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System-defining Structural Properties in Polysynthetic Languages

Zusammenfassung


Two kinds of forces have been proposed to shape morphological systems: system-independent principles such as iconicity, uniformity, and transparency (MAYERTHALER 1981), and system-defining structural properties, tendencies toward typological consistency (WURZEL 1984). So far, investigation of typologically defined tendencies has been concentrated primarily in two types of languages, agglutinating and fusional. Yet morphological typologies have traditionally included a third type as well: polysynthetic languages. Do polysynthetic languages have special system-defining structural properties of their own?

Polysynthetic languages do constitute a recognizable and useful morphological type, but they do not differ from agglutinating and fusional languages along the same parameter that these two differ from each other. Agglutinating and fusional languages contrast in their phonological relations among morphemes: agglutinating languages exhibit clear morpheme boundaries, while fusional languages do not. Polysynthetic languages can show almost any degree of fusion. They can also exhibit a variety of morphophonemic processes, including those typical of agglutinating languages, such as vowel harmony, as well as those found in fusional languages, such as ablaut.

Polysynthetic languages are by definition those that exhibit a high number of morphemes per word. They also share a number of other features. Among these is a tendency to develop their morphological complexity primarily within their verbs. The location of morphemes within a language has often been assumed to be an arbitrary formal feature. As BYBEE (1985) has pointed out, however, the locus of morphologization is usually functionally motivated. Affixes tend to be ‘relevant’ to their lexical hosts. The most common kinds of verbal affixes among languages, such as tense and aspect, modify events and states. The most common kinds of nominal
Affixes, such as number, gender, and case, describe persons and objects. If relevance is a universal property of morphological systems, then languages with predominantly verbal morphology should grammaticize different categories than those with well developed nominal morphology. In fact, the tendency of polysynthetic languages to develop morphological complexity primarily within the verb can have a significant effect on the semantic nature of the categories grammaticized, and on the structure of the resulting morphological systems.

Good examples of polysynthetic languages are especially abundant throughout North America. The several hundred languages indigenous to the continent are not all demonstrably related genetically: over fifty families and isolates are usually distinguished. Nevertheless, the majority share a propensity toward well-developed verbal morphology, often accompanied by comparatively little nominal morphology. They also tend to share many of the same grammatical categories.

1. Typical Verbal Modifiers

Probably the most common affixes on verbs in languages of any type are those marking tense, aspect, and mode. It might be expected that these categories would be especially well developed among polysynthetic languages. Many North American languages do in fact exhibit elaborate aspect and mode morphology, although pure tense morphemes are somewhat rarer. Pawnee, for example, a Caddoan language originally spoken in Nebraska, exhibits a rich repertoire of aspect and mode distinctions within verbs. Parks (1976) identifies several aspectual markers: statives, perfects, and imperfects, and within these, simple, intensive, habitual, inchoative, and usitative. He also describes a large set of modes: indicative, negative indicative, assertive, imperative, contingent, absolute (interrogative, narrative), subjunctive (irrealis), infinitive, desiderative, conditional, and gerundial. Quotatives, evidentials (speaker was not an eyewitness), inferentials, and dubitatives are marked by prefixes. Parks remarks that ‘tense as a category is little developed in Pawnee. Most verb forms, in fact, are tenseless and translate temporally as either past or present. Future time is indicated by either the potential mode or the intensive aspect; but in either case the temporal element is subordinate to other features, modal or aspectual. There is, however, one tense marker: uks- ‘aorist’. This prefix is optionally used to indicate past time’ (1979: 224). Similar systems are common among other North American languages.


Aspect, mode, and manner are not the only features marked on the verbs of polysynthetic languages in North America, however.
2. Typical Nominal Morphology

Much of the nominal morphology typical of European languages is absent from most North American languages. Nouns in European languages are often inflected for number, gender, and case, but in the majority of North American languages, nouns carry no such inflection. The resulting grammatical systems are not semantically impoverished, but they do differ from ‘inflecting’ European languages in subtle ways that are often overlooked.

2.1. Number

Probably the most common inflectional category of nouns in European languages is number. A few North American languages (Zuni, the Kiowa-Tanoan and Algon- quian languages) exhibit inflectional number marking on nouns, but in the majority, number is not marked on nouns at all, or only on certain nouns, on certain occasions.

Verbs, by contrast, often contain indications of number. Verbal number markers have sometimes been analyzed as agreement affixes, ‘copies’ of features from nouns. Yet a copying analysis usually fails to describe the cooccurrences of nominal and verbal markers. Verbal number markers often appear when there are no nouns present to copy number from. Even when a separate nominal is present, the verbal marker may not ‘agree’ with it. The sentence in 1) comes from Koasati, a Muskogean language of Louisiana and Texas. The noun ‘willow’ is unmarked for number, but the verbal prefix ho- indicates that multiple willows are described.

1) Koasati (Kimbrell 1986: 126)

\[
\begin{array}{ll}
akkammi-fa & ost-k \\
be.so-in & willow-SUBJECT \\
ho-cobá-hci & DISTRIBUTIVE-be.big-PROGRESSIVE \\
\end{array}
\]

‘In such places willows all grow.’

Verbal number markers like the Koasati ho- perform subtly different functions from plural suffixes on nouns in European languages. Kimball notes that ‘this prefix is not equivalent to a pluralizer for the third person, as it is not required, even when the context indicates that the third person is not singular’ (1986: 125). It is a distributive, indicating that the event is spread out over time or space. The distribution may imply the participation of multiple subjects or of multiple objects, but its primary function is to characterize events. Other verbal number markers are also pervasive in North American languages, specifying such things as joint effort or causation, collective participation, multiple eventhood, multiple displacement, etc. In all cases, their primary function is to describe some aspect of events and states.

Verbal number markers of this type differ in a second way from the nominal number markers of European languages. In most European languages, number marking is inflectional. Number must usually be specified on all count nouns. It cannot be unspecified, since the absence of a number marker is meaningful: it means that the number is singular. All count nouns can be expected to have both singular and plural forms. This is feasible, since all objects referred to by count nouns can in principle be enumerated.

Verbal number markers, by contrast, may be highly productive, but they are not normally inflectional. Distinctions like distribution are not equally pertinent or
even applicable to all events and states. Giving someone a message may be different from spreading a story all around town, but seeing one rock is not a very different action from seeing several. Verbal number markers such as distributives tend to appear only where pertinent. They are derivational, functioning to derive new verb stems where the meaning they contribute is significant enough to warrant a special lexical item. Many languages with verbal number suffixes already contain monomorphic verb stems that include number as part of their basic meaning. In Koasati, for example, entirely different verb roots may be used for events involving one, two, or more participants. Compare, for example, *haca'dlin* ‘(one) to stand’, *hikk'dlin* ‘(two) to stand’, and *lokko'dlin* ‘(three or more) to stand’. Standing alone is considered a different activity from standing as a pair or standing in a group. (The distributive prefix does not appear with these roots when they describe a group.) Different verb roots may imply different numbers of objects: *i'sin* ‘to pick (something) up’, *pihlin* ‘to pick (several things) up’. Verb roots may encode occurrence number: *batá'plin* ‘to hit (something)’, *bóklin* ‘to hit (repeatedly)’. The derivational number suffixes on verbs provide a systematic device for creating additional lexical items of this type.

### 2.2. Gender

In many European languages, all nouns are inflected for gender. Gender inflection is relatively rare in North America, but in many languages, verbs contain classificatory information that might at first resemble the gender inflection of European nouns.

Bella Coola, a Salish language of British Columbia, contains verbal suffixes that ‘describe some feature (shape, texture, function) of the object denoted by the noun’ in the same clause *(NATER 1984: 85)*. (Examples of such suffixes are bold printed in the examples in 2).

2) Bella Coola *(NATER 1984: 85)*

lhk’u-ulh *wasulhít*
big-bulky house

’tikís’-anlíh-tiítís
ci’íts’amniítís

washed-sheet-like-PASSIVE 1 my blanket

‘Somebody washed my blanket’

These verbal affixes are not simply misplaced nominal specifiers or agreement markers. A single noun may be associated on different occasions with different classificatory affixes, depending upon the part of the object involved or the way in which it moves, is positioned, or is manipulated. The primary function of the affixes is to qualify the nature of states and events. The bigness of bulky objects is a different kind of bigness than that of sheet-like objects, road-like objects, etc. Washing sheet-like objects involves different motions from washing bulky objects.

Classificatory affixes can be found in many North American languages, sometimes in great profusion. In some languages they are quite productive, appearing with large numbers of verbs, while in others, they are rarer. Unlike the gender markers of many European languages, however, they are not inflectional. The shape, texture, or consistency of associated objects has an effect on the nature of some activities,
but is negligible or inapplicable to others. A grammar that required their specification in all contexts would be inefficient. Classificatory affixes are thus derivational: they permit speakers to create lexical items encoding these features just where they are pertinent. Many languages already contain some sets of monomorphemic verb roots whose only semantic difference is the shape or nature of the object affected. Acoma, for example, a Keresan pueblo language of New Mexico, contains the following set of handling verbs: -\(\text{rit}\) ‘to handle things in a basket’, -\(\text{ist}\) ‘to handle liquid’, -\(\text{is}\) ‘to handle things in a sack or box’, -\(\text{am\textasciitilde{}}\text{ak}\) ‘to handle grainlike or sandlike objects’, -\(\text{is}\) ‘to handle meat’, -\(\text{ipdy}\) ‘to carry on the back’, -\(\text{a}\) ‘to handle one flexible object’, -\(\text{uku}\) ‘to handle several flexible objects’, -\(\text{ud}\) ‘to handle one compact object’, -\(\text{uid}\) ‘to handle several compact objects’ (Miller 1965: 133). These are not unlike English sets of verbs that differ semantically in the nature of the object involved: eat/drink (solid/liquid), spill/drop/scatter (liquid/solid/multiple or particulate), bring/lead (inanimate/animate), set/lay/stand (solid/long/tall).

2.3. Case

Among the most common inflectional markers on noun phrases in European languages are case markers: suffixes or adpositions to noun phrases that register their roles in predications. Two kinds of cases can be distinguished: core or primary cases, and oblique or secondary cases. Core cases usually include i) subjects and objects, ii) ergatives and absolutes, or iii) agents and patients. Oblique cases may include datives or benefactives, instrumentals, comitatives, genitives, locatives, and others.

Although nominal case marking does occur in North America, it is relatively rare. The roles of participants are more often specified instead within the verb.

2.3.1. Core cases

Core cases are marked in many European languages by means of inflectional suffixes on nouns. In the Hungarian example in 3), for example, the suffix -\(\text{at}\) on the noun \(\text{haz}\) ‘house’ is an accusative case marker. The absence of a suffix indicates nominative case.

3) Hungarian (Robert Hetzron p.c.)

\[\text{Lát-ok egy ház-at} \]
\[\text{see-1 a house-ACCUSATIVE} \]
\[\text{szép.} \]
\[\text{The house is beautiful.} \]

In the majority of North American languages, core arguments are identified by obligatory pronominal affixes or clitics within verbs. In Hupa, an Athapaskan language of California, pronominal prefixes follow a nominative-accusative pattern.

4) Hupa (Golla 1985: 40, 41, 44)

\[\text{ch’il-whil-\textit{kis}} \]
\[\text{3. NOMINATIVE-1. ACCUSATIVE} \]
\[\text{hit} \]
‘he hits me’

The pronominal affixes are referential in their own right, so verbs containing
them constitute grammatical predications in themselves. The verbs in 4) above, for example, are complete sentences. In languages with overt third person pronominal affixes, the pronouns always appear whether separate noun phrases are present or not.

5. Hupa (GOLLA 1979: 42)
John ch'i-tehs-yay.
John he went off
\`John went off.'

The presence of obligatory bound pronouns can have a significant effect on the grammar. The noun phrases of sentences like 5) are not syntactically equivalent to the subject and object noun phrases of languages like English. They function more as appositives to the bound pronouns. This difference can have major ramifications in such areas of the grammar as constituent ordering, the treatment of anaphora, the status of subordinate clauses, and others.

2.3.2. Datives and Benefactives

In most European languages, the role of indirect object, goal, or beneficiary is encoded as a characteristic of the person or object fulfilling that role. The role is often registered on noun phrases by inflectional case suffixes or adpositions.

6. Hungarian (ROBERT HETZRON p.c.)

\`irok a barát-om-nak
\`write-1 the friend-my-DATIVE
\`I am writing to my friend.'

In North American languages, relationships of this type are often encoded within the verb. Note the bold printed suffixes in 7) from Takelma, a language of Oregon.

7. Takelma (SAPIR 1922: 143, 145)

\`seleva\'th\n\`he shouted to him'
\`i-k\nu\n manan'xi\n\`he fixed it for me'
\`sgele\'we\n\`he shouted'
\`i-k\w ma'n\n\`he fixed it'

These dative and benefactive affixes are not displaced nominal case or agreement markers. If the first verb in 7) appeared with a noun identifying the person shouted to, the noun would carry no dative or indirect object case marker. There would be nothing to agree with.

In some languages, dative or benefactive affixes on verbs are very productive, and in others quite restricted, but they are never inflectional like their European counterparts. They function to derive new verbs that describe an activity directed at a goal or beneficiary. Not all verbs have dative or benefactive forms. Some kinds of activities are often done for others, such as cooking or making things, so many languages contain derived verb stems meaning 'cook for' and 'make for'. Others, such as sleeping, are rarely done for others, so few languages contain lexical items such as 'sleep for'. Many languages contain at least some monomorphemic verb roots that already indicate direction toward a goal or beneficiary as part of their basic meaning, such as 'give', 'tell', 'answer', or 'pay'.
Additional evidence of the lexical status of dative or benefactive verbs comes from the fact that they are sometimes derived for specialized purposes. In Cayuga, for example, an Iroquoian language of Ontario, the verb ‘enter’ plus a dative/benefactive suffix means ‘visit’ (Reginald Henry p.c.).

2.3.3. Instrumentals

Many European languages indicate the roles of instruments by case suffixes on nouns.

8) Hungarian (ROBERT HEZRON p.c.)

Toll-al \( \rightarrow \) \text{irok}.

pen-INSTRUMENTAL write

‘I am writing with a pen.’

In North American languages, the presence of instruments is indicated within verbs in two ways. In some languages, a derivational affix on verbs simply changes their argument structure. They are used to derive transitive verb stems whose direct objects are instruments, like the Takelma verb \( \text{wa-lobo} \) ‘pound-with’, for example. Another device consists of sets of verbal affixes that at first seem to specify the instrument itself. Compare the verbs in 9) from Lakhota, a Siouan language of South Dakota.

9) Lakhota (STANLEY REDBIRD, p.c.)

\begin{tabular}{ll}
  ya\text{s}á & ‘bite off’ \\
  na\text{s}á & ‘break with the feet’ \\
  yu\text{s}á & ‘break with the hands’ \\
  wak\text{s}á & ‘cut with a saw’ \\
  kaks\text{á} & ‘cut with an axe, break off’
\end{tabular}

These prefixes are actually not precisely equivalent in function to the instrumental noun phrases of European languages. They do not refer directly to specific instruments but rather indicate types of motion. Verbs containing the prefix \text{ya}- usually indicate actions involving the mouth, but the prefix contributes more the meaning of ‘by biting’, ‘by chewing’, or ‘by talking’. The prefix \text{na}- usually appears on verbs describing actions with the feet, but entails a kind of kicking or stepping motion. The prefix \text{pu}- describe pulling motions. The prefix \text{wa}- indicates a sawing motion, not a specific instrument. \text{ka}- indicates a type of slapping motion, often with a flat surface. This may be the palm of a hand, an instrument with a flat surface (such as an axe), or something like an automobile which causes twigs to snap off as it brushes by trees.

The functional difference between these prefixes and instrumental noun phrases is underscored by the fact that they can cooccur.

10) Lakhota (STANLEY REDBIRD p.c.)

\begin{tabular}{ll}
  i & \text{ya}sá \\
  mouth use & \text{by.-biting.-cut} \\
  ‘He bit it off with his teeth’, ‘he used his teeth to bite it off’ \\
  mila & \text{waks}a \\
  \text{knife use} & \text{by.-sawing.-cut} \\
  ‘He cut it with a knife’, ‘he used a knife to cut it’
\end{tabular}
Neither the noun nor the instrumental prefix is redundant here. The noun specifies the object used, the prefix a type of motion. One instrument may be used with different types of motions, or a particular motion may appear with different instruments. The sentences in 11) describe different ways of popping a balloon.

11) Lakhota (STANLEY REDBIRD p.c.)
napé ū papʰópe
hand use by pushing-pop
'(He) popped it by pushing down on it with his hand.'
napé ū kapʰópe
hand use by slapping-pop
'(He) popped it by slaming his palm down on it.'
napé ū yupʰópe
hand use by pulling-pop
'(He) squeezed it and popped it with his hands.'

Of course an instrumental prefix can imply the type of instrument used. The prefix *nap-* 'by kicking' implies the use of the foot, so speakers do not usually specify the foot separately with a noun phrase unless special emphasis or clarification is desired.

The instrumental prefixes on verbs may be very productive, as they are in Lakhota, but their function is to form new lexical items. Presented with a combination of a particular verb root and an instrumental prefix, speakers generally know whether it exists in the language or not. Particular combinations often do not exist because there has been no reason to create 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. If a particular combination does exist, speakers are usually aware of its special usages. A speaker of Santee, a dialect of Lakhota, was asked about the meaning of the verb formed from the instrumental prefix *nap-* 'by pressure' plus the verb root *kpá* 'shatter'. She quickly replied that this word is used when someone shatters a windshield with the head (during an accident), or when one pounds chokecherries with a rock or mortar and pestle.

2.3.4. Comitative

In some European languages, comitative noun phrases are identified by case suffixes or adpositions.

12) Hungarian (ROBERT HETZRON p.c.)
Sétálok a bardt-om-mal
walk the friend-my-COMITATIVE
'I am taking a walk with my friend.'

In some North American languages, similar concepts can be conveyed within the verbal morphology. Compare the pairs of verbs in 13) from Tonkawa, a language once spoken in Texas.

13) Tonkawa (HOLTER 1946: 305)
tasa-yela- 'to sit with'
yela- 'to sit'
tas-nece- 'to lie with'
nece- 'to lie'
ta-notso- 'to stand with'
notso- 'to stand'

Like other verbal affixes, these comitatives 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 significantly different, recognizable, event or state. Not surprisingly, the lexical items derived with comitatives are often similar in meaning across languages, including not only ‘sit with’, ‘stand with’, and ‘lie with’, but also such social activities as ‘talk with’, ‘sing with’, ‘play with’, ‘mourn with’, ‘eat with’, ‘walk with’, etc.

2.3.5. Locatives

In many European languages, direction and location are shown by case suffixes or adpositions associated with noun phrases. These may simply indicate general location, they may distinguish direction from location, or they may be more specific.

14) Hungarian (ROBERT HETZRON p.c.)

<table>
<thead>
<tr>
<th>Hungarian verb</th>
<th>English translation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Barát-om-hoz</td>
<td>friend-my-ALLATIVE</td>
</tr>
<tr>
<td>megyék</td>
<td>go-1</td>
</tr>
<tr>
<td>lakom</td>
<td>live-1</td>
</tr>
</tbody>
</table>

‘I am going to my friend(‘s place).’

‘I live at my friend(‘s place).’

In the majority of North American languages, some indications of direction and location are grammaticized within the verbal morphology. In many languages, verbs contain general deictic locational and/or directional affixes meaning ‘toward’ and ‘away’, or ‘at’. Note the suffix in the verb in 15) from Nez Perce, a Sahaptian language of the Northwest.


<table>
<thead>
<tr>
<th>Nez Perce verb</th>
<th>English translation</th>
</tr>
</thead>
<tbody>
<tr>
<td>kua kúusme péexyuyye</td>
<td>and water-D.O. 3.TRANSITIVE-go-ALLATIVE-PERFECTIVE</td>
</tr>
<tr>
<td>'and he went to the water'</td>
<td></td>
</tr>
</tbody>
</table>

This Nez Perce suffix enters into idioms. The verb -kwh ‘go’ plus the suffix yields a verb stem meaning ‘marry’.

The categories are more elaborate in many languages. Maidu, a language of north-eastern California, 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, from’, ‘across, through’, ‘on top of, off the ground’, ‘round and round, over and over’, and ‘apart, asunder, stretching out’ (DIXON 1911: 700 to 701).

16) Maidu (DIXON 1911: 700–1)

<table>
<thead>
<tr>
<th>Maidu verb</th>
<th>English translation</th>
</tr>
</thead>
<tbody>
<tr>
<td>ha’s-mit-asi</td>
<td>'I slid into a hole'</td>
</tr>
<tr>
<td>has-si’p-asi</td>
<td>'I slid out of the house'</td>
</tr>
<tr>
<td>la’p-site-dom</td>
<td>'crawling through (a hole in the fence)'</td>
</tr>
<tr>
<td>la’p-iso-no-ge-dom</td>
<td>'crawling around something'</td>
</tr>
</tbody>
</table>

In many languages, locative affixes on verbs seem quite specific, like the Tsimshian suffixes meaning ‘from on the water toward the shore’, ‘to the woods in rear of the houses’, ‘from the side of the house to the fire’, ‘along a valley’, and others (BOAS 1911: 299–300). These are not precisely equivalent to the locative noun phrases of European languages, however. They describe a type of action, not a specific location. Note that even English contains some monomorphemic verbs that include as parts of their meanings relatively specific locations, like the verb board, mean-
ing ‘enter a mechanical means of transportation, such as a boat, airplane, train, or bus’.

The existence of locative affixes within verbs in a language does not entail that all location or direction is necessarily specified within the verb. Those that have been sufficiently pertinent to the culture to be grammaticized function, as needed, to create lexical items that correspond to conceptually unitary, recurring phenomena.

3. Conclusion

The propensity of polysynthetic languages to develop morphological complexity within their verbs can have a subtle effect both on the semantic nature of the categories they grammaticize, and on the resulting structure of their morphological systems.

The locus of morphologization is functionally motivated. Affixes on verbs usually describe events and states, while those on nouns usually describe persons and objects. Most of the morphology of the verb-centered, polysynthetic languages of North America does in fact describe events and states, rather than their participants. The resulting systems are not semantically impoverished, however. Much of what is typically specified by nominal morphology in European languages, such as the number of participants in an event, or the identity of instruments or locations involved, can be implied by the verbal morphology of polysynthetic languages. The opposite is also true. Distinctions specified by the verbal morphology of many North American languages, such as occurrence number or various kinds of motion, can be implied by the noun phrases of European languages.

The resulting systems are still not structurally isomorphic. Many of the distinctions conveyed by inflectional morphology in European languages are implied by derivational morphology in polysynthetic languages. Prototypical inflectional affixes are fully productive, occurring with all members of a given lexical category: in languages with inflectional case marking on nouns, for example, all nouns can be expected to have forms in all cases. Inflectional affixes are typically required by the grammar: speakers must specify the case role of all participants or they will not speak grammatically. Inflectional affixes are normally transparent in meaning: case suffixes normally contribute predictable meanings no matter what noun they occur with. Prototypical derivational affixes, by contrast, function only when needed to create new lexical items, although they may be highly productive. Speakers know which combinations already exist in the language. Derivational affixes are rarely required by the grammar in the same sense as inflectional affixes: most languages contain monomorphemic roots that are syntactically equivalent to derivationally complex stems. The meanings of derivational affixes are not always fully transparent, since they are used to create individual lexical items for specific purposes, and the meanings of lexical items can change over time. Speakers often supply very specific meanings for derivationally complex stems. The difference between inflection and derivation may not always be obvious; some derivational affixes are highly productive and transparent in meaning. Nevertheless, it can be important to our understanding of the functioning of morphology in polysynthetic languages.

The fact that number, gender, and case markers on nouns tend to be inflectional,
while related markers on verbs tend to be derivational is also functionally motivated. Number, gender, and case distinctions are generally applicable to all persons and objects. They are thus expressed by obligatory inflectional affixes on all nouns in many languages. Related verbal distinctions, by contrast, are not equally pertinent to all events and states. Such characteristics as distributed activity, 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 even applicable to others. For this reason, they are seldom expressed by inflectional affixes on all verbs. It would make little sense for a language to contain forms for all logical combinations of these features with all events and states, nor for all to be obligatorily specified on every verb. Instead, these features tend to be expressed by derivational morphology. They are encoded on lexical items only when salient.

Verb-centered polysynthetic languages thus differ semantically and structurally from those with more elaborate nominal morphology. What one asserts, the other can imply. What is inflectional in one is derivational in the other. Neither is necessarily impoverished, but they grammaticize subtly different types of categories in subtly different ways.

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