Chapter 1
Lexicalization Patterns

1 INTRODUCTION

This study addresses the systematic relations in language between meaning and surface expression.[1] (The word "surface" throughout this chapter simply indicates overt linguistic forms, not any derivational theory.) 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 universal principles and typological patterns as well as forms of diachronic category shift or maintenance across the typological patterns.

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). We will also address diachronic shifts from one typological pattern to

another, as well as the cognitive underpinnings of these patterns (both treated further in chapter II-4). 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 relationships—noting any patterns.
   d. Compare (c)-type patterns across different languages, noting any metapatterns.
   e. Compare (c)-type patterns across different stages of a single language, noting any shifts or nonshifts that accord with a (d)-type metapattern.
   f. Consider the cognitive processes and structures that might give rise to the phenomena observed in (a) through (e).

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 (*un*kind), and as a verbal incorporated feature (*doubt*); in Atsugewi as a verb requiring an infinitive complement (mit^{h}i: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. While chapter II-3 follows the former direction, the present chapter explores in only this second direction.

Within this limitation, we narrow our concerns still further. One can examine lexemes consisting of different numbers of morphemes for the meanings that appear in them. At the low 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'.[2] Alternatively, one could investigate the meanings 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 study looks only at the mid-portion of this range: 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 2, and one type of closed-class element, the **satellite**, defined and treated in section 3. These two surface types are vehicles for roughly the same set of semantic categories.[3] The aim in these two 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. Section 4 looks at the effect of these patterns on semantic salience in the complex composed of both verb and satellites together. And the conclusion in section 5 argues the advantages of the approach adopted here. The present chapter fits this volume's overall purview by examining the conceptual structure of certain semantic domains; the typological patterns in which this conceptual structure is parceled out in the morphosyntactic structures of different languages; and the cognitive processes that support this typology and that lead diachronically to category shift or maintenance within the typology.

1.1 Characteristics of Lexicalization

We outline now some general characteristics of lexicalization, as part of this study'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. How does the 'degree' meaning arise? One way we could account for it is by lexicalization—that is, the direct association of certain semantic components with a particular morpheme. By this interpretation, *pressure* here differs from the usual usage by incorporating an additional meaning component: $\text{pressure}_2 = \textit{degree of}\ \text{pressure}_1$ (or, alternatively, there is a special *what* here: what_1 *degree of*). 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. More broadly, the study of lexicalization must also address 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 the latter morphemes 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 morphemes that are *extant* in a language. What if English had no word *die*? We would still want to be able to say that *kill* incorporates the meaning component 'cause'. As a case in point, this is exactly what we would want to say for the verb (to) *poison* 'kill/harm with poison', which in fact lacks a noncausative counterpart that means 'die/become harmed from poison' (*They poisoned him with hemlock.* | **He poisoned from the hemlock*).

To this end, we can establish a new notion, that of a morpheme's *usage*: 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 action on Patient' ('causative') and, syntactically, it 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' ('noncausative') and takes a Patient subject. Such relationships can be represented, for cases involving both lexical (*L*) and grammatical (*G*) morphemes, as in (2).

(2) usage of L_2 = usage of L_1 in construction with G
(e.g., L_2 = kill, L_1 = appear, and G = make)

We can say here that L_2 incorporates the meaning of G 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 break$_2$ and make break$_1$, 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 noncausative. An equivalent way of characterizing such a usage range is as in (3). As an example of this, the causative/noncausative usage range of *break* equals the causative usage of *kill* plus the noncausative 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 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.

1.2 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. Additional analysis appears in chapters I-2 and I-3 as well as in Talmy (1975b).

To begin with, we treat a situation containing motion and the continuation of a stationary location alike as a **Motion event** (with a capital M). The basic Motion event consists of one object (the **Figure**) moving or located with respect to another object (the reference 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 path followed or site occupied by the Figure object with respect to the Ground object. The component of **Motion** (with a capital M) refers to the presence per se of motion or locatedness in the event. Only these two motive states are structurally distinguished by language. We will represent motion by the form **MOVE** and location by BE_{LOC} (a mnemonic for 'be located').[5] The Motion component refers to the occurrence (MOVE) or nonoccurrence (BE_{LOC}) specifically of **translational motion**. This is motion in which the location of the Figure changes in the time period under consideration. It

thus does not refer to all the types of motion that a Figure could exhibit, in particular excluding "self-contained motion" like rotation, oscillation, or dilation, itself treated below. In addition to these internal components, a Motion event can be associated with an external **Co-event** that most often bears the relation of Manner or of Cause to it. All these semantic entities can be seen in the sentences in (4).

(4)	*Manner*	*Cause*
a. *Motion*	The pencil rolled off the table.	The pencil blew off the table.
b. *Location*	The pencil lay on the table.	The pencil stuck on 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** were taken from Gestalt psychology, but Talmy (1972) gave them a distinct semantic interpretation that is continued here. The Figure is a moving or conceptually movable object whose path or site is at issue. The Ground is a reference frame, or a reference object stationary within a reference frame, with respect to which the Figure's path or site is characterized.

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 chapter I-5, but some major differences can be indicated here. The notion of Ground captures the commonality—namely, function as reference object—that runs across all of Fillmore's separate cases "Location," "Source," "Goal," and "Path." In Fillmore's system, these four cases 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_{LOC} opposition within the Motion component. Moreover, the fact that these Fillmorean cases incorporate path notions in addition to their reference to a Ground object—for example, a 'from' notion in Source and a 'to' notion in Goal—opens the door to adding a new case for every newly recognized path notion, with possibly adverse consequences for univer-

sality 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.[6]

2 THE VERB

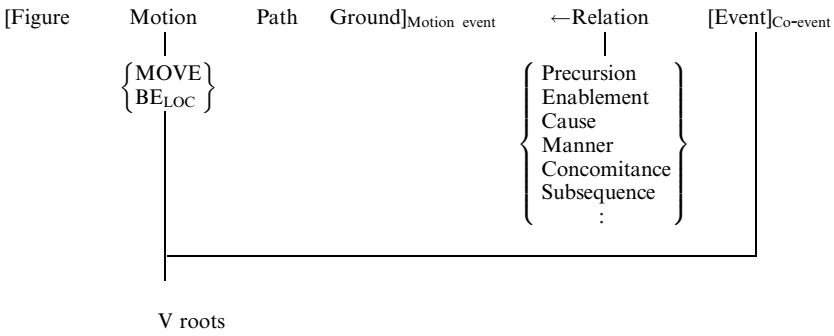
In this study of the verb, we look mainly at the verb root alone. This is because the main concern here is with the kinds of lexicalization that involve a single morpheme, and because in this way we are able to compare lexicalization patterns across languages with very different word structure. For example, 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 the three typologically principal lexicalization types for verb roots. In most cases, a language uses only one of these types for the verb in its most characteristic expression of Motion. Here, "characteristic" means that (1) it is *colloquial* in style, rather than literary, stilted, and so on; (2) it is *frequent* in occurrence in speech, rather than only occasional; (3) it is *pervasive*, rather than limited—that is, a wide range of semantic notions are expressed in this type.

2.1 Motion + Co-Event

In a Motion-sentence pattern characteristic of one group of languages, the verb expresses at once both the fact of Motion and a Co-event,[7] usually either the manner or the cause of the Motion. 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 meaning-to-form relationship here can be represented as in the accompanying diagram. Language families or languages that seem to be of this type are Indo-European (except for post-Latin Romance languages), Finno-Ugric, Chinese, Ojibwa, and Warlbiri. English is a perfect example of the type.

(5) *English expressions of Motion with conflated Manner or Cause*
BE_{LOC} + Manner
a. The lamp *stood|lay|leaned* on the table.
b. The rope *hung* across the canyon from two hooks.



Co-event conflated in the Motion verb

MOVE + Manner

Nonagentive

c. The rock *slid/rolled/bounced* down the hill.
d. The gate *swung/creaked* shut on its rusty hinges.
e. Smoke *swirled/rushed* through the opening.

Agentive

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

Nonagentive

j. The napkin *blew* off the table.
k. The bone *pulled* loose from its socket.
l. The water *boiled* down to the midline of the pot.

Agentive

m. I *pushed/threw/kicked* the keg into the storeroom.
n. I *blew/flicked* the ant off my plate.
o. I *chopped/sawed* the tree down to the ground at the base.
p. I *knocked/pounded/hammered* the nail into the board with a mallet.

Here, the assessment of whether it is Manner or Cause that is conflated in the verb is based on whether the verb's basic reference 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 . . .', *pushed* refers to what I did, and so gives the Cause of the event.

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.

2.1.1 The Pattern Underlying Co-Event Conflation We can indicate the type of conflation pattern involved here with a construction that represents the separate semantic components individually—that is, that decomposes or "unpacks" the sentences. The Manner or Cause notion conflated in the verb is then best represented by a separate subordinate clause standing for a Co-event. In this construction, the relation that the Co-event bears to the main Motion event is then indicated by a form like WITH-THE-MANNER-OF or WITH-THE-CAUSE-OF. Such a form represents a deep or mid-level morpheme (see below) that functions semantically like the subordinating preposition or conjunction of a complex sentence. Thus, the form WITH-THE-CAUSE-OF functions like the English subordinator *by* in an agentive construction (as in *I moved the keg into the storeroom by kicking it*), or like the subordinators *from* or *as a result of* in a nonagentive construction (as in *The napkin came off the table from/as a result of the wind blowing on it*). Although they are otherwise awkward, these forms have the advantage that they mnemonically suggest their intended semantic content; that they exhibit the same form across differences of agentive and nonagentive usage; and that their consistent pattern allows the easy introduction of further such forms, a number of which appear later. Also in the constructions below, the subscript "$_{A}$" is placed before a verb to indicate that the verb is agentive (thus, $_{A}$MOVE = CAUSE to MOVE). And the form GO is used to represent self-agentive motion.

(6) *Unconflated paraphrases of English Motion expressions*
BE$_{LOC}$ + Manner
a′. The lamp lay on the table. = [the lamp WAS$_{LOC}$ on the table] WITH-THE-MANNER-OF [the lamp lay there]
b′. The rope hung across the canyon from two hooks. = [the rope WAS$_{LOC}$ (EXTENDED) across the canyon] WITH-THE-MANNER-OF [the rope hung from two hooks]

MOVE + Manner

Nonagentive

c′. The rock rolled down the hill. = [the rock MOVED down the hill] WITH-THE-MANNER-OF [the rock rolled]

d′. The gate swung shut on its rusty hinges. = [the gate MOVED shut (= the gate shut)] WITH-THE-MANNER-OF [the gate swung on its rusty hinges]

Agentive

f′. I bounced the keg into the storeroom. = I $_{A}$MOVED the keg into the storeroom] WITH-THE-MANNER-OF [I bounced the keg]

Self-agentive

h′. I ran down the stairs. = [I WENT down the stairs] WITH-THE-MANNER-OF [I ran]

MOVE + Cause

Nonagentive

j′. The napkin blew off the table. = [the napkin MOVED off the table] WITH-THE-CAUSE-OF [(something) blew on the napkin]

k′. The bone pulled loose from its socket. = [the bone MOVED loose from its socket] WITH-THE-CAUSE-OF [(something) pulled on the bone]

Agentive

m′. I kicked the keg into the storeroom. = [I $_{A}$MOVED the keg into the storeroom] WITH-THE-CAUSE-OF [I kicked the keg]

o′. I chopped the tree down to the ground at the base. = [I $_{A}$MOVED the tree down to the ground] WITH-THE-CAUSE-OF [I chopped on the tree at the base]

Note that many of the decompositional constructions here may relate more directly to sentences without conflation, which can therefore paraphrase the original conflational sentences, as in (7).

(7) c″. The rock rolled down the hill.
The rock went down the hill, rolling in the process/the while.

j″. The napkin blew off the table.
The napkin moved off the table from (the wind) blowing on it.

m″. I kicked the keg into the storeroom.
I moved the keg into the storeroom by kicking it.

2.1.2 Properties of Co-Event Conflation We here examine certain properties of the relation that the Co-event bears to the main Motion event within a larger Motion situation.

2.1.2.1 Two Verb Usages In the above examples, the same verb form appears in the subordinate clause of the unpacked construction as in the single clause of the integrated sentence. On the conflational account put forward here, the former use of the verb form is more basic, and the latter use incorporates this former use, in its particular relation to the Motion event, together with an additional semantic component of Motion. An English-type language will generally have a regular pattern of such "lexical doublets."

Thus, in its basic usage the verb *float* refers to the buoyancy relation between an object and a medium, as seen in (8).

(8) The craft floated on a cushion of air.

Given the subscript "1" to mark this usage, the verb can also appear in a subordinate clause, next to a main clause referring to motion.

(9) The craft moved into the hangar, floating_1 on a cushion of air.

But the same verb form has a second usage that includes the idea of motion together with that of buoyancy. The verb in this usage—here marked with the subscript "2"—can appear in a one-clause sentence that is virtually equivalent to the preceding two-clause sentence.

(10) The craft floated_2 into the hangar on a cushion of air.

Accordingly, the relationship between the two meanings of *float* can be represented in isolation as

(11) MOVE WITH-THE-MANNER-OF [floating_1] $\rightarrow$ float_2
or MOVE [floating_1 (the while)] $\rightarrow$ float_2

and can be represented within the larger sentence as in (12).

(12) The craft $\underline{\text{MOVED [floating}_1\text{ (the while)]}}$ into the hangar on a cushion of air
$\downarrow$
floated_2

The same pair of usages can be seen in an agentive verb such as *kick*. In its basic usage, here again marked with the subscript "1," this verb refers to an agent's impacting his or her foot into some object, but presupposes nothing about that object's moving. This is obvious when that object is understood in fact to be fixed in place.

(13) I kicked$_1$ the wall with my left foot.

Again, this verb can be used in a subordinate clause alongside an independent reference to motion, as in (14a). And again, it has a second usage, marked with the subscript "2," that now incorporates this reference to motion, together with the basic meaning of *kick*$_1$ in its causal relation to this motion, as seen in (14b).

(14) a. I $_{\text{A}}$MOVED the ball across the field, by kicking$_1$ it with my left foot

b. I $\underline{_{\text{A}}\text{MOVED [by kicking}_1\text{]}}$ the ball across the field with my left foot

$\downarrow$

kicked$_2$

We can note that Mandarin, for one, is of the same typological category as English in that it conflates the Co-event in its verb. But the parallel goes further. It also has the same double usage for a single verb form.

(15) a. Wǒ yòng zuó jiǎo tī$_1$ le yī xià qíang
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 tī$_2$ guò le cāo-chǎng
I use(-ing) left foot D.O. ball kick across PERF field
'I kicked the ball across the field with my left foot.'

2.1.2.2 The Lexicalization Account Certain evidence may support the proposal of two distinctly lexicalized usages for a verb like *float* or *kick*. To begin with, such a verb in its second usage co-occurs with two constituents of certain semantically different types, while the verb in its first usage co-occurs with only one of these constituents. Thus, *float* in (12) occurs with the directional constituent *into the hangar* and the locative constituent *on a cushion of air*. Our interpretation is that the verb conflates within itself two separate concepts, one of motion and one of situated relationship, that, respectively, are in semantic association with the two constituents. In its first usage, though, *float* lacks an incorporated concept of motion, and so occurs only with the locative constituent. Similarly, *kick* in its second usage may incorporate both a concept of caused motion and a concept of body-part impact that associate, respectively, with a directional constituent (here, *across the field*) and a body-part-naming constituent (*with my left foot*), whereas *kick* in its first usage associates only with the latter type of constituent.[8]

We can further support the idea that the two usages of a verb like *float* each represent two distinct lexicalizations by showing verbs that have only the one or the other of these usages. To illustrate with this verb itself, note in (16) that the verbal form *be afloat* can occur in the same semantic and syntactic contexts as *float*$_1$, but not in those of *float*$_2$.

(16) a. The craft floated$_1$/was afloat on a cushion of air.
b. The craft floated$_2$/*was afloat into the hangar on a cushion of air.

Further, verbs that are otherwise comparable to *float*—and that they might have been expected to exhibit its same two usages—in fact have only one or the other of them. Thus, *lie*, as used in (17a), is semantically much like *float*$_1$ in referring to the support relation between one object and another—rather than buoyancy of an object in a medium, the relationship here is one of a linear object in roughly horizontal contact along its length with a firm undersurface. But it cannot also be used in a motion-incorporating sense like *float*$_2$, as seen in (17b), which attempts to express the pen's moving down the incline while in lengthwise contact with it. Conversely, *drift* and *glide* only express motion through space, in the way that *float*$_2$ does, as seen in (18b). They cannot also be used in a nonmotion sense, as attempted in (18a).

(17) a. The pen lay on the plank.
b. *The pen lay quickly down along the incline.

(18) a. *The canoe drifted/glided on that spot of the lake for an hour.
b. The canoe drifted/glided halfway across the lake.

Comparably for agentive forms, *throw* is semantically much like *kick*$_2$ in referring to a distinct motion event caused by a prior body action, as seen in (20b). But it has no usage parallel to *kick*$_1$ referring to the body action alone—that is, to swinging an object around with one's arm without releasing it into a separate path, as seen in (20a). Complementarily *swing* itself is generally restricted to this latter sense, parallel to *kick*$_1$, as seen in (19a), but cannot be used in a sentence like that in (19b) to express consequent motion through space.

(19) a. I swung the ball with my left hand.
b. *I swung the ball across the field with my left hand.

(20) a. *I threw the ball with my left hand without releasing it.
b. I threw the ball across the field with my left hand.

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* (L_2) is the same as that of *swing* (L_1) when this form is in construction with the largely grammatical sequence (G) *cause to 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): $kick_2$ = *cause to move by* $kicking_1$; or, equivalently by formula (3), *kick* (L_3) has usages equaling the usage of *throw* (L_2) taken together with the usage of *swing* (L_1).[9]

Further support for the idea of separate lexicalization for distinct usages comes from historical changes in word meaning. For example, in their traditional use the verbs *hold* and *carry* formed a near-perfect suppletive pair, differing only in that *carry* additionally incorporated a Motion event while *hold* did not.

(21)

	Without motion	*With motion*
a.	I held the box as I lay on the bed.	*I held the box to my neighbor's house.
b.	*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 has just occurred or is about to occur—can also be used in a locative sense: *I stood at the front door carrying the box*. Such a partial extension from the original motion usage into the domain of locative usage would seem better handled by an account based on lexicalization than by one based on constructions.

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, as (22) suggests.

(22) 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 spinaround).
c. I'll jump that down (about to jump onto a mat floating atop the tub water and force it down to the bottom).

Note that while the *carry* example extended a motion usage to a locative usage, these children's examples have gone in the opposite direction.

In all the preceding, where we have treated the second usage of a verb —the usage that occurs within the more complex single-clause sentence— as a lexicalization of additional components conflated into it, Aske (1989) and Goldberg (1995) treat it as the original simplex verb and treat the additional complexities of the surrounding construction as the source of the additional meanings. Perhaps the evidence adduced above can be largely reconstrued to serve as well for this constructional position. In the end, the important thing is that we correctly identify the semantic components and their interrelationships, whether these are seen as involving lexical conflation or constructions. However, either approach should aim to be consistent in its treatment of any pairing of usages. For example, our lexicalization approach should—and does—treat intransitive *break* and transitive *break* as distinct lexical items, the latter item incorporating the meaning of the former item together with a component of causation. Many of the same arguments adduced for the two usages of verbs like *float* apply as well to verbs like *break*. Thus, transitive *break* has a greater number of internal components that associate with a greater number of arguments in the sentence. Some verbs comparable to *break* occur only in the intransitive usage, like *collapse*, or only in the transitive usage, like *demolish*. Historical change has extended some one-usage verbs to a double usage. And children make the error of extending a one-usage verb into the other usage. Correlatively, a constructionist approach should claim that no distinct lexical item for transitive *break* exists in English. Rather, it should treat the transitive causative usage of *break* as consisting of intransitive *break* in interaction with the structure of the surrounding sentence, since that would parallel its treatment of Motion-Manner verbs like $float_2$.[10]

2.1.2.3 Translational and Self-Contained Motion When the motion complex expressed by a sentence can be analyzed into a Motion event and a Co-event of Manner, certain further properties can be observed. The Motion event abstracts from the complex the main translational motion that the Figure exhibits, while the Co-event, if it too involves Motion, abstracts from the complex an event of "self-contained Motion." In translational motion, an object's basic location shifts from one point to another in space. In self-contained Motion, an object keeps its same basic, or "average," location. Self-contained Motion generally consists of

oscillation, rotation, dilation (expansion or contraction), wiggle, local wander, or rest. Thus, the Motion complex expressed by (23a) can be analyzed as in (23b) into a Motion event of pure translation, which the deep verb MOVE uniquely refers to, and a Co-event of Manner that represents an event of oscillatory or rotational self-contained Motion. (And, as seen below, a language like Spanish regularly represents such a Co-event with its own verb in a separate gerundive clause.) These two types of self-contained Motion are represented in isolation by the sentences in (23c).[11]

(23) a. The ball bounced/rolled down the hall.
b. [the ball MOVED down the hall] WITH-THE-MANNER-OF [the ball bounced/rolled]
c. The ball bounced up and down on the same floor tile. / The log rolled over and over in the water.

The cognitive correlate of this linguistic phenomenon is that we apparently conceptualize, and perhaps perceive, certain complex motions as a composite of two abstractably distinct schematic patterns of simpler motion. For example, we may conceptualize, and perceive, the complex motion of a ball describing a succession of gradually diminishing parabolic arcs through a hallway as consisting of two superimposed or fused—but otherwise distinct—schematized motions: motion forward along a horizontal straight line and motion iteratively up and down along a vertical straight line. The componential separation of Motion event and Manner Co-event that we have established for the linguistic structure underlying Motion thus reflects this process of separation that our cognition performs.

This analysis of a Motion complex into a main Motion event and a Co-event raises an issue of **conceptual separability**: how cleanly the complex can be partitioned into autonomous component events. The separation can be quite clean, as in partitioning the motion complex in the "hovercraft" example into a translational schema ([the craft MOVED into the hangar]) and an autonomous component of self-contained Motion of the rest type ([the craft floated on a cushion of air]). Separation is a bit more difficult in the case of the ball bouncing down the hall, since the pure self-contained bouncing motion would take place in a straight vertical line, whereas in the full motion complex, it has blended with the forward motion to yield a parabolic resultant. Separation is still more difficult in the case of the ball rolling down the hall, since the component of rotation that one conceptually abstracts out is not wholly independent, but rather must take place in the right direction and at the right speed so

as to correlate with the forward translational motion. The separation becomes fully problematic with cases like a canoe gliding across a lake or a book sliding down an incline, since it is not clear what candidate for an autonomous Co-event might be left after one has conceptually subtracted the event of translational motion from gliding or sliding. After all, the Manner of, say, *slide* includes a component of friction, or rubbing, between contacting surfaces of the Figure and Ground objects, but such friction can in fact exist only in the course of the Figure's translational motion, and so could not be adduced independently of it.

It might thus be argued that Manner should not be treated as some separate event that bears a relation to some simplified main event, but, at most, only as an aspect of a complex event, on the grounds that in reality some putative Manners cannot exist in isolation. Cognitively, however, linguistic structure attests that we at least conceptualize Manner regularly as a separate event. In a similar way, it is attested by linguistic structure itself—from the fact that certain forms of aspect can be expressed by main verbs, as in *I started|continued|stopped|finished sweeping*—that the "temporal contour" of a process can be abstracted off from the remainder of that process for conceptualization as a separate process in its own right (see chapter II-3).

2.1.3 Extensions of the Co-Event Conflation Pattern In the languages that have it, the pattern seen so far for Co-event conflation normally applies far beyond the expression of simple Motion. We here consider five such extensions of the pattern. Again, virtually none of these extensions can be expressed as such in languages like Spanish. In the examples that follow, *F* stands for Figure; *G* for Ground; *A* for Agent; *(to) AGENT* for (to) cause agentively; $_{A}$MOVE for agentively cause to MOVE; and capital-letter words for deep or mid-level morphemes. The following characterization of such morphemes holds throughout this chapter (indeed, throughout this volume).

Neither a deep nor a mid-level morpheme has explicit form as an overt morpheme. A **deep morpheme** represents a concept that is believed to be both fundamental and universal in the semantic organization of language. A **mid-level morpheme** represents a particular conceptual complex that consists of a deep-morphemic concept together with certain additional semantic material, and that is recurrent in the semantic organization of a particular language, though it is often also to be found in many other languages. Thus, a deep or mid-level morpheme represents a single specific

meaning that is inferred to function structurally in the semantic organization of a language or of language in general. The precise details of such a meaning—as with the meaning of any surface lexical morpheme—can be progressively more finely determined through linguistic investigation. The meanings of the deep and mid-level morphemes posited here are, to be sure, not all greatly detailed in this way below, but they are at least characterized schematically.

Lacking overt form, a deep or mid-level morpheme could be represented by any convenient symbol. But our practice has been to use a surface word, written in capitals, that is suggestive of the morpheme's meaning. However, it is to be emphasized that deep and mid-level morphemes are entities distinct from and in principle not to be identified with the surface words chosen to designate them. Thus, below, the mid-level verb GO—which is intended to refer solely to an Agent's volitionally self-propelled motion, apart from any notion of deixis—is not to be identified with the English lexical verb *go*, which does incorporate deixis and has a wide range of disparate usages.

More specifically, GO represents a semantic complex in which an animate entity volitionally and intentionally causes the translocation of its whole body through space via internal (neuromuscular) control or the results thereof (as in driving a vehicle). Within this complex, the object that exhibits the pure translocational concept of the simplex MOVE verb is the body of the animate entity. The distinction between the self-agentive motion of GO and the autonomous motion of MOVE has been rigorously maintained in the author's work, although often disregarded elsewhere. However, it is true that languages represent self-agentive and autonomous motion largely with the same syntactic constructions and often with the same lexical forms. An example is, in fact, the surface English verb *go*, as seen in *The plumber*/*The rain went into the kitchen*.

Comparably to GO, the mid-level verb PUT is here intended to designate a certain concept that plays a structural role in the semantic organization of English (as well as many other languages). The concept is as follows: an Agent's controlledly moving an object through body part movements but without whole-body translocation. PUT thus at least covers the range of English *put* (*I put the book in the box*), *take* (*I took the book out of the box*), *pick* (*I picked the book up off the floor*), and *move* (*I moved the book three inches to the left*). PUT is accordingly not to be identified with the English lexical verb *put*.

2.1.3.1 Conflation onto Mid-Level Verbs Based on BE_{LOC} or MOVE For the first extension, we note that material from the Co-event can conflate not only onto the two deep verbs BE_{LOC} and MOVE (or with their agentive counterparts), but also onto certain mid-level verbs based on those deep verbs. Three examples of such mid-level verbs that take Co-event conflation are shown in (24), and a number of further examples appear in (25) and (26).

(24) *Mid-level verbs that take Co-event conflation*

a. COVER: [F] BE_{LOC} all-over [G]

[paint COVERED the rug] WITH-THE-MANNER-OF [the paint was in streaks/dots]

Paint streaked/dotted the rug.

b. GIVE: $[A_1]$ $_A$MOVE [F] into the GRASP of $[A_2]$

[I GAVE him another beer] WITH-THE-MANNER-OF [I slid the beer]

I slid him another beer.

c. PUT: [A] controlledly $_A$MOVE [F] by limb motion but without body translocation

[I PUT the hay up onto/down off of the truck] WITH-THE-CAUSE-OF [I forked the hay]

I forked the hay up onto/down off of the truck.
(**I forked the hay to my neighbor's house down the block* shows that *fork* is based on PUT, not on $_A$MOVE.)

2.1.3.2 Conflation onto Combinations of MOVE with Matrix Verbs We have previously seen that the Co-event can conflate with the agentive form of MOVE, which has been represented as $_A$MOVE. This agentive form can be best understood as deriving from the combination of MOVE and a causative matrix verb that can be represented as "(to) AGENT." Thus, (to) $_A$MOVE derives from (to) AGENT to MOVE. The second extension of the present pattern is that the Co-event can also conflate with combinations of MOVE and matrix verbs other then (to) AGENT, or indeed with nestings of such combinations. These other matrix verbs can include further causative verbs, like "(to) INDUCE" (see section 2.6 for a range of deep causative verbs) or verbs of attempting, like "(to) AIM." The deep verb INDUCE is intended to represent in its pure and abstracted form the concept of 'caused agency', as described in detail in

chapter I-8. The deep verb AIM is intended to represent the intention of an Agent to cause some circumstance, where the outcome is moot. The examples in (25) demonstrate a nested succession of such combinations based on the self-agentive verb "GO" (itself based on MOVE, as just noted above).

(25) a. GO: [A] AGENT himself [i.e., his whole body, = F] to MOVE

[the child WENT down the hallway] WITH-THE-MANNER-OF [the child hopped]

The child hopped down the hallway.
Similarly: I ran into the house.

b. GET: [A_1] INDUCE [A_2] to GO

[I GOT him out of his hiding place] WITH-THE-CAUSE-OF [I lured/scared him]

I lured/scared him out of his hiding place.
Similarly: I talked him down off the ledge. / I prodded the cattle into the pen. / They smoked the bear out of its den.

c. URGE: [A_1] AIM to GET [A_2] = [A_1] AIM to INDUCE [A_2] to GO

[I URGED her away from the building] WITH-THE-CAUSE-OF [I waved at her]

I waved her away from the building.
Similarly: I beckoned him toward me. / I called him over to us.

The (b) and the (c) types of conflation must be distinguished because the (b) type presupposes the occurrence of the motion event, which therefore cannot be denied—*They lured|scared|smoked|prodded|talked him out, *but he didn't budge*—whereas the (c) type, with its incorporated notion of 'aiming/attempting', only implicates the occurrence of the motion event, which is therefore defeasible—*They waved|beckoned|called him over, but he didn't budge*.

2.1.3.3 Conflation onto Metaphorically Extended MOVE The third extension of the present pattern is that the Co-event can conflate with METAPHORIC EXTENSIONS of MOVE—which are here represented by the deep verb within quotes: "MOVE"—or with mid-level morphemes built on "MOVE". One type of such metaphoric extension is from motion to change of state, the only type we illustrate here.[12] Some surface constructions for change of state in English are patterned like motion con-

structions, so that the form "MOVE" can be readily used in their underlying representations (see (26a) and (26d)). To represent change of state constructions with an adjective, though, we use the more suggestive forms BECOME for the nonagentive and $MAKE_1$ for the agentive (see (26b) and (26e)). And in some constructions, the change of state pertains to coming into existence, a semantic complex that we represent with the mid-level verb FORM in the nonagentive and with the verb $MAKE_2$ in the agentive (see (26c) and (26f)).

(26) *Motion-like change of state constructions*
Nonagentive

a. "MOVE": [F] MOVE metaphorically (i.e., change state)

[he "MOVED" to death] WITH-THE-CAUSE-OF [he choked on a bone]

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

b. BECOME: "MOVE" in the environment: __Adjective

[the shirt BECAME dry] WITH-THE-CAUSE-OF [the shirt flapped 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.

c. FORM: [F] "MOVE" into EXISTENCE (cf. the phrase *come into existence*)

[a hole FORMED in the table] WITH-THE-CAUSE-OF [a cigarette burned the table]

A hole burned in the table from the cigarette.

Agentive

d. "$_A$MOVE": [A] AGENT [F] to "MOVE"

[I "$_A$MOVED" him to death] WITH-THE-CAUSE-OF [I choked him]

(I killed him by choking him.—or:)
I choked him to death.
Similarly: I rocked/sang the baby to sleep.

e. $_A$BECOME = $MAKE_1$: "$_A$MOVE" in the environment: __Adjective

[I $MADE_1$ the fence blue] WITH-THE-CAUSE-OF [I painted the fence]

I painted the fence blue.

f. $_A$FORM = $MAKE_2$: [A] AGENT [F] to "MOVE" into EXISTENCE (cf. the phrase *bring into existence*)

[I $MADE_2$ the cake out of fresh ingredients] WITH-THE-CAUSE-OF [I baked the ingredients]

I baked a cake out of fresh ingredients.
Similarly: I knitted a sweater out of spun wool. / I hacked a path through the jungle. / The mouse chewed a hole through the wall.

2.1.3.4 Conflation across the Various Relations of the Co-event to the Motion Event The fourth extension of the present pattern is that the relation borne by the Co-event to the Motion event with which it conflates need not be limited to that of either Manner or Cause, but can in fact range over a sizable set of alternatives. Selected from this larger set, eight of these relations are presented here. These are roughly sequenced according to the temporal relationship of the Co-event to the Motion event, beginning with the Co-event taking place beforehand and ending with its occurring afterward. This range of conflation generally works for both nonagentive and agentive cases, and examples of both types are given where feasible.[13]

In the first relation, **Precursion**, the Co-event precedes the main Motion event but does not cause or assist its occurrence. The Motion event would proceed much the same if the Co-event had not occurred. Thus, in the first example of (27a), some glass could have fallen over the carpet without having first splintered. The splintering of the glass preceded but did not cause the motion of the glass onto the carpet. Likewise, in the second example of (27a), my grinding the caraway seeds preceded but did not cause its entering the test tube—the researcher could have simply poured or dropped the seeds in instead.

(27) a. *Precursion*

i. [glass MOVED onto the carpet] WITH-THE-PRECURSION-OF [the glass splintered]

Glass splintered onto the carpet.

ii. [the researcher $_A$MOVED the caraway seeds into the test tube] WITH-THE-PRECURSION-OF [the researcher ground the caraway seeds]

The researcher ground the caraway seeds into the test tube.

Note that languages can differ in their constraints on the semantic closeness that the Co-event must bear to the main Motion event when it bears a relation of Precursion to it. English generally requires that the Co-event precede the Motion event directly and be conceptually associated with it as part of a single activity. Thus, if the second example above is to be used felicitously, the researcher could not, say, have used a mortar and pestle to grind the seeds on an earlier occasion and then later poured the grounds out of the mortar into the test tube, but would rather have to hold the mortar over the test tube so that each portion of seeds ground by the pestle drops immediately into the test tube. Further, grinding the seeds and getting them into the test tube cannot be considered anything but an integrated event. But Atsugewi permits a Co-event of Precursion to precede the Motion event by any interval and to bear no canonical relation to it. Examples of this are given under the "Usage 3" headings in section 4.2.4 of chapter II-2. An example from that section can be sketched here to highlight its contrast with English. Consider the verb root -miǩ'-, whose meaning can be loosely rendered in English as 'for an architectural structure to deintegrate (lose its structural integrity)'. This verb root can, for example, take the Path + Ground suffix that means 'down into a volume enclosure in the ground', while also taking the Cause prefix that means 'as a result of the wind blowing on it'. The resulting verb could refer to a situation in which a house collapsed down into the cellar from the wind. Here, the verb root refers to a Co-event of deintegration that is simply in a temporally concurrent Manner relation to the main event involving a downward motion. But the same verb root can take a different affix set: the Path + Ground suffix meaning 'up', together with a Cause prefix meaning 'as a result of an Agent's whole body acting on it'. The resulting verb can be used to refer to a situation in which a boy crawling under the pile of boards from a house that had previously collapsed lifted them up with his body as he stood. Here, the verb root refers to a Co-event of architectural deintegration that can have occurred indefinitely long before the main event involving an upward motion and that bears no particular canonic association with that later event. Thus, this verb can express Precursion of the temporally and associatively decoupled type that English precludes.

In the **Enablement** relation, the Co-event directly precedes the main Motion event and enables the occurrence of an event that causes the Motion but does not itself cause this Motion. Thus, in the first example of (27b), your reaching to or grabbing the bottle does not cause the bottle to

move off the shelf. Rather, it enables you to subsequently keep the bottle in your grip as you move your arm back from the shelf, which *is* the event that does cause the bottle's motion. Likewise, in the second example of (27b), my gathering up jelly beans into a scoop does not cause them to move into the sack. But it does enable them next to be lifted to the sack and sluiced off the scoop, which then does cause them to enter the sack.

(27) b. *Enablement*

i. [could you $_{A}$MOVE that bottle down off the shelf] WITH-THE-ENABLEMENT-OF [you reach to/grab the bottle]

Could you reach/grab that bottle down off the shelf?

ii. [I $_{A}$MOVED jellybeans into her sack] WITH-THE-ENABLEMENT-OF [I scooped up the jellybeans]

I scooped jellybeans up into her sack.

In the relation of **reverse enablement**, the Co-event named by the verb is an event that has previously taken place and that now gets undone. This new event, in turn, enables the main Motion event named by the satellite. This latter relation of enablement is the same as that just described. Thus, in the first example of (27c), I first undo a prior event of tying—that is, I untie the sack. This enables me to open the sack. Note that this event of opening is not caused by the act of untying, which is thus only an enablement, but by an act of pulling on the mouth of the sack with my fingers.[14]

(27) c. *Reverse enablement*

i. [I $_{A}$MOVED the sack TO AN-OPEN-CONFORMATION] WITH-THE-ENABLING-REVERSAL-OF [(someone) had tied the sack]

Ich habe den Sack aufgebunden.
I have the sack open-tied
"I untied the sack and opened it."

ii. [I $_{A}$MOVED the dog TO FREENESS] WITH-THE-ENABLING-REVERSAL-OF [(someone) had chained the dog]

Ich habe den Hund losgekettet.
I have the dog free-chained
"I set the dog free by unchaining it."

In the Cause relation, much discussed earlier, the Co-event can precede the main Motion event in the case of **onset causation**, or it can co-occur

with the main Motion event in the case of **extended causation** (see chapters I-7 and I-8). And it is construed as bringing about the occurrence of this Motion. That is, the Motion event would not take place if the Co-event did not occur.

(27) d. *Cause*
Onset
i. [our tent MOVED down into the gully] WITH-THE-ONSET-CAUSE-OF [a gust of wind blew on the tent]
Our tent blew down into the gully from a gust of wind.
ii. [I $_{A}$MOVED the puck across the ice] WITH-THE-ONSET-CAUSE-OF [I batted the puck]
I batted the puck across the ice.
Extended
iii. [the water MOVED down to the midline of the pot] WITH-THE-EXTENDED-CAUSE-OF [the water boiled]
The water boiled down to the midline of the pot.
iv. [I $_{A}$MOVED the toothpaste out of the tube] WITH-THE-EXTENDED-CAUSE-OF [I squeezed on the toothpaste/tube]
I squeezed the toothpaste out of the tube.

In the Manner relation, also much discussed, the Co-event co-occurs with the Motion event and is conceptualized as an additional activity that the Figure of the Motion event exhibits—an activity that directly pertains to the Motion event but that is distinct from it. In this conceptualization, the Co-event can "pertain" to the Motion event in several ways, such as by interacting with it, affecting it, or being able to manifest itself only in the course of it. Thus, the Co-event can consist of a pattern of motion by the Figure—specifically, a so-conceivedly abstractable type of self-contained motion—that coalesces with the Figure's translational motion to form a more complex envelope of movement, as in the case of a ball bouncing or rolling down a hall. Or the Co-event can be a conceptually abstractable activity by the Figure that could exist only in association with translational motion by the Figure, as in the case of a canoe gliding through water, of a book sliding down an incline, or of a baby crawling across the floor.

(27) e. *Manner*

i. [the top MOVED past the lamp] WITH-THE-MANNER-OF [the top spun]

The top spun past the lamp.

ii. [the frond MOVED into its sheath] WITH-THE-MANNER-OF [the frond curled up]

The frond curled up into its sheath.

iii. [I $_{A}$MOVED the mug along the counter] WITH-THE-MANNER-OF [I slid the mug]

I slid the mug along the counter.

The **Concomitance** relation is like Manner in that in it, the Co-event co-occurs with the main Motion event and is an activity that the Figure of the Motion event additionally exhibits. But here, this activity does not in itself pertain to the concurrent Motion, in the sense of "pertain" just described, and could just as readily take place by itself (although the presumed difference between Manner and Concomitance may have the character more of a gradient than of a sharp division). Thus, in the first example of (27f), the woman could wear a green dress whether or not she goes to a party, and without any effect on her path to one. The concomitance relation is not robustly represented in English (thus, speakers differ on their acceptance of the second example below). But it is readily available in some languages, like Atsugewi. This language, for example, can say the equivalent of "The baby cried along after its mother" to mean "The baby followed along after its mother, crying as it went."

(27) f. *Concomitance*

i. [she WENT to the party] WITH-THE-CONCOMITANCE-OF [she wore a green dress]

She wore a green dress to the party.

ii. [I WENT past the graveyard] WITH-THE-CONCOMITANCE-OF [I whistled]

I whistled past the graveyard.
cf. I read comics all the way to New York.

In the relation of **Concurrent Result**, the Co-event results from—that is, is caused by—the main Motion event, and would not otherwise occur. It takes place concurrently with, or during some portion of, the Motion

event. The Figure of the Co-event here may be the same as that of the Motion event, but it need not be. Thus, in the second example of (27g), the water splashes as a result of and concurrently with the rocket's motion into it.

(27) g. *Concurrent result*

i. [the door MOVED TO A-POSITION-ACROSS-AN-OPENING] WITH-THE-CONCURRENT-RESULT-OF [the door slammed]

The door slammed shut.

ii. [the rocket MOVED into the water] WITH-THE-CONCURRENT-RESULT-OF [the water splashed]

The rocket splashed into the water.

Finally, in the **Subsequence** relation, the Co-event takes place directly after the main Motion event, and is enabled by, is caused by, or is the purpose of that Motion event. In fact, Subsequence may better be considered a cover term for a small set of such finer relations that will need to be structurally distinguished.[15]

(27) h. *Subsequence* (*including Consequence*/*Purpose*)

i. [I will GO down to your office] WITH-THE-SUBSEQUENCE-OF [I will stop at your office]

I'll stop down at your office (on my way out of the building).

ii. [I will GO in (to the kitchen)] WITH-THE-SUBSEQUENCE-OF [I will look at the stew cooking on the stove]

I'll look in at the stew cooking on the stove.

iii. [they $_{A}$MOVED the prisoner into his cell] WITH-THE-SUBSEQUENCE-OF [they locked the cell]

They locked the prisoner into his cell.

(with PLACE: [A] PUT [F] TO [G])

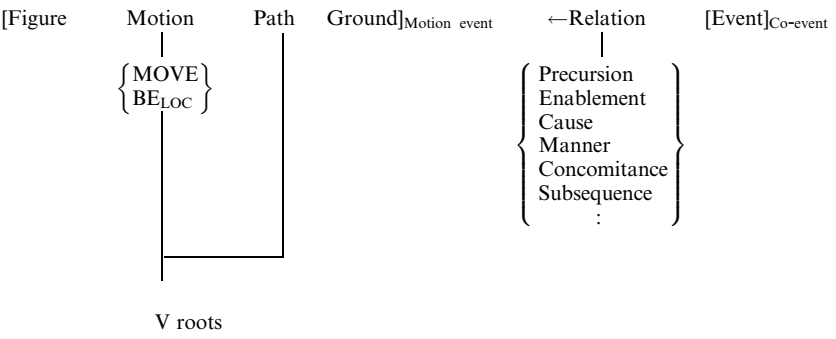
iv. [I PLACED the painting down on the table] WITH-THE-SUBSEQUENCE-OF [the painting lay (there)]

I laid the painting down on the table.
Similarly: I stood/leaned/hung the painting on the chair/against the door/on the wall.
Comparably: I sat down on the chair.

2.1.3.5 Multiple Conflation The final extension of the present pattern is that Co-event conflation is not limited to occurring just once within a two-clause structure but can in fact take place *n* times within a structure containing $n + 1$ clauses. By one approach, it can be theorized that such a structure arrays these clauses in a hierarchical embedding, and that conflation occurs successively, beginning with the lowest pair of related clauses. The examples below, though, simply present the clauses of these structures in sequence. The first example below exhibits a triplet of forms, extended beyond the doublets seen earlier. Thus, the most basic of the forms, $reach_1$ refers to extending a limb along its axis toward an object; $reach_2$ refers to moving an object by one's grip on it after having thus reached toward it; and $reach_3$ refers to giving the object thus moved and thus reached toward.

(28) a. [could you GIVE me the flour]
WITH-THE-ENABLEMENT-OF [you $_{A}$MOVE the flour down off the shelf], WITH-THE-ENABLEMENT-OF [you $reach_1$ to it with your free hand]?
⇒ [could you GIVE me the flour,]
WITH-THE-ENABLEMENT-OF [you $reach_2$ the flour down off that shelf with your free hand?]
⇒ Could you $reach_3$ me the flour down off that shelf with your free hand?
Similarly: [I $_{A}$MOVED a path through the jungle]
WITH-THE-ENABLEMENT-OF [I $_{A}$FORMED a path ($\Longrightarrow$ *out*)]
WITH-THE-CAUSE-OF [I $_{A}$MOVED STUFF away]
WITH-THE-CAUSE-OF [I hacked at the STUFF with my machete]
⇒ I hacked out a path through the jungle with my machete.

b. [the prisoner SENT a message to his confederate]
WITH-THE-MANNER-OF [the prisoner $_{A}$MOVED the message along the water pipes]
WITH-THE-ENABLEMENT-OF [the prisoner $_{A}$FORMED the message ($\Longrightarrow$ *out*)]
WITH-THE-CAUSE-OF [the prisoner tapped on the water pipes]
⇒ The prisoner tapped out a message along the water pipes to his confederate.



Path conflated in the Motion verb

2.2 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 a Co-event of 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 main verb root itself. Rather, languages of this type have a whole series of surface verbs that express motion along various paths. This conflation pattern can be represented schematically as in the accompanying diagram.

2.2.1 The Pattern Underlying Path-Event Conflation Language families or languages that seem to be of this type are Romance, Semitic, Japanese, Korean, Turkish, Tamil, Polynesian, Nez Perce, and Caddo. Spanish is a perfect example of the type. We draw on it for illustration, first with nonagentive sentences, and point out how pervasive the system is here.[16]

(29) *Spanish expressions of Motion (nonagentive) 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 turn to the island (floating)
(= 'MOVED around')
"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 en el canal (flotando)
the bottle MOVED-about in 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. La dos botellas se separaron (flotando)
the two bottles MOVED-apart (floating)
"The two bottles floated apart."

Further Spanish nonagentive verbs that manifest this Path conflating pattern are *avanzar* 'MOVE ahead/forward', *regresar* 'MOVE in the

reverse direction', *acercarse* 'MOVE closer to (approach)', *llegar* 'MOVE to the point of (arrive at)', *seguir* 'MOVE along after (follow)'.

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:

(30) *Spanish expressions of Motion (agentive) with conflation of Path*

a. Metí el barril a la bodega rodándolo
I-$_{A}$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-$_{A}$MOVED-out the cork from the bottle twisting-it
Retorcí el corcho y lo saqué de la botella
I-twisted the cork and it I-$_{A}$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 una hacha
I-felled the tree sawing-it// by ax-chops/ with an ax
"I sawed//chopped the tree down."

d. Quité el papel del paquete cortándolo
I-$_{A}$MOVED-off the paper from-the package cutting-it
"I cut the wrapper off the package."

One category of agentive motion can be represented by the mid-level verb PUT. In this type, an Agent moves a Figure by the motion of some body part(s) (or an instrument held thereby) in steady contact with the Figure, but without the translocation of the Agent's whole body.[17] As before with simple MOVE, Spanish conflates PUT with different Path notions to yield a series of different verb forms with the separate indication of distinctions of path, as seen in table 1.1.

Notice that English does use different verb forms here, *put* and *take*, in correlation with the general path notions 'to' and 'from' in a way that suggests the Spanish type of Path incorporation. And this may be the best interpretation. But an alternative view is that these are simply suppletive forms of the single more general and nondirectional PUT notion, where the specific form that is to appear at the surface is determined completely by the particular Path particle and/or preposition present. In expressing this notion, English uses *put* in conjunction with a 'to'-type preposition (*I put the dish into/onto the stove*); *take* with a 'from'-type preposition

Table 1.1
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 y F_2	A put F_1 and 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 y F_2	A take F_1 and F_2 apart

except when *up* is present (*I took the dish off/out of the stove*), *pick* with a 'from'-type preposition in the presence of *up* (*I picked the dish up off the chair*); and *move* with an 'along'-type preposition (*I moved the dish further down the ledge*).

As further evidence for the interpretation 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 PUT 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 PUT verbs express the bulk of Path distinctions—the only prepositions used with this subsystem are *a, de,* and *en*—and so are central, unsupplanted fixtures in the Spanish sentence, as is typical for *that* language.

English does have a number of verbs that genuinely incorporate Path, as in the Spanish conflation type. Important examples are *enter, exit, ascend, descend, cross, pass, circle, advance, proceed, approach, arrive, depart, return, join, separate, part, rise, leave, near, follow.* And these verbs even call for a Spanish-type pattern for the rest of the sentence. Thus, any Manner notion must be expressed in a separate constituent. For example,

a sentence like *The rock slid past our tent* exhibits the basic English pattern with a Manner-incorporating verb and a Path preposition, but the use of a Path-incorporating verb requires that any expression of Manner occur in a separate constituent (where it is rather awkward), as seen in *The rock passed our tent in its slide/in sliding*. These verbs (and the sentence pattern they call for) are not the most characteristic type in English, however, and many are not the most colloquial alternatives available. And, significantly, the great majority—here, all but the last four verbs listed—are not even original English forms but rather are borrowings from Romance, where they are the native type. By contrast, German, which has borrowed much less from Romance languages, lacks verb roots that might correspond to most of the Path verbs in the list.

2.2.2 Components of Path Although Path has so far been treated as a simplex constituent, it is better understood as comprising several structurally distinct components. The three main components for spoken languages are the Vector, the Conformation, and the Deictic (though sign languages may additionally have Contour and Direction).

The Vector comprises the basic types of arrival, traversal, and departure that a Figural schema can execute with respect to a Ground schema. These Vector forms are part of a small set of **Motion-aspect formulas** that are quite possibly universal. These formulas are given in (31), with the Vectors shown as deep prepositions written in capitals.[18] In these formulas, the Figure and the Ground appear as highly abstracted and fundamental schemas. The **fundamental Figure schema** appears first—here, always as "a point." A **fundamental Ground schema**—a member of a very small set—follows the Vector. Each formula is exemplified with a sentence whose more specific spatial reference is based on the formula.

(31) a. A point BE_{LOC} AT a point, for a bounded extent of time.
The napkin lay on the bed/in the box for three hours.
b. A point MOVE TO a point, at a point of time.
The napkin blew onto the bed/into the box at exactly 3:05.
c. A point MOVE FROM a point, at a point of time.
The napkin blew off the bed/out of the box at exactly 3:05.
d. A point MOVE VIA a point, at a point of time.
The ball rolled across the crack/past the lamp at exactly 3:05.
e. A point MOVE ALONG an unbounded extent, for a bounded extent of time.

The ball rolled down the slope/along the ledge/around the tree for 10 seconds.

e′. A point MOVE TOWARD a point, for a bounded extent of time.
The ball rolled toward the lamp for 10 seconds.

e″. A point MOVE AWAY-FROM a point, for a bounded extent of time.
The ball rolled away from the lamp for 10 seconds.

f. A point MOVE ALENGTH a bounded extent, in a bounded extent of time.
The ball rolled across the rug/through the tube in 10 seconds.
The ball rolled 20 feet in 10 seconds.

f′. A point MOVE FROM-TO a point-pair, in a bounded extent of time.
The ball rolled from the lamp to the door/from one side of the rug to the other in 10 seconds.

g. A point MOVE ALONG-TO an extent bounded at a terminating point, at a point of time/in a bounded extent of time.
The car reached the house at 3:05/in three hours.

h. A point MOVE FROM-ALONG an extent bounded at a beginning point, since a point of time/for a bounded extent of time.
The car has been driving from Chicago since 12:05/for three hours.

The Conformation component of the Path is a geometric complex that relates the fundamental Ground schema within a Motion-aspect formula to the schema for a full Ground object. Each language lexicalizes its own set of such geometric complexes. To illustrate, the fundamental Ground schema in (32a) to (32c) is 'a point'. To this fundamental Ground schema, English can add, for example, the particular Conformation notion: 'which is of the inside of [an enclosure]'. Or it can add another particular Conformation notion: 'which is of the surface of [a volume]'. In each such Conformation, the schema for the full Ground object is indicated in brackets. For felicity, it must be easy to geometrically idealize any full Ground object that is in reference down to this indicated schema—as, say, in referring to a box for 'an enclosure' or a bed for 'a volume'. For the three formulas of (32a) to (32c), then, the combination of the Vector

and the fundamental Ground schema with these Conformations is as shown in (32).

(32) a. AT a point which is of the inside of [an enclosure] = *in* [an enclosure]
AT a point which is of the surface of [a volume] = *on* [a volume]
b. TO a point which is of the inside of [an enclosure] = *in(to)* [an enclosure]
TO a point which is of the surface of [a volume] = *on(to)* [a volume]
c. FROM a point which is of the inside of [an enclosure] = *out of* [an enclosure]
FROM a point which is of the surface of [a volume] = *off (of)* [a volume].

The full formulas of (32a) to (32c) together with the 'inside' Conformation are shown in (33a) along with sentences built on the entire complexes. The comparable presentation for the 'surface' comformation appears in (33b).

(33) a. i. A point BE_{LOC} AT a point which is of the inside of an enclosure for a bounded extent of time.
The ball was in the box for three hours.
ii. A point MOVE TO a point which is of the inside of an enclosure at a point of time.
The ball rolled into the box at exactly 3:05.
iii. A point MOVE FROM a point which is of the inside of an enclosure at a point of time.
The ball rolled out of the box at exactly 3:05.

b. i. A point BE_{LOC} AT a point which is of the surface of a volume for a bounded extent of time.
The napkin lay on the bed for three hours.
ii. A point MOVE TO a point which is of the surface of a volume at a point of time.
The napkin blew onto the bed at exactly 3:05.
iii. A point MOVE FROM a point which is of the surface of a volume at a point of time.
The napkin blew off of the bed at exactly 3:05.

Comparably, the Vector plus the fundamental Ground schema of (31d), "VIA a point," can be combined with the Conformation 'which is to one

side of [a point]' to yield *past* (*The ball rolled past the lamp at exactly 3:05*). It can also be combined with the Conformation 'which is (one of the points) of [a line]' to yield *across* (*The ball rolled across the crack at exactly 3:05*). And it can be combined with the Conformation 'which is (one of the points) of [a plane]' to yield *through* (*The ball sailed through the pane of glass at exactly 3:05*).

In a similar way, the Vector and the fundamental Ground schema of (31e), "ALONG an unbounded extent," can be combined with the Conformation 'which is to one side of and parallel to [an unbounded extent]' to yield *alongside* (I walked alongside the base of the cliff for an hour). And the Vector plus the fundamental Ground schema of (31f), "ALENGTH a bounded extent," can be combined with the Conformation 'which is coterminous and coaxial with [a bounded cylinder]' to yield *through* (*I walked through the tunnel in 10 minutes*). (A much expanded and more detailed presentation of such structures appears in the appendix to chapter I-3.)

With the Vector and the Conformation components of Path thus distinguished, we can characterize the Spanish pattern for representing a Motion event more precisely. The verb root conflates together Fact-of-Motion and the Vector and Conformation components of the Path constituent. The preposition that can occur with a Ground nominal represents the Vector alone. Thus, in the form "F *salir de* G," the verb means 'MOVE FROM a point of the inside (of an enclosure)', while the preposition simply represents the Vector 'FROM'. Comparably, in the form "F *pasar por* G," the verb means 'MOVE VIA a point that is to one side (of a point)', while the preposition represents solely the Vector 'VIA'.

In languages that include it in their characteristic representation of Motion events, the Deictic component of Path typically has only the two member notions 'toward the speaker' and 'in a direction other than toward the speaker'.[19] Languages with a Path conflating verb system can differ in their treatment of the Deictic. Spanish largely classes its Deictic verbs—*venir* 'come' and *ir* 'go'—together with its "Conformation verbs" (a term for the verbs that incorporate Fact-of-Motion + Vector + Conformation)—for example, *entrar* 'enter'. Thus, in a typical motion sentence, the main verb slot will be occupied by one or the other of these Path verb types, while any gerundive verb form will express Manner.[20]

Like Spanish, Korean can occupy its main verb slot with either type of Path verb—that is, with a Conformation verb or a deictic verb—and

accompany this with a gerundive constituent of Manner. But unlike Spanish, Korean can represent both Path components concurrently in nonagentive sentences (Choi and Bowerman 1991). In this case, the Deictic verb is the main verb, the Conformation verb appears in a gerundive constituent, and a Manner verb can still appear in a further gerundive constituent. Thus, Korean is a characteristically Path verb type of language, but it structurally distinguishes the Deictic component from the Conformation component of Path and accords it higher priority when both components are present.

2.3 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 the accompanying diagram.

This pattern can first be illustrated close to home, for English does have a few forms that conform to it. Thus, the nonagentive verb (to) *rain* refers to rain moving, and the agentive verb (to) *spit* refers to causing spit to move, as seen in (34).

(34) a. It *rained* in through the bedroom window. Nonagentive
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

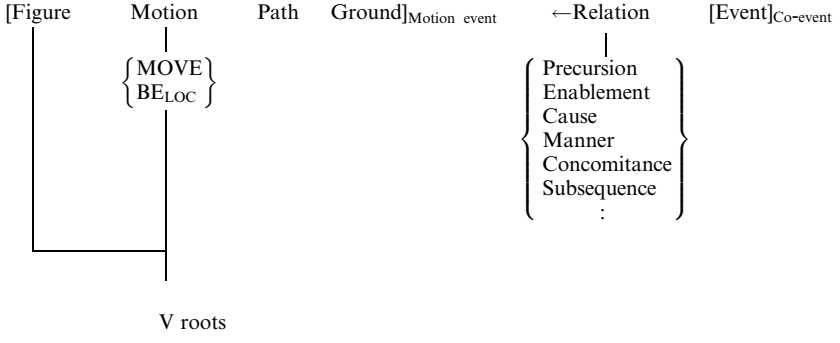


Figure conflated in the Motion verb

usages. Atsugewi, a Hokan language of northern California, is an example par excellence of this type. The verb roots in (35) are just a sampling.

(35) *Atsugewi verb roots of motion with conflated Figure*

-lup-	'for a small shiny spherical object (e.g., a round candy, an eyeball, a hailstone) to move/be-located'
-t̓-	'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'
-st̓aq̓-	'for runny icky material (e.g., mud, manure, rotten tomatoes, guts, chewed gum) to move/be-located'

These verb roots can also have an agentive meaning. For example, *-st̓aq̓-* 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 nonagentive motion, and of agentive motion. Each of these usages is now exemplified with *-st̓aq̓-* 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). (Note that an independent nominal for 'guts' could be included along with the verb, thus providing a separate reference to the Figure entity beside the one already provided by the verb root.)

(36) *Atsugewi expressions of motion with conflated Figure*

a.

Locative suffix	-ik·	'on the ground'
Cause prefix	uh-	'from "gravity" (an object's own weight) acting on it'
Inflectional affix set	'- w- -^{a}	'3rd person–subject; factual mood'

/'-w-uh-st̓aq̓-ik·-^{a}/ ⇒ [ẇost̓aq̓ík·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* -ic̓t 'into liquid'
Cause prefix ca- 'from the wind blowing on the Figure'
Inflectional affix set '- w- -[a] '3rd person–subject, factual mood'

/'-w-ca-s̓taq̓-ic̓t-[a]/ ⇒ [c̓was̓taq̓íc̓ta]

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'
Cause prefix cu- 'from a linear object, moving axially, acting on the Figure.'
Inflectional affix set s- '- w- -[a] 'I–subject (3rd person–object), factual mood'

/s-'-w-cu-s̓taq̓-cis-[a]/ ⇒ [sc̓us̓táq̓c[h]a]

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."

Atsugewi's pattern of conflating the Figure with Motion extends to such Figural objects as body parts and garments. Note that the usual English construction for referring to body-part control involves expressing the body part as the direct-object nominal of a verb of maneuvering, as in *I laid my head on the pillow|pulled my arm back out of the cage|put my ear against the wall|stuck my tongue out*. There is only an occasional verb root for body-part motion, which then usually involves additional semantic constraints—for example, *step*, 'controlledly $_{A}$MOVE one of one's feet while standing on the other', as in *I stepped into the puddle|over the crack*. But in Atsugewi, the regular pattern involves a verb root that refers to a particular body part as moving or located and that can take the full range of directional suffixes. Similarly, instead of such English constructions as *I have a hat on|put my shirt on|took my shoes off|put a coat on her*, Atsugewi has verb roots that refer to a particular garment moved or located for wear that takes affixes indicating whether the garment is on, or is put on or taken off oneself or someone else.[21]

Table 1.2
Three main typological categories for Motion verbs

Language/language family	The particular components of a Motion event characteristically represented in the verb root
Romance	Motion + Path
Semitic	
Polynesian	
Nez Perce	
Caddo	
Japanese	
Korean	
Indo-European (not Romance)	Motion + Co-event
Chinese	
Finno-Ugric	
Ojibwa	
Warlpiri	
Atsugewi (and apparently most northern Hokan)	Motion + Figure
Navaho	

2.4 A Typology for Motion Verbs

The three conflation patterns for Motion verbs discussed so far are apparently the main ones found across languages. But other patterns occur or, in some cases, fail to occur. This range is discussed here.

2.4.1 Motion + Co-Event, Path, or Figure The three main conflation patterns for Motion verbs that languages exhibit are summarized in table 1.2. Subcategorization of these three types, based on where the remaining components of a Motion event are expressed in a sentence, is treated later.

2.4.2 Motion + Ground The typology just presented raises questions about the nonoccurring combinatory possibilities. It can be seen that one Motion-event component, the Ground, does not by itself conflate 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 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 include is the provision for expressing many further Paths and Grounds. Thus, in addition to the forms just seen with prefixal *em-* and *de-*, we might expect such a system to contain *circumplane,* 'move around an airplane', and *transplane,* 'move through an airplane'. And there should be many further verb roots participating in this system, say, *(to) house* 'move with respect to a house' (*I enhoused|dehoused|circumhoused*), and *(to) liquid*, 'move with respect to liquid' (*The penguin will enliquid|deliquid|transliquid*). 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—since a discourse often tracks the same Figure object moving progressively with respect to a succession of Ground objects—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 apparently as the most extensively represented, of Co-event 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.

2.4.3 Motion + Two Semantic Components 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* '$_{A}$MOVE onto a shelf' (*I shelved the books*) and *box* '$_{A}$MOVE into a box' (*I boxed the apples*).[22] Another minor system of agentive verbs in English conflates the Figure and Path together with Motion: *powder* '$_{A}$MOVE facial powder onto' (*She powdered her nose*), *scale* '$_{A}$MOVE the scales off of' (*I scaled the fish*).

Conflation systems of this multicomponent sort apparently never form a language's major system for expressing Motion. The reason for such a prohibition seems straightforward for any system that would undertake to make relatively fine semantic distinctions: it would require 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', and so on, and further verbs for the myriad of Ground objects other than a box. Such a system would not be feasible 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 multicomponent conflational system, one with fairly broadband references 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', and so forth. A system such as this would indeed be feasible for language, yet also seems unrealized, and an explanation here, too, must be awaited.

2.4.4 Motion + No Further Semantic Component Another combinatorial possibility is that the verb root expresses the Motion component alone, without the conflation of any other component of the Motion event. This pattern does occur, perhaps with some frequency, in representing the locative type of Motion event. In a language with this arrangement, a single verb form represents the deep verb BE_{LOC} and does not conflate with various Paths, Figures, or Co-events. Spanish has this arrangement: the verb *estar* 'to be located' is followed by various locative prepositions or prepositional complexes that represent the site, but it does not have a

set of distinct verb roots that conflate BE_{LOC} with various sites to yield such meanings as 'to be in', 'to be on', 'to be under'.[23]

For the representation of the motion type of a Motion event, Atsugewi does in fact have a minor system with a nonconflated verb. A verb root consisting of the vowel *i-* that directly takes any of the Path + Ground suffixes can be interpreted as expressing the 'MOVE' notion in isolation. However, this form is not the main way that Motion is expressed in Atsugewi (although it is not fully clear when its use is called for).

If indeed the pattern with lack of conflation occurs rarely or never as the main system of a language, one explanation may be its relative inefficiency. The pattern calls for the re-expression of the same morpheme with the same fixed meaning—whether 'MOVE' alone or 'MOVE/BE_{LOC}'—for every reference to a Motion event. Yet this one fixed meaning can readily be gotten from the other represented components of the Motion event, as is demonstrated by the fact that the previously described major systems for expressing a Motion event in fact lack any morpheme to represent the Motion component alone.

2.4.5 Motion + A Minimally Differentiated Semantic Component Certain major systems do exist, however, that, in effect, approach the zero-conflation type. These are systems in which Motion does conflate with another component of the Motion event, but where only two or three distinctions pertaining to that component are represented, rather than a great many distinctions, as we have seen previously.

Thus, Southwest Pomo conflates MOVE with the Figure, but not with that aspect of the Figure that pertains to the type of object or material that it is, as in Atsugewi, but rather with the numerosity of the Figure, and here it marks only three distinctions. Specifically, the Southwest Pomo verb roots *-w/-ʔda/-pʰil* mean, respectively, 'for one/two or three/several together … to move', and these three roots appear recurrently in verbs referring to Motion events. Any representation of the Figure's object type or material characteristics takes place not in the verb root but in the subject nominal.

In a comparable way, it appears that Hindi, in its expression of nonagentive motion, conflates MOVE with Path, but only with the deictic portion of Path, not with the portion that pertains to geometric configurations. And here, only the two-valued 'hither/thither' distinction within deixis is conflated with MOVE so as to yield two verb roots—essentially,

'come' and 'go'—that appear recurrently in constructions representing non-agentive motion events. The Conformation portion of Path is expressed in a separate Path satellite or prepositional complex.

Finally, in Supalla's (1982) analysis, the main system in American Sign Language for representing Motion events has at its core a small set of hand movement types that can be regarded as the counterpart of verb roots. These hand movements represent a component of the Path constituent that does not seem to receive distinct structural recognition as a Path component in any spoken language. This component can be termed the 'Contour' and consists of certain distinctions in the shape of the Path described by a Figure. Supalla distinguishes seven Path Contours in all, and three for cases of actual motion: straight line, curve, and circle.

As the dominant hand moves to trace out a Path-Contour, it may concurrently represent other components of the Path—namely, the Vector, Conformation, Deictic, and Direction of the Path—as well as a certain set of Manners. In addition, the hand's shape concurrently represents the classificatory category of the Figure and, potentially also, certain aspects of an Instrument or Agent. These further semantic representations behave analogously to separate satellite classes accompanying the verb root in a spoken language. The central observation here, though, is that in the main system for representing Motion events in ASL, the verb root equivalent incorporates the Path, as in Spanish, but it incorporates only the Contour component of Path and then marks only three distinctions within that component.

2.4.6 Split System of Conflation So far, we have mostly treated a language in terms of having a characteristic conflation type, sometimes along with some minor systems and occasional forms of a different conflation type. Alternatively, though, a language can characteristically employ one conflation type for one type of Motion event, and characteristically employ a different conflation type for another type of Motion event. This can be called a "split" or "complementary" system of conflation.

As suggested earlier, Spanish has such a split system with respect to state of Motion. For a locative situation with an underlying BE_{LOC}, Spanish characteristically uses the zero-conflation pattern. But for an event of actual motion with an underlying MOVE, we have seen Spanish characteristically to use Path conflation.[24] Even within this MOVE type, though, a further split can be seen. Aske (1989) and Slobin and Hoiting (1994)

have observed that motion events whose paths are conceptualized as crossing a boundary—as would be typical for 'into' and 'out of'—are the ones that are represented with the Path conflation pattern. But motion events with a path conceptualized as not crossing a boundary—as would be typical for 'from', 'to', and 'toward'—are characteristically represented with the Co-event conflation pattern, just like English, as in *Corrí de mi casa a la escuela*, 'I ran from my house to the school'.

A different split pattern occurs in Emai (Schaefer 1988). Emai has an extensive set of Path verbs, much like Spanish, but in a Motion sentence, it generally uses this set only for self-agentive motion. It instead uses a main verb with Co-event conflation for nonagentive and agentive motion. It can use this latter conflation type for self-agentive motion as well, if the Manner is other than that of 'walking'.[25]

Tzeltal exhibits yet another split pattern, in fact employing each of the three main conflation types for separate types of Motion event. Like Atsugewi, this language has a large set of verb roots in which the Figure is conflated. These "positional roots" largely distinguish Figure objects in terms of their disposition: their form, orientation, and arrangement relative to other objects. Unlike Atsugewi, though, when applying them to a Motion event, Tzeltal uses these roots for only one circumstance: where the Figure is or ends up supported at some location. The stative form of the roots refers to a locative situation, having the sense 'for a Figure with *X* disposition to be at a particular supportive location'. The inchoative form of the roots, the "assumptive," refers to the arrival at a supportive location of a Figure that has *X* disposition or that acquires it in the process. And the agentive form of the roots, the "depositive," refers to an Agent's placing at a supportive location a Figure that has *X* disposition or that acquires it in the process, where the Agent controls this motion—that is, holds the Figure with body part or instrument.

In addition, though, like Spanish, Tzeltal has a set of Path-conflating verb roots—the "movement verbs"—that are used for two further types of Motion event. The nonagentive form of the verbs is used for autonomous Figural motion, thus having the sense '(for a Figure) to MOVE along *X* Path'. The agentive form of the verbs is used for controlled agentive motion, thus having the sense '(for an Agent) to $_{A}$MOVE (the Figure) along *X* Path while holding (it)'.

Finally, like English, Tzeltal uses Co-event-conflating verbs in construction with the "directional" form of the Path verbs—which here,

then, function like Path satellites. This construction covers much the same range of usages as the English construction—for example, the counterparts of an agentive noncontrolled Cause type like "I kicked it in," of an agentive controlled Cause type like "I carried it in," of a self-agentive Manner type like "I ran out," and of a nonagentive Manner type like "It fell down" (though this is the least well-represented type). Although the situations that the last three of these types refer to can largely also be represented by the path-verb construction, the first type can only be represented by the present construction.[26]

2.4.7 Parallel System of Conflation In a split system, a language uses different conflation types for different types of Motion event. But in a parallel system of conflation, a language can use different conflation types with roughly comparable colloquiality in the representation of the *same* type of Motion event. English would exemplify a parallel-type system if its Path verb-based constructions were as colloquial as its Co-event verb-based constructions—for example, if *The bottle exited the cave floating* were as colloquial as *The bottle floated out of the cave*. But this is not the case, so that English has been classed as being characteristically of the Co-event conflation type. On the other hand, modern Greek does exemplify the parallel system of conflation in using exactly the two types of conflation just cited with comparable colloquiality to represent most events of autonomous or self-agentive motion. Thus, for most Path notions, Greek has both a Path satellite for use with a Manner-Cause verb, and a Path verb that can be accompanied by a Manner/Cause gerund. In (37), we illustrate this for the Path notion 'in(to)'.[27]

(37) a. etreksa mesa (s-to spiti)
I-ran in (to-the house [ACC])
"I ran in (-to the house)."
b. bika (trekhondas) (s-to spiti)
I-entered (running) (to-the house [ACC])
"I entered (the house) (running)."

A sampling of parallel Path satellite and Path verb constructions in Greek follows, using the notation of section 3.

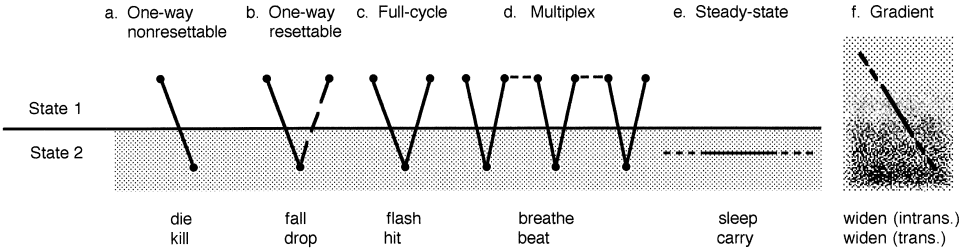
(38) [*se* 'at/to'; *apo* 'from'; V_C = the Co-event verb; V_{MC} = verb conflating MOVE + Co-event]

into	F V_{MC} ←mesa (se + ACC> G)	F beno (se + ACC> G) (V_C-GER)
out (of)	F V_{MC} ←ekso (apo + ACC> G)	F vgheno (apo + ACC> G) (V_C-GER)
up (along)	F V_{MC} ←pano (se + ACC> G)	F anaveno (se + ACC> G) (V_C-GER)
down (along)	F V_{MC} ←kato	F kataveno (apo + ACC> G) (V_C-GER)
back (to)	F V_{MC} ←piso (se + ACC> G)	F ghirizo (se + ACC> G) (V_C-GER)

2.4.8 Intermixed System of Conflation In principle, a language might exhibit no consistent pattern of conflation for some type of Motion event, but rather intermix different forms of conflation for the various members of that Motion event type. As will be seen in section 2.7.1, Latin appears to intermix different lexicalization patterns in its expression of change of state. But no language has come to attention in which some characteristic conflation pattern has not emerged for each semantically distinguishable type of Motion event. What such an intermixed system might look like can be readily imagined. Consider that for some Path notions, Greek does not have parallel constructions, but either a Path verb or a Path satellite alone. Thus, 'across' and 'past' can be expressed only with Path verbs (*dhiaskhizo* and *perno*), while 'around' can be expressed only with a Path satellite (←*ghiro*). If the remainder of the Path notions were also expressed by either the one or the other conflation form without any principled semantic basis—instead of the actually occurring pattern of doublets for the majority of the Path notions—then Greek would be an example of an intermixed system of conflation.

2.5 Aspect

In addition to the Motion typology we have just seen, languages form a typology according to their characteristic way of expressing (change of) state. This is a domain that involves aspect and causation and their interaction, as addressed in this and the next two sections. "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. The accompanying figure shows some of the aspect types lexicalized in verb roots, with nonagentive and agentive English verbs exemplifying each.



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 nonresettable type by its compatibility with iterative expressions, as in *He fell three times*. The nonresettable verbs cannot occur here: **He died three times*. This same one-way form is distinguished from a full-cycle form by its ability to occur with expressions of reversal, as in *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 that 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 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, as (39) shows.

(39)

Completive aspect	*Steady-state aspect*
We learned/*studied French in three years.	We *learned/studied French for two years.
She taught us French in three years.	She taught us French for two 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.[28] It is doubtful that any verb root can have a meaning wholly neutral with respect 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 kept flashing*. Similarly, we can make the reverse change from the (d) type to the (c) type with the abstract grammatical form V_{dummy} *a* [__ + Deriv]$_N$—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).[29]

Third, different languages have different patterns of aspect incorporation in their verbs. For example, we will see in section 2.7 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.

Fourth, verb roots' aspect incorporation can correlate with surrounding factors. For example, it seems generally that a language with a ready inflection indicating 'multiplexity' has few verb roots like English *beat, wag, flap, 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 American Sign Language (Elissa Newport, personal communication).

2.6 Causation

By one analysis, quite a few distinct types of causation are lexicalized in verbs (see chapter II-6). The number is appreciably greater than the usually recognized two-way distinction between 'noncausative' 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 (40g)). All but two of these types can be illustrated with the verb *break*. Other verbs are given to illustrate types (40h) and (40i). Most of these types are here named for the kind of element that acts as the verbal subject.

(40) *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]...).	Undergoer situation (not causative)
h. I walked to the store.	Self-agentive causation
i. I sent him to the store.	Inducive causation (caused agency)

Previous linguistic treatments (e.g., McCawley 1968) have represented their incorporated causative element by the capitalized form "CAUSE." Since more distinctions are recognized here, more representational forms are needed.[30]

(41) a. ... broke ... = ... broke ...
b. ... RESULTED-to-break ... = ... $_{R}$broke ...
c. ... EVENTed-to-break ... = ... $_{E}$broke ...
d. ... INSTRUMENTed-to-break ... = ... $_{I}$broke ...
e. ... AUTHORed-to-break ... = ... $_{Au}$broke ...
f. ... AGENTed-to-break ... = ... $_{A}$broke ...
g. ... UNDERWENT-to-break ... = ... $_{U}$broke ...

The autonomous (40a) type presents an event occurring in and of itself, without implying that there is a cause. Such causes as there may be fall outside of attention.[31]

In the (40b) "resulting-event causation" type, on the other hand, this main event has resulted from another event and would not otherwise have occurred. The causing event can be expressed not only by a full clause, as in (40b) and again in (42a) below, but also by a verb-derived nominal, as in (42b), or by what can be termed an "action noun," as in (42c). A standard noun as in (42d), however, will not do.

(42) The window cracked

a. from a ball's sailing into it	Nominalized clause
b. from the pressure/bump of a branch against it	Verb-derived nominal

c. from the wind/a fire/the rain — Action noun
d. *from a ball — 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 (42c) might be considered to have internal semantic structures equivalent to the clauses in (43).

(43) a. wind 'air's blowing [on the Figure]'
b. rain 'rainwater's falling [on the Figure]'
c. fire 'flames acting [on the Figure]'

Such semantic conflation, taking place in the noun, exemplifies lexicalization in a grammatical category other than the verb root and the satellite, the ones addressed in this chapter. (For further examples, involving conflation in subordinating and coordinating conjunctions and in certain adverb classes, see chapter I-6.)

Perhaps most verbs that are lexicalized to express either the autonomous or the resulting-event type of causation can also express the other type. English verbs whose range includes both these causation types but no others are *die, fall, drift, disappear, sleep.* English appears to lexically distinguish these two causation types only in the stative with the verbs *be* and *stay*, as (44) suggests.

(44) a. The pen was on the incline. — Autonomous situation
b. The pen *was/stayed on the incline from a lever pressing against it. — Resulting-event causation

While the (40b) type focuses on the main event as *resulting* from another event, the (40c) "causing-event" type focuses on the latter (now the subject) as *causing* the main event.[32] And the instrumental (40d) type focuses on just that object within the causing event that actually *impinges* on the affected elements of the resulting event.[33] 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.* Further, there may be no verbs that are lexicalized only for the (c) or the (d) type without also being able to express the other type.

In both author (40e) and agent (40f) causation, an animate being wills a bodily action that leads (through a variously sized chain of causal events) to the main event referred to.[34] In the author type, the being intends all these events except the final one; in the agent type, the final one, too, is

intended. English verbs associated with the author type and only slightly or not at all with the agentive are *spill, drop, knock (down)*, and bimorphemic *mislay*. Strictly agentive verbs are *murder, throw, persecute*.

The Undergoer in the (40g) 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.

(45) a. Se me quebró el brazo.
'The arm broke itself [to] me.' = 'I broke my arm.'
b. 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, as seen in: I *broke* my arm, I *caught* my sweater on a nail, I *developed* a wart in my ear. And English also has verbs that require the Undergoer as subject, like *lose* and *forget*. We can contrast the agent, author, and undergoer types with the three verbs in *I hid|mislaid|lost 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:

(46) $\left\{\begin{matrix}\text{to AGENT}\\ \text{to AUTHOR}\\ \text{to UNDERGO}\end{matrix}\right\}$ that NP become not findable

(approx. = $\left\{\begin{matrix}\text{to } \textit{hide}\\ \text{to } \textit{mislay}\\ \text{to } \textit{lose}\end{matrix}\right\}$ NP)

The self-agentive (40h) type is like the agentive except that the animate being's bodily action is itself the final and relevant event, not just an earlier event in a causal sequence. Often, the whole body is moved through space as a Figure. In their usual usage, the English verbs *go, walk, run, jump, trudge, recline, crouch*, and so on incorporate this type. The verb *roll* can incorporate several different causation types, among them the self-agentive, and so permits a contrastive example.

(47) 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 inducive (40i) type, something (whether a thing, an event, or another Agent) induces an Agent to intentionally carry out an act.[35] For most inducive verbs, the agentively performed act that is induced is in fact a self-agentive type of act, in particular, an act of 'going'. For example, the verb in *I lured him out of his hiding place* means 'by luring, to INDUCE to GO'. Atypically, *sic/set . . . on*, as in *I sicced/set the dogs on the intruder*, mean 'by issuing directions, to INDUCE to attack', and so refer to a self-agentive act of attacking rather than of going. Some English verbs that incorporate only the inducive type (at least, in one sector of their usage) 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.[36]

(48) a. The dogs set upon us. Self-agentive causation
b. He set the dogs upon us. Inducive 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 that overlap in enough different ways). For example, we can try to use each of the verbs *die, kill, murder* in every one of the causative types listed in (40).

(49) 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 (49) we can derive the summary in table 1.3, where we see just the acceptable usages.

The different acceptability patterns here help determine which of the posited causative types are structurally distinguished by language. Thus, we have here established the following: The agentive (f) is a type by itself —it alone accommodates *murder*. And there are at least distinctions between the (a/b) set of types—*die* but not *kill* ranges over these; the (c/d/e)

Table 1.3
Acceptable types of causative usage: *die*, *kill* and *murder*

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

set of types—*kill*'s range minus the agentive (f), which was already isolated; and the (g/h/i) set of types—suiting none of the verbs. We can now seek cases that exhibit distinctions within these clusters of types. As already seen, the (a) and (b) types are distinguished, at least in the stative, by English *be* and *stay*. And we have already seen that the (e) author type of causation is selectively lexicalized in such verbs as *mislay*, thus separating the (e) type from the (c)-(d)-(e) cluster 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 latter two types themselves are distinguished in that only (h) accommodates *trudge* and only (i) accommodates *sic . . . on.* It is, however, quite possible that no verbs distinguish between the (c) and (d) causation types, even crosslinguistically, so that these would have to be merged.

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:

(50) a. *S author-causative*
S accidentally
S in (+ Cause clause)
S . . . too . . .
may S!

b. *S agent-causative*
S intentionally
S in order that . . .
NP intend to S
NP_1 persuade NP_2 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.

(51) 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 *mislaid/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 my pen.
*Mislay/Hide your pen somewhere in the kitchen!

What might be seen as a problem for this demonstration—the fact that *mislay* is bimorphemic, with its prefix explicitly expressing unintentionality—can be avoided by replacing the *mislay/hide* pair in the demonstration with the pair *spill/pour* with largely the same results. This new pair has the additional advantage that it allows illustration of the 'S . . . too . . .' frame, which *mislay/hide* do not easily fit: I spilled/*poured the milk by opening the spout too wide.

Note that the same test frames employed in the preceding demonstration can also be used with verbs like *break*, which 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 (52a) and only as an agent type in (52b).

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

Further evidence that verbs have different causative lexicalizations is that they take different grammatical augments to indicate a shift in causation type. Table 1.4 shows a sample from English of such augments and the shifts they mediate. In (53) each shift is illustrated with a verb that is lexicalized solely in the starting-point causative type and that is placed with the relevant grammatical shifters in a clause. Accompanying this, for

Table 1.4
Lexicalized causation types shifted by grammatical elements

	autonomous	agentive	self-agentive	undergoer	inducive
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

Note: (a)–(e) correspond to (a)–(e) in (53).

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, (53a) 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 (*I obliterated the stone*/**The stone obliterated*).[37]

(53) a. The witch made the stone disappear. Cf. The witch *obliterated* the stone.
b. He made himself disappear. Cf. He *scrammed*.
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 *trudged* to work.
e. I had the maid go to the store. Cf. I *sent* the maid to the store.
I had the dog attack the stranger. Cf. I *sicced* the 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 instru-

mentalities 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.

Patterns also operate 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/noncausative distinction—that is, are lexicalized for either the noncausative (40a/b) types or the (40c–e) causative types but not for both. The pattern applies to both simplex and complex expressions, as (54) shows.

(54)

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

By contrast, almost all English verbs expressing the material disruption of an object—for example, *break, crack, snap, burst, bust, smash, shatter, shred, rip, tear*—apply equally in both noncausative 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 *demolish*, lacking the autonomous usage (**The shed demolished*).

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'.

(55) *Japanese*
a. Doa ga aita
door SUBJ open (PAST)
"The door opened."
b. Kare wa doa o aketa
he TOP door OBJ open (CAUS PAST)
"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 (40c) and instrument (40d) 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 (40b) resulting-event causation type instead.

2.7 Interaction 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 that bring about a semantic shift from each such 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 'states' seems to involve only (or mainly) the three aspect-causative types listed in (56) (cf. Chafe 1970).

(56) 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.[38] 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.[39] 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 a satellite—yielding the form *lie down*—to signify getting into the posture. And it must be further augmented by an agentive derivation—*lay down*—to refer to putting into the lying posture,[40] as (57) illustrates.

(57) 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.

Unlike English, 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 *-te 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 inducive 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:

(58) 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 tataseta
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'.[41] 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*.[42]

(59) 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 1.5.

Table 1.5
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

For each class of language, table 1.5 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.

Other languages have other means for deriving the nonbasic 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 verbs like *liegen* 'lie' and *sitzen* 'sit'. But it does not derive the inchoative 'getting-into-a-state' type directly from this. Rather, it first derives the agentive 'putting-into-a-state' type, with verbal forms like *legen* and *setzen.* And from this, in the manner of Spanish, it uses the reflexive to get back to the inchoative, with forms like *sich legen* and *sich setzen*. Schematically:

(60) *German*

In the preceding lexicalization patterns, the verb root incorporated only one aspect-causative type. There are further patterns in which the same verb form serves equally for two types, while grammatical augmentation is required for the third. In one pattern of this sort, the 'being-in-a-state' and the 'getting into-a-state' types are represented by the same lexical form, but an augmented form is used for the 'putting-into-a-state' type. The verb root in a pattern like this may be thought to capture a factor common to the two types it represents, namely, the involvement of only a single participant (note that the unrepresented 'putting-into-a-state' type, requiring an agent, involves two participants). By one analysis, modern literary Arabic exemplifies this pattern for posture notions (but see below for an alternative interpretation), as in the following root referring to 'sleeping' or 'lying'.

(61) a. Nām-a ṭ-ṭifl-u ʕalā s-sarīr
{was-lying / lay-down}-he the-child-NOM {on / onto} the-bed
"The child was lying on the bed." / "The child lay down onto the bed."

b. Anam-tu ṭ-ṭifl-a ʕalā s-sarīr
laid-down-I the-child-ACC on(to) the-bed
"I laid the child down onto the bed."

In another pattern, the same verb root is used to express both the inchoative 'entering-into-a-state' and the agentive 'putting-into-a-state' types, while a different formulation is required for the stative 'being-in-a-state' type. The common factor captured by the verb with two usages in this pattern would seem to be 'change-of-state'. In familiar languages, there are no apparent instances of this as the predominant pattern for verbs expressing postures. But if we switch here to another category of states, that of 'conditions' (further treated below), the pattern can be exemplified by English. Here, for instance, the verb *freeze* lexicalizes the condition of 'frozenness' together with either the agentive or the inchoative type. For the stative type, however, the grammatical form *be* + 'past-participle-inflection' must be added, yielding *be frozen*, as in (62).

(62) a. The water was frozen.
b. The water froze.
c. I froze the water.

The remaining possible two-way pattern—where the verb root would be used for both the stative and the agentive types, but not the inchoative—does not appear to have any realization. One reason for such a gap may be that these two types do not share a factor that is common to them both while absent from the inchoative.

Consideration of these two-way cases next brings us to the pattern where the same verb root is used, without any grammatical augment, for all three aspect-causative types. In fact, this pattern seems to be the one English posture verbs are moving toward in a process of change going on now. Thus, 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-nonagentive distinction has in many dialects all but disappeared colloquially, with forms like *lay* or *sit* 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, as (63) illustrates.

(63) a. He lay down/stood up all during the show.
b. He lay 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 lay (?down) there for hours*. And the verb without satellite may be somewhat awkward in colloquial speech for the agentive usage: *?She laid|stood the child on the bed*.

This same lexicalization pattern occurs without qualification in English for several individual verbs of other 'state' categories. One clear example is *hide*, a 'position' verb, as (64) shows.[43]

(64) a. He hid in the attic for an hour. Being in a position
b. He hid in the attic when the sheriff arrived. Getting into a position
c. I hid him in the attic when the sheriff arrived. Putting into a position

We can point to one further lexicalization pattern. Here, the verb root is always accompanied by morphemes with their own aspect-causative meanings, making it difficult to determine whether the verb root itself incorporates any aspect-causative type of its own. Perhaps it does not, and the conclusion to be drawn is that such a verb refers solely to a particular state, abstracted away from all notions of aspect and causation, and that it requires augmentation for *every* aspect-causative indication. If so, then the morphemes that express this augmentation can themselves exhibit some of the same patterns of incorporation as seen earlier for verb roots. Thus, in some cases, there would be distinct morphemes for each of the aspect-causative types. In other cases, a single set of forms would serve for some pair of aspect-causative types, with another set for the third. This latter pattern can be exemplified by Atsugewi. Here, a verb root referring to posture is always surrounded by aspect-causation indicating affixes. And among these, generally, one set serves for both the 'getting-into-a-state' and the 'putting-into-a-state' meanings, while a different set is required for 'being-in-a-state'. This is illustrated in (65).

(65) a.

Verb root	-it^{u}-	'for a linear object to be in//move into/out of/while in a lying posture'
Directional suffix	-mic̓	'down onto the ground'
Inflectional affix set	s- w- '- -^{a}	'I–subject (3rd person–object), factual mood'

/s-'-w-it^{u}-mic̓-^{a}/ ⇒ [sẁit^{h}míc̓]

"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 (3rd person–object), factual mood'

/s-'-w-it^{u}-ak·-^{a}/ ⇒ [sẇit·ák·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 handles the agentive.

2.7.1 Consistency of Patterns 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 their stative lexicalization, with perhaps only inchoative *arise* 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* 'to sit' takes a prefixal satellite to yield the inchoative *considere* 'to sit down', while agentive *inclinare* 'to lean (something) against' takes the reflexive to yield the inchoative *se inclinare* 'to lean (oneself) against'); see (66).

(66)

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'		

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 in this way because its posture verbs are generally lexicalized in the stative, while its condition verbs have the two aspect-causative meanings other than stative.

Table 1.6
Lexicalization patterns 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	patere	patescere	patefacere
	'to be open'	'to open (intr.)'	'to open (tr.)'
Dependent	fractus esse	frangi	frangere
	'to be broken'	'to break (intr.)'	'to break (tr.)'

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 1.6.

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 (67a) and Spanish (67b). Compare (58) and (59) with the following:

(67) a. *Japanese*
i. Mizu ga kootte ita
water SUBJ frozen be (PAST)
"The water was frozen."
ii. Mizu ga kootta
water SUBJ freeze (PAST)
"The water froze."

iii. Mizu o koorasita
water OBJ freeze (CAUSE PAST)
"I froze the water."

b. *Spanish*

i. El agua estaba helada
the water was frozen
"The water was frozen."

ii. El agua se heló
the water REFL froze
"The water froze."

iii. Helé el agua
I-froze the water
"I froze the water."

Comparably, Arabic verbs referring to conditions are lexicalized like posture verbs, with the stative and the inchoative using the same form. Compare (61) with (68).

(68) a. ʕAmiy-a ṭ-ṭifl-u
{was-blind / became-blind}-he the-boy-NOM
"The boy was/became blind."

b. AʕmaY-tu ṭ-ṭifl-a
made-blind-I the-boy-ACC
"I blinded the boy."

2.7.2 Other Aspect-Causative Types There are aspect-causative types other than the three listed in (56) that might seem quite relevant to notions of states. These would involve the transition from being in a state to not being in that state. Such a transition could apply to both the non-agentive and the agentive, as seen in (69).

(69) b′. exiting from a state
c′. removing from a state

However, such types of 'state departure' seem to be under a universal constraint excluding them from at least one type of lexicalization: a verb root can refer to both state location and state entry, but it cannot refer to either of these and also to state departure. Thus, the Arabic verb form for 'be/become blind' cannot also mean 'cease being blind'. Likewise, the English *hide*, as in *He hid*, can refer to 'being in hiding' or 'going into

hiding', but not also to 'coming out of hiding'. Further, by one interpretation, even for a verb root that is lexicalized not for a range of senses but only for a single change-of-state sense, that sense is always state entry, not state departure. Thus, by this interpretation, the basic sense of English *die* is not 'leave death' or 'become not alive', but rather 'enter death' or 'become dead'—as is indeed suggested by the fact that this verb is etymologically related not to adjectival or nominal *live|life* but to *dead|death*.

In addition, state departure—though not excluded from them—seems quite underrepresented among grammatical devices that interact with verb roots. For example, English *hide* cannot be used with departure-indicating satellites or prepositions, either in the postposed location

(70) a. *He hid out of the attic. = He came out of the attic, where he had been hiding.
b. *I hid him out of the attic. = I got him out of the attic, where he had been hiding.

or prefixally:[44]

(71) a. *He unhid from the attic.
b. *I unhid him from the attic.

Comparably, adjectives of condition have ready adjunct verbs or verb-forming affixes to express state location and state entry but, in English and many other languages, not state departure.[45]

(72) be-in-a-state:
be sick

enter-into-a-state:	exit-from-a-state:
get sick	**lose* sick
sick*en*	**de*sick
put-into-a-state:	remove-from-a-state:
make (someone) sick	**break* (someone) sick
sick*en* (someone)	**de*sick (someone)

American Sign Language is similarly constrained. Thus, its signs for conditions (like 'sick') can generally be executed with a number of distinct movement patterns indicating different aspects ('be sick', 'be sick for a long time', 'stay sick', 'become sick', 'become thoroughly sick', 'repeatedly become sick', 'be prone to becoming sick', and so on), but state departure is not among these (*'cease being sick'). The idea must be expressed with a combination of two signs ('be sick' + 'finish').

To be sure, English does have *un-* 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 different one expresses 'from' in French *à/à/de*, Japanese *ni/ni/kara* (though *e* is also used for the 'to' meaning alone), and Atsugewi *-i?/-i?/-uk·a*. English exhibits this pattern in some of its prepositional and relative-interrogative forms, as the sentences in (73) illustrate.

(73) a. She was *behind* the barn. *Where* was she?
b. She went *behind* the barn. *Where* did she go?
c. She came *from behind* the barn. *Where* did she come *from*?

It is not clear why there should be this avoidance of expressing state departure. But in any case, among grammatical elements it is only a tendency, not an absolute. In Atsugewi, verb roots referring to postures and positions (and apparently also conditions) regularly take grammatical elements that indicate state departure, at least in the agentive. We exemplify this with the verb root used previously in (65).

(74)

Verb root	-it^{u}-	'for a linear object to be in// move into/out of/while in-a lying posture'
Directional suffix	-ic̓	'up off something'
Inflectional affix set	s- w- '- -^{a}	'I–subject (3rd person–object), factual mood'

/s-'-w-it^{u}-ic̓-^{a}/ ⇒ [swic̓·úc̓]

"I picked it up off the ground, where it had been lying."

2.8 Personation

As a contrast with the earlier section on causation, we introduce here a semantic category that in most previous treatments has been incorrectly merged with that of causativity. 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. Among causation types, an increase in participants brings along with it an increment in actional content, as in going from the autonomous *The snow melted* to the agentive *John melted the snow*, which indicates an additional action complex on the part of John. Involved here, rather, is a new parameter, one that we will call **personation**, pertaining to the role structure 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.

(75) a. Je raserai Jean
I will-shave, John
"I will shave John."
b. Je me raserai
I myself will-shave
"I will shave."

English, too, has many verbs with this personation type; (76) provides examples.

(76) a. I cut/bandaged/tickled John.
b. I cut/bandaged/tickled $\left\{\begin{matrix}\text{myself}\\ *\text{–}\phi\end{matrix}\right\}$.

But there is a sizable group of English verbs whose simplest form can—in addition to being used to refer to action on another person's body—also express the Agent acting on his own body. This kind of verb thus has

a range of incorporations that includes not only the dyadic personation type, but the monadic type as well, as (77) shows.

(77) a. I shaved.
b. I washed.
c. I soaped up.
d. I bathed.
e. I showered.
f. I scratched (too hard)/Don't scratch!
g. I buttoned up.
h. I dressed.
i. I undressed.
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 (except, as in (78e) and (78j), where the concept is expressed with a verb + noun construction).

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

As already noted, English verbs of the type in (77) 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 (77) that refer only to the monadic type. To express the dyadic type, these verbs must add an inflectional element—usually the benefactive suffix *-iray*. With this set of forms, Atsugewi behaves in a way quite complementary to that of French. One example:

(79) a. *Cause prefix* +

Verb root	cu-sp̓aƛ̓-	'comb the hair'
Inflectional affix set	s- ʾ- w- -[a]	'I–subject'

/s-ʾ-w-cu-sp̓aƛ̓-[a]/ ⇒ [sc̓usp̓áƛ̓[a]]

"I combed my hair."

b. *Cause prefix* +

Verb root	cu-sp̓aƛ̓-	'comb the hair'
Benefactive suffix	-iray	'for another'
Inflectional affix set	m- w- -isahk	'I–subject, thee–object, factual mood'

/m-w-cu-sp̓aƛ̓-iray-isahk/ ⇒ [mcusp̓aƛ̓əré·sahki]

"I combed your hair."

American Sign Language appears to lexicalize exclusively in the monadic personation type for referring to a certain class of actions, those that in any way involve the torso. Signs for such actions intrinsically refer to them as a person would perform them on herself. 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 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.

Note that actions lacking physical contact can also be lexicalized with different personations. For example, the English verb *get* (in the sense of 'go and bring back') is basically monadic, as seen in (80a), but can add a benefactive expression for the dyadic, as in (80b). Complementarily, *serve* is basically dyadic, as in (80d), but can add a reflexive for the monadic type, as in (80c). 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*.

(80) *Monadic* *Dyadic*

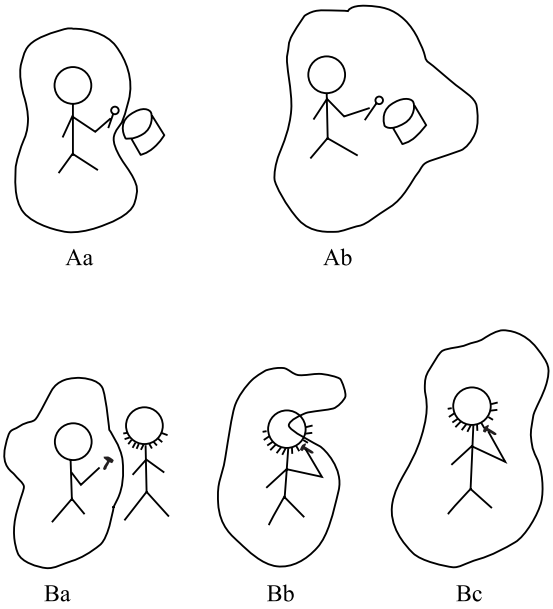
a. I got some dessert from the kitchen. → b. I got some dessert from the kitchen for Sue.

c. I served myself some dessert from the kitchen. ← d. I served (Sue) some dessert from the kitchen.

The semantic category of personation can be conceptualized schematically. Consider an ideational complex to which the category of personation might be applied. In a sentence that refers to such a complex, the predicate (typically a verb) by itself refers literally to a specific portion of the complex, a portion here called an "action." And the subject nominal of the sentence generally refers to an actor within the complex (typically an Agent) that is responsible for the action. As discussed in chapters I-4 and I-8, an unbroken causal linkage is generally conceptualized as progressing—spatially, in the typical case of a physical referent—from the actor to the action that she is responsible for. Accordingly, one can conceptualize an "envelope" enclosing the actor and the action, as well as all causal activity connecting the two.

The schematic conceptualization proposed here is that if the action within the envelope affects some entity outside the envelope, then the ideational complex is understood as dyadic and the sentence that represents it will prototypically be syntactically transitive. But if the envelope encloses all of the ideational complex—apart from any incidental elements that are understood as unaffected by the action within the envelope—then the ideational complex is understood as monadic and the sentence that represents it will prototypically be syntactically intransitive. Accordingly, the schematic envelope proposed here can be termed the **personation envelope** or the **transitivity envelope**.[46]

The accompanying figure represents the two schematic situations just outlined. In (Aa), representing the sentence *The girl is beating the drum*, the envelope encloses 'the girl' as the actor and 'beating' as the action but excludes 'the drum'. This is because the verb *beat* by itself merely implies the presence of a further affected object, but literally refers only to the action that could affect such an object. And this verb is appropriately transitive, requiring the presence of a direct object nominal referring to the affected object. However, in (Ab), representing the sentence *The girl is drumming*, the envelope encloses not only 'the girl' as actor and 'beating' as an activity, but also 'a drum' as an object. This is because the action that the verb *drum* literally refers to includes within its unified compass



components both of a dynamic activity and of engaged physical material. And the verb is appropriately intransitive.

The same schematization can be carried over to the earlier issues involving the reflexive, as represented in part B of the figure. Here, (Ba), representing the sentence *I shaved him*, represents a particular ideational complex as involving basic dyadicity and transitive syntax. The schematic envelope encloses the actor 'I' and the action of 'shaving'—that is, of removing beard by running a razor over a face. But it excludes an affected object 'him', whose face it is that receives the razor action. In (Bb), representing the sentence *I shaved myself*, the envelope again encloses both the actor 'I' and the action of 'shaving', but now it excludes the actor's 'face', treating it as an external affected object. In effect, therefore, this case differs from the preceding one only in that the reflexive here indicates that the face acted on by the razor belongs to the same actor whose arm wields the razor, rather than to a different individual. A situation like this might be called **reflexively dyadic** in personation type. While the verb *shave* here is still transitive, one might want to refer to its syntax distinctively as being **reflexively transitive**. But in (Bc), representing the sentence *I shaved*, the envelope now encloses the whole of the complex in which 'I', as actor, perform the activity of 'shaving' on the 'face' of the same actor,

'I'. This ideational complex is thus here being conceptualized as monadic. The verb *shave* here can be understood as being basically intransitive and as having a literal semantic reference to an action that encompasses both a razor-wielding hand and a beard-bearing face that belong to the same individual.

2.9 Valence

We saw in the sections on causation and personation that patterns in the number and types of arguments adjoining a verb can form the basis for typologies. We now see that the same is true for patterns in the salience accorded such arguments.

2.9.1 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 multiroled 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 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 the Figure as subject, while *emit* requires the Ground as subject—as contrasted 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.

(81) *Valence properties for* emanate*,* emit*, and* radiate

Figure as subject	*Ground as subject*
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.

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.[47] 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.

(82) *Valence properties for* steal*,* rob*, and* rip off

Figure as direct object	*Ground as direct object*
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).

Some verbs—*suffuse* and *drain* are examples—can accommodate their nominals in either the basic Figure-above-Ground precedence or the inverted Ground-above-Figure precedence in both the nonagentive and the agentive. Under inversion, the Figure acquires one of two ''demotion particles.'' It acquires *of* when there is an underlying 'from'-type Path, as with *drain*, and it acquires *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 limited in one respect or another, can be compared. See (83).

(83) a. *Valence patterns for a non-'from'-type Path (F = Figure, G = Ground, A = Agent)*

	Nonagentive	*Agentive*
Basic precedence	Perfume (F) suffused through the room (G).	I (A) suffused perfume (F) through the room (G).
Inverted precedence	The room (G) suffused with perfume (F).	I (A) suffused the room (G) with perfume (F).

b. *Valence patterns for a 'from'-type Path*

	Nonagentive	*Agentive*
Basic precedence	The gasoline (F) drained from the fuel tank (G).	I (A) drained the gasoline (F) from the fuel tank (G).
Inverted precedence	The fuel tank (G) drained of gasoline (F).	I (A) drained the fuel tank (G) of gasoline (F).

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

Actually, this paradigm is abridged from a still larger one (see Talmy 1972: 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 (see Fillmore 1977, Hook 1983).

(84)

	Nonagentive	*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.
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 (see note 31). Thus, the sentence in (85a) can be embedded as in (85b) to yield (85c).

(85) a. I kicked the ball (G) with my left foot (F).
[<I kicked my left foot (F) into the ball (G)]

b. I MOVED the ball (F_2) across the field (G_2) by kicking it (G_1) with my left foot (F_1).

c. I kicked the ball (F) across the field (G) with my left foot ($F_2 \Rightarrow I$).

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 preceding sort. Its prefix *be-* can indicate a shift in secondary focus from the Figure onto the Ground, as (86) suggests.

(86) a. Ich raubte ihm seine Tasche
I stole him(DAT) his(ACC) wallet
"I stole his wallet from him." Figure as direct object
b. Ich *be*raubte ihn seiner Tasche
I SHIFT-stole him(ACC) his(GEN) wallet
"I robbed him of his wallet." Ground as direct object[48]

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 *rob* 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, as (87) illustrates.

(87)

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 prefix *ver-* reverses the perspective to the giver's point of view, see (88).

(88)

sell	bequeath	lend	
*ver*kaufen	*ver*erben	*ver*leihen	*ver*borgen
buy	inherit	borrow	
kaufen	erben	leihen	borgen

This shift in perspective is illustrated in (89).

(89) a. Ich kaufte das Haus von ihm
I bought the house from him
"I bought the house from him."
b. Er *ver*kaufte mir das Haus
he bought(REVERSE) me(DAT) the house
"He sold me the house."

2.9.2 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.[49] 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* (illustrated in (90)), which refer to roughly the same affective situation.[50]

(90) a. That frightens me. Stimulus as subject
b. I fear that. Experiencer as subject

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-en P" (not a passive: the preposition P 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 1.7.

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.[51] While some of its most colloquial verbs (*like, want*) have the Experiencer as subject, the bulk of its vocabulary items for affect focus on the Stimulus, as we see in table 1.8.[52]

By contrast with English, Atsugewi roots appear to have Experiencer subjects almost exclusively. Virtually every affect-expressing verb (as well as adjectives in construction with 'be') elicited in fieldwork was lexicalized with an Experiencer subject. To express a Stimulus subject, these forms take the suffix *-ahẇ*. For one example see table 1.9.[53]

Table 1.7
Derivational patterns for affect verbs focused on the Stimulus or the Experiencer

Stimulus as subject	⇒	*Experiencer as subject*
It frightens me		I am frightened of it
It pleases me		I am pleased with it
It interests me		I am interested in it
Experiencer as subject	⇒	*Stimulus as subject*
I fear it		It is fearful to me
I like it		It is likable to me
I loathe it		It is loathsome to me

Table 1.8
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
comfort	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	irritate	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	appall	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
fancy	respect	prefer	covet	fume over	regret
	esteem	wish for	envy	seethe over	rue
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 1.9
Derivation of Experiencer-subject verb roots to Stimulus-subject in Atsugewi

Experiencer as subject		
verb root:	-lay-	'to consider as good'
Cause prefix:	sa-	'by vision'
derivational suffix:	-im	(no specific meaning: occurs here idiomatically)
inflectional affix-set:	s- '-w- -[a]	'I—subject, 3rd person object'
/s-'-w-sa-lay-im-[a]/ ⇒ [sẇsal·ayíw] "I find it beautiful"		
Derived to; Stimulus as subject		
verb root:	-lay-	'to consider as good'
Cause prefix:	sa-	'by vision'
valence-shifting suffix:	-ahẇ	'from Stimulus to Experiencer'
inflectional affix-set:	'- w- -[a]	'3rd person subject'
/'-w-sa-lay-ahẇ-[a]/ ⇒ [ẇsal·ayáhẇa] "It is beautiful"		

It may be that the boundaries of the 'affect' category here are too encompassive or misdrawn for good comparative assessments. There 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 1.8 have Experiencer subjects, and this arrangement might be widespread, if not universal. Thus, although colloquial expressions with the opposite valence occur in other languages

(91) a. *Yiddish*
Mir vilt zikh esn
me-to wants self to-eat
b. *Samoan*
'Ua sau ('iate 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

Table 1.10
'Cognitive' Verbs

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

should separate out an 'assessment' category for notions like 'esteem', 'value', 'prize'; in table 1.8 the English verbs for these notions again all require Experiencer subjects. We had already separated out a 'cognitive' category for the more intellective 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 1.10.

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

3 SATELLITES

In section 2, we have examined a connected set of semantic categories that appear lexicalized in an open-class type of surface element, the verb root. Here, to demonstrate the parallelism and to augment earlier typologies, we will examine roughly the same set of semantic categories, but now lexicalized in a closed-class type of surface element. This is an element

that has not been generally recognized as such in the linguistic literature. We term it the **satellite to the verb**—or simply, the **satellite**, abbreviated "Sat." It is the grammatical category of any constituent other than a noun-phrase or prepositional-phrase complement that is in a sister relation to the verb root. It relates to the verb root as a dependent to a head. The satellite, which can be either a bound affix or a free word, is thus intended to encompass all of the following grammatical forms, which traditionally have been largely treated independently of each other: English verb particles, German separable and inseparable verb prefixes, Latin or Russian verb prefixes, Chinese verb complements, Lahu nonhead "versatile verbs" (see Matisoff 1973), Caddo incorporated nouns, and Atsugewi polysynthetic affixes around the verb root. A set of forms that can function as satellites in a language often overlaps partially, but not wholly, with a set of forms in another grammatical category in that language, generally the category of prepositions, verbs, or nouns. Thus, English satellites largely overlap with prepositions—but *together, apart*, and *forth*, for example, serve only as satellites, while *of, from*, and *toward* serve only as prepositions. In a similar way, Mandarin satellites largely overlap with verb roots. And in Caddo, the satellites of one type largely overlap with noun roots. One justification for recognizing the satellite as a grammatical category is that it captures an observable commonality, both syntactic and semantic, across all these forms—for example, its common function across one typological category of languages as the characteristic site in construction with the verb for the expression of Path or, more generally, of the "core schema" (chapter II-3).

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 earlier, such as English verb particles, Latin verb prefixes, Chinese resultative complements, and the noninflectional affixes in the Atsugewi polysynthetic verb. Seemingly also deserving satellite status are such compounding forms as the first element in English *(to) test-drive*. Probably meriting satellite status are incorporated nouns, like those in the Caddo polysynthetic verb, while pronominal clitics like those in French may merit the designation less, and full noun phrases are entirely excluded. It is uncertain what status should be accorded such verb-phrase forms as inflections, an auxiliary, a negative element, a closed-class particle like English *only* or *even*, or a free adverb semantically related to the verb root. It is further not clear whether this indeterminacy is due to the present theory's early stage of development or to a clinelike character for the satellite category.

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 a direct object noun phrase.

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 ◂ that, in effect, "points" from the satellite to its head, the verb root).

(92) a.	*Satellite*	◂over	◂mis-
b.	*Verb complex*	start ◂over	fire ◂mis-
c.	*Example sentence*	The record started over.	The engine misfired.

As many as four such satellites can appear together in a verb complex, as in (93). (Here, *right*—belonging to a morpheme set that also includes *way* and *just*—is semantically dependent on the following satellite as its modifier, but it fills a syntactic slot and behaves phonologically like a prototypical satellite.)

(93) Come ◂right ◂back ◂down ◂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 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 1.11.

Another kind of satellite is the second element of a verb compound in Chinese, called by some the "resultative complement." Another example is any nonhead word in the lengthy verbal sequences typical of 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 noninflectional affixes on the verb root in the Atsugewi "polysynthetic verb."[54] We now examine a range of types of semantic material that appear in satellites.

3.1 Path

The satellites in English are mostly involved in the expressions of Path. Generally, the Path is expressed fully by the combination of a satellite and a preposition, as in (94a). But usually the satellite can also appear alone, as in (94b). The ellipsis of the prepositional phrase here generally requires

Table 1.11
Satellites as verb prefixes in German, Latin, and Russian

	A. German	
	"*separable*" *prefix*	"*inseparable*" *prefix*
satellite	◂entzwei	◂zer-
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. Latin	C. Russian
	prefixes	*prefixes*
satellite	◂in-	◂v-
verb complex	volare ◂in- (involare)	letet' ◂v- (vletet')
ex. sentence	Avis involavit "The bird flew in"	Ptica vletela "The bird flew in"

that its nominal be either a deictic or an anaphoric pronoun (i.e., that the Ground object be uniquely identifiable by the hearer).[55]

(94) a. I ran *out of* the house.
b. (After rifling through the house,) I ran *out* [i.e., ... 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 object. Thus this symbol, together with ◂, encloses the full surface expression (the satellite plus preposition) that specifies Path, as illustrated in (95a). 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 (95b).

(95) a. ◂out of>
b. F ... ◂out (of> G)

English has quite a few Path satellites. Some are presented in the sentences in (96), here without any final Ground-containing phrase.

(96) *Some Path satellites in English*

I ran in_1.	He ran *across*.	It flew up_1.
I ran out_1.	He ran *along*.	It flew *down*.
I climbed *on*.	He ran *through*.	I went *above*.
I stepped off_1.	He ran *past/by*.	I went *below*.
He drove off_2.	She came $over_1$.	I ran up_2 (to her).

I stepped *aside*.	It toppled *over*$_2$.	She followed along *after* (us).
She came *forth*.	She spun *around*$_1$.	They slammed *together*.
She walked *away*.	She walked *around*$_2$.	They rolled *apart*.
He went *ahead*.	She walked (all)	It shrank *in*$_2$.
He came *back*.	*about*.	It spread *out*$_2$.

In addition, English has a number of Path satellites that would not be generally recognized as such—that is, as being in the same semantic category as those of (96).

(97) *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-	∅> G	The eaves of the roof overhung the garden.
F ...	◂under-	∅> 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 in (98) and (99) for Russian (see Talmy 1975b for an extensive treatment of such forms in this language).[56]

(98) *Some Path expressions in Russian*

F ... ◂v- v + ACC> 'into'
F ... ◂vy- iz + GEN> 'out of'
F ... ◂pere- čerez + ACC> 'across'

F . . . ◂pod- pod + ACC> 'to under'
F . . . ◂pod- k + DAT> 'up to'
F . . . ◂ob- ob + ACC> 'to against'
F . . . ◂ot- ot + GEN> 'off a ways from'
F . . . ◂na- na + ACC> 'onto'
F . . . ◂s- s + GEN> 'off of'
F . . . ◂pro- mimo + GEN> 'past'
F . . . ◂za- za + ACC> 'to behind/beyond'
F . . . ◂pri- k + DAT> 'into arrival at'
F . . . ◂do- do + GEN> 'all the way to'
F . . . ◂iz- iz + GEN> '(issuing) forth from'

(99) a. Ja vbežal (v dom)
I in-ran (into house(ACC))
"I ran in (-to the house)."
b. Ja 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 (see (98) and (99)), 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 (98) and (99))—the two occurrences are still formally distinct. However, a problem arises for English, which, perhaps alone among Indo-European languages, has come to regularly position satellite and preposition next to each other in a sentence. Nevertheless, there are still ways in which the two kinds of forms—satellites and prepositions—distinguish themselves.

To begin with, the two classes of forms do not have identical memberships: there are forms with only one function or the other. Thus, as already noted, *together, apart, away, back*, and *forth* are satellites that never act as prepositions, while *of, at, from*, and *toward* are prepositions that never act as satellites.[57] 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*).

Next, there are differences in properties. First, with regard to phrase structure and co-occurrence, a satellite is in construction with the verb, while a preposition is in construction with an object nominal. Consistent with this fact, when a Ground nominal is omitted—as it generally may be when its referent is known or inferable—the preposition that would have appeared with that nominal is also omitted, while the satellite remains. Consider, for example, the sentence *He was sitting in his room and then suddenly ran out (of it)*. If the *it* is omitted, the preposition *of* that is in construction with it must also be omitted. But the satellite *out*, which is in construction with the verb *ran*, stays in place. Moreover, a sentence can contain a satellite in construction with the verb with no notion of any object nominal, even an omitted one, as in *The log burned up*. But a preposition always involves some object nominal—though this might have been moved or omitted, as in *This bed was slept in*, or *This bed is good to sleep in*.

Second, with regard to positional properties, a preposition precedes its nominal (unless this has been moved or omitted), as in (100a). But a free satellite (i.e., one not prefixal to the verb) has these more complex characteristics: It precedes a preposition if one is present, as in (100b). It either precedes or follows a full NP that lacks a preposition, as in (100c), though it tends to follow the NP if that location places it directly before a subsequent preposition, as in (100d). And it must follow a pronominal NP that lacks a preposition, as in (100e).

(100) a. I ran from the house/it.
b. I ran away from the house/it.
c. I dragged away the trash. / I dragged the trash away.
d. ?I dragged away the trash from the house. / I dragged the trash away from the house.
e. *I dragged away it (from the house). / I dragged it (away from the house).

Third, with regard to stress, in the unmarked case and with only pronominal objects (which are more diagnostic than nonpronominal objects), a preposition is unstressed and a satellite is stressed, as can be determined for the sentences in (100). In fact, in a sentence whose NPs are all prono-

minal, a satellite—or the final satellite if there are more than one—is generally the most heavily stressed word of all, as in *I dragged him away from it*, or in *You come right back down out from up in there*.

Finally, the English Path system has a special feature. There are a number of forms like *past* that behave like ordinary satellites when there is no final nominal, as in (101a), but that, if there is a final nominal, even a pronominal one, appear directly before it and get heavy stress. That is, they have the prepositioning property of a preposition but the stress of a satellite.

(101) a. (I saw him on the corner but) I just drove *pást*.
b. I drove *pást* him.

Because of its distinct dual behavior, the latter usage of a form like *past* can be considered to exemplify a new (and perhaps rare) grammatical category—a coalesced version of a satellite plus a preposition that could be termed a **satellite preposition** or "satprep"—as suggested symbolically in (102a). Alternatively, it can be considered an ordinary satellite that happens to be coupled with a zero preposition, as suggested in (102b).

(102) a. F . . . ◂past▸ G
b. F . . . ◂past ∅▸ G

Examples of other satpreps in English are *through*, as in *The sword ran through him*, and *up*, as in *I climbed up it*. Indeed, despite its apparent bimorphemic origin, the form *into* now acts like a satprep that is phonologically distinct from the combination of the satellite *in* followed by the preposition *to*, as seen in *The bee's sting went into him*, versus *Carrying the breakfast tray, the butler went in to him*. On the same phonological basis, *out of* also behaves like a single satprep unit, by contrast with the sequence *out from*, as in *She ran out-of it* versus *She ran out from behind it*. Perhaps English has developed the satprep form because it has come to regularly juxtapose its inherited satellite and preposition forms. But, as will shortly be seen, Mandarin, for one other language, also exhibits a homolog of the satprep. A summary of the various satellite and preposition distinctions in English is given in (103).

(103) a.	*Preposition + NP*	(Mary invited me to her party.) I went to it.
b.	*Satellite*	(I heard music on the second floor.) I went úp.

c. *Satellite* + *preposition* + *NP*	(There was a door set in the wall.) I went úp to it.
d. *Satprep* + *NP*	(There was a stairway to the second floor.) I went úp it.
e. *Satellite* + *NP*	(They wanted the phone on the second floor.) I took it úp.

Mandarin Chinese has Path satellites and constructions that are entirely homologous with those of English. A number of these satellites are listed in (104) (they variously may, cannot, or must be further followed by the satellite for 'hither' or for 'thither').

(104)

←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 in (105) and (106) in two different sentences that receive the same translation in English.

(105) F . . . ←guò (-∅> G-biān) (coalescence of satellite and preposition)
past side
Píng-zi piāo guò shí-tóu páng-biān
bottle float past rock('s) side
'The bottle floated past the rock.'

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

3.2 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 its/ . . . associated opening'. These forms are illustrated in (107) in sentences, optionally followed by prepositional phrases that amplify the meanings already present in them.

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

The reason it can be concluded that such satellites incorporate a Ground in addition to a Path is that they are informationally complete with respect to that Ground, rather than anaphoric or deictic. Accordingly, a discourse can readily begin with their use, as in *The President swung the White House gate shut and drove home*. By contrast, a Path satellite is informationally complete with respect to the Path, but it only indicates a type of Ground and, by itself, can only be anaphoric or deictic with respect to any particular instantiation of such a Ground. Thus, while English *in* indicates an enclosure as Ground, it cannot by itself refer to a particular enclosure, as seen in *The President drove in*. For that, it must be accompanied by some explicit reference to the Ground object, as in *The President drove into a courtyard*.

Atsugewi is one language that has such Path + Ground satellites as a major system.[58] It has some 50 forms of this sort. We can illustrate the system by listing the 14 or so separate satellites that together are roughly equivalent to the English use of *into* with different particular nominals. (A plus sign here indicates that the satellite must be followed by one of *-im*/*-ik·*, 'hither'/'thither'.)

(108) *Path + Ground satellites in Atsugewi*

-iċt	'into a liquid'
-cis	'into a fire'
-isp -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)
-i̓k̓s^{u} +	'into a corner' (e.g., a room corner, the wall-floor edge)
-mik·	'into the face/eye (or onto the head) of someone'
-mi̓c̓	'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)
-i̓k̓s	'horizontally into (or onto) an object above the ground' (e.g., the side of tree trunk)

Instances of the use of this satellite system can be seen in the Atsugewi examples appearing earlier—(36a) to (36c), (65a), (65b), and (74). Two further examples are given in (109).

(109) a.

Verb root	-s̓t̓ a̓q̓-	'for runny icky material to move/be located'
Directional suffix	-ipsn^{u}	'into a volume enclosure'
Deictic suffix	-ik·	'hither'
Cause prefix	ma-	'from a person's foot/feet acting on (the Figure)'
Inflectional affix set	'- w- -^{a}	'3rd person–subject, factual mood'

/'-w-ma-s̓t̓a̓q̓-ipsn^{u}-ik·-^{a}/ ⇒ [m̓a·s̓t̓a̓q̓ipsnuk·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, 3rd person–object, factual mood'

/m-w-phu-lup-mik·-[a] ⇒ [mphol·úp[h]mik·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.''

3.3 Patient: (Figure/)Ground

Another type of satellite is one that indicates the Patient of an event being referred to. Such satellites constitute a major system, for example, in ''noun-incorporating'' Amerindian languages. 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 nonmotion examples, with (110a) showing the Patient as subject in a nonagentive sentence, and (110b) and (110c) showing it as direct object in agentive sentences.

(110) a. ʔínikuʔ hák-*nisah*-ni-káh-saʔ ⇒ [ʔínikuʔ 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 kanidaʔkah]
milk liquid-find-PAST
Literally: 'He liquid-found the milk.'
Loosely: ''He found the milk.''

c. widiš *dáʔn*-yi-daʔk-ah ⇒ [widiš dânnidaʔkah]
salt powder-find-PAST
Literally: 'He powder-found the salt.'
Loosely: ''He found the salt.''

Without the independent noun, the last example would work as in (111).

(111) *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 the following locative example.

(112) 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:

(113) 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 ⇒ [tisáničáywakkah]
house-penetrate/traverse-PAST
Literally: 'He-house-traversed.'
Loosely: "He went through the house."

3.4 Manner

An uncommon type of satellite 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 (114).

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

We list a selection of Nez Perce Manner prefixes in (115). Note that this prefix system includes not only types of locomotive manners but extends as well to types of Concomitance, both of affect ('in anger') and of activity ('on the warpath').

(115) *Nez Perce Manner prefixes*

ʔipsqi-	'walking'
wilé·-	'running'
wat-	'wading'
siwi-	'swimming-on-surface'
tuk^{w}e-	'swimming-within-liquid'
we·-	'flying'
tu·ḱe-	'using a cane'
ceptukte-	'crawling'
tuḱweme	'(snake) slithering'
wu·l-	'(animal) walking/(human) riding (on animal at a walk)'
quqú·-	'(animal) galloping/(human) galloping (on animal)'
tiq̓e-	'(heavier object) floating-by-updraft/wafting/gliding'
ʔiyé·-	'(lighter object) floating-by-intrinsic-buoyancy'
wis-	'traveling with one's belongings'
kipi-	'tracking'
tiẇek-	'pursuing (someone: D.O.)'
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 immediately following the Path verb, as in (116).

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

Such gerunds might in time evolve into a closed-class system of fixed postposed satellites, and perhaps even further into suffixes on the verb. One could thus imagine the few kinds of changes that would turn the Spanish system for expressing Motion into a homolog of the Nez Perce system.

3.5 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 nonagentive 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 30 forms. 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 in (117). They are grouped according to the kind of instrumentality they specify. As in other Hokan languages, they appear as short prefixes immediately preceding the verb root. Instances of these satellites in use in a verb have appeared in examples (36a) to (36c) as well as in (109a) and (109b). In addition, section 4 of chapter II-2 presents the Cause satellites with elaborated semantic descriptions and as used within numerous examples of verbs.

(117) *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)
←miw- ‘from heat/fire acting on P’

Objects in action

←cu- ‘from a linear object acting axially on P’ (e.g., 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’
←ru- ‘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’
←pri- ‘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’

Table 1.12
Typology of Motion verbs and their satellites

	The particular components of a Motion event characteristically represented in the:	
Language/language family	Verb root	Satellite
A. Romance Semitic Polynesian	Motion + Path	A. ∅
B. Nez Perce		B. Manner
C. Caddo		C. (Figure/)Ground [Patient]
Indo-European (not Romance) Chinese	Motion + Co-event	Path
Atsugewi (most northern Hokan)	Motion + Figure	Path + Ground and Cause

3.6 Motion-Related Satellites: Extending the Motion Typology

Table 1.2 (section 2.4) showed the three major categories into which languages fall in their treatment of Motion. The typology was based on which component of a Motion event is characteristically expressed in the verb root (together with 'fact of Motion', which always appears there). For each such language type, the next issue is where the remaining components of the Motion event are located. The satellite is the most diagnostic syntactic constituent to look at after the verb, and so we can make a revealing subcategorization by seeing which Motion components characteristically appear in the satellites that accompany the verb (see table 1.12).[59]

3.6.1 Verb-Framed and Satellite-Framed Systems As noted, the typology summarized in this table is based on looking at selected syntactic constituents—first the verb root and then the satellite—to see which components of a Motion event characteristically show up in them. But a complementary typology could be based on looking at selected components of a Motion event to see which syntactic constituents they characteristically show up in. This latter approach is adopted in chapter II-3. As observed there, the typologically most diagnostic component to follow is the Path. Path appears in the verb root in "verb-framed" languages such as Spanish, and it appears in the satellite in "satellite-framed" languages

such as English and Atsugewi. Further, as a major generalization over the typology that has been treated in the present chapter, where Path appears, there, too, appear four other kinds of semantic constituents: aspect, state change, action correlation, and realization.

3.6.2 Typological Shift and Maintenance Tracing the route by which a language shifts its typological pattern for the expression of Motion events—or indeed, maintains its pattern while other changes are ongoing—can be a rich research area for diachronic linguistics. We can suggest some processes here.

Consider first some forms of change and maintenance within Indo-European. For their characteristic representation of Motion events, Latin, classical Greek, and Proto-Germanic all exhibited the presumably Indo-European pattern of using Co-event-conflating verb roots together with Path satellites that formed prefixes on the verb roots. Perhaps because of phonological changes that rendered the Path prefixes less distinct from each other and from the verb roots, all three languages apparently became unable to maintain their inherited pattern. Both Germanic and Greek proceeded to develop a new set of Path satellites that largely supplanted the prior set. In German, for example, a few of the original Path satellites continue on as "inseparable prefixes," while the new set comprises the much more numerous "separable prefixes." This development of a fresh Path satellite system permitted the maintenance of the inherited pattern for representing Motion events with Co-event verb conflation.

The languages arising from Latin, on the other hand, each developed a new system of Path-conflating verbs, rather than reestablishing the Path satellite system. In this process, each of the daughter languages formed its set of Path verbs in its own way by variously coining new verbs or shifting the semantics of inherited verbs so as to fill out the basic directional grid of the new Path verb system. At the same time, these languages may have undergone the complementary change of advancing their gerundive constructions for the expression of Manner and Cause. The factors that may have tilted one language toward reestablishing its typological category and another language toward shifting to another category must yet be discerned.[60]

From its classical to its contemporary form, Chinese appears to have undergone a typological shift in a direction just the reverse of that exhibited by the Romance languages: from a Path-conflation pattern to a Co-event-conflation pattern (see Li 1993). Classical Chinese had a full set of

Path verbs used as main verbs in the representation of Motion events. Through the development of a serial verb construction, these Path verbs have progressively come to have their main occurrence as second-position elements following a Manner/Cause-conflating verb. While the serial verb interpretation is still available, these second-position elements appear to have been incrementally turning into a system of Path satellites following a Manner/Cause main verb. Favoring this reinterpretation is the fact that some of the morphemes with clear Path senses in second position have become less colloquial or obsolescent or obsolete as main verbs, or that in their usage as a main verb, they have meanings only partially or metaphorically related to their second-position Path sense.

3.6.3 Cognitive Underpinnings of Typological Shift and Maintenance

Section 2.4 and section 3 up to the present point have outlined the cross-linguistic range of meaning-form patterns for expressing a Motion situation. This range has been seen to constitute a structured typology: it includes some alternative patterns with perhaps equal priority of occurrence, it includes some patterns hierarchically ranked in priority, and it excludes some patterns. Although this typological structuring among patterns must have its basis in human cognitive organization, exactly how it is based there is not clear. It might be an innate part of the language system in our cognition, or it might arise secondarily as a consequence of other cognitive properties or from the effects of external exigencies on cognition. Whatever its exact basis, this typological structure is largely responsible for the long-range diachronic maintenance of a pattern or shift from one pattern to another in a language.

This long-range effect is the cumulative result of speakers' numerous moment-to-moment "choices" in expression. Speakers opt among alternatives of expression through cognitive processing that accords with their cognitively based structural typology. Such choices sometimes yield nonce forms, innovative expressions, and constructions that "push the envelope" of the language's current structure. In such novel formations, speakers may tend to shift more easily among equally ranked patterns, to shift toward a more highly ranked pattern or to maintain an already highly ranked one, and to avoid excluded patterns. Of course, momentary speaker choices and their cumulative diachronic effect respond not only to cognitively based typological structure, but also to other cognitive structures pertinent to language. The latter might include a requirement for an adequate number of lexical distinctions within certain semantic areas

(such as that of Paths undertaken with respect to Ground objects), or a tendency toward maintaining the overall semantic organization of the language (see chapter II-4). Further, speaker choices arise not only in a direct way from such typological and other cognitive structures, but also indirectly from exposure to other speakers' choices (themselves arising from the counterpart cognitive structures within the other speakers). That is, the diachronic effect actually arises cumulatively from two forms of cognitive processing, one responding to typological structure and the other to interpersonal interaction.

In sum, the diachronic maintenance or change of universals and typologies of concept structuring in language results cumulatively from ongoing cognitive processes in correlation with relatively stable structures in cognition. Considerations like the preceding and their future elaboration may eventually help unify our understanding of concept structuring, typology (in the general sense that includes universality), and process (in the general sense that includes structure) in the cognitive organization of language.

3.7 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.

(118) *English aspect satellites (V = 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/worded 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 nonintegral/denatured) state'
The log burned up in two hours (cf. The log burned for one hour before I put it out).
The dog chewed the mat up in 20 minutes (cf. 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).

(119) *Russian aspect satellites*

←po- 'V for a while'
Ja poguljal
I "po"-strolled
"I strolled about for a while."
Xočets'a poletat' na samolëte
wants-REFL "po"-fly on airplane
"I'd like to fly for a while on a plane (i.e., take a short flight)."

←pere-	'V every now and then' Perepadajut doždi "pere"-fall rains (N) "Rains fall (It rains) every now and then."
←za-	'start Ving' Kapli doždja zapadali odna za drugoj drops rain-GEN "za"-fell one after another "Drops of rain began to fall one after another."
←raz- + REFL	'burst out Ving' Ona rasplakalas' she "raz"-cried-REFL "She burst out crying."
←pro-/←pere-	'complete the process of Ving' Pivo perebrodilo beer "pere"-fermented "The beer has finished fermenting."
←po-	'V as one complete act' On eë poceloval he her "po"-kissed "He kissed her" (vs. was kissing, kept kissing, used to kiss).
←na- + REFL	'V to satiation' On naels'a he "na"-ate-REFL "He ate his fill."
←s-	'V and de-V as one complete cycle' [only with motion verbs] Ja sletal v odin mig na počtu I "s"-flew in one moment to the 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 indicates 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

Table 1.13
Atsugewi aspect satellites' meanings

V's action is related to:	
the general temporal flow	*an ongoing locomotory event*
almost V	go and V
still V	go Ving along
V repeatedly	come Ving along
V again/back, reV	V in passing
start Ving	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	

one of moving along (see Wilkins' (1991) "associated motion"). In translation, these forms can be represented as in table 1.13. We can illustrate the second satellite type as in (120).

(120) *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–subject (3rd person–object), factual mood'

Independent noun taƙ̓i· 'acorn(s)'

Nominal marker c

/s-'-w-acp-ikc-[a] c taƙ̓i·/ ⇒ [sẇacpík[h]ca c taʔƙ̓í·]

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."[61]

3.8 Valence

In section 2.9 we saw satellites (German *be-* and *ver-*, Atsugewi *-ahẇ*) 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, they determine the grammatical relations of the surrounding nominals. We look at this situation now.

3.8.1 Satellites Determining the Figure-Ground Precedence Pattern of the Verb Consider the Path satellites (or satellite + preposition combinations) referring to surfaces in (121).

(121) a. Water poured *onto* the table. 'to a point of the surface of'
b. Water poured *all over* the table. 'to all points of the surface of'

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

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

However, English has no form comparable to *all over* for interiors, as (122b) suggests.

(122) b. *Water poured all into/? the tub. 'to all points of the inside of'

A new locution must be resorted to. This locution, moreover, differs from the others in that it has the reverse valence requirements: the Figure as prepositional object and the Ground (in nonagentive sentences) as subject.

(123) The tub poured *full of* water.

By the opposite token, the satellite for surfaces does not allow this reverse valence arrangement, as (124) indicates.

(124) *The table poured all over with/of water.

This same pattern applies as well to agentive sentences, except that what was the subject nominal is now the direct object.

(125) *'surfaces'*
a. I poured water onto the table.
b. I poured water all over the table.
(*I poured the table all over with/of water.)

'interiors'

c. I poured water into the tub.
(*I poured water all into the tub.)
d. I poured the tub full of water.

Using the earlier notation, the valence requirements of these satellites can be represented as in (126).

(126) a. F . . . ◄on (-to> G)
b. F . . . ◄all-over (∅> G)
c. F . . . ◄in (-to> G)
d. F . . . ◄full (-of> F)

With the concept of a precedence hierarchy among grammatical relations that places subject and direct object above prepositional object, we can say that in English the notion of a 'filled surface' expressed in a satellite requires the basic Figure-above-Ground, or F-G, precedence, while the notion of a 'filled interior' requires the reverse Ground-above-Figure, or G-F, precedence.

In many languages, certain notions expressed in satellites require one or the other of these same precedence patterns. For example, in Russian, the notion 'into' can only be in the basic F-G precedence pattern, as seen in (127).

(127) a. Ja v-lil vodu v stakan
I in-poured water(ACC) in glass(ACC)
"I poured water into the glass."
b. *Ja v-lil stakan vodoj
I in-poured glass(ACC) water(INSTR)
*"I poured the glass in with water."

By contrast, the notion 'all around' (i.e., 'to all points of the surrounding surface of') requires the reversed G-F precedence pattern:

(128) a. *Ja ob-lil vodu na/? sabaku
I circum-poured water(ACC) on dog(ACC)
*"I poured water all round the dog."
b. Ja ob-lil sabaku vodoj
I circum-poured dog(ACC) water(INSTR)
"I poured the dog round with water."

Accordingly, these satellites can be represented notationally as in (129).

(129) a. F ... ◂v- (v + ACC> G)
b. G ... ◂ob- (∅ + INSTR> F)

Outside Indo-European, Atsugewi exhibits similar cases of Path satellites requiring either basic F-G or reversed G-F precedence. Two such satellites, respectively, are *-cis* 'into a fire' and *-mik·* 'into someone's face' (represented in (130) as *afire* and *aface*).

(130) a. /ac^{h} ∅- s-'-i:-^{a} s-'-w-ra+pl̓-cis-^{a} c ahẇ-iʔ/
water OBJ- TOPICALIZER INFL-pour-afire NP fire-to
⇒ [ʔác^{h}·i se· sẇlap^{h}l̓íc^{h}·a c ʔahẇíʔ]
'I-poured-afire water (D.O.) (F) campfire-to (G)'
"I threw water over the campfire."
b. /ac^{h}- aʔ t- s-'-i:-^{a} s-'-w-ra+pl̓-mik··^{a} c aẇtih/
water-with NONOBJ- TOPICALIZER INFL-pour-aface NP man
⇒ [ʔac^{h}·ʔá c^{h}e· sẇlap^{h}l̓ím·ik·a c ʔáẇte]
'I-poured-aface man (D.O.) (G) water-with (F)'
"I threw water into the man's face" ("I threw the man aface with water").

In some cases, a Path satellite can be used with either valence precedence. English *through* works this way in usages like the examples in (131).

(131) (*it* = 'my sword')
a. I (A) ran it (F) *through* him (G).
b. I (A) ran him (G) *through* with it (F).

Of these two usages of *through*, the former is actually a satellite preposition. Both usages would appear in our formula representation as in (132).[62]

(132) a. F ... ◂through> G
b. G ... ◂through (with> F)

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 separable verb prefixes for directional 'in', *arayn-* and *ayn-*, work as in (133) (see chapter II-5).

(133) a. F ... ◂arayn- (in> G) '(directional) in F-G'
G ... ◂ayn- (mit> F) '(directional) in G-F'

b. Ikh hob nishtvilndik arayn-geshtokhn a dorn (F) in ferd (G)
I have accidentally in(F-G)-stuck a thorn in-the horse
"I stuck a thorn into the horse."
c. Ikh hob nishtvilndik ayn-geshtokhn dos ferd (G) mit a dorn (F)
I have accidentally in (G-F)-stuck the horse with a thorn
"I stuck the horse (in) with a thorn."

3.8.2 Satellites Requiring Direct Object to Indicate 'Bounded Path'

Several Indo-European languages have the same pattern for distinguishing between bounded and unbounded Paths through the use of two parallel constructions. These constructions differ with respect to a valence-controlling satellite. When the Path is bounded and is completed 'in' a quantity of time, the verb has a Path satellite that requires the Ground as direct object. 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 prepositional object. Russian exhibits this pattern. The satellites illustrated here are *ob-* 'circum-', present in (134ai) but not (134aii), *pro-* 'length-', present in (134bi) but not (134bii), and *pere-* 'cross-', present in (134ci) but not (134cii).

(134) a. i. Satelit obletel zemlju (za 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 d'na)
satellite(NOM) flew-along around earth(GEN) for 3 days
"The satellite flew around the earth for 3 days."
b. i. On probežal (vsju) ulicu (za 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 (za 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 potom ostanovils'a
he ran-along across street(ACC) for 2 seconds and then stopped
"He ran across the street for 2 seconds and then stopped."

A comparable pattern may exist in German, though presently with varying degrees of colloquiality. In this pattern, the inseparable form of a Path satellite is used for the transitive construction. The satellites illustrated

here are inseparable *über-* 'cross-' and *durch-* 'through-', present in (135a) but not (135b).

(135) a. Er überschwamm/durchschwamm den Fluss in 10 Minuten.
he over-swam/through-swam the river(ACC) in 10 minutes
"He swam across/through the river in 10 minutes."
b. Er schwamm schon 10 Minuten (über/durch den Fluss), als das Boot kam.
he swam already 10 minutes over/through the river (ACC), when the boat came
'He had been swimming (across/through the river) for 10 minutes when the boat came.'

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 the reversed G-F precedence pattern, 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?

4 SALIENCE IN THE VERB COMPLEX

A theoretical perspective that encompasses both sections 2 and 3 pertains to *salience*—specifically, 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 (see chapter I-4). With regard to such salience, there appears to be an initial universal principle. Other things being equal (such as a constituent's degree of stress or its position in the sentence), a semantic component is backgrounded by expression in the main verb root or in any closed-class element, including a satellite—hence, anywhere in the main verb complex. Elsewhere, though, it is foregrounded. This can be called the principle of **backgrounding according to constituent type**.

For example, the first two sentences in (136) are virtually equivalent in the total information that they convey. But they differ in that the fact of the use of an aircraft as transport is foregrounded in (136a) due to its representation by an adverb phrase and the noun that it contains, whereas it is an incidental piece of background information in (136b), where it is conflated within the main verb.

(136) a. I went by plane to Hawaii last month.
b. I flew to Hawaii last month.
c. I went to Hawaii last month.

The following second principle appears to serve as a companion to the preceding principle. A concept or a category of concepts tends to be expressed more readily where it is backgrounded. That is, speakers tend to opt for its expression over its omission more often where it can be referred to in a backgrounded way than where it can only be referred to in a foregrounded way. And it tends to be stylistically more colloquial, or less awkward, where it can be backgrounded than where it must be foregrounded. This can be called the principle of **ready expression under backgrounding**. For instance, a Manner concept—such as, the use of aeronautic transport, as in the preceding example—is probably expressed more readily—that is, is expressed more frequently and colloquially—when represented in a backgrounding constituent, like the main verb of (136b), than when represented in a foregrounding constituent, like the adverb phrase of (136a).

This second principle itself has a companion: Where a concept is backgrounded and thus is readily expressed, its informational content can be included in a sentence with apparently low cognitive cost—specifically, without much additional speaker effort or hearer attention. This third principle can be called **low cognitive cost of extra information under backgrounding**. Thus, (136b), in addition to expressing the same informational content as (136c), including the specific concept of translocation, adds to this the fact that this translocation was accomplished through the use of aeronautic transport. But this additional concept is included, as it were, "for free," in that (136b) can apparently be said as readily, and with as little speaker or hearer effort, as the less informative sentence in (136c). Finally, a consequence of the third principle is that a language can casually and comfortably pack more information into a sentence where it can express that information in a backgrounded fashion than can another language—or another sector of usage within the same language—that does not permit the backgrounded expression of such information. This can be called the principle of **ready inclusion of extra information under backgrounding**.

This fourth principle can be demonstrated with respect to the present issue of differential salience across different language types, as well as across different sectors of a single language. Languages may be quite comparable in the informational content that they can express. But 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 (137).

(137) The man ran back down into the cellar.

In this rather ordinary sentence, English has backgrounded—and hence, by the fourth principle, been readily able to pack in—all of 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 almost 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. Again by the fourth principle, such foregrounded information is not readily included and, in fact, an attempted inclusion of all of it in a single sentence can be unacceptably awkward. Thus, in the present case, Spanish can comfortably express either the Manner alone, as in (138a), or one of the Path notions together with a gerundively expressed Manner, as in (138b) to (138d). For acceptable style, further components must either be omitted and left for possible inference, or established elsewhere in the discourse:

(138) *Spanish sentences closest to information-packed English sentence of (137)*

a. El hombre corrió a -l sótano
the man ran to-the cellar
"The man ran to the cellar."

b. El hombre volvió a -l sótano corriendo
the man went-back to-the cellar running
"The man returned to the cellar at a run."

c. El hombre bajó a -l sótano corriendo
the man went-down to-the cellar running
"The man descended to the cellar at a run."

d. El hombre entró a -l sótano corriendo
the man went-in to-the cellar running
"The man entered the cellar at a run."

In comparing texts written in satellite-framed languages like English and in verb-framed languages like Spanish, Slobin (1996) documents an additional difference between the two language types other than where they locate their expression of Path and Manner. As already observed in Talmy (1985b), Slobin verifies that in sentences representing Motion, English expresses Manner liberally, while Spanish does so only sparingly.[63] While he seeks a cause for this difference in the fact that English characteristically represents Manner in the main verb while Spanish does so in a gerundive constituent, he does not say why this fact should lead to the observed effect. On the contrary, it might be argued that in principle the two languages should be equivalent in their behavior, since both language types express Manner and Path in the verb and in a nonverbal constituent, but simply do so in opposite ways.

We would hold that the first two principles posited at the beginning of this section are required to explain the difference in behavior between English and Spanish. In English, both Manner and Path are characteristically expressed in backgrounding constituents: the main verb root and the closed-class satellite. It should be expected therefore that both of these semantic categories will be readily included in a sentence—and that is what is found. But characteristically in Spanish, only Path is expressed in a backgrounding constituent, the main verb root, whereas Manner is expressed in a foregrounding constituent, a gerundive or an adverb phrase. It would thus be expected that the expression of Path is readily included in a sentence, while that of Manner is not—and, again, that is what is found. One test for this account would be the behavior of a verb-framed language that expresses Manner not in a gerundive or an adverb phrase but in a genuine closed-class satellite. Such a language would then be expected to include the expression of Manner in a sentence as readily as that of Path, unlike the verb-framed languages that Slobin has examined. An example of such a language is Nez Perce, as discussed in section 3.4. But it remains to examine texts from this language, or a comparable one, with an eye toward testing the prediction of ready Manner expression.

While the kind of contrast exemplified so far in this section has been at the level of a general pattern difference between two languages, the same kind of contrast can be observed at the level of individual morphemes, even between such similarly patterned languages as Russian and English. For example, Russian has a Path satellite + preposition complex, ←*pri-*

k + DAT> 'into arrival at', that characterizes the Ground as an intended destination. English lacks this and, to render it, must resort to the Spanish pattern of expression using a Path-incorporating verb *(arrive)*. As seen in the illustration in (139b), English, as usual with this nonnative conflation type, exhibits awkwardness at further expressing the Manner component. As a baseline for comparison, (139a) illustrates the usual Russian-English parallelism. Here, both languages represent the Path concept 'to a point adjacent to but not touching' with a satellite + preposition complex: Russian <*pod- k* + DAT>, and English <*up to*>.

(139) a. *Russian* On pod-bežal k vorotam
he up.to-ran to gates(DAT)
English "He ran up to the gate."
b. *Russian* On pri-bežal k vorotam
he into.arrival-ran to gates(DAT)
English "He arrived at the gate at a run."

In this example, English shows how different sectors of usage within a single language—even where this involves only different individual concepts to be expressed—can behave differently with respect to the two principles set forth at the beginning of this section. Thus, Manner (here, 'running') can be expressed readily in a backgrounding constituent (the main verb) when in conjunction with the 'up to' Path notion. But it is forced into a foregrounding constituent (here, an adverb phrase) when in conjunction with the 'arrival' path notion, and so can be expressed only at greater cognitive cost.

At the general level again, we can extend the contrast between languages as to the quantity and types of information that they characteristically background, for as English is to Spanish, so Atsugewi is to English. Like English, Atsugewi can represent both Cause and Path in a backgrounded way in its verb complex. But further, it can backgroundedly represent the Figure and the Ground in its verb complex (as has already been shown). Take for example the polysynthetic form in (36b), approximately represented in (140) with its morphemes glossed and separated by dashes.

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

We can try to match English sentences to this form in either of two ways: by achieving equivalence either in informational content or in back-

groundedness. To achieve informational equivalence, the English sentence must include full independent noun phrases to express the additional two components that it cannot background—that is, the Figure and the Ground. These NPs can be accurate indicators of the Atsugewi referents, like the forms *some icky matter* and *some liquid* in (141a). Or, to equal the original form in colloquialness, the NPs can provide more specific indications that would be pertinent to a particular referent situation, like the forms *the guts* and *the creek* in (141b). Either way, the mere use of such NPs draws foregrounded attention to their contents. The representation of Cause and Path is not here at issue between the two languages, since both employ their means for backgrounding these components. Atsugewi backgrounds Cause in its Cause satellite and Path in its Path + Ground satellite, while English backgrounds Cause in the verb root (*blow*) and Path in its Path satellite (*in(to)*).

(141) 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 (142).

(142) It blew in.

Such equivalence in backgrounding, however, is only gained at the cost of forfeiting information, for the original Atsugewi form additionally indicates that the 'it' is an icky one and the entry is a liquid one. Thus, due to the quantity and semantic character of its satellites, as well as the semantic character of its verb root, Atsugewi can, with relatively fine differentiation, express more of the components of a Motion event at a backgrounded level of attention than English is able to do.[64]

5 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 such as 'Motion event', 'Figure', 'Ground', 'Path', 'Co-event', 'Precursion', 'Enablement', 'Cause', 'Manner', 'Personation',

and so on, as well as syntactic categories such as '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 determining the order and roles of words, this study has addressed semantic components, as they appear at the surface, and has determined their presence, their site (i.e., their "host" constituent or grammatical relation), and their combination within a site.

Third, this method of componential crosslinguistic comparison permits observations not otherwise feasible. Section 4 demonstrated this for the issue of information's "salience." 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, and old and new information for comparison across languages. But 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 consequence of each language's selection of such incorporations.

Fourth, 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 Coevent). Thus, the issue for us has not just taken the form: semantic component 'a' shows up in surface constituent 'x' in language '1' and shows up in constituent 'y' in language '2'. Rather, the issue 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 in that language 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.

Fifth, the meaning-form patterns revealed by the present approach can be seen to exhibit certain diachronic shifts or nonshifts in the history of a language. We can trace the ways in which the semantic componential makeup of certain classes of morphemes in the language changes in correlation with alterations in the syntactic patterns that bring the morphemes together in sentences.

Finally, the present approach suggests cognitive structures and processes that underlie the newly posited semantic and syntactic categories, the semantic composition of morphemes and its correlation with syntactic structure, the typologies and universals of meaning-form correlations, and the shifts that these undergo.

Notes

1. This chapter is a much revised and expanded version of Talmy (1985b). The compendium of meaning-form associations that had been included in Talmy (1985b) now appears, somewhat revised, in chapter II-2, together with further analyses of material otherwise presented in the present chapter.

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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. *Gehen* refers to walking, so that one could not ask *Wo wollen Sie denn hingehen?* of a swimmer.

3. Chapter I-1 argues that the referents of the closed-class forms of a language constitute its basic conceptual structuring system. Accordingly, the significance of the fact that the set of semantic categories presented here are also expressed by the

closed-class satellite form is that these categories are therefore part of the basic structuring system of a language.

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 (vi):

(i) I cut John.

(ii) I shaved John.

(iii) I cut myself.

(iv) I shaved myself.

(v) *I cut.

(vi) I shaved.

We could believe that a reflexive meaning component is present in (vi) due to any of the three processes just described: because it is lexicalized in the verb, deleted from the sentence, or to be inferred by pragmatics. However, we only need to assume that a reflexive meaning is present if we consider this usage to be derived from that in (ii)/(iv). We could, alternatively, conclude that the (vi) 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 to underscore this distinction.

6. Our Figure is essentially the same as Gruber's (1965) "theme," but Gruber, like Fillmore, did not abstract out a semantic form like our Ground. Langacker's (1987) "trajector" and "landmark" are highly comparable to our Figure and Ground and, specifically, his landmark has the same abstractive advantages that Ground does over the systems of Gruber and Fillmore.

7. The term **Co-event** is now used as a replacement for the term "supporting event" that was employed in Talmy (1991).

8. This proposed association between a component incorporated in the verb and an external constituent can be lexicosyntactic as well as semantic. For example, in its basic usage, the intransitive verb *choke* in English distinctively requires the preposition *on* in the constituent that names the object that causes obstruction, as in (a), unlike many other languages, which require an instrumental *with*-type preposition. But this lexicosyntactic requirement for *on* is retained in the second usage of *choke* that additionally incorporates a change-of-state concept of 'becoming', as in (b). Our interpretation is that this second usage derives from the first usage, where the peculiar prepositional requirement is based. These relationships are shown explicitly in (26a).

(a) He choked on a bone.

(b) He choked to death on a bone.

9. In the verbs treated so far that exhibit both type 1 and type 2 usages—like *float* or *kick*—the type 1 usage has been lexically basic, while the type 2 usage is built on that by the addition of a component of translational motion. In this regard consider the two verbs *jump* and *run*, which can both refer to propelling one's

body through pedal launches. *Jump* appears to behave as just described with respect to basicness. Used without further spatial reference, as in *I jumped*, it exhibits a type 1 usage, referring solely to an act of pedally launching oneself into the air (and perhaps also returning to the ground). In turn, it can add an increment of translational motion in a type 2 usage, as in *I jumped along the hallway*. By contrast, *run* appears to be basically lexicalized in the type 2 usage since, when used without further spatial reference, as in *I ran*, the only interpretation is that I moved along through space, propelling myself through alternating pedal launches. To obtain a type 1 sense, one must add a phrase like that in *I ran in place*. This type 1 sense would seem to be derived from the type 2 sense by a semantic process of "cutting back" on the basic meaning—what is termed "resection" in chapter II-3.

10. As with many alternative linguistic descriptions, each of the present two approaches handles some aspects of language better and some worse. To illustrate the latter, this chapter's lexical analysis strains our intuition when it treats the three uses of *reach* in (28) as distinct lexicalizations. On the other hand, the construction analysis cannot easily account for verbs like *lie* in (17) that refuse occurrence in a motion construction, nor verbs like *glide* in (18) that require a motion construction. Here, nothing is saved with a construction analysis since the individual lexical verbs would in any case need to be marked as to which constructions they can occur in. Further, nothing in the construction analysis explains why English cannot use the motion construction to represent reverse enablement as German can (see (27c)), nor the under-fulfillment, over-fulfillment, and antifulfillment relations as Mandarin can (see II-3 (51)–(53)), nor a relation like that in 'He sat/lay to the hospital' to mean "He drove/rode lying on a stretcher to the hospital" as Arrerndte can (David Wilkins, personal communication).

11. To be sure, under a finer granularity, self-contained Motion resolves into translational motion. Thus, in the upward phase of its bounce cycle, the ball translates from the floor to a point in midair. And in the course of half a rotation, a point on the log translates from one end to the other of an arc. But such local translations cancel each other out within the broader scope of a coarser granularity.

12. As shown at length in chapter II-3, three further metaphoric extensions are from motion to "temporal contouring," to "action correlating," and to "realization."

13. In chapter II-3, the relations that a Co-event can bear to a main event are termed "support relations," and they are treated there in a much broader theoretical context. In addition, a distinct set of semantic relationships between a Co-event verb and a framing satellite are described in section 7 of chapter II-3. Included among those relationships—which, unlike the ones here, are borne by the satellite to the verb—are confirmation, fulfillment, underfulfillment, overfulfillment, and antifulfillment.

14. Reverse enablement does not exist as a construction type in English. What might at first be taken to exemplify this type, verbs with the prefixal satellite *un-*, in fact do not do so. Rather, the satellite *un-*, as in *untie*, directly refers to the

process of reversal per se. It does not refer to the main Motion event, as does the German satellite *auf-* '[MOVE] to an open conformation'.

15. As an index of their generality, the different types of Co-event relations are found as well in verbs not based on a Motion event. Purpose, for example, is conflated in the English verbs *wash* and *rinse* (see chapter II-3). 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. Evidence for such an incorporation is that the verbs are virtually unable to appear in contexts that pragmatically conflict with Purpose

(i) I washed/rinsed the shirt in tap water/*in dirty ink.

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

(ii) I soaked the shirt in dirty ink/I flushed 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:

(iii) 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, *curl up* expresses a main action similar to that of *clench*, but it incorporates no restrictions as to the cause of the action:

(iv) 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.

16. In more colloquial usage, the gerundive *flotando* would generally occur immediately after the verb, but for clarity it is here placed finally—also a possible, if more awkward, location.

Whether in a generic or polysemous way, the Spanish preposition *por* covers a range of Path types, each here glossed with its closest distinct English form.

17. The same semantic complex except with translocation of the Agent's body can be represented by the mid-level verb CARRY, which underlies the English verbs *carry, take*, and *bring*.

18. As with any deep morpheme, the form used to represent a particular deep preposition is not to be identified with any English lexical item. Several of the forms are in fact devised. Thus, ALENGTH is used to represent the basic concept of a path with full span over a bounded extent. Note that it may be necessary to subdivide the Vectors To and From into two types, one involving the concept of a discrete translocation and the other involving the concept of progression along a linear trajectory.

19. The Deictic is thus just a special choice of Vector, Conformation, and Ground, not a semantically distinct factor, but its recurrence across languages earns it structural status.

20. An exception to this characterization of Spanish is a somewhat limited construction, exemplified by *Venía/Iba entrando a la casa*, 'He was coming/going into the house'.

21. Chapter II-4 shows that Atsugewi presents a wholly different partitioning of semantic space—that one is on a different semantic landscape—than that of, say, familiar European languages. For example, Atsugewi wholly lacks verbs of 'object maneuvering' like English *hold*, *put* (in), *take* (out); *have*, *give* (to), *take* (from); *carry*, *bring* (to), *take* (to); *throw*, *kick*, *bat* (away); *push*, *pull* (along). The components of the semantic material expressed by such verbs are in Atsugewi variously omitted, or apportioned out over different constituent types, or expressed by the construction.

22. In English, the particular Paths occurring in this system appear to be virtually limited to the contact-forming 'into/onto' type. Exceptional, thus, is *quarry* '$_{A}$MOVE out of a quarry', as in *We quarried the granite*, and the verb *mine* with a similar sense, as in *We mined the bauxite.*

23. It may be a general tendency that languages with Path conflation for motion do not extend this conflation type to the locative and, like Spanish, there employ zero conflation. But this pattern is not universal. Halkomelem, a Salish language of Canada (Gerdts 1988), does indeed have a set of verb roots that conflate BE_{LOC} with particular sites.

And though perhaps rarely forming a characteristic 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 dessert*, *Clothing filled the hamper.* It is just that such verbs seldom constitute the colloquial system for locative expression.

24. English is more consistent than Spanish—that is, has less of a split system than Spanish—in that it extends its pattern of Co-event conflation for motion events to locative situations as well. This is seen in constructions like *The painting lay on/stood on/leaned against the table*, although, like Spanish, English also has the zero-conflation construction with *be*, as in *The painting was on/against the table*.

25. In Emai, a path is construed as being either of two main types: a linear progression along a trajectory, or a discrete translocation to or from a point. After a Co-event-conflating main verb, the trajectory type of path is represented by one of the Path verbs, now serving as a satellite rather than as a main verb. The translocation type of path is represented by a system of nonverbal locative markers.

26. Position verbs can also occur in construction with the directionals. For example, the assumptive form of the verb referring to a 'crooked Figure' together with the directional for 'down' can mean 'after falling, for an object that is already crooked or that has become crooked in the process of falling to come to rest on a surface'. Note that Atsugewi has a semantically and syntactically comparable construction, as detailed in section 4.2.4 of chapter II-2. The main difference is

that the Tzeltal position verbs include the semantic component of 'coming to rest on a surface' in these constructions, whereas in Atsugewi, the verb roots that refer to (change of) shape lack such a component, and so enter constructions representing a greater range of translational events.

27. Here and in the other forms, there may tend to be this distinction between the two constructions: the Path verb suggest progression along a trajectory that leads to the Figure's final location, while the Path satellites suggest only its arrival at that final location. If such a semantic distinction does prove correct, it may be adjudged that Greek here does not have a parallel system after all, but rather a split system.

28. This is not to imply that a verb root always has exactly one basic aspect. A verb root can show a certain range of aspect, 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*.

29. These two grammatical forms—*keep -ing* and V_{dummy} *a* $[\_\_ + Deriv]_N$—may be thought to trigger certain cognitive processes. Respectively, these are **multiplexing** and **unit excerpting**. Such processes are discussed in chapter I-1.

30. Our representation of the self-agentive and the inducive types was shown in section 2.1.3.2.

31. Not only intransitive sentences can be autonomous. For example, *An acorn hit the plate* is autonomous. The requirement, rather, is that the sentence must not express a cause (as does *An acorn broke the plate*).

32. Arguments are given in chapters I-6 and II-6 why the resulting-event (b) form should be considered semantically more basic than the causing-event (c) form.

33. 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 (1977). 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.

34. The act of will is the first 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 *Sue burnt the leaves* only mentions Sue 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 Sue (due to her will) acted physically to marshal it. The typical omission of explicit reference to all the causal subevents in the chain between an initiator and a final subevent are treated at length in chapter I-4.

35. 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. Thus, another good term for the "inducive" is "caused agency" (other treatments use the term "instigative"). See chapter I-8.

36. A semantic and constructional parallelism can be observed here. Shifting one's attention from an autonomous construction to a homologous agentive construction (as from *The ball rolled away* to *I rolled the ball away*) involves a shift from an intransitive to a transitive, and the semantic addition of agency. Similarly, going from a self-agentive construction to a homologous inducive construction (as from *The horse walked away* to *I walked the horse away*) involves a shift from intransitive to transitive and the addition of a further agency. The following sentences illustrate all four constructions while using the same participants:

(i) Inducive: They sent the drunk out of the bar.

(ii) Self-agentive: The drunk went out of the bar.

(iii) Agentive: They threw the drunk out of the bar.

(iv) Autonomous: The drunk sailed out of the bar.

The semantic character of the former relationship seems to get imputed to the latter relationship. Thus, we tend to understand a self-agentive event as occurring in and of itself, and to take the inducer of an inducive event as directly bringing about the final event without the intermediary volition of the actor. This semantic imposition is termed the cognitive process of "physicalization" in chapter I-7, and the backgrounding of the intermediary agent in the inducive is treated at length in chapter I-4.

37. 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 *hide* over the agentive and self-agentive types, and for *set . . . upon* over the self-agentive and inducive types:

(i) She hid herself behind the bushes = She hid behind the bushes

(ii) He had his dogs set upon (i.e., fall upon) us = He set his dogs upon us

38. For these, the three aspect-causative types we have noted for verbs of state have the following particular manifestation: (1) a body or object is in a posture noncausatively, or else an animate being self-agentively maintains its body in the posture; (2) a body or object comes into a posture noncausatively, or else an animate being self-agentively gets its body into the posture; (3) an agent puts a body other than its own, or some other object, into a posture.

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

(i) She bent over the rare flower for a full minute.

(ii) He bowed before his queen for a long minute.

40. 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.

41. 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 or her body, lift, and set down. But that is clearly not what one does with oneself. The movement is accomplished, rather, by internal—that is, neuromuscular—activity.

42. 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 nonpassive reading, as in the sentence gloss 'I lay (there)'.

43. The postures category treated in the preceding is mostly nonrelational. 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 'lie on', 'stand on', 'lean against', 'hang from', '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.

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

(i) She *stood* there speaking.

(ii) She *stood up* to speak.

(iii) She *stood down* when she had finished speaking.

45. Constructions with *stop*—for instance, *stop being sick* and *stop someone from being sick*—are not counted because, in them, *stop* operates on an already verbal construction with *be*, rather than directly on the adjective *sick* itself.

46. The qualifier "prototypical" has here been applied to the syntactic form of a sentence because of certain hedges that one might want to allow for. For example, the sentence *I took a nap* is formally transitive (and for some speakers can passivize, as in *Naps are taken by the schoolchildren in the afternoon*). But some might still want to treat this sentence as intransitive, both on semantic grounds and on the basis of its kinship to the formally intransitive sentence *I napped*. In the other direction, the sentence *I pounded on the table* is formally intransitive. But some might still want to treat it as transitive, both on the semantic grounds that it refers to an affected object outside the actor and on the basis of its kinship with the formally transitive sentence *I pounded the table*. The semantic basis of such alternative judgments is precisely addressed by the personation envelope.

47. For this section, the earlier limitation to single-morpheme verbs has been relaxed. Considered here, thus, are a lexical complex like *rip off* and, later, a mor-

phemically complex verb like *frighten*. This is feasible because valence properties can inhere in morphemic complexes of this sort as well as in single roots.

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

(i) a. Ich warf faule Äpfel auf ihn.
"I threw rotten apples at him."
b. Ich bewarf ihn mit faulen Äpfeln.
"I pelted him with rotten apples."

(ii) a. Ich schenkte ihm das Fahrrad.
"I "presented" the bicycle to him."
b. Ich beschenkte ihn mit dem Fahrrad.
"I "presented" him with the bicycle."

49. In the official terminology adopted in the present work—used, for example, in chapter I-2—the two main entities in an experiential situation are the "Experiencer" and the "Experienced." The Experiencer can emit a "Probe" toward the Experienced, while the Experienced can emit a "Stimulus" toward the Experiencer. In this section, though, for ease in distinguishing the two main experiential entities at a glance, we loosely use the word "Stimulus" in place of "Experienced."

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

(i) a. *Stimulus as subject*
That *is odd to* me.
That *is of importance to* me.
That *got the goat of me* → *got my goat*.
b. *Experiencer as subject*
I *am glad about* that.
I *am in fear of* that.
I *flew off the handle over* that.

51. 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 verbs *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.

52. These lists avoid verbs that refer more to an affect-related action than to the affect itself. For example, *quake* and *rant*—candidates for the Experiencer-subject group—really refer directly to the subject's overt actions, and only imply his or her accompanying affect of fear or anger. Similarly, *harass* 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.

53. 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. *-Ahẇ* is added for the perspective of the Stimulus object rendering the sensation:

(i) *Verb root* -yi:sk̓ap- 'feel cold'
Inflectional affix set s- '- w- -[a] 'I–subject, factual mood'
/s-'-w-yi:sk̓ap-[a]/ ⇒ [sẇye·sk̓áp[h]]
"I am cold (i.e., feel cold)."

(ii) *Verb root* -yi:sk̓ap- 'feel cold'
Valence-shifting suffix -ahẇ 'from Stimulus to Experiencer'
Inflectional affix set '- w- -[a] '3rd person–subject', factual mood'
/'-w-yi:sk̓ap-ahẇ-[a] ⇒ [ẇye·sk̓apáhẇa]
"It is cold (i.e., to the touch)."

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

(i) **Not* JOAN hit him ⇒ JOAN did*n't* hit him.

(ii) *Even* JOAN hit him ⇒ JOAN *even* hit him.

(iii) Joan gave him *only* ONE ⇒ Joan *only* gave him ONE.

55. Some Path expressions generally do not permit omissions of this sort. Such is the case with *into* in the sense of 'collision' and also with *up to* in the sense of 'approach' (although some contexts do allow *up* alone):

(i) It was too dark to see the tree, so he walked into it (*... walked in).

(ii) When I saw Joan on the corner, I walked up to her (*... walked up) (but acceptable is: When I saw Joan on the corner, I walked up and said "Hi").

56. When they do not take a Path satellite, Russian verbs of motion exist in pairs of distinct forms, traditionally termed the "determinate" form and the "indeterminate" form. Examples of such paired forms are 'walk': *idti/xodit'*; 'drive': *yexat'/yezdit'*; and 'run': *bežat'/begat'*. Semantically, each form of a pair has a cluster of usages distinct from that of the other form. But it may be adjudged that the main semantic tendency of the determinate cluster is comparable to the meaning of the English satellite *along*, as in *I walked along*, and that of the indeterminate form is comparable to the meaning of the English satellite *about* (in the sense of 'all about/all around'), as in *I walked about*. It can also be observed that the set of prefixal Path satellites in Russian lacks forms semantically comparable to these two English satellites. Accordingly, one interpretation of the motion verb pairs in Russian is that they represent the conflation of a deep MOVE or GO verb with a deep satellite ALONG or ABOUT (as well as with a Manner event). Such verb pairs are thus, in effect, suppletive extensions of the prefixal Path satellites.

57. There is some dialectal variation. For example, *with* is only a preposition in some dialects, but in others it is also a satellite, as in *Can I come with?* or *I'll take it with*.

58. Judging from their distribution, satellites of this type seem to be an areal phenomenon rather than a genetic one. Thus, Atsugewi and Klamath, neighbor-

ing but unrelated languages, both have extensive suffixal systems of these satellites. But the Pomo languages, related to Atsugewi and sharing with it the extensive instrumental prefix system (see section 3.5), quite lack Path + Ground satellites.

59. This typology has served in several other lines of research—for example, that seen in Choi and Bowerman (1991) and that in Berman and Slobin (1994). Slobin (1996) has uncovered correlates of the present sentence-level typology within larger stretches of discourse.

60. Gabriele Pallotti (personal communication) reports that southern Italian dialects have a Path conflation pattern, that northern dialects have a Co-event conflation pattern, and that central dialects, including standard Italian, have both patterns in parallel, with discourse factors determining the pattern used. Thus, Neapolitan has *ascire, trasere, sagliere, scinnere* 'exit, enter, ascend, descend', but forms like **'nna fuori* 'go out' are impossible. In Northern Italy, the opposite holds. The Bolognese dialect, for example, has *ander fora, ander dainter, ander so, ander zo* 'go out, go in, go up, go down'. But there are no verbs with the meanings 'exit, enter, ascend, descend'. And standard Italian has both patterns. Thus, it has *uscire, entrare, salire, scendere* 'exit, enter, ascend, descend', and *andare fuori/dentro/su/giú* 'go out/in/up/down'. Further, both these patterns represent Manner in their usual respective way. Thus, Manner appears as a separate gerund in the Path conflating forms—for example, *é uscita/entrata/salita/scesa correndo* 'she entered/exited/ascended/descended while running'. And Manner appears in the main verb in the Coevent-conflating forms—for instance, *é corsa fuori/dentro/su/giú* 'she ran out/in/up/down'.

What remains to be determined diachronically is whether the Co-event conflation pattern in the northern and central dialects was retained from Latin and accompanied by the development of a new Path satellite system, or whether the Co-event conflation pattern is a later development (in effect, a return to the Latin pattern), accompanied by the loss of the Path conflation system in the northern dialects. In either case, the processes of the Co-event-conflating Germanic languages just to the north may have been an influencing factor.

61. 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* 'run to meet'. And 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'.

62. Such formulas might usually present a satellite construction in a nonagentive format. But they are readily adapted to an agentive presentation:

(i) A . . . F ◄through> G

(ii) A . . . G ◄through (with> F)

Such finer formulations can be useful in representing language particularities. Thus, English in fact lacks the (132b) construction and only has its agentive (ii) counterpart.

63. Slobin (1996) has further observed that verb-framed languages like Spanish not only express Manner less readily than satellite-framed languages like English, but that they also have fewer distinct lexical verbs for expressing distinctions of Manner. The four principles posited here do not account for this phenomenon, so further explanation must be sought.

64. 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. (See Talmy 1972.)