1. Introduction. As is well known, affixes in most languages tend to be relevant to their lexical hosts (Bybee 1985). Typical affixes on verbs qualify events and states, specifying such features as tense or aspect, while affixes on nouns usually qualify entities, marking such distinctions as the number of people or things referred to, their genders, or their roles. Languages are not equivalent in their distribution of morphological complexity, however. In particular, some languages, among them many North American languages, exhibit a concentration of morphological complexity within their verbs. If relevance is a universal property of morphological systems, then languages like these should grammaticize different sets of semantic categories than those with well-developed nominal morphology.

Languages with predominantly verbal morphology generally do contain a profusion of typical verbal affixes. Pawnee, for example, contains a rich array of aspect affixes, including statives, perfects, and imperfects, and within these, simple, iterative, habitual, inchoative, and usitative. There is also an elaborate set of mode affixes including indicative, negative indicative, assertive, imperative, contingent, potential, absolute (interrogative, narrative), subjunctive (irrealis), infinitive, desiderative, conditional, gerundial, and quotatives, evidentials (speaker was not an eyewitness), inferentials, and dubitatives, as well as an aorist tense (Parks 1976:224). Other characteristics of events and states can also be grammaticized within the verb morphology of such languages. Notions expressed by separate adverbials in many of the world’s languages, such as manner, are expressed by affixes on Pawnee verbs. One set of adverbial affixes, for example, adds the meanings ‘aggressively’, ‘ahead’, ‘under pressure’, ‘while running’, ‘surprised, annoyed’, and ‘angrily’ (Parks 1976:289–90).

Languages with predominantly verbal morphology often lack the affixes found on nouns in other languages, such as number, gender, and case markers. Distinctions related to these categories are frequently marked within their verbs, however. Yet the exact meanings and functions of number, gender, and various case markers on verbs are rarely
precisely equivalent to their counterparts on nouns. Their morphologization within verbs can indicate significant differences both in the nature of the categories grammaticized and in the structure of the resulting morphological systems.

2. Number. Among languages with affixes on nouns, probably the most common inflectional category of nouns is number. A few languages with complex verb morphology in North America, such as the Algonquian languages, exhibit inflectional number marking on nouns, but in the majority number is not distinguished on nouns at all, or only on certain nouns on certain occasions.

By contrast, verbs often contain a variety of number markers. Some of these, such as the number distinctions associated with bound pronouns, do function much like the inflectional number affixes on nouns, quantifying participants in events. But many function in subtly different ways.

As remarked by Frajzyngier (1985), Durie (1986), and Mithun (1988a), among others, an agreement analysis frequently fails to describe the distribution of these number markers in verbs. They often appear when there are no nouns present in the clause to agree with. The sentence in (1), for example, comes from a conversation in Central Pomo. It was translated into English with a plural subject ‘they’ because of a suffix -ma- on the verb. No plural noun phrase appears in the Central Pomo sentence, or in the preceding discourse.

Central Pomo (Frances Jack, p.c.)

(1) Mii čá šwéy qawii ma-w
there house new build-NUMBER-PERFECTIVE
‘They’re building new houses there’.

More important, when nouns are present in a clause, associated verbs do not necessarily match them in number. The noun ‘Whiteman’ in (2) carries no number marker, but the verbs ‘go’ and ‘want’ contain several different number suffixes.

Central Pomo (Frances Jack, p.c.)

(2) Masāan jāwhal ʔel,
Whiteman work the

1 I appreciate the help of the following people who generously shared their expertise on their languages: Reginald Henry on Cayuga, Robert Hetzron on Hungarian, and Frances Jack on Central Pomo. I am also grateful to Wallace Chafe for the Armenian examples and for useful comments on this paper.
The lack of perfect agreement is due to the fact that Central Pomo verb suffixes perform subtly different functions from the plural suffixes on nouns in languages like English. The suffix -ma- on the verb qa'wimaw 'build' in (1) specifies joint or collective action, not multiple agents. It does not appear every time more than one agent is involved. The suffix -ta- on the verb qohtlaq 'come' in (2) marks multiple events, not multiple participants. It can appear if a single individual performs an action several times. The suffix -q- indicates multiple activities. The suffix -č'i- on the verb dāa?č'iw 'want' marks multiple states. The primary function of all of these number markers in verbs is to characterize events and states, not to enumerate participants. Of course, the involvement of multiple individuals can sometimes be inferred from them. The English sentence The boys jumped with glee specifies that multiple boys were involved, but implies that there were multiple jumps. A corresponding Central Pomo sentence would specify that multiple jumps were executed in concert, but only imply that there were multiple jumpers.

An especially common verbal number marker among North American languages is a distributive. Its primary function is to describe the scope of events or states, typically distributing them over multiple locations, times, or participants. Sometimes a plurality of objects can be deduced from the situation. Note the effect of the Navajo distributive prefix da- in the verbs in (3). The distributive specifies only multiple boring, but one might deduce that there were probably multiple holes.

Navajo (Young and Morgan 1980:160)

(3) i'it'elnìl 'I bored a hole in it'
'ada'sęnil 'I bored holes in it'

These verbal number markers differ from nominal plural markers not only semantically, but also in a way that affects the structure of the morphological system. The distinction between inflectional and derivational morphology is not always clear-cut, but the plural markers in languages like English are usually considered good examples of prototypical inflection. Number specification is obligatory: whenever multiple entities are referred to, the plural forms of count nouns are required by
the grammar. All count nouns can accordingly be expected to have plural forms. This presents no logical problem, since all entities referred to by count nouns can in principle be enumerated.

Number affixes on verbs like those in Central Pomo and Navajo may be highly productive, but they are not inflectional. They are not equally relevant or even applicable to all events and states, so it would be inefficient for a grammar to require their specification on every verb. They are derivational, functioning to create new verb stems in just those cases where a special lexical item is warranted. Many languages with verbal number affixes also contain monomorphemic verb roots that already include number as part of their basic meaning. The Central Pomo verb root *hli- ‘go’ in (2) above, for example, is used only for action by a group. A different root, *yó-, is used when an individual goes somewhere alone. Going in a group and going alone are categorized lexically as different activities. Similarly, entirely different verb roots are used if an individual sits alone or several sit together (*ʔéhá-/napʰó-), if one speaks or several converse (*canó-/lów-), etc. Killing one person is conceived of as a different act than massacring a group (*hqʰíml/léy), laying down a single object is a different motion than laying down several (*né-/méá-). Navajo contains similar sets. The verb root -ôghá is used if a single individual goes somewhere, -(d)kah if a group goes. The root -ôq describes the movement or handling of a single solid roundish object, the root -ônîl the movement or handling of plural objects. Derivational number affixes on verbs provide a systematic device for creating additional lexical items that include a number distinction as part of their meaning. (More detailed discussions of this kind of number marking in North American languages can be found in Mithun 1988a; 1988b.)

3. Gender. A second category often specified by nominal affixes among the world’s languages is gender. Inflectional endings on the Russian nouns *braí(-ó) ‘brother’, *s’estr-a ‘sister’, and *p’îr-o ‘pen’, for example, specify that they are grammatically masculine, feminine, and neuter, respectively.

Gender inflection on nouns is relatively rare in North America, but verbs in some languages contain affixes that appear to convey similar information. The Haida verbs in (4) are all based on the root -daal ‘walk’.

Haida (Lawrence 1977:95)

(4) dla-daal ‘(person or small animal) walks along slowly’
    xa-daal ‘(small person or object) moves along slowly’
    sq’-daal ‘(sticklike object) walks along slowly, as hands of a clock’

...
Classificatory prefixes can also characterize patients of transitives.

Haida (Lawrence 1977:95)

(5) *dkihl*aa ‘hide (large cloth object)’
*daqiihl*aa ‘hide (heavy compact object)’
*daqahl*aa ‘hide (several objects)’
*dax‘nhl*aa ‘hide (a pile or stack of objects)’

Haida contains an elaborate repertoire of such classificatory prefixes. They distinguish actions involving kinds of objects, not only large or small animals and people but also solid heavy objects, spherical objects, bundles, buildings, sacklike objects (mattresses), sticklike objects with one end widened (paddles), indefinitely extendable objects (rope, song), objects with protrusions, unsavory characters, slimy stringy strips, large stout person, bows of boats, and many more (Lawrence 1977:98–105).

Although they somewhat resemble the masculine/feminine/neuter classifications of nominal gender systems in other languages, these verbal classifiers actually describe kinds of activities and states, not kinds of objects. A liquid occupies a position in a different way than a stick. People manipulate cloth in a different way than a many-pointed object. The classifier chosen does not depend on an inherent feature of the object, but on the way it moves or is handled. Lawrence notes that “one very important fact about the shape prefixes is that some objects may be classified in more than one way, according to the object’s size, its spatial arrangement, or what part of the object is being specifically considered” (1977:97).

Classifiers on verbs are highly productive in some languages and less so in others, but they are rarely uniformly applicable to all events and states. The shape of affected objects is a salient feature of some activities but not pertinent to others. The classifiers are accordingly more derivational, providing speakers with a tool for deriving lexical items encoding shape just when it is significant. Most languages already contain monomorphemic verb roots that imply shape or substance as part of their meaning. Compare English eat and drink (solid vs. liquid), bring and lead (inanimate vs. animate), or lay, set, stand, and even spread (long, solid, tall, clothlike or liquid/malleable/particulate). The classificatory affixes of languages like Haida provide a derivational mechanism for creating additional lexical items of this type.

A similar classificatory effect is achieved within the verb morphology of some languages by a slightly different structure: noun incorporation. This is a type of noun-verb compounding in which noun roots serve to narrow the semantic scope of verb roots (Mithun 1984). Incorporated nouns are not referential in their own right: they are verbal qualifiers. Compare the verb stem in (6) from Cayuga.
Cayuga (Reginald Henry, p.c.)

(6) -ihsak- 'look for (an inanimate object)'
-ya't-ihsak- 'look for (an animate object)'

Separate noun phrases can cooccur with verbs containing incorporated classificatory nouns, just as with classificatory affixes.

Cayuga (Reginald Henry, p.c.)

(7a) so:wá:s k-ya't-ihsa:s
dog 1.AGENT-body-seek-HABITUAL
‘I am looking for a dog’.

(7b) Te-ká-hwsa-ne't
DUALIC-N-back-layered
pie
a'-s-n?atá-qni?
OPTATIVE-2.SG.AGENT-baked goods-make-PUNCTUAL
you should baked goods make
‘You should bake a pie’.

(7c) O-hnek-akaʔ-∅
N-liquid-delicious-STATIVE
soda pop
g-k-hník-ghaʔ
FUTURE-1.SG.AGENT-liquid-consume-PUNCTUAL
I will liquid consume
‘I’ll drink some soda pop’.

Such noun-verb compounds are usually lexicalized. Classificatory incorporation may be very productive in a language, but speakers generally know whether or not a certain combination exists in the language. Combinations name recurring concepts. Making baked goods is a special, identifiable kind of making: baking. Consuming liquid is a special kind of consuming: drinking. Like any lexical items, classificatory noun-verb compounds can have specialized meanings, like Cayuga -atat-rih-qni-SEMI.REFLEXIVE-word-make > ‘read’. (Further discussion of classificatory noun incorporation can be found in Mithun 1986c).

4. Case. In many of the world’s languages, all nouns are inflected with case affixes that specify their roles. Among the most common case distinctions specified by affixes on nouns are core or primary cases: nominative/accusative, ergative/absolutive, agent/patient, etc.

In a number of languages, in fact in the majority of North American languages, core arguments are identified by obligatory pronominal affixes
or clitics on verbs. These affixes are not “agreement” markers; they are referential pronouns in their own right. As discussed elsewhere, the presence of these obligatory bound pronouns in all persons and core cases can have a profound effect on the syntactic structure of such languages. (See, among others, Jelinek 1984 and Mithun 1986a; 1986b; 1987.)

Languages differ considerably in the repertoires of secondary or oblique cases they distinguish, but many of the world’s languages specify oblique case, like core case, with inflectional affixes on nouns. In a number of languages, however, related distinctions are grammaticized instead within the verb morphology. The affixes on verbs can differ both semantically and grammatically from their counterparts in nouns.

4.1. Datives and benefactives. The role of indirect object, goal, or beneficiary is frequently encoded in languages as a characteristic of the entity fulfilling that role. The role is registered on noun phrases by inflectional case affixes or adpositions, as in the Armenian sentence in (8).

Armenian (Wallace Chafe, p.c.)

(8) Hagop-i dav'i
    Hagop-DATIVE gave.1

‘I gave it to Hagop’.

Such dative or benefactive suffixes on nouns, like other nominal case markers, are usually highly inflectional. Every noun can be expected to have a dative or benefactive form.

In some languages, however, dative and/or benefactive relationships are encoded within the verb. Maricopa contains a typical verbal benefactive affix.

Maricopa (Gordon 1986:86)

(9a) va chew-k
    house make-REALIS

‘He built a house’.

(9b) va ny-chew-i-k
    house 3/1-make-BENEFACTIVE-REALIS

‘He built a house for me’.

The productivity of dative/benefactive verbal affixes varies from language to language, but even when they are highly productive, they are not inflectional in the same way as their nominal counterparts. All verbs do not necessarily have dative or benefactive forms. Dative and benefactive affixes on verbs are used to derive lexical items only when speakers need a permanent term for a recurring concept. Some activities, like
cooking or making things, are often done for someone's benefit. Accordingly, many languages contain derived verb stems meaning 'cook for' and 'make for'. Other activities, like sleeping, are less compatible with beneficiaries. Few languages contain derived verb stems meaning 'sleep for'. Gordon reports that in Maricopa, “benefactive -y is limited, apparently lexically, in occurrence.” When Maricopa speakers wish to specify that a particular action was done for someone's benefit, but the language contains no verb stem denoting that combination, they use the verb 'do' with a benefactive suffix.

Maricopa (Gordon 1986:86)

(10) *kwnho nyip ?-ntay
basket me 1-mother
?-we-y-k
1-do-BENEFACTIVE-SAME.SUBJECT 1.sell-REALIS
'I sold baskets for my mother'.

Most languages contain monomorphemic verb roots that already include as part of their meaning the direction of an activity toward a goal, like 'give', 'answer', 'tell', etc. Dative/benefactive affixes provide a tool for creating more lexical items of this kind.

Since verbs containing dative-benefactive affixes are lexical items in their own right, they sometimes have specialized meanings. Cayuga contains a highly productive dative/benefactive verbal suffix. The meanings of verbs containing the suffix are usually transparent, but they are not always precisely equivalent to the sums of their parts. The Cayuga verb root -yq, for example, means 'enter, arrive'. When the dative suffix is added, the derived stem means 'visit'.

Cayuga (Reginald Henry, p.c.)

(11a) *hó-yq-
MASculine.SINGular.PATient-ENTER-STATATIVE
'He has arrived'.

(11b) šakó-yq-ʔs-heʔ
M.SG/F.SG-ENTER-DATIVE-PURPOSIVE
ho-nóʔha?
M.SG.PATIENT-mother
'He has gone to visit his mother'.

4.2. Instrumentals. A number of the world's languages indicate the roles of instruments by case suffixes on nouns, as in the Armenian example in (12).
Armenian (Wallace Chafe, p.c.)

(12) *tanag-o\textsubscript{y} g\textsubscript{d}\textsubscript{d}r\textsubscript{e}t\textsubscript{s}i*

knife-INSTRUMENTAL cut.1

'I cut it \textit{with} a knife'.

Alternatively, the involvement of an instrument can be indicated by affixes on verbs. Two different types of markers are used for this purpose.

In some languages, a verbal affix is used to derive transitive verb stems whose direct objects are instruments. Compare the Takelma sentences in (13). The verb stem meaning 'pound-with' is derived from the verb root for 'pound' plus an instrumental prefix *wa*-

Takelma (Sapir 1922:68)

(13a) *l\textsubscript{o}b\textsubscript{o}\textsubscript{\textprime}x\textadidas\textacute e*  

pound-1  

'I pound'.

(13b) *nox\textadidas\textprime wa\textprime yana-wa-lobo\textadidas\textacute bi\textprime n*  

peste acorn-with.it-pound-1  

'I pound acorns with a pestle'.

Cheyenne contains a verbal prefix *-v\textacute e\textacute s\textacute e*- with the same function. In (14) the prefix creates a stem 'hit with' from the root for 'hit'.

Cheyenne (Leman 1980:160)

(14a) *n\textacute aoo\textacute ma*  

1-hit-3.ANIMATE  

'he hit me'

(14b) *n\textacute a\textacute v\textacute e\textacute s\textacute e\textacute o\textacute o\textacute ma  kah\textsubscript{\textacute a}m\textsubscript{\textacute a}x\textsubscript{\textacute e}*

1-INSTRUMENTAL-hit-3.ANIMATE stick  

'he hit me with a stick'

A second type of verbal affix also indicates the involvement of an instrument in an event. Affixes of this type appear at first to specify the instrument itself. Compare the Central Pomo verbs in (15).

Central Pomo (Frances Jack, p.c.)

(15) *p\textsubscript{b}h\textacute a\textacute a\textacute a\textacute c\textacute \textacute e* 'split wood with an ax'  

*\textacute c\textsubscript{\textacute b\textacute a}\textacute a\textacute a\textacute c\textacute \textacute e* 'split open watermelon with a knife'  

*m\textacute a\textacute b\textacute a\textacute a\textacute c\textacute \textacute e* 'split something open with the foot'  

*q\textacute a\textacute b\textacute a\textacute a\textacute c\textacute \textacute e* 'split open a grape with the teeth'  

*d\textacute a\textacute b\textacute a\textacute a\textacute c\textacute \textacute e* 'part hair in the middle'  

*p\textacute b\textacute a\textacute a\textacute c\textacute \textacute e* 'prepare basket roots'  

*\textsubscript{\textacute e}\textsubscript{\textacute h\textacute b\textacute a\textacute a\textacute c\textacute \textacute e}* 'crack nuts with a heavy object'  

*h\textacute b\textacute a\textacute a\textacute c\textacute \textacute e* 'split something by pushing down with a stick'
The English glosses suggest that the prefixes add meanings such as 'with a knife', 'with an ax', 'with the foot', 'with the teeth', etc. Their precise meanings are actually subtly different. They specify kinds of motions: 'by sawing', 'by swinging', 'by stepping', 'by biting', etc. The prefix da- in 'part hair' refers to a kind of pushing motion that can be done with the hands, by waves, etc. The prefix p'- indicates pulling apart. When certain basket roots are found, a small slit is made in one end, then one of the edges is held in the teeth while the other is grasped between the thumb and first finger, and they are gently pulled apart, splitting the root lengthwise. The prefix ch- indicates a heavy, slamming motion. The prefix h- indicates a poking motion. The prefix ?- indicates fine work, as with the fingers. The prefix s- indicates a sucking motion. The prefix š- indicates a particular pulling motion.

The fact that these prefixes are not semantically equivalent to separate instrumental noun phrases is demonstrated by their cooccurrences with other instrumental noun phrases. If the verbal prefixes actually specified instruments, then the nouns would be redundant. Yet sentences like (16) are not uncommon and are considered completely correct.

Central Pomo (Frances Jack, p.c.)

(16) hāači-wi
ax-WITH
pʰ-hāa-č-la
BY.SWINGING-split-SEMELFACTIVE-SPEAKER.ACT
'I split it with an ax'.

It might be hypothesized that the instrumental prefixes are agreement markers, registering features inherent to noun phrases. The prefixes often appear when there is no noun phrase referring to an instrument in the sentence, however, or even in the discourse. Example (16) above would be a completely grammatical sentence without the noun phrase 'with an ax'. More important, different verbal prefixes can occur with the same noun.

Central Pomo (Frances Jack, p.c.)

(17a) qʰabe-wi
rock-WITH
č-bāa-č-
BY.SLAMMING-split-SEMELFACTIVE-PERFECTIVE
'He cracked it open with a rock'. 
Different nouns can also appear with the same verbal prefix.

Central Pomo (Frances Jack, p.c.)

(18a) \( h\text{o}_\text{o}-\text{wi} \)

heat-WITH

\( m-\text{b}a\text{a}-\text{c}^-? \)

BY.INTERNAL.PRESSURE-split-SEMELFACTIVE-PERFECTIVE

'It split from the heat'.

(18b) \( \text{\textquoteleft\textquoteleft eema}-\text{wi} \)

frost-WITH

\( m-\text{b}a\text{a}-\text{c}^-? \)

BY.INTERNAL.PRESSURE-split-SEMELFACTIVE-PERFECTIVE

'It split from the frost'.

The verbal prefixes specify a kind of motion, although they may imply a kind of instrument.

Such verbal affixes may be very productive, as they are in Central Pomo, but they are not inflectional like the instrumental suffixes on Armenian nouns. They are derivational: their function is to create new lexical items. Presented with a combination of a particular verb root and an instrumental prefix, speakers generally know not just whether it is grammatical, but whether it exists in the language. Particular combinations of prefixes and roots often do not exist because there has been no use for them: their meaning would not correspond to a recurring concept in the culture. They also may not exist because the language already contains another term for the concept, so there was no need to derive a new one. In some cases, roots on which large numbers of derived stems are based no longer occur independently in the language. There is no longer an independent verb \( \text{b}a\text{a}\text{c}^-? \) in modern Central Pomo, for example.

Like other lexical items, combinations of verb roots and instrumental affixes often have specialized meanings. Speakers know about the particular usages of existing combinations, and typically volunteer these as part of their meaning. The Central Pomo stems above do not contain specific references to watermelon, wood, grapes, hair, basket roots, etc.,
but they were provided as part of their usual usages. The verb *sbúac* literally means to open up something with a tongue movement or by sucking, but it has a specialized usage: it describes the action of a traditional sucking doctor who sucks poison out of the body.

4.3. Comitative. Another case role specified by nominal suffixes in some languages is the comitative. Note the function of the suffix *-mal* on the Hungarian noun in (19).

*Hungarian (Robert Hetzron, p.c.)*

(19)  
\[ Sétálok a barát-om-mal \]

\[ walk-1 the friend-my-COMITATIVE \]

'I am taking a walk with my friend'.

Similar concepts are conveyed within the verbal morphology of some languages. Compare the pairs of Tonkawa verbs in (20).

*Tonkawa (Hoijer 1946:305)*

(20)  
\[ yela- 'to sit' \]
\[ tasa-yela 'to sit with' \]
\[ necne- 'to lie' \]
\[ tas-ecne- 'to lie with' \]
\[ notso- 'to stand' \]
\[ ia'-notso- 'to stand with' \]

Verbal comitatives, like the other verbal affixes described above, modify the nature of the activity predicated. They, too, are derivational rather than inflectional. They are used to create new verb stems when the presence of an extra participant results in a special recognizable event or state, worthy of a name. Not surprisingly, the lexical items derived with verbal comitatives are often similar in meaning across languages. Newman cites a number of derived comitative verb stems from Yokuts, including 'sing with', 'mourn with', 'walk about with', 'eat with', 'play with', 'stay over night with', and others (1944:85–86). Comitative verbs typically represent traditionally social events. Some social activities are already distinguished in some languages by separate verb roots. Cayuga contains a special verb stem used for eating together, for example, unrelated to those used for eating in general: compare *taetwdá-tq* ‘we all should eat together’ and *a-twatekho* ‘we all should eat’. Comitative affixes provide a mechanism for creating additional lexical items of this kind.

Like other lexical items, comitative verbs sometimes have specialized usages. In Takelma, there is a comitative suffix *-(a)gw*. The verb *yanagwa’nk* ‘he will take it along’ is based on the root *yana- ‘go* plus the
comitative (Sapir 1922:138). The root /tɪg- ‘come home from the hunt’ plus the comitative suffix, literally ‘come.home.from.the.hunt-with’, is used specifically for bringing back game: /tɪgwaɪn/ ‘he will fetch game home’.

4.4. Locatives. In many of the world’s languages, direction and location are shown by case suffixes or adpositions associated with noun phrases. These may indicate general location, or they may distinguish direction from location, as in (21).

Hungarian (Robert Hetzron, p.c.)

(21) Eb-ben a ház-ban lakom
this-INESSIVE the house-INESSIVE live-1
‘I live in this house’.

Eb-be a ház-ba megvek
this-ILLATIVE the house-ILLATIVE go-1
‘I am going into this house’.

Locative affixes on nouns may express finer distinctions. Hungarian is notorious for its large repertoire of locative suffixes, including, in addition to the inessive and illative above, an adessive (‘at’), an allative (‘to’), an ablative (‘from’), a superessive (‘on’), a sublative (‘onto’), an elative (‘out of’), a delative (‘from’), and others.

Indications of direction and location can alternatively be grammaticized within the verbal morphology instead of on nouns. Verbs in many languages contain general deictic locational and/or directional affixes. Cayuga, for example, has a cislocative prefix that indicates motion toward an object or an unmarked position, and a translocative prefix that indicates motion away or a distant position.

Cayuga (Reginald Henry, p.c.)

(22) satá:wegi
‘swim!’

tasátawegi
‘swim this way!’

ha:sátawegi
‘swim away!’

qotehni:n̓oh
‘one sells’

kyotéhni:n̓oh
‘store (‘one sells there’)’

ekhôn?atây:tho? ‘I will plant potatoes’

bekhôn?atây:tho? ‘I will plant potatoes over there’

Locative categories within the verb morphology are more elaborate in many languages. Maidu contains fifteen verbal suffixes indicating the direction of motion. They supply such meanings as ‘downward, to the end’, ‘separation, off from’, ‘against, up to, alongside of’, ‘upward’, ‘down, on ground’, ‘away, away from’, ‘down into a hole, into a house,
into a box', 'together, toward each other', ‘against, at’, ‘toward the speaker’, ‘out of, out from’, ‘across, through’, ‘on top of, off the ground’, ‘round and round, over and over, over’, and ‘apart, asunder, stretching out’ (Dixon 1911:700–701).

Maidu (Dixon 1911:700–701)

(23) ha ‘s-mi-asi  ‘I slid into a hole’
    has-si-p-asi  ‘I slid out (of the house)’
    la ‘p-sito-dom  ‘crawling through (a hole in the fence)’
    la ‘p-tso-no-ye-dom  ‘crawling around something’

In some languages, the kind of location, source, or goal is included within the meaning of the verbal affix. In Haida, certain verbs, especially verbs of motion, contain suffixes that specify the direction of motion. They add such meanings as ‘away/starting off’, ‘arriving’, ‘in house/inside’, ‘out of house/outside’, ‘up’, ‘down/out of a boat or vehicle’, ‘in a boat or vehicle/aboard’, ‘up from the beach/in the woods’, ‘down from the woods/toward the beach/out toward the open sea’, ‘across’, ‘in the next room’, ‘around/from one place to another’, and others (Lawrence 1977). Like other derivational affixes, they form new lexical items, sometimes equivalent in meaning to monomorphemic verb roots in other languages. Note the translations in (24).

Haida (Lawrence 1977:115)

(24) qaa  ‘walk, go, come’
    qaat  ‘leave, go off, go away’
    qaatt ‘arrive’
    qats ‘enter’
    qaagahl  ‘exit’
    qat ‘eihl  ‘descend, get out (of boat)’
    qaadlil ‘get in (boat)’
    qak ‘ahl  ‘go or come up in woods’
    gas ‘da  ‘go or come down to beach, out to sea’
    qaatt ‘go or come across’
    qaasgyaang  ‘go or come into the next room’
    qaa ‘unggwaang  ‘walk around’

Locative affixes on verbs are not precisely equivalent in function to the locative nouns of languages like Hungarian. They describe a kind of action, not a specific location. Grammarians of these languages sometimes note that there is no clear demarcation between locative affixes and those with manner or aspectual meaning. Tsimshian, for example, contains a large repertoire of proclitics. Boas classified them into three groups: “local adverbs,” “local adverbs, which however, show a gradual
transition into modal adverbs,” and “modal adverbs” (Boas 1911b:299–300). They provide such meanings as ‘up through the air’, ‘from on the water toward the shore’, ‘out of the woods in rear of the houses to the houses’, ‘from the side of the house to the fire’, ‘upriver’, ‘downriver’, ‘right there’, ‘out of water’, ‘to and for, at both ends’, ‘along a valley’, ‘lengthwise along the middle line’, ‘along the edge, edgewise’, ‘along the inside’, ‘all over’, ‘sideways’, ‘inclined against’, and many more. Although some of these meanings seem quite specialized, they were apparently relevant enough to the culture to be grammaticized for systematic usage. Note that English does contain some verbs that include as parts of their meanings features similar to those in the above list. Our verb to fish out, for example, means to remove something from a liquid. The verb to board means to move onto or into a mechanical means of transportation, such as a boat, airplane, train, or bus.

The productivity of locative affixes on verbs varies from one language to the next, but they are usually derivational. Their function is to create lexical items that correspond to conceptually unitary, recurring phenomena.

Like all derivational constructions, lexical items formed by locative affixes can have specialized meanings. Karok contains an elaborate set of directional suffixes. The meanings of many verb stems containing locatives are equal to the sums of their parts, such as kyi·m-kar ‘fall-into.river’. Often the meanings are somewhat different, however. The derived stem ʔárih-iš(riht), literally ‘jump-down.from.the.height.of.a.man’, is used for ‘become’. The stem siř-kara, literally ‘disappear-horizontally.toward.the.center.of.a.body.of.water’ is used for ‘swallow’. The stem ʔi·m-värak, literally ‘burn-hither.from.upriver’, is used when the Northern Lights appear (Bright 1957:96–101).

5. Conclusions. A tendency to develop morphological complexity primarily within verbs can have a significant effect on the nature of the categories grammaticized in a language. Much of the morphology of languages with predominantly verbal affixation does in fact describe aspects of events and states, rather than persons and objects.

The grammatical systems of such languages are not necessarily semantically impoverished. Much of what is specified by nominal morphology in other languages is implied by the verbal morphology of these. Nouns may be unmarked for number, for example, but the use of verbs specifying joint effort can imply the participation of multiple agents. Nouns may not be classified by gender, but verbs describing actions appropriate to certain kinds of participants can imply the
presence of such participants. Nouns may not be inflected for case, but verbs containing a dative or benefactive affix can indicate that a primary participant is functioning as a goal. Verbs describing actions accomplished with kinds of motion like kicking or stepping can imply the involvement of the foot as an instrument.

The morphological systems of languages containing such verbal markers are also not structurally isomorphic with those containing nominal number, gender, and case inflection. Number, gender, and case distinctions are generally applicable to all persons and objects. The referents of all count nouns can in principle be enumerated. Gender distinctions can exhaustively partition all nouns into classes. (Whether the distinctions are consistently semantically motivated or not, they can be functional in maintaining reference.) All nouns in a predication perform some role. Number, gender, and case are thus expressed by prototypical inflectional affixes on nouns in many languages. The distinctions are obligatorily specified on all nouns, and all nouns can be expected to have appropriate forms. The meanings of inflected nouns are general and predictable.

Related verbal distinctions, by contrast, are not usually equally applicable to all events and states. Such characteristics as occurrence number, distributed activity, joint effort, the shape or consistency of affected objects, direction toward a goal, type of motion, nature of location, etc., are highly salient features of some events, but not applicable to others. For this reason, they are seldom expressed consistently by inflectional affixes on verbs. They are expressed instead by more derivational morphology, encoded on specific lexical items only when salient. The resulting derivationally complex verb stems, like other lexical items, are free to have specialized meanings.

The semantic and grammatical differences between this nominal and verbal morphology are easy to miss, particularly when the verbal affixes are highly productive. The verbal affixes have thus sometimes been relegated to the status of agreement markers. Agreement analyses can obscure two important aspects of these languages, however. One is of course the precise meanings of the affixes themselves. The other is the difference between derivationally complex lexical items that do exist, those that could but do not exist, and those that could not exist. The specialized meanings of the derived stems that do exist can be overlooked, as the grammarian, seeking morphological regularities, fails to pursue speakers' comments about the special usages of each form. When we do this, we miss one of the most important aspects of language itself, its cultural context.
REFERENCES


