb incorporates a particular causation type by using special test frames. For example, here are two sets of frames that can test for author- and agent-type incorporation in English verbs:

- | | | |
|------|--|---|
| (27) | s: author-causative
s accidentally
s in (+ Cause clause)
s . . . toa . . .
may s! | s: agent-causative
s intentionally
s in order that . . .
NP intend to s
NP- persuade NQ to s
s! |
|------|--|---|

When placed in these frames, the verbs **mislay** and **hide** show complementary acceptability patterns. In this way each verb is shown to incorporate the one but not the other of the two causation types tested for:²¹

- (28) a. I accidentally mislaid/*hid my pen somewhere in the kitchen
I mislaid/*hid the pen in putting it in some obscure place
May you mislay/*hide your pen!

- b. I intentionally 'midaid/hid my pen somewhere in the kitchen
I *mislaid/hid the pen so that it would never be seen again
I intend to *mislay/hide my pen somewhere in the kitchen
She persuaded me to *mislay/hide the pen
*Mislay/Hide your pen somewhere in the kitchen!"

Table 2.4. *Lexicalized causation types shifted by grammatical elements*

	autonomous	agentive	self-agentive	undergoer	inductive
(a)	v	make v			
(b)	v		make REFL v		
(c)	{v or v}			have v	
(d)		v	v REFL		
(e)		{v or v}			have v

(a)-(e) correspond to (a j(e) in (29).

Further evidence that verbs have different causative lexicalizations is that they take different grammatical augments to indicate a shift in causation type. Table 2.4 shows a sample from English of such augments and the shifts they mediate. In (zg) each shift is illustrated with a verb that is lexicalized solely in the starting-point causative type and is placed with the relevant grammatical shifters in a clause. Accompanying this, for comparison, is a causatively equivalent clause with an unaugmented verb (in *italics*) lexicalized solely in the causation type at the end of the shift. **Thus**, (2ga) shows **disappear**, which is solely autonomous (The **stone disappeared**/* **The witch disappeared the stone**), rendered agentive by the augment **make**, and thereby equivalent to the unaugmented **obliterate**, which itself is solely agentive (***The stone obliterated**):^U

- (29) a. The witch made the stone disappear (cf. The witch **obliterated** the stone)
b. He made himself disappear (cf. He scrambled)
c. You might have your toy sailboat drift off (cf. You might lose your toy sailboat)
You might have your wallet (get) stolen in the crowd (cf. You might lose your wallet in the crowd)
d. She dragged herself to work (cf. She **hugged** to work)
e. I had the maid go to the store (cf. I sent the maid to the store)
I had my dog attack the stranger (cf. I **sicked** my dog on the stranger)

We can observe causative lexicalization patterns at different levels of linguistic organization. At the level of individual lexical items, a verb's particular range of lexicalizations can often be explained on the basis of its core meaning alone. For example, the basic referent of *break* can apply to a person's body-part but not to his whole body (I broke his arm/ *I broke him) and, accordingly, the verb lacks a self-agentive usage (*I broke, in the sense 'I broke myself/my body'). Similarly, *erode* resists agentive usage because an agent cannot generally marshal the instrumentalities of erosion. On the other hand, it seems purely arbitrary that *poison* has an agentive but not an autonomous usage (He **poisoned her with toadstools**/*She **poisoned after eating toadstools**) while *drown* has both (He **drowned her/She drowned**), or that *conceal* has an agentive but not a self-agentive usage (I **concealed her**/*She **concealed in the bushes**) while *hide* has both (I **hid her/She hid in the bushes**). But motivated or idiosyncratic, all these lexicalization patterns are associated with particular lexical items.

There are also patterns operating at the level of a whole semantic category. For example, virtually all English verbs that refer to death without expressing its cause (in contrast, for example, to *drown*) observe the basic causative/non-causative distinction - i.e., are lexicalized for either the non-causative (21a/b) types or the (21c-e) causative types but not for both. The pattern applies to both simplex and complex expressions:

(30)	non-causative	causative
die	kick off	kill
expire	kick the bucket	slay
decease	bite the dust	dispatch
perish	give up the ghost	murder
croak	meet one's end	liquidate
pass away	breathe one's last	assassinate
		slaughter
		exterminate
		off
		waste
		knock/bump off
		rub out
		do in
		do away with

By contrast, almost all English verbs expressing the material disruption of an object - e.g. *break*, *crack*, *snup*, *burst*, *bust*, *smash*, *shatter*, *shred*, *tip*, *tear* - apply equally in both non-causative and causative cases (The **balloon burst**/I **burst the balloon**). There are not many more exceptions than *collapse*, lacking an agentive usage (*I **collapsed the shed**), and *demonish*, lacking the autonomous usage (*The **shed demonished**).

Different languages often exhibit different lexicalization patterns for a particular semantic category. For example, verbs referring to states are mostly lexicalized in the autonomous type in Japanese but are mostly

agentive in Spanish. Japanese adds an inflection to its verbs to express the corresponding agentive, while Spanish adds its reflexive clitics (here serving not in a 'reflexive' but in a 'de-agentivizing' function) to express the autonomous. We can illustrate these complementary patterns with the verbs for 'open':

- @) Japanese: a. Doa ga aita
door SUBJ open(PAST)
'The door opened'
b. Kare wa doa o aketa
he TOP door O~ open (taus PASST)
'He opened the door'
Spanish: c. Abrió la puerta
he opened the door
'He opened the door'
d. La puerta se abrió
The door REFL opened
'The door opened'

Finally, at the broadest scope, some lexicalization patterns affect the whole lexicon of a language. One example is that in Japanese the causing-event (21-) and instrument (21d) causation types are barely represented at all. Thus, verbs otherwise corresponding to our *kill* and *break* cannot be used (without extreme awkwardness) with the causing event or Instrument as subject. To express these constituents, one must use the (21b) resulting-event causation type instead.

1.7 Interacting of aspect and causation

Different verb roots incorporate different combinations of aspectual and causative types. One might at first expect a language to have a roughly equal distribution of the combinations over its lexicon and to have grammatical elements for getting from each combination to any other. But we find two limiting factors. First, not all aspect-causative combinations are relevant to every semantic domain. For example, in many languages the semantic domain of Mates' seems to involve only (or mainly) these three aspect-causative types (compare Chafe 1970):

- (34) a. being in a state (stative)
b. entering into a state (inchoative)
c. putting into a state (agentive)

Second, even for such a smaller set, the relevant verbs in a language generally are not evenly lexicalized over the different types. For example, for the expression of 'states', there are languages in which the verb roots are preponderantly lexicalized in only the (a) or only the (b) or only the (c) type. In other languages, such verb roots show a small range of lexicalizations, either over the (a/b) types or over the (b/c) types. There are also languages in which the same verb root is used equivalently for all three aspect-causative types. Sometimes a language's roots exhibit different patterns for different categories within the 'states' domain. Wherever the verb roots are restricted in their aspect-causative ranges, there are generally grammatical devices for getting to the remaining types. But because of all these limitations, the number of devices required can be quite small.

We first demonstrate these lexicalization patterns for one category of states, that of 'postures': postures or orientations that are assumed by the human body or by objects treated as comparable to the body." We can use English here to illustrate the pattern of lexicalization largely limited to the 'being-in-a-state' type. This is seen in verbs like *lie*, *sit*, *stand*, *lean*, *kneel*, *squat*, *crouch*, *bend*, *bow*, etc. = These verbs must generally take on additional elements for the other aspect-causative types to be conveyed. For example, *lie* by itself refers to being in the lying posture. The verb must be augmented by what we call a 'satellite' - yielding the form *lie down* - to signify getting into the posture. And it must be further augmented by an agentive derivation - yielding *lay down* - to refer to putting into the lying posture?

- (33) a. She **lay** there all during the program
 b. She *lay down* there when the program began
 c. He *laid* her *down* there when the program began

Japanese is a language where posture verbs are generally lexicalized in the 'getting into a state' type, with the other types derived therefrom. For example, the basic meaning of *tatu* is 'to stand up' (comparable to the English verb *arise*). When this verb is grammatically augmented by the -*fe iru* form, whose meaning can be rendered as 'to be (in the state of) having [Ved]', the resultant meaning is 'to be in a standing posture'. And when the verb is augmented by the agentive or by the inductive suffix, yielding the forms *tateru* and *tataseru*, the resultant meanings are 'to put into a standing posture' a thing or a person, respectively. To illustrate:

- (34) a. **Boku** wa **tatta**
 I TOP **arose**
 'I stood up'

- b. **Boku** wa **tatte** ita
 I TOP **having-arisen** was
 'I was standing'
 c. **Hon** o **tateta**
 book OBJ **AGENTED-to-arise**
 'I stood the book up'
 d. **Kodomo** o **tatase**
 child OBJ **INDUCED-to-arise**
 'I stood the child up'

Exemplifying the third pattern, Spanish lexicalizes posture notions in the agentive 'putting-into-a-state' type, the other types being derived therefrom. For example, the verb *acostar* is inherently transitive, with the meaning 'to lay (someone) down'. To it must be added the reflexive morpheme, giving *acostarse*, to get the meaning 'to lie down'.²⁷ And for the steady-state meaning 'to lie', the verb must be suffixed with the past participle ending and put in construction with the verb 'to be': *estar acostado*?

- (35) a. **Acosté** el niño
 I **laid** down the **child**
 'I laid the child down'
 b. **Me** **acosté**
 myself I **laid** down
 'I lay down'
 c. **Estaba** **acostado**
 I **was** **laid** down
 'I lay (there)'

These typological findings can be represented together in a single schematic matrix, as in Table 2.5. For each class of language, Table 2.5 shows the aspect-causative type of the verb in which postural notions are generally lexicalized, and the patterns by which the other types are derived therefrom.

Table 2.5. *Lexicalization patterns for verbs of posture* (v = verb root, SAT = satellite, PP = past participle inflection)

	be in a posture	get into a posture	put into a posture
English:	v	v + SAT	v + CAUS + SAT
Japanese:	'be' + v + PP	v	v + CAUS
Spanish:	'be' + v + PP	v + REFL	v

Other languages have other means for deriving the non-basic aspect-causative types from the favored one. For example, German is like English in having the stative type as basic for posture notions, as with

- (40) a. verb root -it^u- 'for a linear object to be in
 // move into/out of/while
 in a lying posture'
 directional suffix: -mič 'down onto the ground'
 inflectional affix-set: s- 'w- -a 'I = subject, 3d person object
 (factual mood)
 /s-'w-it^u-mič-a/ ⇒ [s^wit^hmič]
 'I lay down onto the ground'/'I laid it down onto the ground'
- b. verb root: -it^u- as for (a) above
 locative suffix: -ak- 'on the ground'
 inflectional affix-set: s- 'w- -a 'I = subject, 3d person object
 (factual mood)
 /s-'w-it^u-ak-a/ ⇒ [s^wit^hak-a]
 'I was lying on the ground'

Arabic forms like those cited earlier have an alternative analysis that places them at this point of the exposition. The verb root can be taken to be a consonantal form that – like the Atsugewi root – names the state alone and always takes different interposed vowel sequences as grammatical augmentations. These grammatical elements, then, follow a pattern complementary to that of Atsugewi: one vowel sequence handles both the stative and the inchoative, while another one handles the agentive.

1-7.1 Consistency of *patiems* within a language

Lexicalization patterns for aspect-causative types exhibit different degrees of pervasiveness in a language, first in the degree to which a pattern predominates within a semantic category. For example, posture notions in English are largely consistent in stative lexicalization, with perhaps only inchoative *atie* falling outside this pattern. By contrast, posture notions in Latin show up in verbs of a variety of lexicalization types. Each type of verb employs different means to yield other aspect-causative meanings (e.g. stative *sedere* 'Yo sit' takes a prefixal satellite to yield the inchoative *considerere* 'to sit down', while agentive *inclinare* 'to lean (something) against' takes the reflexive to yield the inchoative *se inclinare* 'to lean (oneself) against'):

(41)	stative	inchoative	agentive
	stare 'stand'	surgere 'stand up'	ponere 'lay, set'
	sedere 'sit'		locare 'set, lay'
	iacere 'lie'		inflectere 'bow, bend'
	cubare 'lie'		inclinare 'lean'

Table 2.6. *Lexicalization pattern for Latin verbs of condition* (v = verb root, PP = past participle inflection)

	be in a condition	enter into a condition	put into a condition
Independent:	v	v + INCHOATIVE	v + CAUS
Dependent:	'be' + v + PP	v + MEDIOPASSIVE	v
Examples:			
Independent:	<i>patere</i> 'to be open'	<i>patescere</i> 'to open (intr.)'	<i>patefacere</i> 'to open (tr.)'
Dependent:	<i>fractus esse</i> 'to be broken'	<i>frangi</i> 'to break (intr.)'	<i>frangere</i> 'to break (tr.)'

Second, a pattern in a language that predominates within one category of a semantic domain may or may not do so across the categories. As already seen, English is inconsistent here because its posture verbs are generally lexicalized in the stative, while its condition verbs have the two aspect-causative meanings other than stative.

Latin also exhibits different patterns across categories. To show this, we first point out that what has so far been considered the single category of 'conditions' is better understood as comprising two separate categories. One of these is 'independent conditions': conditions that objects are conceived of as occurring in naturally. The other category is that of 'dependent conditions': conditions conceived of as not original for objects, ones that objects must be brought into by external forces. In many languages, independent conditions are frequently lexicalized in adjectives. In Latin they are, too, but they also frequently appear in verbs. Here they are generally lexicalized in the 'being-in-a-state' type, with the other types derived therefrom. Dependent conditions, on the other hand, are generally lexicalized in verbs in the agentive, and these follow the Spanish pattern for derivation (except that instead of the reflexive, the mediopassive inflections are used). A schematic representation is given in Table 2.6.

The other languages we have looked at in this section show greater consistency across categories. They have the same lexicalization patterns for their verbs of condition as they do for their verbs of posture. We illustrate this extension of the patterns first for Japanese (ea) and Spanish (42b). Compare (34) and (35) with the following:

- (42)
 a. Japanese
- | | | | | | |
|------------------------|------------|-------------------|--------|---------------------|--------------|
| Mizu ga | kootte ita | Mizu ga | kootta | Mizu o | koorasita |
| water | SUBJ | frozen | be | water | SUBJ |
| | | | | | freeze |
| | | | | | (CAUSE PAST) |
| 'The water was frozen' | | 'The water froze' | | 'I froze the water' | |

For actions of **certain** types, approximately the **same** **actional** content is **manifested** whether one or two **participants** are involved. For example, whether John shaves himself or shaves me, the action still involves one **hand** moving one **razor over** one **face**. The **only** relevant **difference** here is whether the hand **and** the **face** belong to the **same** body. The

distinction here is not one of different causation types. For the latter, an increase in participants brings along with it an increment in actional content, as in going from the autonomous *Z%e snow melred* to the agentive John *melred* the snow. Involved here, rather, is a new parameter, one that we will call 'personation', pertaining to the role-structure that is ascribed to an action. An action complex of certain kinds can be taken to manifest either locally, in the body and movements of a single actor (the *monadic* personation type), or distributively, with an actor's body acting on that of a further participant (the *dyadic* personation type).

A **verb root** can be lexicalized for just one personation type (either one), taking grammatical augmentation to express the opposite type, or it can range over both types. **Languages** exhibit different patterns, with a bias toward one or another type of lexicalization. Consider, for example, the category of actions involving the use of hands or handled materials on a body. French, for one **language**, apparently must lexicalize such actions in the dyadic personation type, as actions performed on a *different* person's body. For the case of action on an actor's own body, grammatical derivation must be employed – here, the reflexive:

- (49) a. Je **raserai** Jean
1 will-shave John
'I will shave John'
b. Je me **raserai**
1 myself will-shave
'I will shave'

English, too, has **many** verbs with this personation-type, for example:

- (50) a. 1 cut/bandaged/tickled John
b. I cut/bandaged/tickled $\left\{ \begin{array}{l} \text{myself} \\ *-\phi \end{array} \right\}$

But there is a sizable group of English verbs **whose** simplest form can – in addition to indicating different-person referente – also express the Agent acting on his own **body**, thus incorporating the monadic personation type as well:

- (51) a. I shaved f. I scratched (toa hard)/Don't scratch!
b. 1 **washed** g. 1 buttoned up
c. 1 soaped up h. 1 dressed
d. I bathed i. 1 undressed
e. 1 showered j. I changed

As discussed in note 4, **there** is no reason to **assume** that these verbs incorporate any reflexive meaning in conjunction with some 'basically' other-directed sense. It is quite possible to regard these verbs simply as expressing actions that manifest directly in the actor's own person. In having **such** a group of **forms**, English distinguishes itself from French, which must use the reflexive with all the corresponding verb **forms**:

- (52) a. se **raser** f. se gratter
b. se **laver** g. se bouttonner
c. se **savonner** h. s'habiller
d. se **baigner** i. se déshabiller
e. . . . (prendre une douche) j. . . . (changer de vêtements)

As already noted, English verbs of the type in (51) generally can also express the dyadic personation type (e.g. *I shaved him*), and so cover the range of lexicalization types. But Atsugewi has a group of verbs like those in (51) that refer only to the monadic type. To express the dyadic type, these verbs must add an idectionalelement – usually the benefactive s&ix *-iray*. With this set of forms, Atsugewi behaves in a way quite complementary to that of French. One example:

- (53) a. instrumental prefix +
verb root: -cu-spál- 'comb the hair'
inflectional affix-set: s- 'w- -a 'I – subject'
/s-'w-cu-spál-a/ ⇒ [scuspal]
'I combed my hair'
b. instrumental prefix +
verb root: -cu-spál- 'comb the hair'
benefactive suffix: -iray 'for another'
inflectional affix-set: m- w- -isahk 'I – subject, thee – object'
/m-w-cu-spál-iray-isahk/ ⇒ [mcuspal²ré-sahki]
'I combed your hair'

Ameritan **Sign Language** appears to lexicalize exclusively in the monadic personation type for refeting to a certain class of actions, those that in any way involve the torso. Signs for **such** actions intrinsically represent them as a person would perform them on himself. These signs must be augmented by additional gestures (such as a shift in body direction) in order to indicate that the actions are performed on someone **else**. For example, a woman signer can **assert** that **she** had put on earrings by (among other gestures) bringing her **two** hands toward her **ears**. However, to assert that **she** had put the earrings on her mother (who has **been** 'set up' at a certain point of **nearby space**), **she** cannot

simply move her hands outward toward where her mother's ears would be. Rather, **she** only begins by moving her hands outward, but then shifts her body direction slightly and adopts a distinct facial expression – indicating that her torso is now representing that of her mother – and curves her hands back around, moving them again to her own ears. That is, an additional gestural complex is necessary to indicate that the referent action is to be understood as other-directed.”

1.9 Valence

1.g.1 General considerations

In conceptualizing an event that involves several different entities in distinct roles, one is able to direct greater attention to some one of these entities than to the others or, perhaps, to adopt its actual perspective point. A secondary degree of attention or perspective-taking, further, can be accorded to some second entity. Such cognitive forms of focusing in are indicated linguistically by a variety of devices. One device is to make the focused element the grammatical subject – or, for assigning secondary focus to an additional element, to make that the direct object. (Within the scope of our description, it will suffice to adopt simple notions of the grammatical relations ‘subject’ and ‘direct object’, and to associate these with the case markings ‘nominative’ and ‘accusative’ in the languages that have these.) Now, a lexical verb that refers to a multi-rolled event can have built-in constraints on its freedom to assign focus. It can be limited to taking only a particular one of the element types as subject (or direct object), and so lexicalizes focus on that element type. In other instances, a single verb can accommodate different element types in the focus position, and so has a range of lexicalizations. Such focusing properties are here called the ‘valence’ of a verb. Traditionally, the term valence has been used to refer (either solely or additionally) to the number of distinct element types occurring in association with a verb. In this chapter, the issue of element number arises only in the treatment of causation and personation. Valence here is used just for the particular surface case assignment(s) that a verb exhibits, given a fixed number of certain types of elements in association with it.

The notion of incorporated valence can be effectively demonstrated where there are two verbs whose subject limitations together equal the range of subject possibilities of a third verb. This is the case with *emanate* and *emit* on the one hand and *radiate* on the other. All three of these verbs refer to roughly the same event, an event having both a Figure element and a Ground element. But *emanate* requires @e Figure as subject, while *emit* requires the Ground as subject – as contrasted

Table 2.7. *Valence properties for selected English verbs*

(i) <i>Valence properties for emanate, emit, and radiate</i>		
<i>Figure as subject</i>		<i>Ground as subject</i>
Light emanates from the sun		*The sun emanates light
*Light emits from the sun		The sun emits light
Light radiates from the sun		The sun radiates light
(ii) <i>Valence properties for steal, rob and rip off</i>		
<i>Figure as direct object</i>		<i>Ground as direct object</i>
I stole his money from him		*I stole him of his money
*I robbed his money from him		I robbed him of his money
I ripped his money off from him		I ripped him off (? of his money)
(iii) <i>Valence patterns with the Figure exhibiting a 'to'-type Path</i> (F = Figure, G = Ground, A = Agent)		
	<i>non-agentive</i>	<i>agentive</i>
<i>basic order</i>	Perfume (F) suffused through the room (G)	I (A) suffused perfume (F) through the room (G)
<i>inverted order</i>	The mom (G) suffused with perfume (F)	I (A) suffused the room (G) with perfume (F)
(iv) <i>Valence patterns with the Figure exhibiting a 'from'-type Path</i>		
	<i>non-agentive</i>	<i>agentive</i>
<i>basic order</i>	The blood (F) drained from his veins (G)	I (A) drained the blood (F) from his veins (G)
<i>inverted order</i>	His veins (G) drained of their blood (F)	I (A) drained his veins (G) of their blood (F)

(The word *slowly* can be inserted in the preceding sentences for smoother reading.)

with *radiate*, which accommodates either. Thus, *emanate* incorporates focus on the Figure (the radiation) and *emit* does this for the Ground (the radiator), while *radiate* can incorporate either focus.

We can demonstrate a similar relationship with an agentive example. *Steal*, *rob*, and *rip off* all refer to the same event and take nominals for the Agent, Figure, and Ground roles. All give the Agent primary focus as subject. But for secondary focus as direct object, *steal* selects the Figure (the possessions) while *rob* selects the Ground (the possessor). *Rip off* accommodates either.

Some verbs – suffuse and *drain* are examples – can accommodate their nominals in either the basic Figure-before-Ground order or the inverted Ground-before-Figure order in both the non-agentive and the agentive. Under inversion, the Figure acquires one of two ‘demotion particles’ – *of* when it exhibits an underlying ‘from’-type Path, as with *drain*, and *with* for other Path types, as with *suffuse* (some languages use different cases for this). Thus, the full array of these two verbs’ forms in effect constitutes a paradigm against which other verbs, more listed in one respect or another, can be compared. See Table 2.7 for the valence properties of all the preceding English verbs.³⁵

In the same way as with aspect and causation, a language can have grammatical devices for use with a verb of one valence type in order to express a different type. German has this arrangement for cases of the secondary focus sort. Its prefix *be-* can indicate a shift in secondary focus from the Figure onto the Ground:

- (54) a. Ich raubte ihm seine Tasche
I stole ~I~(DAT) his(Acc) Wallet
'I stole his wallet from him' (Figure as direct object)
- b. Ich beraubte ihn seiner Tasche
I sHIFr-stole hh(ACC) hiS(GEN) wallet
'I robbed him of his wallet' (Ground as direct object)³⁶

Where a language, as here, has a grammatical device for getting to a particular valence type, it might tend to have relatively few verb roots lexicalized in that type. In fact German appears to have fewer verb roots like *our* and *pelt*, roots that intrinsically take the Ground as direct object, using instead its complexes of Figure-taking root plus valence-shifter, like *be-raub(en)* and *be-werf(en)*. The two languages contrast in a similar way in what can be called verbs of giving, this time as to how they indicate focus on (and, hence, the point of view of) the giver or the receiver. Both languages do have cases where the distinction is indicated by distinct verb roots of complementary valence type:

- (55) give teach
get (in the sense of 'receive') learn
geben lehren
kriegen lernen

But in other cases, English has two verb roots where German has only one, one lexicalized with focus on the receiver. A pretil verb reverses the perspective to the giver's point of view:

- (56) sebo bequeath lend
buy inherit borrow
verkaufen vererben verleihen verborgen
kaufen erben leihen borgen

This is illustrated in (57).

- (57) a. Ich kaufte das Haus von ihm
I bought the house from him
'I bought the house from him'
- b. Er verkaufte mir das Haus
he bought(REVERSE) me(DAT) the house
'He sold me the house'

Table 2.8. *Derivational patterns for affect verbs focused on the Stimulus or the Experiencer*

<i>Stimulus as subject</i>	⇒	<i>Experiencer as subject</i>
It frightens me		I am frightened of it
It pleases me		I am pleased with it
It interests me		I am interested in it
<i>Experience as subject</i>	⇒	<i>Stimulus as subject</i>
I fear it		It is fearful to me
I like it		It is likeable to me
I loathe it		It is loathsome to me

1.9.2 Valence in verbs of affect

Consider verbs of **affect** with respect to **valence**. These verbs generally require either the Stimulus or the Experiencer of an affective event as the subject. Accordingly, they incorporate focus on either the qualities of the Stimulus or the state of the Experiencer. Compare this lexicalization difference in *frighten* and *fear*, which refer to roughly the same affective situation:

- W a. That frightens me – Stimulus as subject
b. I fear that – Experiencer as subject³⁷

For verbs lexicalized in either valence type, there are grammatical, or grammatical-derivational, means for getting to the opposite type. Thus, a verb with a Stimulus subject can generally be placed in the construction 'be – V + PP – Prep' (not a passive: the preposition can be other words than *by*) to bring the Experiencer into subject position. And a verb with an Experiencer subject can often figure in the construction 'be – V + Adj – to', which places the Stimulus as subject. See Table 2.8.

While possibly all languages have some verbs of each valence type, they differ as to which type predominates. In this respect, English seems to favor lexicalizing the Stimulus as subject.³⁸ While some of its most colloquial verbs (*Me, want*) have the Experiencer as subject, the bulk of its vocabulary items for affect focus on the Stimulus, as we see in Table 2.9.39

By contrast with English, Atsugewi roots appear to have Experiencer subjects almost exclusively. Virtually every affect-expressing verb (as well as adjective in construction with 'be') elicited in fieldwork was lexicalized with an Experiencer subject. To express a Stimulus subject, these forms took the suffix *-ah&*. For one example see Table 2.10.

It may be that the boundaries of the 'affect' category here are too encompassive or misdrawn for good comparative assessments. There

Table 2.9. *Affect verbs in English*

Stimulus as subject					
please	key up	astonish	annoy	incense	worry
satisfy	turn on	awe	bother	infuriate	concern
gratify	interest	wow	irk	outrage	trouble
civilize	engage	confuse	bug	miff	distress
soothe	captivate	puzzle	vex	put out	upset
calm	intrigue	perplex	pique	disgruntle	disturb
charm	fascinate	mystify	peeve	frustrate	disconcert
amuse	beguile	baffle	nettle	chagrin	unsettle
cheer	entrance	bewilder	initiate	embarrass	shake up
tickle	bewitch	boggle	provoke	abash	discombobulate
delight	tantalize	stupefy	gall	cow	frighten
thrill	matter to	dumbfound	aggravate	shame	scare
transport	bore	flabbergast	grate on	humiliate	alarm
move	surprise	shock	piss off	disgust	grieve
stir	startle	dismay	exasperate	gross out	hurt
arouse	amaze	appal	anger	revolt	pain
excite	astound	horrify	rile		torment
Experiencer as subject					
like	marvel over	want	lust for	abhor	worry about
enjoy	wonder at	feel like	crave	deplore	grieve over
care for	trust	desire	need	anger over	sorrow over
groove on	respect	prefer	covet	fume over	regret
fancy	esteem	wish for	envy	seethe over	me
relish	admire	hope for	dislike	gloat over	hurt from
love	appreciate	hanker after	resent	distrust	ache from
adore	value	hunger for	hate	fear	suffer from
delight in	prize	thirst for	detest	dread	bear
thrill to	cherish	long for	despise		stand
exult over	revere	yearn for	loathe		tolerate

Table 2.10. *Derivation of Experiencer-subject verb roots to Stimulus-subject in Atsugewi*

Experiencer as subject		
verb root:	-lay-	'to consider as good'
instrumental prefix:	sa-	'by vision'
derivational suffix:	-im	(no specific meaning; occurs here idiomatically)
inflectional affix-set:	s- 'w- -a	'I = subject, 3d person object'
/s-'w-sa-lay-im-a/ ⇒ [swsal·ayiw]		
'I find it beautiful'		
Derived to: Stimulus as subject		
verb root:	-lay-	'to consider as good'
instrumental prefix:	sa-	'by vision'
valence-shifting suffix:	-ahw	'from Stimulus to Experiencer'
inflectional affix-set:	'w- -a	'3d person subject'
/'w-sa-lay-ahw-a/ ⇒ [wsal·ayáhwa]		
'It is beautiful'		

Table 2.11. *'Cognitive' verbs in English*

Stimulus as subject	Experiencer as subject
strike	know think
seem to	realize feel
remind . . of	believe doubt
	consider suspect imagine
	remember forget wonder about
	learn discover find out

may be smaller categories following more 'natural' divisions that reveal more about semantic organization. For example, a 'desiderative' category might well be separated out by itself: *all* the English verbs of 'wanting' listed in Table 2.9 have Experiencer subjects, and this arrangement might be universal. Thus, although colloquial expressions with the opposite valence occur in other languages:

- (59) a. Yiddish:
Mir vilt xix esn
me-ro wants REFL to eat
- b. Samoan:
'Ua sau (liate a'u) le fia 'ia
AsP come (to me) the want (to) eat
'A desire for eating has come on me (I feel like eating)'

they are derived constructions based on verb roots with *Experiencer* subjects. (However, Kaluli of New Guinea may possibly be a language in which all mental verbs – including those of 'wanting' and 'knowing' – put the Experiencer in the surface case that identifies it as the affected argument (Bambi Schieffelin, personal communication).) Perhaps, too, one should separate out an 'assessment' category for notions like 'esteem', 'value', 'prize'; in Table 2.9 the English verbs for these notions again all require Experiencer subjects. We had already separated out a 'cognitive' category for the more intellectual mental processes. Verbs of this category were excluded from the affect list above, and again English seems to favor Experiencer as subject for them, as shown in Table 2.11.

A single semantic-cognitive principle might account for all these correlations between category of mental event and lexicalization tendency: subjecthood, perhaps because of its frequent association with agency, may tend to confer upon any semantic category expressed in it some initiatory or instigative characteristics. Accordingly, with Stimulus as subject, an external object or event (the stimulus) may be felt to act on an Experiencer so as to engender within him/her a particular mental event. Conversely, with Experiencer as subject, the mental event may be felt to arise autonomously and to direct itself outward toward a selected object. For example, a mental event of 'wanting' might be

psychological experience across cultures as a self-originating event, and so, by this principle, have a preponderant tendency across languages to correlate with Experiencer subjecthood.

2.0 Satellites

Here we will examine the representation of certain semantic categories by a type of surface constituent that has not been generally recognized as such in the linguistic literature, one that we term a 'satellite'. Present in many if not all languages, satellites are certain immediate constituents of a verb root other than inflections, auxiliaries, or nominal arguments. They relate to the verb root as periphery (or modifiers) to a head. A verb root together with its satellites forms a constituent in its own right, the 'verb complex', also not generally recognized. It is this constituent as a whole that relates to such other constituents as an inflectional &-set, an auxiliary, or a direct object noun phrase. In some cases, elements that are encountered acting as satellites to a verb root otherwise belong to particular recognizable grammatical categories; therefore, it seems better to consider the satellite role not as a grammatical category in its own right but as a new kind of grammatical relation.

The satellite is easily illustrated in English. It can take the form of either a free word or an affix (satellites are marked here by the symbol **F** that, in effect, 'points' from the satellite to its head, the verb root):

- | | | | |
|------|----------------------------|--------------------|-------------------------|
| (60) | satellite: | verb complex: | example sentence: |
| | F over | start * ver | The record started over |
| | F T _i S- | fire F mis- | The engine misfired |

As many as four such satellites can appear together in a verb complex:

- (61) Come **F**fright **F**back **F**down **F**out from up in there!
(said, for example, by a parent to a Child in a treehouse)

The term traditionally applied to the above element in English is 'verb particle' (see Fraser 1976). The term 'satellite' has been introduced in **order** to capture the commonality between such particles and comparable forms in other languages. Within Indo-European, such forms include the 'separable' and 'inseparable' prefixes of German and the verb prefixes of Latin and Russian as shown in Table 2.12.

Another kind of satellite is the second element of a verb compound in Chinese, called by some the 'resultative complement'. Another example is any non-head word in the lengthy verbal sequences typical of

Table 2.12. *Satellites as verb prefixes in German, Latin, and Russian*

a. German		
	kparabk prq5x	'inseparable' prq5x
satellite:	+entzwei	+5er-
verb complex:	brechen +entzwei (entzweibrechen)	brechen +zer- (zerbrechen)
ex. sentence:	Der Tisch brach entzwei 'The table broke in two'	Der Tisch zerbrach 'The table broke to pieces'
b. Lah:		
	PM=	
satellite:	+in-	letet' • v-(vletet')
verb complex:	volare +in- (involare)	Ptica vletela
ex. sentence:	Avis involavit 'The bird flew in'	'The bird Aew in'

Tibeto-Burman languages. In the case of **Lahu**, Matisoff (1973) has called any such word a 'versatile verb'. A third example is any of the non-inflectional **atives** on the verb root in the Atsugewi 'polysynthetic verb'.⁴² We now examine a range of types of semantic material that appear in satellites.

2.1 Path

The satellites in English are mostly involved in the expression of Path. Generally, the Path is expressed fully by the combination of a satellite and a preposition, as in (62a). But usually the satellite can also appear alone, as in (62b). The ellipsis of the prepositional phrase here generally requires that its nominal be either a deictic or an anaphoric pronoun (i.e., that the Ground object be uniquely identifiable by the hearer):⁴³

- (62) a. I ran **OUT** **of** the house
b. (After rifling through the house,) I ran out [Le., . . . of it]

Some symbolism here can help represent the semantic and grammatical situation. The symbol > is placed after a preposition, in effect pointing toward its nominal head. Thus this symbol together with **F** enclose the full surface expression (the satellite plus preposition) that specifies Path, as illustrated in (63a). For a still finer representation, parentheses are used to mark off the portion that can be optionally omitted, and F and G indicate the locations of the nominals that function as Figure and Ground, as shown in (63b):

- (63) a. **F**out of>
b. F . . . fout (of> G)

English has quite a few path satellites. Some are presented in the sentences below, here without any final Ground-containing phrase:

(64) Path satellites in English

I ran <i>in</i>	It flew <i>up</i>	He ran <i>along</i>
I ran <i>out</i>	It flew <i>down</i>	He ran <i>around</i>
I got <i>on</i>	I went <i>above</i>	He ran <i>past/by</i>
I got <i>off</i>	I went <i>below</i>	He ran <i>away</i>
She came <i>over</i> ₁	He ran <i>through</i>	He ran <i>back</i>
It toppled <i>over</i> ₂	He ran <i>across</i>	She came <i>forth</i>
		They rolled <i>apart</i>
		They slammed <i>together</i>

In addition, English has a number of Path satellites that would not be generally recognized as such, i.e., as being in the same semantic category as those of (64):

(65) More Path satellites in English

F . . . <loose (from> G)	The bone pulled loose (from its socket)
F . . . <free (from> G)	The coin melted free (from the ice)
F . . . <clear (of> G)	She swam clear (of the oncoming ship)
F . . . <stuck (to> G)	The twig froze stuck (to the window)
F . . . <fast (to> G)	The glaze baked fast (to the clay)
F . . . <un- (from> G)	The bolt must have unscrewed (from the plate)
F . . . <over- ϕ > G	The eaves of the roof overhung the garden
F . . . <under- ϕ > G	Gold leaf underlay the enamel
G . . . <full (of> F)	The tub quickly poured full (of hot water)

The languages in most branches of Indo-European have Path systems that are homologous with the one just seen for English. That is, they also use a satellite and a preposition, with the prepositional phrase generally omissible. This is illustrated here for Russian (see Talmy 1975 for an extensive treatment of such forms in this language):

(66) Path expressions in Russian

<v- v + ACC>	'into'	<pere- čerez + ACC>	'across'
<vy- iz + GEN>	'out of'	<pod- pod + ACC>	'(to) under'
<na- na + ACC>	'onto'	<pod- k + DAT>	'up to'
<s- s + GEN>	'off of'	<pri- k + DAT>	'into-arrival-at'
		<do- do + GEN>	'all the way to'

- (67) a. Ya vbeial (v dom)
I in ran (into house(ACC))
I ran in (-to the house)
- b. Ya vybežal (iz doma)
I out ran (out Of house(GEN))
I ran out (of the house)

We want to emphasize for all these Path examples that satellites should be well distinguished from prepositions. No confusion can occur in most Indo-European languages, where the two forms have quite distinct positional and grammatical characteristics. For example, in Latin, Classical Greek, and Russian (cf. (66) and (67)), the satellite is bound prefixally to the verb while the preposition accompanies the noun (wherever it turns up in the sentence) and governs its case. Even where a satellite and a preposition with the same phonetic shape are both used together in a sentence to express a particular Path notion – as often happens in Latin, Greek, and Russian (again, see (66) and (67)) – the two occurrences are still formally distinct. However, a problem arises for English which, perhaps done among Indo-European languages, has come to regularly position satellite and preposition next to each other in a sentence. For some of these juxtapositions, a kind of merged form has developed, while for others – especially where two occurrences of the same shape might be expected – one of the forms has dropped (we treat this next). Nevertheless, there are still ways in which the two kinds of forms – satellites and prepositions – distinguish themselves. First, it is only a preposition that will disappear when the Ground nominal is omitted: a satellite remains. Next, the two classes of forms do not have identical memberships: there are forms with only one function or the other. For example, together, apart, and forth are satellites that never act as prepositions, while from, at, and toward are prepositions that never act as satellites. Furthermore, forms serving in both functions often have different senses in each. Thus, to as a preposition ('I went to the store') is different from to as a satellite ('I came to'), and satellite over in its sense of 'rotation around a horizontal axis' ('It fell/toppled/turned/flipped over') does not have a close semantic counterpart in prepositional over with its 'above' or 'covering' senses ('over the treetop', 'over the Wall').

We look more closely now at the special feature of the English Path system; it is worth going into because the same feature will appear again in the Mandarin system that we treat next. English has a number of forms like past that behave like ordinary satellites when there is no final

nominal, as in (68a), but **appear** without **any** preposition when there **is** a **final** nominal, as in (68b):

- (68) a. (I saw him **on** the comer but) I just drove *past*
 b. I drove *past* him

A form like that in (68b) has properties of both a satellite and a preposition. It receives the heavy stress of a satellite (a preposition receives light stress, as in 'I went to him'). But like a preposition it is always positioned **before** the nominal (an ordinary satellite may follow a **direct** object **noun**, and must follow a **pronoun**, as in 'I drove him in'). The different English **accentual** and positional **types** can be **contrasted** thus:

- (69) a. **Iwenttōhim** - with a preposition alone
 b. I followed him in - with a satellite alone
 c. I went in **tō** him (where he sat)- with both a satellite and a **preposition**
 d. I went **pást** him - with a satellite-preposition

Because of its special behavior, a form like *past* might be considered a coalesced version of a satellite plus a preposition = a **satellite-preposition** (first treated in Talmy 1972) = as suggested symbolically in (70a). Or, as is assumed here, it can be considered a real satellite that happens to be coupled with a **zero** preposition, as suggested in (70b):

- (70) a. <past> b. F. . . <past (∅ > G)

Mandarin Chinese has Path satellites and constructions that are entirely homologous with those of English. A number of these satellites are listed here (they variously may, cannot, or must be further followed by the satellite for 'hither' or for 'thither'):

- | | | | | |
|------|--------|----------------------------------|-------|--------------------|
| (71) | <qù | 'thither | <guò | 'across/past' |
| | <lái | 'hither' | <qǐ | 'up off' |
| | <shàng | 'up' | <diào | 'off (He ran off)' |
| | <xià | 'down' | <zǒu | 'away' |
| | <jìn | 'in' | <huí | 'back' |
| | <chū | 'out' | <lǒng | 'together' |
| | <dào | 'all the way (to)' | <kāi | 'apart/free' |
| | <dǎo | 'atopple (i.e., pivotally over)' | <sàn | 'ascatter' |

These satellites participate in Path expressions of either the coalesced or the uncoalesced type. The only apparent **difference from English** is an order distinction: the object of the coalesced **form follows** the **verb complex**, whereas the prepositional phrase of the uncoalesced form **precedes** it (as is general with prepositional phrases of any kind). Some satellites can participate in both constructions. One of these is the satellite meaning 'past', which we see here in two different sentences that receive the same translation in **English**:

- (72) F. . . +guò (-\$> G -biàn) (coalescence of satellite and
 past side preposition)
 Píng-zi piāo guò shí-tóu páng-biān
 bottle float past rock('s) side
 'The bottle floated past the rock'

- (73) F. . . **euò** (cóng> G -biān) (the uncoalesced form with both
 past from side a satellite and a preposition)
 Píng-zi cóng shí-tóu páng-biān piāo guò
 bottle from rock(?) side float past
 'The bottle floated past the rock'

2.2 Path + Ground

In a conflation pattern distinct from the preceding one, a satellite can express at once both a particular Path and the kind of object acting as Ground for the Path. Satellites of this sort seem to be rare in the languages of the world. However, they constitute a major type in certain Amerindian languages. English does have a few examples, which can serve to introduce the type. One is the form *home* in its use as a satellite, where it has the meaning 'to his/her/. . . , home'. Another is the form *shut*, also in its satellite use, where it means 'to (a position) across an opening'. These forms are here illustrated in sentences, optionally followed by prepositional phrases that amplify the meanings already present in the satellites:

- (74) a. She drove **home** (to her **cottage** in the suburbs)
 b. The gate swung **shut** (across the entryway)

Atsugewi is one language which has such satellites as a major system.⁴⁴ It has some fifty forms of this sort. We can illustrate the system by listing the fourteen or so separate satellites that together are roughly equivalent to the English use of **into** with different particular nominals.

[A '+' here indicates that the satellite must be followed by one of -im/-&, 'hither'/'thither'):

- (75) Path + Ground satellites in Atsugewi
- Et 'into a liquid
 - cis 'into a fire'
 - lisp -u + 'into an aggregate' (e.g. bushes, a crowd, a rib-cage)
 - wam 'down into a gravitic container' (e.g. a basket, a cupped hand, a pocket, a lake basin)
 - wamm 'into an areal enclosure' (e.g. a corral, a field, the area occupied by a pool of water)
 - ipsn^u + '(horizontally) into a volume enclosure' (e.g. a house, an oven, a crevice, a deer's stomach)
 - tip -u + 'down into a (large) volume enclosure in the ground (e.g. a cellar, a deer-trapping pit)
 - ikn + 'over-the-rim into a volume enclosure' (e.g. a gopher hole, a mouth)
 - ikc 'into a passageway so as to cause blockage' (e.g. in choking, shutting, walling off)
 - iks^u + 'into a comer' (e.g. a room comer, the wall-floor edge)
 - mik· 'into the face/eye (or onto the head) of someone'
 - mic 'down into (or onto) the ground
 - cis^u + 'down into (or onto) an object above the ground (e.g. the top of a tree stump)
 - iks 'horizontally into (or onto) an object above the ground' (e.g. the side of a tree trunk)

Instances of the use of this satellite system can be seen in the Atsugewi examples appearing earlier, (19a, b, c), (40a, b), and (48); two further examples are given in (76).

- (76) a. verb root: -staq- 'for runny icky material to move/be located'
- directional suffix: -ipsn^u 'into a volume enclosure'
- deictic suffix: -ik· 'hither'
- instrumental prefix: ma- 'from a person's foot/feet acting on (the Figure)'
- inflectional affix-set: '- w- -^a '3d person subject (factual mood)'
- /'-w-ma-staq-ipsn^u-ik·-^a/ ⇒ [ma-staq-ipsnuk·a]
- Literal: 'He caused it that runny icky material move hither into a volume enclosure by acting on it with his feet'
- Instantiated: 'He tracked up the house (coming in with muddy feet)'

- b. verb root: -lup- 'for a small shiny spherical object to move/be located'
- directional suffix: -mik· 'into the face/eye(s) of someone'
- instrumental prefix: phu- 'from the mouth - working egressively - acting on (the Figure)'
- inflectional affix-set: m- w- -^a 'thou - subject, 3d person object (factual mood)'
- /m-w-phu-lup-mik·-^a/ ⇒ [mphol·up^hmik·a]
- Literal: 'You caused it that a small shiny spherical object move into his face by acting on it with your mouth working egressively'
- Instantiated: 'You spat your candy-ball into his face'

2.3 Patient: (Figure) Ground

Another type of satellite is one that indicates the Patient of an event being referred to. Though apparently rare otherwise, such satellites do constitute a major system in some Amerindian languages, those known as 'noun-incorporating'. These languages include an affixal form of the satellite within their polysynthetic verb. Caddo is a case in point. Here, the satellite gives a typically more generic identification of the Patient. The sentence may also contain an independent nominal that gives a typically more specific identification of the same Patient, but the satellite must be present in any case. Here first are some non-motion examples, with (77a) showing the Patient as subject in a non-agentive sentence, and (b) and (c) showing it as direct object in agentive sentences:

- (77) a. Qiku3 hák-n&&-ni-kah-sa3j [ʔmikuʔ háhnisánkáhsaʔ]
church PROG-house-burn-PROG
Literally: 'The church is house-burning'
(i.e., building-burning)
Loosely: 'The church is burning'
- b. cú-cuʔ kan-yi-daʔk-ah ⇒ [cú-cuʔ kannidaʔkah]
milk liquid-find-PAST
Literally: 'He liquid-found the milk'
Loosely: 'He found the milk'
- c. widiš dá ʔn-yi-daʔk-ah ⇒ [widiš dānnidaʔkah]
salt powder-find-PAST
Literally: 'He powder found the salt'
Loosely: 'He found the salt'

Without the independent **noun**, the last example would work in this way:

- (78) *dáʔn-yi-daʔk-ah* 'He powder-found it'/'He found it 'something powdery'

In Caddo's general pattern for expressing Motion, the verb root indicates **fact-of-Motion** together **with** Path, in the manner **of** Spanish. The incorporated **noun** can under limited conditions – it is not yet clear what these are – indicate the Figure, as in this locative example:

- (79) *yak-čah-yih nisah-ya-ʔah* ⇒ [dahčahih tisáyʔah]
woods edge-LOC house-be-TNS
 Literally: 'At woods edge it-house-is'
 Loosely: 'The house is at the edge of the woods'

Usually, the incorporated **noun** indicates the Ground:

- (80) a. *wá·kas na-yawat-yá-ynik-ah* ⇒ [wá·kas táywacáynikah]
cattle PL-water-enter-PAST
 Literally: 'Cattle water-entered'
 Loosely: 'The cattle went into the water'
 b. *nisah-nt-káy-watak-ah* ⇒ [tisáncáywakkah]
house-penetrate/traverse-PAST
 Literally: 'He-house-traversed'
 Loosely: 'He went through the house'

2.4 Manner

Another uncommon satellite type is one expressing Manner. An extensive system of such satellites is found in Nez Perce, another polysynthetic language of North America (see Aoki 1970). In Motion sentences, the verb root in this language is like that of Spanish: it expresses Motion + Path. But at the same time, a prefix adjoining the root specifies the particular Manner in which the Motion is executed. An example of this arrangement is given in (81).

- (81) /hi-quqú·-láhsa-e/ ⇒ [hiqqoláhsaya]
3d person-galloping-go up-PAST
 Literally: 'He/she ascended galloping'
 Loosely: 'He galloped uphill'

We list here a selection of Nez Perce Manner prefixes. Note that not just locomotive manners are expressed, but also ones of affect ('in anger') and activity ('on the warpath'):

(82) Nez Perce Manner prefixes

ʔipsqi-	'walking'
wilé·-	'running'
wat-	'wading'
siwi-	'swimming-on-surface'
tukʷe-	'swimming-within-liquid'
we·-	'flying'
tu·ke-	'using a cane'
ceptukte-	'crawling'
tukweme	'(snake) slithering'
wu-l-	'(animal) walking/(human) riding (animal at a walk)'
quqú·-	'(animal) galloping/(human) galloping (on animal)'
tiq̄e-	'(heavier object) floating-by-updraft/wafting/ gliding'
ʔiyé·-	'(lighter object) floating-by-buoyancy'
wis-	'travelling with one's belongings'
kipi-	'tracking'
tiwek-	'pursuing (someone: OBJ)'
cú·-	'(plurality) in single file'
til-	'on the warpath/to fight'
qisim-	'in anger'

Assuming that polysynthetic forms arise through boundary and sound changes among concatenated words, one can imagine how a Nez Perce-type system could have developed from a Spanish type. Originally independent words referring to Manner came regularly to stand next to the verb and then became affixal (and in most cases also lost their usage elsewhere in the sentence). Indeed, one can imagine how Spanish might evolve in the direction of Nez Perce. The preferred position for Manner-expressing gerunds in Spanish is already one adjacent to the verb, as in:

- (83) Entró corriendo/volando/nadando/ . . . a la cueva
 he entered running flying swimming to the cave

One could imagine the few changes that would be necessary to take this into the Nez Perce system.

2.5 Cause

A kind of satellite found in a number of languages, at least in the Americas, has traditionally been described as expressing 'Instrument'. However, these forms seem more to express the whole of a Cause event.

This is because, at least in the familiar cases, not only the **kind** of instrumental object that is involved is indicated, but also the way in which this object has acted on a Patient (to cause an effect). That is, a satellite of this sort is equivalent to a whole subordinate clause expressing causation in English. In particular, a satellite occurring in a non-agentive verb complex is equivalent to a from-clause, as in (to take an actual example in translation): 'The sack burst from a long thin **object poking endwise into** it'. And the same satellite occurring in an agentive verb complex is equivalent to a by-clause, as in 'I burst the sack **by poking a long thin object endwise into** it'.

Perhaps the greatest elaboration of this satellite type occurs in the Hokan languages of northern California, with Atsugewi having some two dozen forms (see Talmy 1972:84-Ig5, 407-67). Here, most verb roots must take one or another of the Cause satellites, so that there is obligatory indication of the cause of the action expressed by the verb root (some verb roots cannot take these satellites, but they are in the minority). The full set of these satellites subdivides the semantic domain of possible causes fairly exhaustively. That is, any perceived or conceived causal condition will likely be covered by one or another of the satellites. The majority of the Atsugewi Cause satellites, those in commonest use, are listed below. They are grouped here according to the kind of instrumentality that they specify. As in other Hokan languages, they appear as short prefixes immediately preceding the verb root:

(84) Atsugewi Cause **satellites** (P = the Patient, E = the Experiencer)

natural forces

- ←ca- 'from the wind **blowing on** P'
- ←cu- 'from **flowing** liquid acting **on** P' (e.g. a river **on** a bank)
- ←ka- 'from the rain acting **on** P'
- ←ra- 'from a **substance** exerting steady pressure **on** P' (e.g. gas **in** the stomach)
- ←uh- 'from the weight of a **substance** bearing down **on** P' (e.g. snow **on** a limb)
- 'from "gravity" (the tendency of things to fall) acting **on** P'
- ←miw- 'from **heat/fire** acting **on** P'

objects in action

- ←cu- 'from a linear object acting axially **on** P' (as in poking, prodding, **pool-cueing**, piercing, propping)

- ←uh- 'from a linear object **acting** circumpivotally (swinging) **on** P' (as in pounding, chopping, batting)
- ←ra- a. 'from a linear object? acting obliquely **on** P' (as in digging, sewing, poling, **leaning**)
b. 'from a **linear/planar** object acting **laterally** along the surface of P' (as in raking, sweeping, scraping, plowing, whittling, smoothing, vising)
- ←ta- 'from a linear object acting within a **liquid** P' (as in stirring, **paddling**)
- ←ka- 'from a linear object moving rotationally into P' (as in **boring**)
- ←mi- 'from a knife cutting into P'
- ←(flexible) 'from a (flexible) linear object **pulling on or** inward **upon** P' (as in dragging, suspending; girding, binding)

body parts in action

- ←tu- 'from the **hand(s)** - moving centripetally - acting **on** P' (as in choking, pinching)
- ←ci- 'from the **hand(s)** moving manipulatively - acting **on** P'
- ←ma- 'from the **foot/feet** acting **on** P'
- ←ti- 'from the **buttocks** acting **on** P'
- ←wi- 'from the **teeth** acting **on** P'
- ←(mouth) 'from the **mouth** - working ingressively - acting **on** P' (as in sucking, swallowing)
- ←phu- 'from the **mouth** - working egressively - acting **on** P' (as in spitting, blowing)
- ←pu- 'from the **lips** acting **on** P'
- ←hi- 'from any other **body part** (e.g. head, shoulder) **or** the whole body acting **on** P'

sensations

- ←sa- 'from the **visual aspect** of an object acting **on** E'
- ←ka- 'from the **auditory aspect** of an object acting **on** E'
- ←tu- 'from the **feel** of an object acting **on** E'
- ←pri- 'from the **taste/smell** of an object acting **on** E'

Instances of these satellites in use in a verb have appeared in examples (19a, b, and c) and (76a and b), to which the reader is referred.

2.6 *Motion-related satellites extending the motion typology*

Table 2.2 (section 1.4) showed the three major categories into which languages fall in their treatment of Motion. The typology was based on which element of a Motion event is characteristically expressed in the

Table 2.13. *Typology of motion verbs and their satellites*

Language/language family	The particular components of a motion event characteristically represented in the:	
	Verb root	Satellite
Romance Semitic Polynesian Nez Perce Caddo	Motion + Path	\emptyset } Manner } (Figure/)/Ground [Patient]
Indo-European (all?) except Romance Chinese	Motion + {Cause Manner}	Path
Atsugewi (most northern Hokan)	Motion + Figure	a. Path + Ground b. Cause

verb root (with 'fact of Motion', which always appears there). For each such language type, the next issue is where the remaining elements of the motion event are located. The satellite is the most diagnostic surface element to look at after the verb, and so we can make a revealing subcategorization by seeing which motion elements characteristically appear in the satellites that accompany the verbs; see Table 2.13.

2.7 Aspect

Many languages have satellites that express aspect. Frequently, these satellites do not indicate purely 'the distribution pattern of action through time' (as aspect was characterized earlier). This purer form is mixed with, or shades off into, indications of manner, quantity, intention, and other factors. Accordingly, a liberal interpretation is given to aspect in the examples below. In this way, we can present together many of the forms that seem to be treated by a language as belonging to the same group. The demonstration can begin with English. Though this language is not usually thought of as expressing aspect in its satellites (as, say, Russian is), it is in fact a fully adequate example:

(85) **English aspect satellites** (V = to do the action of the verb)

←re-/←over 'V again/anew'

When it got to the end, the record automatically restarted/started over from the beginning

- ←on 'continue Ving without stopping'
We talked/worked **on** into the night
'resume where one had **left off in** Ving'
She stopped at the gas station first, and then she drove **on** from there
'go ahead and V against opposition'
He was asked to stay **on** the other **side** of the door but, adamant, he barged **on in**
- ←away 'continue Ving (with dedication/abandon)'
They worked away **on** their papers
They gossiped away about **all** their neighbors
'feel free to embark **on** and continue Ving'
'Would you like me to read **you some** of my poetry?' 'Read away!'
- ←along 'proceed in the process of Ving'
We were **talking along** about our work when the door suddenly burst open
- ←off 'V all in sequence/progressively'
I read/checked **off** the **names on** the list
All the koalas **in** this **area have** died off
- ←up 'V all the way into a different (a non-integral/denatured) state'
The log bumed up **in** 2 hours
(cp. The log bumed for 1 hour **before** I put it out)
The dog chewed the mat up **in** 20 minutes
(cp. The dog chewed **on** the mat for 10 minutes **before** I took it away)
- ←back 'V in reciprocation for being Ved
He had **teased** her, **so she teased him back**

Other languages have forms comparable to those of English, though often with different, or more varied meanings. Russian is a case in point. In addition to several forms like those in the English list, Russian has (at least) the following (some of the examples are from Wolkonsky and Poltoratzky, 1961):

(86) **Russian aspect satellites**

←po- 'V for a while'

Ya pogul'al 'I strolled about for a while'

Xočets'a poletat' na samolete

'I'd like to fly for a while **on** a plane (i.e., take a short flight)'

←pere- 'V every now and then'

Perepada'ut doidi 'Rains **fall** (It rains) every now and then'

Table 2.14. *Atsugewi aspect satellites' meanings*

V's action is related to:	
the general temporal flow	an ongoing locomotory event
almost v	go and V
stillv	go Ving along
V repeatedly	come Ving. along
V again/back , reV	v in passing
start Vmg	V going along with someone
finish Ving	V coming along with someone
V as a norm	V in following along after someone
V awhile/stay awhile and V	V in going to meet someone
V in a hurry/hurry up and V	
V a little bit/spottily/cutely	

- ←za- 'start viig'
Kapli doid'a zapadali odna za drugoy
'Drops of rain began to fall one after another'
- ←raz- ←s'a 'burst out Ving'
Ona rasplakalas 'She burst out crying'
- ←pro-/←pere-/ . . . 'complete the process of Ving'
Pivo perebrodilo 'The beer has finished fermenting'
- ←po-/ . . . 'V as one complete act'
On yeyo poceloval 'He kissed her' (vs.: was kissing, kept kissing, used to kiss)
- ←na- ←s'a 'V to satiation'
On nayels'a 'He ate his fill'
- ←s- 'V and de-V as one complete cycle' [only with motion verbs]
Ya sletal v odin mig na poku
Lit.: 'I there-and-back-flew in one moment to post-office'
'I got to the post office and back in no time'

Within its affixal verb complex, Atsugewi has certain locations for a group of aspect-related satellites. These are semantically of two kinds, indicating what can be called 'primary' and 'secondary' aspectual notions. The primary kind indicate how the action of the verb root is distributed with respect to the general flow of time. The secondary kind indicate how the action is distributed with respect to another ongoing event, namely one of moving along. In translation, these forms can be represented as in Table 2.14.

To illustrate the second satellite type:

- (87) verb root: **acp-** 'for contained solid material to move/be-located'
- secondary aspect suffix: -ikc 'to a position blocking passage', hence: 'in going to meet (and give to) someone approaching'
- inflectional affix-set: s- ' - w- -^a 'I = sbj (3d person = object) [factual]'
- independent noun: **taki·** 'acorns'
- nominal marker: ^c
/s-'-w-acp-ikc-^a c taki·/ ⇒ [sw'acpik^hca c ta?ki·]
Literally: 'I caused it that contained solid material - namely, acorns - move, in going to meet (and give it to) someone approaching'
Loosely: 'I carried out the basket full of acorns to meet him with, as he approached'⁴⁵

2.8 Valence

In section 1.9 we saw satellites (German *be-* and *ver-*, Atsugewi *-ah&*) involved solely with valence: they signaled shifts for the incorporated valence requirements of verb roots. There are also satellites that basically refer to other notions, such as Path, but themselves incorporate valence requirements. When these are used with verbs that have no competing requirements, it is they that determine the grammatical relations of the surrounding nominals. We look at this situation now.

Consider these Path satellites (or satellite + preposition combinations) referring to surfaces:

- 038) a. Water poured unto the table
- 'to a point on the surface of'
b. Water poured all over the table
- 'to all points on the surface of'

These satellites require the Ground nominal as prepositional object and (in these non-agentive sentences) the Figure nominal as subject. The same holds for the satellite that refers to interiors in the following case:

- (89) a. Water poured into the tub
- 'to a point/some points of the inside of'

In other cases, there are **two** satellites, with the same meaning and sometimes with similar forms, that act as a complementary pair in handling either valence precedence. The Yiddish forms for 'into', *arayn* and *ayn*, work this way (cf. Talmy 1982):

- (99) a. *Ix hob arayn-geštoxn a dom (F) in ferd (G)*
 I have **in(FG)-stuck** a thorn in the horse
 'I stuck a thorn into the horse'
- b. *Ix hob ayn-geštoxn dos ferd (G) mit a dom (F)*
 I have **in(GF)-stuck** the horse with a thorn
 'I stuck the horse (in) with a thorn'

Certain Russian Path satellites are involved in a further interesting valence distinction. They require the Ground as direct object when the Path is bounded and is completed 'in' a quantity of time. For the corresponding unbounded Path that lasts 'for' a quantity of time, there is no Path satellite at all but rather a Path preposition that takes the Ground as **positional object**:

- (loc) a. (i) *Satelit obletel zeml'u (v 3 časa)*
satellite(NOM) circum-flew earth(ACC) in 3 hours
 'The satellite flew around the **earth in 3 hours**' = i.e.,
 made one complete **circuit**
- (ii) *Satelit letel vokrug zemli (3 dn'a)*
satellite(NOM) flew-along around earth(GEN) for 3 days
 'The satellite flew **around the earth** for 3 days'
- b. (i) *On probeial (vs'u) ulicu (v 30 minut)*
 he length **ran all street(ACC) in 30 minutes**
 'He **ran the** length of the (whole) **street in 30 minutes**'
- (ii) *On bežal po ulice (20 minut)*
 he **ran along along street(DAT) for 20 minutes**
 'He **ran** along the **street** for 20 minutes'
- c. (i) *On perebežal ulicu (v 5 sekund)*
 he **CROSS ran street(ACC) in 5 seconds**
 'He **ran** across the **street in 5 seconds**'
- (ii) *On bežal čerez ulicu (2 sekundy) i*
 he **ran along across street(ACC) for 2 seconds and**
 potom ostanovils'a
 then stopped
 'He **ran** across the **street** for 2 seconds and then stopped'

The question of universality must be asked with regard to satellite valence distinctions like those we have **seen**. For example, in Indo-

European languages, satellites expressing a 'full interior' seem without exception to require reversed **G-F** precedence, and satellites expressing bounded Paths largely tend to require the Ground as direct object. Are these and comparable patterns language-particular, family-wide, or universal?

3.0 Conclusion

The principal result of this chapter has been the demonstration that semantic elements and surface elements relate to each other in specific patterns, both typological and universal. The particular contributions of our approach have included the following:

First, the chapter has demonstrated the existence and nature of certain semantic categories ('Motion event', 'Figure', 'Ground', 'Path', 'precursor', 'personation', etc.) as well as syntactic categories ('verb complex', 'satellite', and 'satellite-preposition').

Second, most previous typological and universal work has treated languages' lexical elements as atomic givens, without involving the semantic components that comprise them. Accordingly, such studies have been limited to treating the properties that such whole forms can manifest, in particular, word order, grammatical relations, and case roles. On the other hand, most work on semantic decomposition has not involved crosslinguistic comparison. The present study has united both concerns. It has determined certain semantic components that comprise morphemes and assessed the crosslinguistic differences and commonalities that these exhibit in their patterns of surface occurrence. Thus, instead of words' order and role, this study has determined semantic components' surface presence, site (their 'host' constituent or grammatical relation), and combination within a site.

Third, our tracing of surface occurrence patterns has extended beyond treating a single semantic component at a time, to treating a concurrent set of components (as with those comprising a motion event and its circumstance). Thus, the issue for us has not just taken the form: semantic component 'a' shows up in surface constituent 'x' in language '1' and in constituent 'y' in language '2'. Rather, it has also taken the form: with semantic component 'a' showing up in constituent 'x' in language '1', the syntagmatically related components 'b' and 'c' show up there in constituents 'y' and 'z', whereas language '2' exhibits a different surface arrangement of the same full component set. That is, this study has been concerned with whole-system properties of semantic-surface relations.

The present method of componential crosslinguistic comparison permits observations not **otherwise** feasible. The following section, 3.1,

demonstrates this for the issue of information's 'science'. Former studies of salience have been limited to considering only whole lexical items and, hence, only their relative order and syntactic roles - and, appropriate to these alone, have arrived at such notions as topic, comment, focus, old and new information for comparison across languages. The present method can, in addition, compare the foregrounding or backgrounding of incorporated semantic components according to the type of surface site in which they show up. It can then compare the systemic consequences of each language's selection of such incorporations.

Following this, the Appendix tabularizes and sketches the semantic-surface relations described earlier, and augments these with a number of additional categories, to provide a one-glance sense of the relationships that have been uncovered as well as to furnish an expanded ground for further research.

3.1 The backgrounding of meaning in the verb complex

A theoretical perspective that encompasses both sections 1 and 2 pertains to salience: the degree to which a component of meaning, due to its type of linguistic representation, emerges into the foreground of attention or, on the contrary, forms part of the semantic background where it attracts little direct attention. In this regard, there appears to be a universal principle. Other things being equal (such as a constituent's degree of stress or its position in the sentence), a semantic element is backgrounded by expression in the main verb root or in any closed-class element (including a satellite - hence, anywhere in the verb complex). Elsewhere it is foregrounded. For example, the two sentences in (101) are virtually equivalent in the total information that they convey, but they differ in that the fact of transit by air is pivoted in (101a) in its nominal (-adverbial) occurrence, whereas it is an incidental piece of background information in (101b) where it is conflated within a verb.

- (101) a. Last year 1 went to Hawaii by plane
b. Last year 1 flew to Hawaii

Languages can be quite comparable in the informational content that they convey. However, a way that languages genuinely differ is in the amount and the types of information that can be expressed in a backgrounded way. English and Spanish can be contrasted in this regard. English, with its particular verb-conflation pattern and its multiple satellite capability, can convey in a backgrounded fashion the

Manner or Cause of an event and up to three components of a Path complex, as in (102).

- (102) The man ran back down into the cellar

In this rather ordinary sentence, English has both packed in and backgrounded the information that the man's trip to the cellar was accomplished at a run (ran), that he had already been in the cellar once recently so that this was a return trip (*back*), that his trip began at a point higher than the cellar so that he had to descend (down), and that the cellar formed an enclosure that his trip originated outside of (in-). Spanish, by contrast, with its different verb-conflation pattern and most no productive satellites, can background only **one** of the four English components using its main verb for the purpose; any other expressed component is forced into the foreground in a gerundive or prepositional phrase. The present example, actually, goes beyond the issue of how much can be expressed in the background, to that of how much can be expressed at all in a single sentence, even in the foreground, without being unacceptably awkward. Here, it turns out, Spanish can comfortably express either the Manner alone, as in (102a), or one of the Path notions together with a gerundively expressed Manner, as in (102b, c, and d). For acceptable style, any further components must either be omitted and left for possible inference, or established elsewhere in the discourse:

- (103) Spanish sentences closest to information-packed English sentence of (102)
- El hombre corrió a-l sótano
the man ran to-the cellar
'The man ran to the cellar'
 - El hombre volvió a-l sótano corriendo
the man went back to-the cellar running
'The man returned to the cellar at a run'
 - El hombre bajó a-l sótano corriendo
the man went down to-the cellar running
'The man descended to the cellar at a run'
 - El hombre entró a-l sótano corriendo
the man went in to-the cellar running
'The man entered the cellar at a run'

Notice that although the contrast just described was at the level of a general pattern difference between two languages, the same contrast can be observed at the level of individual morphemes, as between such

Similarly patterned languages as RUW III English. For example, Russian has a Path satellite + prepogbl&rl ~~~~P'ex~ fp~* k + D*T > 'into arriYal at', that characterizes the '~~~~~d as an intended destination. English 1a& this and, to rende' ~~~~ Limit resort to the Spanish pattern of expression using a Path-incl ~~~~ verb (move), with a Shiku attendant awkwardness in exl ~~~~ further components of meting, as seen in (104b). (Shown in ~~~~ for contrast are sentences exhibiting the usual **RussiacEnglish** ~~~~):

- (104) a. Russian: On pod-bežal k ~~~~
he up to-ran to ~~~~(DAT)
English: He ran up to the ~~~~
b. Russian: On pri-bežal k vorotam
he into arrival-ran to gate(DAT)
English: He arrived at the gate at a run

At the general pattern level again we can extend the contrast between languages as to the quantity of types of information they background, for as **English** is to Spanish* "o Atsugewi Is t' English? While **ti** Amerindian language call like English, backgroundedly it can do so as well (as we indicate Cause and Path in its verb co'~(1~* have seen) for Figure and Ground. Tah* ~~~~ for example the polysynthetic form in (rgb), here approximately ~~~~ with its morphemes glossed and separated by dashes:

- (105) (it) - from-wind-blowing -icky matter-moved -
[Cause.....] [Figure...]
into-liquid - Factual
Path + Ground

We can try to match English sentence (1) this form in either of two ways. To achieve informational equivalence, the English sentence must include full independent no-un phrase to express the additional two components that it cannot background. These NI% can be either accurate indicators of the Atsugewi referents, as in (106a), or, to equal the effect in colloquialness, they provide more specific indications that would be pertinent to a particular referent situation, as in (106b). Either way, the mere use of ~~~~ N's draws attention to their contents:

- (W) a. Some icky matter blew into some liquid
b. The guts blew into the creek

If, on the other hand, the English sentence is to achieve equivalence to the Atsugewi form in **backgroundedness** of information, then it must drop the full NPS or change them to pronouns, as in:

(rg) It blew in

Such equivalence in backgrounding, however, is only gained by the forfeiture of information, for the original Atsugewi form additionally indicates that the 'it' is an icky one and the entry is a liquid one.

Appendix Compendium of meaning-form associations

This chapter's research into meaning-form associations is only a beginning. Among other endeavors, it calls for a thorough cross-linguistic determination of which semantic categories are represented with what frequencies by which surface constituents. The fine-toothed cataloging thus called for is initiated here in a more modest format in Table 2.15 and its annotations. Incorporated there are the semantic-surface occurrence patterns presented in the text. But these are augmented so as to include a number of additional semantic categories and one additional verb-complex constituent beyond the verb root and satellite, namely, verbal inflections.

While the table's indications are based only on the author's linguistic experience and must be amplified by a thorough cross-language survey, such a survey might nevertheless lead to quite a few major upsets: For if a language comes to attention with a semantic-surface association formerly thought non-existent, that association will likely be rare. If the table's discrete plus/minus indications are then simply converted to frequency indications, these will exhibit roughly the same pattern as before.

Given such a pattern, the major issue to be addressed next, of course, is whether the pattern shows any regularities and, if so, what factors might explain them. The data at hand here suggests only partial regularities and, in fact, there are exceptions to every explanatory factor considered. (See Bybee (1980, 1985) for work on related issues.) However, answers may emerge in the future as more pieces come into place:

- with the inspection of more languages
- with a more principled determination of which surface forms are to be considered satellites and how these are to be distinguished from (say) inflections
- with the inclusion of the remaining verb-complex constituents such as adverbial particles and auxiliaries (some of Table 2.15's semantic categories that are not represented in the

root, satellite, or inflections, e.g. 'hedging' and 'spatial location', are in fact represented in other verb-complex constituents)

—and with the consideration of further semantic categories and the remaining sentence constituents.

Table 2.15. *Which semantic categories are expressed by which verb-complex elements*

semantic categories	expressed within the verb-complex by:		
	(a) verb root	(b) satellite	(c) inflections
A. main event			
1. main action/state	+	[+/-]	
B. subordinate event			
2. Cause	+(M)	+	[+]
3. Manner	+(M)	+	
4. Purpose	+	(+)	
5. Result		[-/+]	
C. components of a Motion event			
6. Figure	+(M)	+	[-]
7. Path (and Direction, no. 25)	+(M)	+	
8. Ground alone	(+)	+	r-l
7 + 8. Path + Ground	+(M)	+	
D. essential qualities of the event (and of its participants)			
9. hedging	-	[-]	
10. ^x degree of realization	[-]	(+)	
11. polarity	+	+	+
12. phase	+	+	[+]
13. aspect	+	+	+
14. ^x rate	[-]	[+]	
15. causativity	+	+	+
16. personation	+	+	[+]
17. number in an actor	+	[+]	
18. distribution of an actor	+	+	11
19. ^x symmetry/ ^x color . . . of an actor	-		
E. incidental qualities of the event or its participants			
20. relation to comparable events	-	-	
21. ^x temporal setting	[+]	(+)	
22. ^x spatial setting	-	[-]	
23. ^x status of the actors	(+)		
24. gender/class of an actor	[-]	+	+
F. relations of the referent event or its participants to the speech event or its participants			
25. Direction (deictic)	+(M)	+	-
26. ^x spatial location (deictic)	[-]	[-]	[-]
27. tense	-	[-]	+

Table 2.15 (contd)

28. person	[+]	+
relations to the speaker's cognitive state (namely, to the speaker's -)		
29. valence/voice (- attention)	+	+
30. factivity/evidence (- knowledge)	(+)/+	+
31. attitude (- attitude)	+	-
32. mood (- intent)	+	+
relations to the speaker-hearer interaction		
33. speech-act type	(+)	+
G. qualities of the speech event		
34. status of the interlocutors	[+]	+
H. factors pertaining neither to the referent event nor to the speech event		
35. ^x speaker's state of mind, ^x yesterday's weather, . . .		-

Symbols used in Table 2.15

- +
- This semantic category shows up in this surface constituent either in many languages or with great elaboration in at least a few languages.
- (+)
- This category shows up in this constituent in only a few languages, and there with little elaboration.
- This category does not show up in this constituent in any languages known to the author, and may well never do so.
- +/-
- This category shows up in this constituent in one capacity or by one interpretation, but not another, as explained in the annotations which follow.
- []
- There is some question about this assignment of + or -, as explained in the annotations which follow.
- x
- This category has only slight representation in the verb-complex constituents treated here.
- *
- This category is possibly never expressed in the verb-complex constituents treated here.
- (M)
- This category can alone join with the 'Motion' category in the verb root and there form an elaborated system for the expression of Motion events. (The category may also be able to show up in the verb root in other capacities.)

Brief descriptions and illustrations of semantic categories

(Here, (a), (b), (c) refer to the categories' occurrence in verb roots, satellites, or inflections, respectively.)

1. **Main action/state.** (a) This semantic category - which includes motion and locatedness - is the one most identified with the verb root. It is joined there by the other categories @ven a '+' in column (a). Thus, in *kill*, agent causativity (no. 15) joins the main action of 'dying' and, in *lie*, a Manner notion (no. 3), 'with a horizontal supported posture', joins the main state of 'being located'. (b) But there may be an exception to the preceding. By the interpretation favored here for the resultative construction in Indo-European and Chinese languages, the satellite presents its expression of a resulting event as the main action or state, while the verb root, generally expressing a cause, presents this as a

subordinate event. Thus, we consider English *melt/rust/rot away* to be best interpreted as meaning 'disappear [= +away] by melting / rusting / rotting' and German *er-kämpfen/-streiken* as meaning 'obtain [= <er-] (e.g. territory, wages) by battling/striking'. The alternative interpretation would consider the Result expressed by the satellite as the subordinate event and the verb's Cause as the main one, with the reading of (say) *rust away* then taken to be 'rust with the result of disappearing'. (c) This category is not indicated by inflections.

2. **Cause.** This category refers to the qualitatively different kinds of causing events such as can be expressed by an English subordinate *from-* or *by*-clause. It is distinguished from causativity (no. 1 5), which corresponds to a superordinate clause of the type 'NP CAUSEs s'. (a) Cause is regularly incorporated in the verb roots of European languages expressing either motion or other action. Thus, English *blow in The napkin blew off the table* means 'move from (due to) the air blowing on [it]'. (b) Atsugewi has some two dozen prefixal satellites expressing cause, for example *ca-* 'from the wind blowing on [it]'. (c) Causing-event types are generally not expressed in inflections. However, by one analysis, the distinct agentive and inductive inflections of some languages (e.g. Japanese) do indicate different causing events of the types: '[the Agent CAUSES s] by acting physically' vs. '... by inducing another Agent (to act physically)'.

3. **Manner.** Manner refers to a subsidiary action or state that a Patient manifests concurrently with its main action or state. (a) It is regularly incorporated in most Indo-European languages' verbs of Motion (as well as other kinds of action), as in English *float* in *The balloon floated into the church*, which means 'move, floating in the process'. (b) Nez Perce has over two dozen prefixal satellites indicating Manner, for example *%yé-* 'floating in the process'. (c) Manner is not indicated inflectionally.

4. **Purpose.** A purpose event is one that an agent intends to have occur in consequence of his undertaking a main event. (a) Purpose seems universally excluded from incorporation in Motion verb systems. 'Rus, there is no *I stored the keg into the pantry*, with *store* meaning 'move in order to store'. Pm-pose is incorporated in other type verbs, for example in *wash* 'apply liquid to, in order to clean' and in *hunt* (*I hunted deer*) 'search for, etc., in order to capture'. (b) Purpose is expressed in 'benefactive' satellites (for example the Atsugewi *suf&-iray*), which have the meaning 'in order to benefit/give [it] to [the actor named by the direct object nominal]'. (c) Pm-pose is not expressed inflectionally.

5. **Result.** A causing event (no. 2) always has a resulting event paired with it because the two are conceived in terms of a single larger causal interaction. (a) When both events are expressed together in a verb root, as they can be, the question here is, which event is the main one and which subordinate? Thus, in *I kicked the ball along the path*, does *kick* mean 'move by booting' with the Result as main event and Cause as subordinate, or instead 'boot with the result of moving', with the reverse ascriptions? We favor the former interpretation (the same as in no. 2). Thus, it may be that Result never incorporates in a verb root as a subordinate event (hence the '-' in the table in the (a) c&mn), but only as a main one. (b) In the resultative construction, Result is expressed in the satellite, in many languages with numerous distinctions. However, by the interpretation favored here and already discussed in no. 1(b), it appears there not as a subordinate event but as the main one. Our conclusion is that all incorporation of Result, whether in verb root or satellite, is as main event. (c) Result is not expressed inflectionally.

6. **Figure.** The Figure is the salient moving or stationary object in a motion event. (a) It is systematically incorporated in Atsugewi's motion verb roots, for example in *-t-* 'for a smallish planar object (shingle, button, stamp, etc.) to move/be-located'. The occasional English examples include *rain* (*It rained in through the window*) 'for rain(drops) to fall'. (b) A set of Atsugewi preties, overlapping with the causal set, indicates Figures. A set of Caddo prefixes indicates Patient, which sometimes coincides with a Motion event's Figure. (c) Inflections do not represent the Figure *qua* Figure, but they can indicate properties of subject and object - grammatical roles in which the Figure often occurs.

7. **Parh.** This category refers to the variety of paths followed, or sites occupied, by the Figure object. (a) It is a regular component in the Motion-verb systems of many language families, for example Polynesian, Semitic, and Romance, as in forms like Spanish *entrar* 'move in', *salir* 'move out', *subir* 'move up', *bajar* 'move down', *pasar* 'move past/through'. (b) Path is the main category expressed by the satellites of most Indo-European languages outside of Romance, as in English with forms like *in, out, up, down, past, through*. (c) Path is not indicated inflectionally.

8. **Ground.** The Ground is the referente-object in a Motion event, with respect to which the Figure's path/site is reckoned. (a) It does not appear alone with the move/be-located component in any language's major Motion verb-root system, but only in occasional forms, like English (*de/-em-*)*plane*, or in combination with additional components

(see following section 7 + 8). (b) A set of Atsugewi **prefixes**, overlapping with that for Causes, indicates various body-part Grounds – for example ‘finger’ or ‘buttocks’ as **used** with a verb root meaning ‘get a splinter’. A set of Caddo **prefixes** indicates Patient, which often coincides with a Motion event’s Ground. (c) Inflections do not represent a Ground object per se but only in so far as it **serves** as a **grammatical** subject or object.

7 + 8. Path + Ground. The combination of Path and Ground is privileged in that it occurs more than other Motion-component combinations (except for those with the ‘move’ component itself) and certainly more than the Ground alone. (a) **Many** languages **have** a series of verb roots in which this combination joins with ‘move’, for example English *berth* (**The ship berthed**) ‘move into a berth’ or causative *box* (**I boxed the apples**) ‘cause-to-move into a box’. (b) Atsugewi has a major system of suffixal satellites that express some two-score instances of this combination, for example **-Sr** ‘into a liquid’. English has a few examples, such as *al@* ‘into the air’, **apart** (**They moved apart**) ‘away from each other’, and **home** (**I drove home**) ‘to one’s home’. (c) Inflections do not represent this combination.

g. Hedging. Among other functions, hedges qualify the categoriality of a linguistic element’s referent. They are mostly indicated around verbs by adverbs or special expressions, like those in **He sort of danced/He danced** after a **fashion**. (a, b, c) However common they may be in that form, they are not incorporated in verb roots nor expressed by satellites or inflections – unless one considers as hedgers such diminutivizing satellites as Atsugewi **-inkiy**, which changes ‘to rain’ to ‘to drizzle’ or Yiddish **unter-**, which in **unter-ganvenen** changes ‘to steal’ to ‘to pilfer a bit every now and then’.

10. Degree of realization. This category divides a referent action or state – almost **anywhere** along its semantic continuum – into a more central **core** of essential **aspects** and a periphery of commonly associated **aspects**, and indicates that **only one** or the other of these is realized. Languages regularly **indicate** this with adverbs or **particles** near the verb, for example English *almost* and (*just*) *barely*. Thus, **I almost ate it** can suggest lifting an item to the mouth and perhaps **even** inserting and chewing it, but **excludes** at least the essential **aspect** of swallowing it. Conversely, **I just barely ate it** suggests getting an item down the gullet, but without the usually attendant gusto in chewing and tasting. (a) It is doubtful that a genuine **sense** of ‘almost’ or ‘barely’ is **ever really** incorporated in a verb root. But perhaps **coming close** are **forms** like

falter and *teeter* as in **He teetered on the cliff edge**, which suggests ‘almost falling’. (b) Atsugewi has a **suffixal** satellite **-iwt** which indicates ‘almost’ in all the customary senses. It is the only **such** form known to the author. (c) This category is apparently not indicated inflectionally.

ii. Polarity. Polarity is the positive or negative status of an event’s existence. (a) Verb roots can incorporate polarity of two kinds, **either** that pertaining to the root’s own referent **action/state** – for example English *hit* vs. *miss* (= not hit) **the target** – or that pertaining to a **complement** clause’s action/state. In the latter type, incorporated polarity **even** has **some** of the **same** syntactic consequences as **independent** polarity elements (like *not*), for example in requiring either **some** or **any**:

1 managed **to/ordered** him **to/suspect** 1’11 – **see** someone/*anyone

1 failed **to/forbade** him **to/doubt** 1’11 – **see** anyone/*someone

(b) Cheyenne indicates the negative with a prefix **sáa-** in its **poly-affixal** verb (Dan Alford, personal communication). (c) **Some** Amerindian and **Asian** languages are reported to incorporate positive and negative in **two** distinct **sets** of inflections that otherwise **indicate** tense, mood, person, etc.

12. Phase. Distinguished from aspect because of its **different** behavior, the category of ‘phase’ refers to changes in the status of an event’s existence. The member notions are ‘starting’ and ‘stopping’, for use with **any** type of event, and ‘initiating’ and ‘finishing’, for events that are intrinsically bounded. To exemplify the two types, **I stopped reading the book** refers to a change from reading to not reading at any point in the book, while **Ifinished reading the book** refers to reading **all** of the book, and only then not reading. (a) Phase notions can be incorporated in verb roots or collocations, as in **strike up** ‘initiate the playing of [a tune]’ – and, by one interpretation, also **in reach** (e.g. *reach the border*) ‘finish going toward’, **shur up** ‘stop talking’, and **halt** ‘stop moving’. Strikingly, ‘stopping’ is expressed only in verbs, like these or as a complement-taking verb (**stop** in *stop eating*) – not as an auxiliary, satellite, or inflection. (b) Phase notions other than ‘stopping’ are expressed by satellites, for example ‘finishing’ by German *fertig-*, as in **fertig-bauen/-essen** ‘finish building/eating’ (or, more literally, ‘build/eat to completion’); ‘initiating’ by German *un-*, as in **an-spielen** ‘open play (e.g. at cards)’ or **an-schneiden** ‘make the opening cut in’; and ‘starting’ in the specific sense of ‘bursting out’ by Yiddish *be-* (+ *zix*), as in **&4.xn** *zU*: ‘burst out laughing’. (c) Depending on the interpretation, phase either is or is not expressed in inflections. Thus, a preterite inflection

seems to indicate stopping or finishing in conjunction with an unbounded or bounded event, as in She *sjept/She dressed*, but may be better interpreted as being basically a tenseaspect indicator, 'wholly occurring before now', that merely *implies* cessation. There is also inflectional indication of 'entry into a state' – i.e. 'becoming' – but it is not clear whether or not this should be classed together with 'starting'.

13. Aspect. Aspect is the pattern of distribution through time of an action or state. (a) It is regularly incorporated in verb roots, for example in English *hit*, which can refer to a single impact, as against *beat*, which indicates an iteration. (b) It also appears frequently in satellites, as in the Russian prefixal system for indicating perfective/imperfective distinctions. (c) It appears regularly in inflections as well, as in the Spanish conjugational forms indicating the preterite and imperfect.

14. Rate. Rate refers to whether an action or motion takes place faster or slower relative to some norm. (a) Though some verb roots obviously indicate different rates of speed – for example English *trudge*, *walk*, run or nibble, *eat*, *bol* (one's food) – languages seem to include them haphazardly and in conjunction with further semantic differences, rather than base a genuine system of lexical distinctions on rate alone. (b) Satellites generally appear not to indicate rate, with some potential exceptions: an Atsugewi suffix *-iskur* – which has the same form as an independent verb 'to hurry' and, with a verb root, was in elicitation always translated as 'hurry up and V' – might actually or additionally there mean 'V quickly'. Dyirbal (Dixon 1972) has a suffix *-nbd/-gdiy* said to mean 'quickly' but only as part of a semantic range that also includes 'repeatedly', 'start' and 'do a bit more'. We have heard one report that Yana may have had affixes with precisely the meaning 'quickly' and 'slowly'. (c) Rate is not indicated inflectionally.

15. Causation. With the notions in this category, an event is conceived either as occurring by itself or as resulting from another event, where this latter event is either initiated by an agent or not, and such an agent is either volitional or not. (a) Causative notions are regularly incorporated in verb roots. Thus, English *die* indicates only an event of death itself, while *murder* indicates that a volitional agent has initiated an action that has caused the event. (b) As an example for satellites, the Yiddish prefix *far-* can be combined with a comparative adjective in a verb formation meaning 'to cause to become . . .', as in *far-beser-n* 'to improve (transitive)' (from *beser* 'better'). If the reflexive *zix* can be considered a satellite, then it too is an example, for it changes a causative form into a non-causative: *farbesern zix* 'to improve

(intransitive)'. (c) In Japanese, separate Mections indicate agent causation, inductive causation, and decausativization.

16. Personation. Personation refers to the configuration of participants that an action is conceived to be associated with. (a) DiEerent languages' verb roots tend to incorporate different personation types. Thus, typical for French, the verb for 'wmb the hair', *peign*, intrinsically refers to one's doing the action to another (dyadic). The corresponding Atsugewi verb, *c--s\$*, refers to one's manifesting the action in oneself (monadic). (b) Satellites can reverse a root's personation type. The Atsugewi benefactive suffix makes the 'wmb' very dyadic, and the French reflective – considered here as a satellite – *wnverts* its verb to monadic. (c) Inflections *otherwise* involved with causativity may also serve in switching personation types

17. **Number in an actor.** This is the numerosity of the participants – from one to many – behaving as any single argument of an event. It is listed under category "D" as an essential aspect of an event because *such numerosity* affects how the event is manifested. (a) Many Amerindian languages have distinct roots for an action manifested by different numbers of Patients. Thus, the Southwest Pomo verb roots *-LV/- ?da/-p%* mean, respectively, 'for one/two or three/several together . . . to go'. It is a possible universal that the Patient is the only semantic role characterized for number in the verb root. (b) It is not clear whether satellites indicate number. The closest case I know is an Atsugewi dual clitic, *-hiy*. (c) Inflections in many languages indicate the number of the **subject** nominal and sometimes also of the direct object nominal. Interestingly, **inflectional** indications of number seem always to be linked to a particular syntactic role, such as subject or object, while those in the verb root relate instead with a semantic role, the Patient.

18. **Distribution of an actor.** This refers to the arrangement of multiple Patients – whether they form an aggregate or a linear distribution in space and/or time (in the latter case relating with aspect). (a) Different distributions are incorporated systematically in certain Southwest Pomo roots: *-phil/-hayom* 'for several together/separately to go', *h.srz/pkoy* 'act on objects as a group/one after another'. (b) The Atsugewi suffix *-ayw* indicates 'one after another' for multiple Patients. Though less freely usable, the English satellite *off* can do the same: *read off/check off* (items on a list), (animals) *die off*. (c) There is some indeterminacy as to whether a type of affix like Atsugewi's *-ayw* might not be better considered inflectional. Other than this, though, inflections seem not to indicate distribution.

19. **Symmetry**, color *of an actor*. There are many characteristics of an event's participants that are not marked anywhere in the verb complex, even though they seem as reasonable (from an a priori perspective) as the qualities that are marked. Thus, while an argument's numerosity and distribution can be marked, there will be no marking for its color or whether it has a symmetrical arrangement, even though these very qualities are important in other cognitive systems, such as visual perception.

20. **Relation to comparable** event. Many adverbial or particle forms indicate whether an action or state has occurred alone, or in addition to, or in place of another one of a comparable category, like the forms in English *He only danced/ also danced/ even danced/ danced instead*. These notions, however, seem never to be expressed as satellites or inflections, or incorporated in the verb root.

21. **Temporal setting**. This category locates an event within a particular time period, especially a cyclic one. (a) There may be small systems of verb roots differing principally as to temporal locale. Thus, English *breakfast*, *brunch*, *lunch*, *supper* could be interpreted as meaning 'to eat in the morning/late morning/midday/evening'. (b) Yandruwanhdha verbs optionally take the suffixal satellites *-thalka* 'in the morning', *-nhina* 'by day', or *-yukarra* 'at night' (Bernard Comrie, public presentation). It is possible that only the day's cycle is ever thus represented and not, say, that of the month or year. (c) Inflections appear not to indicate this category.

22. **Spatial setting**. This category would indicate something about the physical setting in which an event takes place, perhaps with contrastive notions like 'indoors/out of doors', 'in the water/on land/in the air', 'next to something/in an open space'. But such notions do not seem to be marked in our three verb-complex elements. One possible exception is Klamath's locative suffixes, though these seem really more to indicate Ground than setting, i.e., to indicate something more like *She bit him in the nose* than *She bit him in the kitchen*. The satellites in English *eat* in/eat out (suggested by Martin Schwartz) are perhaps a real, if very limited, exception.

23. **Status of the actors**. This refers to either absolute or relative social characteristics of animate participants in an event. (a) Japanese verbs of giving differ according to the relative social rank of the giver and the receiver, and so incorporate status. (b,c) Actors' status does not seem to appear in satellites or inflections.

24. **Gender/class of an actor**. This refers to category memberships based on sex or other characteristics, and associated either with an event's actors themselves or with the nouns that refer to them. (a) It appears that no verb roots are lexicalized specifically for use with nouns of a particular **grammatical** gender or class. Thus, for example, Spanish could not have two different verbs for 'to fall', one for use with feminine-noun subjects and the other with masculines. While there do exist verb roots associated with nouns of a particular **semantic** gender (or various other properties), for example roots referring to pregnancy, the association seems less one of systematic categorical distinctions involving selectional features or the like than a matter of individual pragmatic applicability; thus, if a man were in fact to become pregnant, one could simply proceed to say 'The man is pregnant'. (b) The grammatical class of the subject and at times also the direct object noun is marked by affixal satellites in Bantu languages. (c) The subject's grammatical gender is indicated in the inflections in all Hebrew tenses and in the Russian past tense forms, for example in *Pos Zayal/Sabaka layala* 'The hound barked/The dog barked'.

25. **Direction** (deictic). This refers to whether the Figure in a Motion event is moving toward or away from the speaker. (a) It is found incorporated in verb roots, for example English *come/go* and *bring/take*. (b) It is frequently marked by satellites, for example the pair in Atsugewi, *-ik/-im*, and in Mandarin, . . . , *Zái/ . . . qù*. (c) It is not marked inflectionally.

26. **Spatial location** (deictic). This category would characterize the location of an event's occurrence with respect to the speaker or hearer (e.g. near or away from one or the other, in or out of their range of vision). It is readily indicated by adverbs or particles, such as English *here* and *there*. But it appears not to occur otherwise in the verb complex. As possible exceptions: we have heard a report that some Northwest Coast Amerindian languages have distinct verb roots meaning 'to be here' and 'to be there'. And the evidential satellites or inflections for visual versus other-sensory information, in Wintu as well as other languages, might be used for inferences about spatial deixis.

27. **Tense**. Like the preceding category, but for time instead of space, tense characterizes the temporal location of an event with respect to the moment of the speaker-hearer interaction. (a) By our interpretation, tense is not incorporated in verb roots. A possible candidate such as English *went* is considered not as a conflation of semantic 'go' + 'past' but as a suppletive form standing in the place of the morphemes *go* and

-ed. The reason is **that went** can only appear in environments where other verb roots are followed by **-ed**. If **went** genuinely incorporated a past sense, **one** might expect its use as well in expressions like *I am wentirtg = 'I was going', or *I **will went** = 'I will have gone'. (b, c) Tense is marked by **ties** and particles (as well as auxiliaries) in many languages. It is not clear that any of these should be taken as satellites; the affixes among them **would** normally be taken to be idections.

28. **Persun.** Person refers to the relation between an actor in a referent event and a participant in the speech event (i.e., the speaker or hearer). Thus, in English, if an actor is the same individual as the speaker, the form **I** is used; if the **same** as the hearer, **you**; and if neither, **he/she/it** or a full nominal is used. (a) No verb roots appear to be specific to a particular person. Distinct forms like English **am/is** invite the same objection as was raised for **went** above. Japanese verbs of giving, sometimes suggested **as** incorporating person, seem rather to basically indicate relative status, which in turn has certain canonic associations with personal arrangements. (Note that some HUUZ roots do incorporate person, for example the distinct Kikuyu nouns for 'my father', 'your father' and 'his father'.) (b) If clitics like Spanish **me/a** can be construed as satellites, then this part of speech can be given a plus for person. (c) Person is notably indicated by inflections.

zg. **Valence/voice.** This category refers to the particular distribution of attention and perspective point that the speaker assigns to the **aerent** actors in an event, when this factor correlates with the surface cases (grammatical relations) of the nouns referring to the actors. The two traditional terms for this category differ only in that 'voice' refers to the assignment when it is marked by inflections or auxiliaries and 'valence' **otherwise**. (a) The category is often incorporated **in verb** roots for example English **sell** and **buy**, which place the main perspective point at the giver and the receiver, respectively, for the same event. (b) The **Gemansatellite** **v r** redirects the main perspective onto the giver **in** an exchange, **as in** **ller-kaufen 'sell' (VS. kaufen 'buy')**. (c) The category is frequently marked by inflections, as in Latin **emere** 'to buy' and **emi** 'to be bought'.

30. **Factiv@evidence.** This category distinguishes the speaker's belief in, versus ignorance of, an event's truth. The two traditional terms, factivity and evidence, differ only as to whether this category is indicated in the verb root itself or outside it. (a) Only rarely, it seems, does a verb root indicate a speaker's state of knowledge as to its own referent event. One example might be English **be**, indicating speaker's certainty of a copular attribution, and **seem**, indicating uncertainty, as in

She **wasl seemed sad**. But many verbs indicate state of knowledge pertaining to a **complement** event, **as in** **Jan (i) realized/(ii) concjuded that she'd won**: (i) the speaker believes the winning to be factual, (ii) the speaker is noncommittal about its actual@. (b) **Wintu** has a set of 'evidential' suffixes, probably to be taken as satellites, that indicate whether the speaker knows for sure or infers an event, as well as the evidence by which he arrived at his knowledge or supposition (Harvey Pitkin and Alice Schlichter, conference presentation). (c) In **Atsugewi**, there are two distinct inflectional sets for the 'factual' and the 'inferential'.

31. **AMude.** The category here is the speaker's attitude toward the referent event. (a) Attitude is incorporated in verb roots. For example, the verbs in **They raided/marauded the village** refer **to roughly the same** objective event, but **maraud** additionally indicates the speaker's attitude of disapproval toward the event. The negative attitudinal content of **traipse**, as compared (say) with **walk**, is evident from the leadingness of this question by a trial attorney: **Did you confirm that Miss Burnett was tiuipsing around the restaura&** (b) The **Atsugewi** suffix **satellite -inkyi** indicates the speaker's 'cute' regard for the event. For example, with a root 'flap', it could be used to speak of baby ducklings moving their wings about. (c) Attitude seems not to be indicated inflectionally.

32. **Mood.** Mood refers to a speaker's feelings or intentions with respect to the actualization of an event. It includes a neutral regard, a wish for (something unrealizable), a hope for (something realizable), a desire to (realize something), and an attempt at (realizing something). (a) It appears that no verb roots have an intrinsic mood **to them**. It might at first be thought that a verb like **want**, as in **She wants to go**, is desiderative, but it really only refers to the actor's desire, not to that of the speaker, whose mood toward this event is here neutral. (b,c) Many languages have affixes - whether taken as satellites or inflections - that indicate mood under terms like indicative, subjunctive, optative, desiderative, conative.

33. **Speech-act** type. This category indicates the speaker's intentions with respect to the hearer in referring to an event. (a) The vast majority of verb roots are neutral with respect to speech-event type. But a few verbs do incorporate a particular type, for example the **Halkomelem** roots meaning 'to be where' and 'to go whither' are solely interrogative, and mainly imperative are English **beware**, the collocation **be advised (which does accommodate modals, but only with an imperative sense: Yuu shouZd/*can be advised that . . .)**, and perhaps forms like **whoa**,

giddiyap, scar, (b,c) The category is often marked by satellites and ideations. For example, Atsugewi has distinct inflectional paradigms for these speech-act types: declarative (I tell you that . . .), interrogative (I ask you whether . . .), imperative (I direct you to . . .), admonitive (I caution you lest . . .).

34. **Status of the interlocutors.** Status is the same here as in no. 23 but refers to the participants of the speech event rather than to the actors of a referent event. (a) The Japanese verbs of giving do not really fit here; they basically indicate the actors' status, and it is only incidental if some of the actors turn out to be participants in a speech event. However, some of Samoa's distinct status-level verbs (e.g. those for eating) may well have usages sensitive solely to who it is that is speaking and being addressed. (b) Satellites and clitics are used by a number of languages to indicate the absolute or relative gender (men's and women's speech) and status of the interlocutors. (c) Inflections for second person in many European languages distinguish degrees of formality that are partly based on relative status.

35. **Speaker's state of mind.** . . . It seems that no markers or incorporations indicate notions unrelated to either the referent event or the speech event. If they existed, one might encounter cases like The chair **broke-ka** meaning 'The chair broke and I'm currently bored' or 'The chair broke and it was raining yesterday'.

NOTES

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- 2 A zero form in a language can represent a meaning not expressed by any actual lexical item. For example, no German verb has the general 'go' meaning of the zero form cited & then implies walking, so that one could not ask *Wu wollen Sie denn hingehen?* of a swimmer).
- 3 For a further theoretical discussion, exploring questions like: What deeper properties of language can account for why the patterns are as they are?, or What still broader phenomena do the observed patterns fit into? see Talmy (rg?6b, rg?8c, 1983, in preparation).
- 4 Apart from these three processes, an analyst can sometimes invoke what we might term semantic resegmentation. Consider the case of **shave** as used in (O)

- (a) I cut John (c) I cut myself (e) *I cut
(b) I shaved John (d) I shaved myself (f) I shaved

We could believe here that a reflexive meaning component is lexicalized in the verb, deleted from the sentence, or to be inferred by pragmatics. However, we need to assume that a reflexive meaning is present only if we consider this usage to be derived from that in (b)/(d). We could, alternatively, conclude that the (f) usage is itself basic and refers directly to a particular action pattern involving a single person, with no reflexive meaning at all.

- 5 These forms express **universal** semantic elements and should not be identified with the English surface verbs used to represent them (they are written in capitals as **MOVE** and **BEN** in other works by the author to underscore this distinction).
- 6 These notions of Figure and Ground have several advantages over Fillmore's (e.g. 1977) system of cases. The comparison is set forth in detail in Talmy (1978a), but some major differences can be indicated here. The notion of 'Ground' captures what is common – namely, a function as referent-object – to all of Fillmore's separate cases 'Location', 'Source', 'Goal', and 'Path', which otherwise have nothing to indicate their commonality (as against, say, 'Instrument', 'Patient', and 'Agent'). Further, Fillmore's system has nothing to indicate the commonality of its Source, Goal, and Path cases as against Location, a distinction captured in our system by the move/be-located opposition within the Motion component. Moreover, the Fillmorean cases' incorporation of path notions (together with referent-object function) opens the door to adding a new case for every newly recognized path notion, with possibly adverse consequences for universality claims. Our system, by abstracting away all notions of path into a separate 'Path' component, allows for the representation of semantic complexes with both universal and language-particular portions.
- 7 The assessment of whether *i?* is Manner or Cause that is conflated in the verb is based on whether the verb's basic referent is to what the Figure does or to what the Agent or Instrument does. For example, in 'I rolled the keg . . .', **rolled** basically refers to what the keg did and so expresses Manner, whereas

in 'I pushed the keg ...', refers to what I did, and so gives the Cause of the event.

- 8 There appear to be constraints, some of them apparently universal, on the kinds of subordinate-clause material that can systematically conflate with Motion. For example, while English readily conflates the Manner or the Cause into a main Motion event, as demonstrated in (6), it cannot **do so** for the Purpose. Thus, beside the complex sentence with subordinate Pm-*pose* clause in (ia), there exists no **conflated analog like** (ib):

- (9) a. I moved the keg into the pantry, in order to store it
b. *I stored the keg into the pantry

In English, then, a non-main event is allowed to conflate with a main Motion event if its time of occurrence is before or during that Motion event, but not after it. This restriction may well be universal.

Under language-particular constraint, on the other hand, is another type of non-main event, Lprecursor', **which** expresses an action &ady undergone by the Figure object that is currently in Motion. Thus, Atsugewi does regularly exhibit forms analogous to (iib) with meanings like that in (lia):

- (3) a. I moved (put) the blanket into the basket, having first folded it
b. I folded the blanket into the basket

In English the sentence in (iib) would have to be interpreted as expressing concurrent Manner: folding the blanket in the process of placing it in. However, English does minimally exhibit the precursor pattern with sentences like Reuch/Get me the salt, meaning 'Give **me** the Salt, having first reached to/getten it', **orto** the extent that speakers accept sentences like **He scooped up** some jelly beans into **my bag** in the sense of 'He put into my bag some jelly beans that he had scooped up/having first scooped them up'.

Aside from any systematic conflation with Motion that they may or may not exhibit, certain types of non-main events do otherwise show **up** conflated in main verbs. Purpose, for example, is conflated in the non-motion-system English verbs wash and rinse. These verbs, beyond referring to certain actions involving the use of liquid, indicate that such actions are undertaken in order to remove dirt or soap. Evident for such an incorporation is that the verbs are virtually unable to **appear** in contexts that pragmatically conflict with the Pm-*pose*:

- (iii) a. I washed/rinsed the shirt in tap water
b. *I washed/rinsed the shirt in dirty ink

whereas otherwise comparable verbs like soak and fry which seem not to express any Purpose beyond the performance of the main action, can appear there:

- (iv) I soaked the shirt in dirty ink/I fried dirty ink through the shirt

Further, Cause and Manner can be conflated as well in verbs that do not participate in the Motion system. For example, the English verb **clench**

expresses (in **one** area of its usage) the curling together of the fingers of a hand specifically caused by internal (neuromotor) activity. No other cause can be compatibly expressed in conjunction with this verb:

- (3) a. My hand clenched into a fist from a muscle spasm/*from the wind blowing on it
b. I/*He clenched my hand into a fist

By contrast, CWI *-p* expresses a main action similar to that of **clench**, but it incorporates no restrictions as to the cause of the action:

- (vi) a. My **hand** curled up into a fist from a muscle spasm/from the wind blowing on it
b. I/He curled my hand up into a fist

- g The systematic relations of the kind shown here are discussed with greater detail and rigor in Tabny (1975). But one point from that discussion can be brought in here. A distinction must be made between translational motion and contained motion. In the former, an object's basic location shifts from one point to another in space. In the latter, the object keeps its same basic, or 'average', location. This latter case usually involves rotation, oscillation, expansion/contraction, or 'contained wander'. This distinction in types of motion underlies the analysis shown in (6) for roll and **bounce**. Both these verbs in their non-translational sense refer to motion, but only to contained motion, as seen in (a) and (b).

- (a) The log rolled over and over in the water
(b) The ball bounced up and down on the pavement square

These verbs, like float in the sense of 'be afloat', can then take on the additional meaning of translational motion through space.

- 10 The usage relationships posited here are accorded some psychological reality by data on children's errors. Bowerman (1981) documents a stage in English acquisition where children become 'aware' of motion conflation in verbs and then overextend the pattern. Thus, verbs that in adult English, idiosyncratically, cannot be used with an incorporated motion meaning become so used by children:

- (a) Don't hug me off my chair (= by hugging move me off)
(b) When you get to her [a doll], you catch her off (on a merry-go-round with a doll, wants a friend standing nearby to remove the doll on the next spin around)
(c) I'll jump that **down** (about to jump onto a mat floating atop the tub water and force it down to the bottom)

Further support comes from historical changes in Word meaning, which exhibit similar extensions beyond previous category boundaries. ThW in their traditional use the **verb** *hold* and *carry* formed a near p-fea suppletive

pti, differing *only* in that carry additionally **incorporated a Motion event while hold** did not:

without motion	with motion
I held the box as I lay on the bed	*I held the box to my neighbor's house
'I carried the box as I lay on the bed	I carried the box to my neighbor's house

Currently, though, carry in some contexts (those where motion just has occurred or is about to occur) can also be used in a locative sense: *I stood in front of the door* carrying the box. (While the children's examples extended non-motion verbs to motion usages, this case has gone in the opposite direction.)

- II This regular conflation of **motion** with path in these languages seems rarely to extend to any regular conflation of location with site – **Le.**, to any **basic system** of distinct verb roots expressing 'be-in', 'be-en', 'be-under', etc. Such a **system** has recently been reported (Donna Gerdtz, personal communication) for Halkomelem, a Salish language of Canada. But generally, these languages instead use some single form, roughly expressing 'be-at', in conjunction with a series of adpositions – much like English when no Manner has conflated with **be**, as in The *peri* was (rather than lay) **in/on/under the box**.

Though rarely forming a core system, the verbal expression of location + site is clearly under no prohibitory constraint. English, for one, has a number of incidental instances of such conflation, for example **surround** ('be around'), **top** ('be atop'), **flank** ('be beside'), **adjoin**, **span**, **line**, **fill** – **as** in **A ditch surrounded the field**, **A cherry topped the desseti**, **Clothing filled the hamper**. It is just that such verbs seldom constitute the colloquial system for locative expression.

- 12 This is not to imply that a verb root always has exactly one basic aspect. A verb root can show a certain range of **aspects**, each manifesting in a different context. Thus, English **kneel** is one-way in She knelt **when the bell rang** and is **steady-state** in **She knelt there for a minute**.
- 13 These two grammatical forms – 'keep-ing' and 'Vdummy u [- + Derivj]' – may be thought to trigger certain cognitive processes. Respectively, these are 'multiplexing' and 'uuit-excerpting'. Such processes **are** discussed in Talmy (197W)
- 14 Other linguistic treatments (e.g. McCawley 1968) represent their incorporated causative element by the capitalised form 'CAUSE'. Since more distinctions are recognized here, more representational forms would be needed (and are in fact used in the author's other writings):

a. . . . broke . . .	= . . . broke . . .
b. . . . REsuLred-to-break . . .	= . . . Rbroke . . .
c. . . . EvENred-to-break . . .	= . . . ubroke . . .

d. . . . rNsRvMRN?ed-to-break . . .	= . . . rbroke . . .
e. . . . Auruoxed-to-break . . .	= . . . *,broke . . .
f. . . . AGENred-to-break . . .	= . . . ,broke . . .
g. . . . UNDERWENT-tO-break . . .	= . . . Dbroke . . .

The causing event can be expressed not only by a full clause, as in the text examples, but also by a verb-derived nominal, as in (b) below, or by what can be termed an 'action noun', **as in (c)**. A standard noun as in **(d)**, however, will not do:

The **window** cracked –

- | | |
|--|-----------------------|
| (a) from a ball's sailing into it- | – nominabzed clause |
| (b) from the pressure/bump of a branch against it | – verbderived nominal |
| (c) from the wind/a fire/the rain | – action noun |
| (d) *from a hall | – standard noun |

The clause-like behavior of **action** nouns can be attributed to their being in fact conflations of full clauses. Thus, the examples in (c) might be considered to have internal semantic stmcrures equivalent to the following clauses:

wind	'air's blowing [on the Figure]'
rain	'rainwater's falling [on the Figure]'
tire	'dames acting [on the Figure]'

Such semantic wnflation, taking place in the noun, exemplifies **lexicalization** in a grammatical category other **than** those, the verb root and the satellite, addressed in this chapter. (For further examples, involving conflation in subordinating and wordinating wnjunctions and in certain adverb classes, see Talmy rg?8b).

- 15 It is not only intransitive sentences that can be autonomous. For example, **An ucom hit the piare** is autonomous. The requirement, rather, is that the sentence must not express a cause (as does **An acom broke the plate**).
- 16 Arguments are given in Talmy (rg76a, r978b) why the resulting-event (b) form should be considered semantically more basic than the causing-event (c) form.
- 17 This impinging object is the Figure within the causing event, but it is the Instrument with respect to the overall cause-effect situation. That is, for this author 'Instrument' is not a basic notion as it is, say, for Fillmore (1975). It is a derived notion, to be characterized in terms of other, more basic notions: the Instrument of a cause-effect sequence is the Figure of the causing event.
- 18 The act of will is the 6rst link in the causal chain. Through internal (neuromotor) activity, it brings about the movement of the body. Note that such bodily motion, even when not referred to, is a necessary link for a final physical event. Thus, while **Abe burnt the Leaves** only mentions Abe as the

initiator and the leaves' burning as the final event, we must infer not only that fire was the immediate Instrument **but** also that Abe (due to his will) acted physically to marshal it.

- 19 To describe this more analytically: something acts on a sentient entity, causing within it the intention to carry out an act. The intention in turn leads to its actually carrying out the act, in the usual manner of agency. Thus, the entity **is** caused to act as an Agent (so that another good term for the 'inductive' is 'caused agency').

The act that is referred to in most inductive verbs is a self-agentive one, and in particular one of 'going', e.g. **smoke** (oti) 'by applying smoke, induce to go (out)' (atypically, sic/set ... on refer to an agentive act of 'attacking'). Because **most** self-agentive verbs are intransitive like most autonomous verbs (the other verb types require a direct object), an inductive construction relates to a self-agentive one in much the same way that an agentive construction relates to an autonomous one:

- | | |
|-------------------------------------|---------------------------------|
| (a) inductive: | (b) self-agentive: |
| They sent the drunk out of the bar. | The drunk went out of the bar |
| (c) agentive: | (d) autonomous: |
| They threw the drunk out of the bar | The drunk sailed out of the bar |

There seems to be a corresponding kind of semantic 'drift': we tend to understand a self-agentive event **as** occurring in and of itself, and to take the inducer of an inductive event as directly bringing about the final event without the intermediary volition of the actor.

- 20 It is, however, quite possible that no verbs distinguish between the (c) and (d) causation types, **even** cross-linguistically, so that these would have to be merged. The (a) and (b) types are distinguished perhaps only in the stative, as in English by the verbs **be** and **stay**:

- | |
|---|
| (a) The pen was on the incline (autonomous situation) |
| (b) The pen <i>*was/stayed</i> on the incline from a lever pressing against it (resulting-event causation) |

- 21 We can avoid the problem with *tilay* – that it is bi-morphemic, with a prefix explicitly expressing unintentionality – by using the verb *spill* in a pair with *polrr*. This same pair would also allow illustration of the 'S ... too ...' **frame**, which *mislay/hide* do not easily fit: ***I spilled/*poured the milk by opening the spout too wide***.

- 22 The same test frames employed here can also be used with verbs like **break**, that can incorporate any of a range of causative types, to select out one particular causative reading. For example, **break** is interpretable only as an author type verb in (a) and only as an agent type in (b):

- | |
|--|
| (a) I broke the window by pressing against it too hard |
| (b) I broke the window in order to let the gas escape |

- 23 Verbs that range over two lexicalization types can be used either with or without a grammatical augment for the same **meaning**. **We see this** for *hid.s* over the agentive and self-agentive types, and for *set ... won* over the self-agentive and inductive types:

- | |
|--|
| (a) She hid herself behind the bushes = She hid behind the bushes |
| (b) He had his dogs set upon (i.e. fall upon) us = He set his dogs upon us |

- 24 For these, the three aspect-causative types we **have** noted for verbs of state have the following particular manifestation: (a) a body or object **is in** a posture non-causatively, or else an animate **being** self-agentively **maintains** its body in the posture; (b) a body or object comes into a posture non-causatively, or else an animate being self-agentively gets its body into the posture; (c) an agent puts a body other than its own, or some other object, into a posture.

- 25 The stative usage of the last two verbs here may not be immediately obvious. It can be seen in the following:

- | |
|---|
| (a) She bent over the rare flower for a full minute |
| (b) He bowed before his queen for a long minute |

- 26 The pattern we are concerned with here held better in older forms of English. Thus, the idea of agent derivation **for the verb is quite** questionable for modern English. But enough of the pattern remains to serve as illustration and to represent languages that **do** have such forms clearly. Among these latter are apparently **many** Uto-Aztecan languages (Wick Miller, personal communication) and Halkomelem.

- 27 This use of the reflexive is a special grammatical **device**, not a semantically motivated one, because there is **no** way to construe the normal **meaning of** the reflexive in this context. Normally, the reflexive entails that exactly what one would do to another, one **does** to oneself. In the present case, what one does to another is to place one's arms around his/her body, lift, and set down. But that is clearly not what one does with oneself. The movement is accomplished, rather, by internal – i.e., neuromuscular – activity.

- 28 This suffix in Spanish generally incorporates a passive meaning (unlike the otherwise comparable Japanese *-te*, which has no voice characteristics). However, the present construction, as in ***estaba acostado*** – which might be taken literally as 'I was laid-down' – will generally be understood with a non-passive reading, as in the sentence gloss 'I lay (there)'.^{2g}

- 2g As noted earlier, it is somewhat forced for modern English to interpret posture verbs as pure statives, with augmentation required for the other aspect-causative types. For one thing, marking of an agentive-non-agentive distinction has all but disappeared colloquially, with forms like *lay* or *sir* serving for both meanings. For another, the satellite can often appear in

stative usages as well. Thus, the combination of verb + satellite can to a large degree be used equally for all three aspect-causative types:

- (a) He laid down/stood up all during the show
- (b) He laid down/stood up when the show began
- (c) She laid him down/stood him up on the bed

Nevertheless, a distinction in the use of forms **does** still hold to this extent: the satellite seems somewhat awkward in some stative expressions, for example in He laid (?down) therefor Tours. And the verb without satellite is somewhat awkward in colloquial speech for the agentive usage: ?She *laid/stood the Child on the bed*.

- 30 The postures category is mostly non-relational. One can largely determine a body's configuration by observing it alone. But the 'positions' category is relational. It involves the position assumed by one object with respect to another (especially where the latter provides support). **Some** position notions that are frequently found lexicalized in verbs across languages are: 'he on', 'stand on', 'lean against', '**hang** from', 'stick into', 'stick out of', 'stick/adhere to', 'float on (surface)', 'float/be suspended in (medium)', 'be lodged in', '(clothes) be on', 'hide/be hidden (**from view**) + Loc'. The postures and positions categories may have no clear boundary between them or may overlap. But these heuristic classes, in **some** version, do seem to be treated differently in many languages.

- 31 English **does** have a few instances **where** a lexical item, unlike *hide*, can participate in **expressions** for all three state relations, including state-departure:

- (a) She *stood* there speaking
- (b) She *srood* up to speak
- (c) She *stood down* when she had finished speaking

- 32 To be sure, English has m- and *de-/dis-* for **use** with **some** position and condition verbs (*unload*, decentralize). But their **use** is limited, and it is also largely secondary in that the **forms** indicate reversal of state-entry rather than state-departure directly. (Thus, central must first add *-ize* indicating state-entry before it can add *de-*; there is no *decentral.)

The distinct treatment that languages accord state-departure as against state-location and state-entry often shows up as well in their adpositional systems expressing Path. For example, the same morpheme expresses 'at' and 'to' but a Merent one expresses 'from' in French à/a/de, Japanese *ni/ni/kara* (though *e* is also used for the 'to' meaning), and Atsugewi *-ip/-i?/-uka*. English exhibits this pattern in **some** of its prepositional and relative-interrogative forms:

- (a) She **was behind the bam** **Where** was she?
- (b) She went **behind the bam** **Where** did she go?
- (c) She **came from behind the bam** **Where** did she **come from**?

- 33 Note that actions lacking physical **contact** can also be lexicalized with different personations. For example, the English verb *get* ('go and bring back') is basically monadic but can add a benefactive expression for the dyadic. On the other hand, the roughly equivalent *serve* ('bring to someone') is basically dyadic but can add a reflexive for the monadic type (the **reflexive** here signals only this change in personation type, for it lacks the literal interpretation *it* has in *I shaved John/I shaved myself*):

<i>monadic</i>	<i>dyadic</i>
I got some dessert from the kitchenj1	got some dessert from the kitchen for Sue
I served myself some dessert from the kitchen	(I served Sue some dessert from the kitchen

- 34 For this section, the earlier limitation to single-morpheme verbs has been relaxed. Considered here, thus, are a lexical complex like *rip* of land, later, a morphemically complex verb like *frighten*. This is feasible because valence properties can inhere in morphemic complexes of this sort as well as in single roots.
- 35 Actually, this paradigm is abridged from a still larger one (see Tahny 197~301-375) that distinguishes three Figure-Ground precedence relations: the basic format with **Figure** above Ground in the case hierarchy, that with Figure demotion alone, and that with Figure demoted and Ground promoted. Perhaps no single verb exhibits all the forms, but a pair of verbs can serve to illustrate (cp. Fillmore (r977), Hook (1983)):

non-agentive	agentive
basic precedence	
The bees swarmed in the garden.	I pounded my shoe on the table.
with Figure demoted	
It swarmed with bees in the garden.	I pounded with my shoe on the table.
and with Ground promoted	
The garden swarmed with bees.	I pounded the table with my shoe.

Note that the **with** appearing here as a demotion particle and still marking the Figure becomes the **with** that marks the Instrument when a sentence of the present sort is embedded in a causative matrix (6. note 17). Thus, the sentence in (a) can be embedded as in (b) to yield (c):

- (a) I kicked the ball (G) with my left foot (F)
[cI kicked my left foot (F) into the ball (G)]
- (b) I *Movad the ball (F) across the field (~2)
by kicking it (G1) with my left foot (Fo)
- (c) I kicked the ball (F) across the field (G) with my left foot (Fo j 1)

36 The final genitive expression here would now be only literary. However, there are other verbs that take a colloquial mit phrase containing the Figure:

- (a) Ich warf faule Apfel auf ihn Ich bewarf ihn *fallen Apfeln*
 'I threw rotten apples at him' 'I pelted him with rotten apples'
- (b) Ich schenkte ihm das Fahrrad Ich beschenkte ihn *mit dem Fahrrad*
 'I "presented" the bicycle to him' 'I "presented" him with the bicycle'

37 The two valence types here pertain not only to verbs but also to adjectival and larger constructions that express affect. Thus, the expressions italicized below can be used only with the case-frame surround shown for them:

Stimuhs 42.5 subject	Experiencer as subject
That ti odd to me	I <i>am glad about</i> that
That is <i>of</i> importance <i>to</i> me	I <i>am in fear of</i> that
That <i>got the goat of me-t</i> <i>gol</i> my goat	I jlew off the handle over that

38 English used to favor Stimulus-subject even more than it does now, but a number of verbs have shifted their valence type. For example, the affect verb *rue* and *like* – as well as the sensation verb *hunger* and the cognition verb *think* – used to take the Experiencer as grammatical object but now take it as subject.

39 These lists avoid verbs that refer more to an affect-related action than to the affect itself. For example, *quake* and *ranf* – candidates for the Experiencer-subject group – really refer directly to the subject's overt actions, and only imply his/her accompanying affect of fear or anger. Similarly, *harrass* and *placate* – potentially Stimulus-subject verbs – refer more to the activities of an external Agent than to the resultant state of irritation or calm in the Experiencer.

40 This arrangement applies as well to verbs of sensation. Thus, 'be cold' is lexicalized from the point of view of the Experiencer feeling the sensation. *Ah&* is added for the perspective of the Stimulus object rendering the sensation:

- (a) verb root: -yi:skap- 'feel cold'
 inflectional &-set: g 'w- = 'I – subject (3d person-object)'
 /s-'w-yi:skap -"/ * [&ye&tph]
 'I am cold (i.e., feel cold)'
- (b) verb root: -yi:skap- 'feel cold'
 valence-shifting sufl%: -ah& 'from Stimulus to Experiencer'
 inflectional affix-set: 'w- -a '3d person-subject'
 /'-w-yi:skap-ah&-"/ ⇒ [wye-skapáhwa]
 'It is cold (i.e., to the touch)'

41 There is *some* indeterminacy as to exactly which kinds of constituents found in construction with a verb root merit satellite designation. Clearest are the

forms named next in the text, such as English verb particles, Latin verb prefixes, Chinese resultative complements, and the non-inflectional affixes in the Atsugewi polysynthetic verb. Probably also deserving satellite status are such compound-forming verbal adjuncts as the first element in English (to) *test-drive*; on the other hand, free adverbs, even ones related semantically to the verb root rather than (say) to the whole clause, seem less like satellites. Also seeming to merit satellite status are the incorporated noun in Iroquoian polysynthetic verbs, whereas pronominal clitics as in French seem less to do so and full noun phrases are entirely excluded. What status should be accorded such verbphrase forms as a negative element or closed-class particles like English *only* and even is uncertain. It is not clear whether this indeterminacy is due to the present theory's early stage of development or to a cline-like character for the satellite category.

42 There appears to be a universal tendency toward satellite formation: elements with certain types of meaning tend to leave the locutions in a sentence where they logically belong and move into the verb complex. This tendency, whose extreme expression is polysynthesis, is also regularly evident in smaller degrees. Examples in English are the negative and other emphatic modifiers on nouns:

- (a) *Not Joan hit him ⇒ Joan didn't hit him
 (b) Even Joan hit him ⇒ Joan even hit him
 (c) Joan gave him only one ⇒ Joan only gave him one

43 Not all Path expressions permit omissions of this sort. Such is the case with *up to* in the sense of 'approach' and also with *into* in the sense of 'collide':

- (a) When I saw Joan on the corner, I walked up to her ('... walked up)
 (b) It was too dark to see the tree, so he walked into it (*... walked b)

44 Judging from their distribution, satellites of this type seem to be an areal phenomenon rather than a genetic one. Thus, Atsugewi and Klamath, neighboring but unrelated languages, both have extensive satellite systems of these, satellites. But the Pomo languages, related to Atsugewi and sharing with it the extensive instrumental prefix system (see section 2.5), quite lack Path + Ground satellites.

45 Though this may remove some of Atsugewi's mystique; notice that the German satellite *entgegen-* also has the 'in going to meet' meaning, as in *entgegenlaufen* 'b-un to meet', while Latin ob- parallels Atsugewi *-ikc* still further in having both the 'meeting' and the 'passage-blocking' meanings, as in *occurrere* 'run to meet' and *obstruere* 'build so as to block off':

46 The Atsugewi polysynthetic verb can background still more: Deixis and four additional nominal roles – Agent, Inducer, Companion, and Beneficiary. However, Deixis is distinguished only as between 'hither' and 'hence', and the nominal roles only as to person and number or, in certain circumstances, merely their presence in the referent situation.