

- Franks, Steven & Schwartz, Linda (1994), "Binding and Non-distinctness: A Reply to Burzio". *Journal of Linguistics* 30, 227–243
- Givón, Talmy (1976), "Topic, Pronoun and Grammatical Agreement". In: Li, Charles (ed.), *Subject and Topic*. New York: Academic Press, 149–188
- Givón, Talmy (1984), *Syntax: A Functional-typological Introduction, Vol. I*. Amsterdam: Benjamins
- Green, John (1987), "Spanish". In: Comrie (ed.), 236–259
- Greenberg, Joseph (1963), "Some Universals of Grammar with Particular Reference to the Order of Meaningful Elements". In: Greenberg, Joseph (ed.), *Universals of Language*. Cambridge/MA: MIT Press, 73–113
- Greenberg, Joseph (1978, ed.), *Universals of Human Language, Vol. III: Word Structure*. Stanford: Stanford University Press
- Greenberg, Joseph (1985), "Some Iconic Relationships among Place, Time, and Discourse Deixis". In: Haiman, John (ed.), *Iconicity in Syntax*. Amsterdam: Benjamins, 271–287
- Greenberg, Joseph (1986), "Some Reflections on Pronominal Systems". In: Weisemann (ed.), xvii–xxi
- Gundel, Jeanette & Hedberg, Nancy & Zacharski, Ron (1993), "Cognitive Status and the Form of Referring Expressions in Discourse". *Language* 69.2, 274–307
- Head, Brian (1978), "Respect Degrees in Pronominal Reference". In: Greenberg (ed.), 152–211
- Hendrick, Randall (1988), *Anaphora in Celtic and Universal Grammar*. Dordrecht: Kluwer
- Hinnebusch, Thomas (1979), "Swahili". In: Shopen, Timothy (ed.), *Languages and Their Status*. Cambridge/MA: Winthrop, 290–293
- Ingram, David (1978), "Typology and Universals of Personal Pronouns". In: Greenberg (ed.), 213–248
- King, Gareth (1996), *Basic Welsh: A Grammar and Workbook*. London: Routledge

## 77. Verb

1. Introduction
2. The lexical composition of verbs
3. Lexical classes that are morphologically significant
4. Morphology and the function of verbs
5. The formation of verbs
6. Inflectional morphology
7. Implicational universals
8. Grammaticized verbs
9. Uncommon abbreviations
10. References

- Mithun, Marianne (1986), "When Zero Isn't There". *Proceedings of the Berkeley Linguistics Society* 12, 195–211
- Newman, Paul (1987), "Hausa and the Chadic Languages". In: Comrie (ed.), 705–723
- Progovac, Ljiljana (1993), "Long-distance Reflexives: Move-to-INFL vs. Relativized SUBJECT". *Linguistic Inquiry* 24, 755–772
- Quirk, Randolph & Greenbaum, Sidney (1973), *A Concise Grammar of Contemporary English*. New York: Harcourt, Brace, Jovanovich
- Reinhart, Tanya & Reuland, Eric (1991), "Anaphors and Logophors: An Argument Structure Perspective". In: Koster, Jan & Reuland, Eric (eds.), *Long-distance Anaphora*. Cambridge: Cambridge University Press, 283–321
- Schachter, Paul (1985), "Parts-of-speech Systems". In: Shopen, Timothy (ed.), *Language Typology and Syntactic Description, Vol. I: Clause Structure*. Cambridge: Cambridge University Press, 3–61
- Schachter, Paul & Otnes, Fe (1972), *Tagalog Reference Grammar*. Berkeley: University of California Press
- Schwartz, Linda & Dunnigan, Timothy (1986), "Pronouns and Pronominal Categories in Southwestern Ojibwe". In: Weisemann (ed.), 285–322
- Silverstein, Michael (1976), "Hierarchy of Features and Ergativity". In: Dixon, R. M. W. (ed.), *Grammatical Categories in Australian Languages*. Canberra: Australian Institute of Aboriginal Studies, 12–171
- Stump, Gregory (1984), "Agreement vs. Incorporation in Breton". *Natural Language and Linguistic Theory, Vol. II*, 289–348
- Ultan, Russell (1978), "Some General Characteristics of Interrogative Systems". In: Greenberg (ed.), 211–248
- Wiesemann, Ursula (1986, ed.), *Pronominal Systems*. Tübingen: Narr

Linda Schwartz, Bloomington (U.S.A.)

### 1. Introduction

Verbs are semantically defined as describing events, actions and, in some languages, states. Syntactically, verbs constitute the primary relational focus of the clause, specifying the roles and interactions of the participant noun phrases. Morphologically, verbs can be the repository of clause-level morphology,

such as negative, interrogative, tense, mood, and evidentiality, as well as agreement and the morphological categories of high relevance to the verb such as valence, voice and aspect. Verbs are more often morphologically complex than nouns, and in this article we will examine the general morphological properties of verbs and the way in which the lexical semantics of the verb interacts with morphological categories.

### 2. The lexical composition of verbs

No cross-linguistically valid delineation of the semantic domains of nouns and verbs is possible because a concept that in one language is expressed as a verb might in another language be expressed as a noun (see Art. 72). Nonetheless a semantically-based distinction between nouns and verbs is possible if we are willing to accept a prototype model of semantic properties (Hopper & Thompson 1984). The semantics of nouns and verbs can be said to correspond to percepts in the real world such that the prototypical noun corresponds to a percept having time-stability and a prototypical verb corresponds to an "action" or "event", that is, a percept that lacks time-stability (Givón 1979). From a functional perspective, a prototypical verb denotes a concrete, kinetic, visible and effective action (Bates & MacWhinney 1982). To the extent that the meanings of verbs deviate from this prototype, and, for example, designate more abstract events or actions, such as mental activities (*think, feel*), processes (*grow, age, develop*), internal conditions (*itch, ache*) or states (*know, be old, be able*), they are less prototypical and more likely to be expressed

- (3) *yad am mon pk d ap ay-p-yn*  
 I go wood hit hold come put-PERF-I.SG  
 'I went and chopped wood and got it and came and put it.'

Most of what we conceive of as events are actually sequences of actions, and languages can divide these sequences in different ways to constitute the meanings of verbs. The division of complex events into their component actions is typical of verbal expression in Kalam and correlates with the fact that the language has fewer than one hundred verb stems, with only about twenty-five of these being commonly used. Needless to say, the commonly used verbs have very general meaning and are applicable to many different

by some other word class, such as adjective or noun. However, since verbs frequently do designate such non-prototypical percepts, the term *state-of-affairs* can be used to cover the meanings expressed by verbs (see Art. 104).

In contrast to concrete objects which are easily isolated perceptually and individuated (it is relatively easy to tell a table from a chair), the boundaries of events are not so discrete. Thus what is included in the meaning of a verb is not a perceptual given, but rather subject to different interpretations in different languages. In a series of experiments, Gentner (1981) found that verbs are less translatable and more mutable in context than nouns are, and thus more subject to language-specific variation in their lexical content. Gentner also found that even within one language, verbs are more subject to variable interpretation than nouns are, as can be seen in the following two sentences where the verb is the lexical element that is subject to an extended interpretation, while the nouns maintain their ordinary interpretations:

- (1) *John ran through the town.*  
 (2) *The road ran through the woods.*

#### 2.1. The conceptualization of event

In the following we examine some of the ways in which the lexical semantics of verbs can differ cross-linguistically. We begin by considering the ways in which a sequence of actions can be conceptualized. For instance, English provides a means for describing the act of fetching firewood as one event, even though it actually consists of a series of actions. In the Papuan language Kalam this same 'event' is described as a sequence of five discrete actions (Foley 1986: 113):

situations. They are used in combination with other verbs and with nouns to designate complex actions.

Given the freedom with which individual languages can interpret sequences of actions as events and the mutability of the lexical meaning of verbs in context, it is not surprising that the number of verbs a language has may differ widely cross-linguistically. The number of nouns a language needs is directly related to the number of concrete objects (and abstract concepts) that are culturally im-

portant, but the number of verbs depends upon how relations between objects are conceptualized and lexicalized. We have just mentioned Kalam, with fewer than one hundred monomorphemic verb stems, but even more extreme examples exist. Among the languages of Australia, especially as one moves away from the east coast, one finds Warlpiri with around 110 simple verb roots, Walmatjari with about forty simple verbs, Gurindji with no more than thirty and some languages in the Kimberleys and Daly River area with only about a dozen verbs to which inflections can be added (Dixon 1980: 280). These are of course used in combination with other elements to produce a wide variety of verbal meaning.

### 2.2. Degree of specificity

Verbs can also differ cross-linguistically, much as nouns and adjectives can, in the degree of specificity with which similar events are distinguished from one another. While many languages have a verb corresponding to Eng. *eat* in the Papuan language Yimas (as in other Papuan languages) one verb *am-* covers 'eat', 'drink' and 'smoke (tobacco)'. Such differences are also common in more abstract domains where we find Spanish distinguishing *saber* 'to know (a fact)' and *conocer* 'to know (a person or place), to be acquainted with'. It is natural for differences in specificity to result in a difference in selectional restrictions – the conditions on a verb that determine the type of arguments with which it occurs – since the meaning of a verb and the type of arguments it takes are closely intertwined. Other differences are possible as well. For instance, English has many more lexical verbs for manner of movement than Spanish does (see also section 2.3). For example, the one Spanish verb *brincar* covers the general range of the six more specific English verbs *bound*, *dive*, *hop*, *jump*, *leap*, and *spring* (Slobin 1997).

### 2.3. Motion verbs

Another way that verbs may differ lexically across languages is according to which of the simultaneous aspects of the event are incorporated into the meaning of the verb. Motion verbs differ across languages according to whether they incorporate the path or direction of motion as in Span. *entrar* 'to go in', *salir* 'to go out', *bajar* 'to go down' and *subir* 'to go up'; the manner of motion, as in Eng.

*roll*, *float*, *bounce*; or the shape of the moving object, as in Atsugewi *-lup-* 'for a small shiny spherical object (e.g. a round candy, an eyeball, a hailstone) to move or be located', *-qput-* 'for loose, dry dirt to move or be located', *-caq-* 'for a slimy lumpish object (a toad, a cow dropping) to move or be located' (Talmy 1985). While the incorporation of direction and manner are familiar from European languages, the incorporation of properties of the moved or located object are found in Native American languages, such as Atsugewi (Hokan) and Navajo (Athapaskan), as well as in American Sign Language. In these languages, verbs that incorporate features of the moved or located object are known as classifier verbs.

### 2.4. Valence

Perhaps the most important inherent lexical property of a verb is its valence, that is, the specification of the number and role of the arguments that a verb may take. In most languages, whether a verb is transitive, intransitive or ditransitive is a lexical property of the verb (although there are some languages in which verbs may be used as transitive or intransitive without any morphological changes). One way that verbs of similar meaning may differ language-internally and cross-linguistically is in the number and role of the arguments that they require. For instance, while Span. *abrir* 'to open' is a transitive verb requiring an object, Yidiny *balan* 'to be open' is an intransitive verb. In order to use the Spanish verb intransitively, the sentence must be passivized; in order to use the Yidiny verb transitively a suffix must be added.

Of course, the choice of valence for a verb is not completely arbitrary, as cognitive factors and shared human experience influence the lexicalization of verbal concepts. One important semantic parameter in verbal meaning is the notion of causation (Gentner 1981; Croft 1990). Events can be viewed as changes of state, and changes of state can have causes. Three prototypical event classes emerge from this view: causatives, inchoatives and statives. Each of these event classes is associated with a typical valence specification. Simple verbs that express cause are typically transitive, specifying an individual acting on another individual. Thus one expects verbs for events such as hitting, killing, kissing, building, etc. to be transitive

across languages. Change of state events are typically intransitive, since by definition the cause is not specified. Thus motion events and events such as laughing, coughing, aging, ripening are usually lexicalized as intransitive. Similarly, statives, which describe inherent properties of entities, such as to be old, to be heavy, to be red, are typically lexicalized as intransitive verbs, if they are lexicalized as verbs at all. Thus verbs of commercial activity, ingestion, manipulation and creation strongly tend to be causative, while verbs of motion with incorporated manner tend to be inchoative, and verbs of behavior or color tend to be stative. In many languages, a small subset of causative verbs are ditransitive, that is, they obligatorily take three arguments – an agent, a patient and a recipient. Such verbs usually correspond to meanings such as tell, give, send, and so on.

Despite these generalizations, languages can still have some surprising valence values, as the Guugu Yimidhirr verb for laughing, which is transitive: *diijal* 'laugh at' (Dixon 1980). More systematic differences are found for events that do not fit the prototypes well: they tend to vary in their valence cross-linguistically (Croft 1990). Thus verbs that describe emotional or mental states in some languages take their human participant as the subject, as in Eng. *I like beans* but other languages make the human participant an object argument or experiencer, as in Span. *Me gustan los frijoles*.

Besides the number and grammatical role of the arguments, the meaning of a verb specifies other characteristics of its arguments. The incorporation of information about the physical attributes of an entity for motion and location verbs has already been illustrated. More common are specifications of animacy or humanness for certain arguments of a verb. Such conditions on the use of verbs with specific arguments are known as selectional restrictions.

Another property of participants that is sometimes incorporated into the verb is plurality of the absolutive argument, as in the following pairs of verbs from !Kung (Snyman 1969: 124f.):

- |     |       |             |        |             |
|-----|-------|-------------|--------|-------------|
| (4) | ≠'wā  | 'pick sg.'  | 'kheu  | 'pick pl.'  |
|     | gū    | 'take sg.'  | nl'hwi | 'take pl.'  |
|     | !o'a  | 'break sg.' | kx'oma | 'break pl.' |
|     | gllxō | 'lay sg.'   | g#a    | 'lay pl.'   |

The plurality of participants is often related to other aspects of plurality of action, such as distributed or repeated action (see section 5.3.5).

### 2.5. Lexical aspect

Another prominent lexical parameter for verbs is aspect or Aktionsart, since the meaning of a verb specifies the temporal contours of the event it is describing (Comrie 1976; Dahl 1985; Art. 109). One distinction that is sometimes regarded as aspectual has already been mentioned – the distinction between stative and inchoative. This distinction is lexicalized in such English pairs as *know* and *realize*. Another type of aspectual distinction occurs between verbs designating only one cycle of an action versus those designating repeating cycles. Thus *step* constitutes one cycle of which *walk* designates multiple repetitions. Other examples are *hit* and *beat*, *snort* and *snore*.

### 2.6. Dynamic vs. stative

A stative situation is one that is extended in time and which involves no change, while a dynamic situation brings about some kind of change. Thus *know* and *be tall* are stative predicates in English, while *run* and *buy* are dynamic predicates (Comrie 1976: 48f.). Of course there is a certain degree of indeterminacy for situations such as sleeping or standing which might be conceptualized as stative or dynamic, as well as for cases in which a steady state is maintained actively, such as emitting a pure tone or holding one's breath. The distinguishing factor that has been suggested is that stative situations are maintained until something happens to change them, while dynamic situations require a constant input of energy to be maintained. Thus sleeping and standing would qualify as stative under this criterion, but emitting a pure tone and holding one's breath would qualify as dynamic.

## 3. Lexical classes that are morphologically significant

The two semantic distinctions that are most important for verbal morphology are the transitive/intransitive distinction and the dynamic/stative distinction. Languages such as Nahuatl, which have subject and object markers on the verb, have a different morphological structure for the verb if the verb is transitive rather than intransitive. In some

languages this difference amounts only to the addition of object markers to the verb along with the subject markers, or ergative in addition to absolutive. The following examples

- (5) intransitive  
(*sarà*) *s-ce-yt'*  
(I) 1.SG.SUBJ-GO-FIN  
'I go.'
- (6) transitive  
(*sara barà*) *hžâya hâ-z-hó-yt'*  
(I you) well 2.SG.ABS-SG.ERG-SEE:DYN-FIN  
'I like you.'
- (7) ditransitive  
*s-âš-cva* *âžoabž (o-)-s+â-r-foe-yt'*  
my-brother:PL news (3.SG.ABS-) 1.SG.IO+10-3.PL-ERG-tell-FIN  
'My brothers told me the news.'

In some cases the extent of morphophonemic fusion between subject and object markers makes the transitive markers appear quite different from the intransitive ones (e.g. in the Maung language of Australia). In Algonquian languages, the transitivity of the verb determines the nature of the final suffix, and also the interpretation of the person/number affixes as referring to the subject or the object.

In addition, transitive and intransitive verbs differ in the extent to which they can be affected by morphological valence-changing processes, such as causative: in some languages only intransitive verbs may be causativized (for instance, Nakanai [New Guinea]), while in others both transitive and intransitive can be affected (as in Arabic). Passivization is a morphological process that applies typically to transitive verbs, though passive-like constructions are found with intransitive verbs in some languages (e.g. German).

The stative/dynamic distinction is usually relevant only for morphological aspect. In some languages stative verbs have fewer aspectual distinctions than dynamic verbs do. For instance, in Abkhaz (Caucasian) stative verbs make no aspectual distinctions in the past, while dynamic verbs distinguish perfective and imperfective aspects. (The past for statives uses the same suffix as the imperfective for dynamics.) Moreover, in this language the present and future tense formations are different for stative vs. dynamic verbs.

It is more common, however, for the stative/dynamic distinction to be important in the interpretation of aspectual morphemes,

from Abkhaz illustrate the use of person/number prefixes for agreement with up to three arguments of the verb: with each added argument a prefix is added to the verb.

or in the cooccurrence restrictions that they manifest. For instance, it is common for a perfective morpheme to have a present state interpretation when used with a stative predicate (e.g. in Island Carib [Arawakan], Tahitian [Eastern Oceanic] and Slave [Athapaskan]). A progressive morpheme may have a present state interpretation with a stative predicate (as in Kanukuru [West Chadic]) or it may simply not be used with statives (as in English or Cocama [Tupi]).

Cooccurrence restrictions based on the lexical aspect of the verb are common for derivational categories and for grammaticizing constructions that are near the beginning of the grammaticization chain. This is the case for progressives, as mentioned above, but it also applies to iteratives (meaning repetition on one occasion), which apply only to dynamic verbs and at the beginning of their development only to telic verbs. Similarly, resultatives only apply to dynamic verbs, and in fact, are most appropriate with process verbs. On the other hand, inchoatives are restricted to statives.

Lexical classes of verbs that are semantically arbitrary also affect the morphology. Some languages, such as Romance languages, have different sets of allomorphs for tense, aspect and mood depending on the arbitrary lexical classification of verb stems, commonly referred to as conjugation classes (see Art. 65). Such affixal allomorphy arises sometimes for phonological reasons, as for instance when some stems end in consonants and others in vowels, or for semantic reasons, as when different auxiliaries that give rise to

the inflections are used for different verbs (as would be the case if Fr. *être* and *avoir* as used in the *passé composé* had become affixes).

#### 4. Morphology and the function of verbs

In their most prototypical clause-level uses, nouns refer to participants, while verbs show the relation among those participants in the situation. On the discourse level, nouns prototypically introduce participants into the discourse, while verbs assert the occurrence of an event of the discourse (Hopper & Thompson 1984: 708). When a verb serves this asserting, reporting, function, it carries its fullest morphological marking – person, number, tense, aspect, modality or whatever categories are marked in the languages and is considered to be finite. On the other hand, when it serves other functions its morphological markings are substantially reduced (Hopper & Thompson 1984). Just as the functions of lexical verbs in context may vary along a scale from true assertion to referring to a state of affairs as though it were an entity, so the formal properties of verbs are modified on a scale of finiteness (Givón 1990).

Nonfinite verbal forms, which typically lack some verbal inflection (most often person and number agreement) and may also have an affixal marking, occur in various functions which are not prototypical for verbs.

Participles allow verbs to be used in adjectival functions modifying nouns. Aspectual distinctions do occur in participles, as in the present and past participles of English and other Indo-European languages (e.g. *eating* vs. *eaten*), and voice distinctions can also occur as in the active and passive participles of Latin. The gerundive, which is a non-finite adjectival passive, conveys some modality sense: for instance Lat. *liber legendus* 'a book to be read' as in *librum legendum censeo* 'I

regard the book as one to be read, I think one should read the book'.

Other nonfinite forms belong to the general category of verbal noun, since they bestow on the verb to a greater or lesser extent the properties associated with nominals allowing the verbs to be used in non-canonical functions. The gerund is a non-finite substantial verb form whose logical subject is usually coreferential with the subject of the main verb or more rarely, the object of the main verb. For example, *Coming to the top of the ridge, we saw the valley stretch out before us* where the logical subject of *coming* is *we*.

The infinitive form of the verb rarely has person/number agreement and sometimes lacks tense or aspect (though it may appear in both active and passive voice). As predicted, the infinitive does not appear as the main verb in the asserted clause of a sentence, nor does it present information in the main narrative line of the discourse. Rather an infinitive appears in a context in which it does not bear a syntactic relation to its notional subject (hence the lack of person/number agreement), as for instance in complement clauses such as *I want him to do it* (Noonan 1985: 20). It is common for an infinitive to be formed with an adposition or case marker indicating allative, benefactive or dative relations (e.g. in Chuvash [Turkic], Udmurt [Finno-Ugric] and Hebrew [Semitic]) (Haspelmath 1991). Cross-linguistic and diachronic evidence suggest that infinitives develop from the use of a locative element with a verb in constructions indicating movement for a purpose (*I went to see him*) to general purpose (*He saved money to buy a car*) and then to complement clauses (*He wants to buy a car*) (Haspelmath 1991; Bybee et al. 1994). Thus infinitives are widely used in all of these contexts, as well as in other subordinate contexts. While it is uncommon for infinitives to show person/number agreement, a notable exception is the personal infinitive of Portuguese, which has the forms shown in Tab. 77.1:

finiteness person	finite	dependent infinitive
1. sg.	( <i>eu</i> ) <i>canto</i>	<i>para (eu) cantar</i> 'for me to sing'
2. sg.	( <i>tu</i> ) <i>cantas</i>	<i>para (tu) cantares</i> 'for you to sing'
3. sg.	( <i>ele</i> ) <i>canta</i>	<i>para ele cantar</i> 'for him to sing'
1. pl.	( <i>nós</i> ) <i>cantamos</i>	<i>para (nós) cantarmos</i> 'for us to sing'
2. pl.	( <i>vós</i> ) <i>cantais</i>	<i>para (vós) cantardes</i> 'for us to sing'
3. pl.	( <i>eles</i> ) <i>cantam</i>	<i>para (eles) cantarem</i> 'for them to sing'

Tab. 77.1: Portuguese personal infinitive

Another term for a type of verbal noun that is used in the Arabic grammatical tradition and also for the description of Caucasian languages is *mašdar*. In the Arabic tradition the *mašdar* is a form lacking both person/number agreement and tense but verb-like in that it can govern the nominative and accusative cases. In the description of Abkhaz, a Caucasian language, the *mašdar* is the only nominalized form of the verb (Hewitt 1979). The notional subject appears as a possessive marker on the Abkhaz *mašdar*.

Nominalizing a verb also allows the verb to appear in non-canonical functions. There are two types of nominalizations, one in which the nominalization names the act, activity or result that corresponds to the verb's action (e.g. *destruction*, *arrival*) and the other in which the meaning of the nominalization reflects the relation between the verb and its arguments. While the latter type includes agentive (*baker*), instrumental (*opener*), and patient (*payee*) nominalizations, by far the most common of these in the languages of the world is the agentive nominalization, which in fact occurs in almost all of the language families of the world (Woodworth 1991). Nominalizing morphemes almost always occur contiguous with the verb stem and it is very unusual to find any inflectional distinctions made within the nominalized verb (Woodworth 1991).

Nominalizations, infinitives and participles in combination with an inflected auxil-

## (10) Kobon

*Yad be gau am-em kaj pak-nab-in.*  
I forest there go-1.SG.MED pig strike-FUT-1.SG.FIN  
'I will go to the forest and strike a pig.'

Thus in all of these cases where the verb stem is serving a function other than to assert the occurrence of a separate event of the discourse, the verb carries fewer inflectional distinctions. When the verb is performing its canonical function it may be marked for those categories of high relevance to the verb, such as aspect and tense, as well as for categories that have clause-level or discourse-level functions. Since the verb is central to the clause, showing the relation among the participants, it is also the repository of clause-level morphology in many languages, serving as the bearer of markings of epistemic and speaker-oriented mood, evidentials, honorifics, negation and interrogation. A discussion of these inflectional categories follows in 6.

iliary are commonly found in constructions that give rise to new inflections (see Art. 68), e.g. in the formation of the anterior or perfective (as in Spanish, French, German or Dutch), the progressive (as in English and Spanish), the future (as in Spanish and French) and the passive (as in English).

Uncommon in Europe, but widespread in the remainder of the world is the use of serial or medial verb constructions in which a single event is described in terms of a series of verbs, as in example (3). In such constructions the verbs do not have independent expression of tense, aspect and mood; rather, in one type of construction, exemplified in (8), all the verbs in the construction have the same values for these categories, while in the other type, exemplified in (9), only the first or last verb has access to the full range of distinctions and the other verbs have no markings for the inflection categories, or extremely reduced markings (Hopper & Thompson 1984):

## (8) Akan

*wo-a-didi a-nom*  
3.PL-PERF-eat PERF-drink  
'They've eaten and drunk.'

## (9) Yoruba

*mo m-mú iwé hò*  
1.SG PROG-take book come  
'I am bringing the book.'

In Papuan languages the medial verb takes a different person/number affix than the final one, as shown in (10) (Davies 1981):

## 5. The formation of verbs

## 5.1. Compounding and incorporation

One method languages exploit to create new verbs is compounding – the combination of two lexical stems into one verb (see Art. 87). The two components may consist of any word class plus a verb as head: noun and a verb (Eng. *babysit*), two verbs (Igbo *tú-fù* 'throw-be lost = throw away'; Mandarin *lā-kāi* 'pull-be open = pull open'), or an adverb or adposition plus verb (as is common in Indo-European languages: Lat. *adēo* 'toward-go = approach', Germ. *mitfühlen* 'with-feel = sympathize'). The entire formation is then inflected according to the (usually

regular) morphological categories of the language, and hence qualifies as a single verb. Directional adverbs that compound with a verb may eventually come to signal aspectual meaning (see section 5.3.4).

Related to compounding is the process of noun incorporation, which involves the morphological incorporation of a noun into a verbal complex (see Art. 88). Noun incorporation differs from compounding in being restricted to a (sometimes rather large) subset of the available nouns and verbs in the language. In particular, the nouns that can be incorporated include body parts, food or game and cultural products. These items are often at a generic rather than specific level of categorization; that is, proper nouns are never incorporated and a word at the level of categorization of *tree* is likely to be incorporated, but not a word that names a species of tree. A typical example of noun incorporation is shown in (11).

## (11) Tiwi (Osborne 1974: 47)

*ji-māni-alipi-ajkina*  
he-me-meat-steel  
'He stole my meat.'

In some languages the incorporated version of the noun is a reduced or even suppletive form of the independent noun. For instance, the free Tiwi noun corresponding to the incorporated form for 'meat' in (11) is *puniŋ-kapa*. At times the verb also appears in a reduced form in the incorporation unit. When the direct object is incorporated, the resulting word is an intransitive verb and does not take an independent object (see Mithun 1984 and Art. 88).

## 5.2. Verbalization processes

Another way to form new verbs is to derive them from nouns and adjectives (see Art. 89). Verbs derived from adjectives usually mean 'to become Q', as in Span. *engrandecer* 'to enlarge' from *grande* 'big, large', and are inchoatives, which in general specify entry into a state. When such forms are used with a causative agent, they are termed factitives. An English verbalization such as *blucken* can be used as an inchoative or a factitive.

Verbs may be derived from nouns by simply adding verbal inflection to nouns, as in English *hammered*, or they may be derived by adding affixes to the noun stem. These affixes always occur closer to the stem than inflection does. The most common meanings for verbalizers are 'to be X' and 'to do X's ac-

tion', with 'to become X' and 'to make X' also occurring frequently as in the following examples (Woodworth 1991: 190, 201):

## (12) Modern Greek 'to do X's action'

*arx-iz-o-o*  
beginning-VBZ-IMP-1.SG  
'I begin'  
*amerikan-iz-o-o*  
American-VBZ-IMP-1.SG  
'I mimic an American'.

## (13) Karok 'to be X'

*?a:s-hi*  
water-VBZ  
'to be wet'

## (14) Karok 'to make X'

*?uhru-hi*  
egg-VBZ  
'to lay eggs'

## (15) O'odham (Papago-Pima) 'to become X'

*e-hodaz-tcu'D*  
REFL-stone-VBZ  
'turned himself to stone'

Some languages have verbalizers with more specific meanings, such as Inuit 'to have few Xs', 'to hunt Xs poorly' or O'odham (Papago-Pima) 'to break' or 'to take X away forcibly'. These more specific verbalizers are undoubtedly related to noun incorporation constructions (Woodworth 1991).

## 5.3. Verbs derived from other verbs

A variety of processes of affixation or reduplication exist that derive one verb from another. These processes involve valence changes, aspectual changes or the addition of locational and directional meaning.

## 5.3.1. Valence-changing morphology

The most common type of derivational morphology for verbs in the languages of the world is valence-changing morphology (cf. Art. 107). Although some languages allow the same verb stem to be used in intransitive, transitive or causative constructions without a change in morphology (e.g. English verbs such as *open* and *boil*), most languages do have some morphological means of changing valency. Causative morphology is by far the most frequently-occurring, as in these examples from Syrian Arabic: *nāzel* 'go down', *nāz-zal* 'bring down', *nām* 'go to sleep', *nayyam* 'put to sleep'. Of course, the effect of causative on an intransitive verb is to make it transitive, and the effect on a transitive verb is to make it ditransitive. Detransitivization or anticausative formation also occurs, as in

this example from Turkish: *aç-ti* 'open-PAST', *aç-il-di* 'open-ANTICAUS-PAST'.

A highly generalized valence-increasing process occurs in many Bantu languages. When an affix, called the applicative, is added to verbs it increases the number of ob-

jects that may occur in the clause. In Chishona this added argument can represent a goal, a motive, a prepositional phrase, or even an infinitive or clausal adjunct. The applicative suffix in Chishona is *-ir-* or *-er-* (Harford 1993).

(16) Applicatives in Chishona

(a) Goal:

*Amái*            *v-áká-túm-ir-á*                            *mu-kóma*                            *chi-po*  
CLASS1a:mother CLASS2a-REM.PAST-send-APPL-IND CLASS1-older.brother CLASS7-GIFT  
'Mother sent the older brother a gift.'

(b) Motive:

*Babá*            *v-áká-úráy-ir-á*                            *munhu mari*  
CLASS1a:father CLASS2a-REM.PAST-kill-APPL-IND person money  
'Father killed a person for money.'

(c) Prepositional phrases:

*A-no-nzw-ir-a*  
CLASS1-PRES-feel-APPL-IND  
*tsitisi*        *kuná*        *va-mwé*  
CLASS9:pity towards CLASS2-others  
'He has pity on others.'

(d) Infinitive adjunct:

*Baba*            *v-áká-úráy-ir-á*                            *nyoká nokuti*  
CLASS1a:father CLASS2-REM.PAST-kill-APPL-IND snake because  
*y-áká-ngá*        *y-áká-pind-á*                            *mu-mbá*  
CLASS9-REM-be CLASS9-REM.PAST-enter-IND CLASS18-in.house  
'Father killed the snake because it had entered the house.'

5.3.2. Attraction of adpositions to verbs

It is also common for prepositions and postpositions to become affixes on verbs, giving them directional or locational meaning, or changing their valence or aspect. In Southern Lwo (Western Nilotic) languages what was previously a preposition occurring with indi-

rect objects has become a suffix on the verb. For instance, in Dholuo, the preposition *ni* occurs with indirect objects that are full nominals, but when the indirect object is pronominal, the preposition and pronoun are both suffixed (Reh 1986: 123f.):

(17) (a) *otieno o-kele ni odhiambo kitabu*  
Otieno PERF-bring DAT/BEN Odhiambo book  
'Otieno has brought a book to Odhiambo.'

(b) *o-kele-n-a kitabu*  
3.SG-bring-DAT/BEN-1.sg book  
'She brings me a book.'

In the related language Lango, the dative/benefactive marker and the agreement marker are suffixed in all cases. The */n/* of the suffix has assimilated to the final consonant of the stem (Reh 1986: 126):

(18) *ò-kèlli dàkó*  
3.SG-bring:BEN woman  
'She brought it for the woman.'

In verb-final languages in which adpositions occur after the noun and before the

verb, they may become prefixes on the verb. The following examples from Abkhaz show the instrumental postposition after the noun (19a) and alternatively incorporated into the verb (19b) (Hewitt 1979: 114):

(19) (a) *a-žah°á á-la sá-yə-sə-yt'*  
ART-hammer it-with I-him-hit-FIN  
'I hit him with a/the hammer.'

(b) *a-žah°á s-a-la-yə-sə-yt'*  
ART-hammer I-it-with-him-hit-FIN  
'I hit him with a/the hammer.'

Other examples of adpositions that become associated with the verb are the separable prefixes of German and Dutch, and the verb particles of English.

5.3.3. Locational and directional morphology

Many languages have locational morphemes that affix to the verb indicating the location of the situation described by the verb. Such affixes most commonly use the location of the speaker as the deictic reference point. The location of the hearer is only used in systems which also use the location of the speaker. In the highly elaborated system of Nimboran (North Papuan) such affixes indicate that the situation occurred 'here', 'there' or 'far away', and additionally 'below' or 'above' (the speaker) (Anceaux 1965: 62–64).

Systems of directional morphemes may be even more elaborate. Such systems are based primarily on allative and ablativ relations, again using the location of the speaker as the primary reference point. Nimboran has eleven directional affixes that specify the possible combinations of movement to and from the five positions listed above (Anceaux 1965: 70–79). Other languages have even more specific meanings for directional affixes. For instance in Karok (Hokan) a set of more than thirty directional affixes have meanings as specific as 'hence upriverward' and 'hither from upriver'; 'horizontally away from the center of a body of water' etc. (Bright 1957: 95–105). In Nicobarese directional affixes indicate movement towards the jungle versus movement towards the village or the sea (Braine 1970: 173–176). Of course, such specific meanings for directionals reflect the geographical environment of the cultures in question.

At times such directional affixes also take on aspectual meaning, as in the case of the Nicobarese affix meaning 'into the

jungle' which also has completive meaning. The Karok affix meaning 'up to the height of a man or less' also means 'to start to' while the affix meaning 'down from the height of a man or less' is used with stative predicates to indicate the action that results in that state (Bright 1957: 97, 102f.). Andative and venitive markings on verbs indicate motion away from and towards to the speaker, or they indicate 'go in order to do' and 'come in order to do'. For instance in Karok, the suffix *-ař* added to a verb gives the meaning 'to go in order to' (*řih-ař* 'to dance-to go in order to = to go in order to dance' [Bright 1957: 106]). The latter meanings sometimes give rise to future markers (as in the southern dialect of Sierra Miwok).

5.3.4. Aspectual derivation

One common type of aspectual derivation makes a verb completive. Completive action has been carried out thoroughly and completely, often with an object that has been totally affected or consumed, or with the implication that all objects have been affected. For instance Tucano (Andean-Equatorial) has a suffix *peò* which means completive, as in the following words (Sorensen 1969: 173f.):

(20) *ba-peò-amí*  
eat-COMP-EVI:3.SG  
'he ate all of it'  
*owhà-peò-apí*  
paddle-COMP-EVI:1.PL  
'(we) paddled all the way over'

Directional particles or adpositions can be used to give completive meaning, as in the English phrases *eat up* or *burn down*. If this use of directional morphemes is generalized, it may lead to the establishment of a derivational perfective, as found in the Slavic languages. Thus the perfective forms of verbs in Serbo-Croatian have prefixes that originally indicated direction:

(21) Imperfective	Perfective
<i>íci</i> 'to go'	<i>proći</i> 'to go through, go past'
<i>teći</i> 'to flow'	<i>proteći</i> 'to flow past'
<i>písati</i> 'to write'	<i>potpísati</i> 'to write under, sign'
	<i>natpísati</i> 'to write down'
	<i>prepísati</i> 'to re-write'

Another common aspect that may be expressed derivationally is the iterative aspect.

defined as the repetition of an action on a single occasion. Iterative is often expressed

by reduplication and can have as other meanings habitual, continuative, frequentative and distributive (cf. Art. 109). Consider the

(22)	<i>lya</i>	'eat'	<i>lyalyalya</i>	'eat and eat and eat'
	<i>gwa</i>	'fall'	<i>gwagwagwa</i>	'fall and fall and fall'
	<i>tawa</i>	'tie'	<i>tawa-tawa</i>	'tie over and over again'
	<i>pinga</i>	'want'	<i>pinga-pinga</i>	'search for'
	<i>jenda</i>	'travel'	<i>jenda-jenda</i>	'wander about'

### 5.3.5. Plurality of action

In section 2.4 examples were given from !Kung of lexical differences relating to singular vs. plural participants. Many languages have a derivational category of plurality of action that may refer to the participation of multiple entities as the absolutive argument, or it may signal that the action was distributed over multiple objects, over space or over time. Consider the prefix *wa:* in Pawnee (Parks 1976: 279):

(23)	<i>wa:wüua</i>	'to defecate here and there'
	<i>rawa:hat</i>	'to pass to (various people)'
	<i>wa:?u</i>	'to give (various things)'

Sierra Miwok has a similar 'distributive' suffix *i:*, as shown in the following examples (Freeland 1951: 112):

(24)	<i>po?:al-i:-</i>	'slit.open-DISTR (to slit open several)'
	<i>ma?:at-i:-</i>	'kill-DISTR (to kill several)'
	<i>ha?:at-i:-</i>	'toss-DISTR (to toss away repeatedly or several)'

Such derivational morphemes do not mark agreement with the absolutive argument, but rather signal that the action of the verb itself occurred more than once. As a consequence of the plural action several objects may have been affected, or the action may have been distributed in time or space.

## 6. Inflectional morphology

By far the most common inflections for verbs are for aspect, tense, mood and person/number. In a sample of 76 maximally unrelated languages (the Gramcats Sample of Bybee et al. 1994) 65 languages have some bound verbal inflection. Of these, 58 languages have person/number inflection, 61 have aspect, 59 have tense and 56 have mood, making these categories so widespread among languages with inflection as to be almost universal. The grammatical mean-

following examples from Mwera (Eastern Sudanic) (Harries 1950: 77):

ings counted as aspect were continuative, frequentative, habitual, imperfective, inchoative, perfective, and progressive (cf. Art. 109). The tenses are anterior (perfect), future, past and present (cf. Art. 110). The moods and modalities are ability, admonitive, certainty, concessive, desire, hypothetical, imperative, inferred certainty, intention, obligation, optative, possibility, probability, prohibitive, purpose and subjunctive (cf. Art. 111).

When these categories are affixed to the verb, they tend to occur with the categories that have the greatest semantic relevance to the verb closest to the stem, that is, from the stem outward: aspect, tense, mood, person/number (Bybee 1985: 33–35 and Art. 39). The categories closest to the stem also show greater morphophonological fusion with the stem, as manifested by the mutual conditioning of allomorphy between stem and affix. The perfective/imperfective distinction is often indicated by major stem changes, but tense, mood and person/number marking rarely are. The latter categories are more often marked with affixes and tend to have only minor effects on the verb stem.

Overall verbal morphology is three times more likely to be suffixed than prefixed, and even in SVO and VSO languages there are more suffixes than prefixes, so most of the inflections referred to here are suffixes (Bybee et al. 1990). While person-number markers have an overall tendency to be suffixed, prefixed person-number markers account for about a third of the prefixes in verb-final languages. In verb-medial languages person-number markers are preposed about half the time.

Person and number usually occur together and when they do, it is rarely possible to make a morphological segmentation separating the person markers from the number markers. Especially in first and second person, person and number tend to be represented by a single morph. Person/number

markers on verbs may either constitute agreement or pronominal arguments of the verb. In the former case, the actual noun phrases are the arguments of the verb and the agreement markers simply index these arguments. In the latter case, the person/number markers are pronouns bound to the verb and represent all the core arguments of the verb. The verb with its inflections, then, represents a complete clause, and full noun phrases func-

tion only to clarify the referents of the pronominal affixes (Mithun 1986).

Person/number markers on verb sometimes include distinctions for gender or noun class. For instance in Krongo, the finite verb has a prefix indexing the subject of the verb. In Tab. 77.2, *n-* is used for first and second person singular and for neuter, *m-* is used for feminine, *ø-* for third singular and *k-* for plural (Reh 1985).

	First and second person	Third person
sg.	<i>n-iisò à?àŋ</i> 'SG-run I (I run)'	<i>m-iisò (nimyà)</i> 'SG.FEM-run (woman) (She [the woman] runs)'
	<i>n-iisò ù?ùŋ</i> 'SG-run you (You run)'	<i>n-iisò (ñtnéerá)</i> 'SG.NEUT-run (dog) (It [the dog] runs)'
pl.	<i>k-iisò àŋŋá</i> 'PL-run we:INCL (We run)'	<i>ø-iisò (káaw)</i> 'SG-MASC-run (man) (He [the man] runs)'
	<i>k-iisò óow</i> 'PL-run we: EXCEL (We run)'	<i>k-iisò (kátú)</i> 'PL-run (people) (They [the people] run)'
	<i>k-iisò àaká</i> 'PL-run you:PL (You run)'	

Tab. 77.2: Person/number markers in Krongo

It is more common for gender to be distinguished in the third person than in second and more common in second than in first person.

Negation is almost always marked on or around the finite verb of the clause and tends to precede the verb stem. The most common way to express negation is with a particle preposed to the verb. This type of expression occurs in languages of all word order types, and is the most common means of expression in SVO and VSO languages. Somewhat less commonly, prefixes mark negation, also in languages of all word order types (including SOV). Only consistent SOV languages such as Japanese and Turkish use a suffix for negation. Expressions that use both a preposed and a postposed element also occur in SOV and SVO languages (cf. Art. 113).

Interrogative is less commonly marked on verbs as the scope of interrogation is the whole clause. However, in consistent verb-final languages such as Japanese, it is common to have an interrogative marker as a suffix (often the last suffix) on the verb. Of course, this suffix will also be clause-final, one of the appropriate positions for elements with clausal scope. Languages with lots of prefixing and pronominal arguments affixed to the verb may have interrogative expressed as a prefix in the verb complex (Tojolabal [Mayan] and Cheyenne [Algonquian]).

## 7. Implicational universals

Some implicational universals concerning verbs have been proposed, having the form 'if a language has property *x*, it also has property *y*.' Such statements should not necessarily be taken to imply a causal relation between *x* and *y*.

One implicational universal that appears to hold true for nouns as well as verbs is that the presence of inflectional morphology implies the presence of derivational morphology (Greenberg 1963). For verbs, this reflects the fact that almost all languages have some ways of deriving verbs, with valence-changing processes, especially causative, being almost universal. On the other hand, some languages have no inflection at all, in particular many Sino-Tibetan and Mon Khmer languages, as well as some Oceanic languages and of course Creole languages. As mentioned above, in the Gramcats Sample of 76 languages, eleven have no verbal inflection at all, while most of these eleven do have some derivational morphology.

A more specific implication is that the presence of person-number categories on the verb implies the presence of aspect, tense or mood categories on the verb (Greenberg 1963: 93). Again, this statement follows from the fact that person-number categories occur

in fewer languages than aspect, tense and mood categories do. That it is not a strict or causal implication is shown by the fact that there are exceptions to this statement. For instance in Trukese (Oceanic) object markers are suffixed to the verb, but subject markers as well as all aspect, tense and mood markers are found in a preverbal auxiliary that is not bound to the verb. Thus the verb has object inflection but no aspect, tense or mood inflection. Similarly, O'odham (Papago-Pima) has object markers prefixed to the verb, but subject markers and aspect, tense and mood are contained in an auxiliary that is not bound to the verb, but rather appears in sentence-second position. Another type of exception is exemplified by Dakota (Siouan), which has an elaborate person-number system incorporated into the verb (prefixed or infixed), but most aspect, tense and mood categories are expressed by particles or auxiliaries.

One might expect implicational relations to hold among aspect, tense and mood categories. However, no such relations can be substantiated; rather these three categories are so commonly occurring that almost all languages that have one of them have the other two (see the numerical break-down in the preceding section). In fact, there is some overlap in these categories and it might be more useful to consider the meanings expressed within these categories in looking for universals rather than looking for universals at the level of aspect, tense and mood. For instance, it appears that if a language has inflectional tense or aspect at all, then it has either a perfective or a past morpheme (Dahl 1985; Bybee et al. 1994; Art. 109 and 110). Similarly it might be said that a large majority of languages with inflection have an inflectional means of expressing the imperative. Beyond these statements, however, it is very difficult to find more universal categories of aspect, tense or mood.

## 8. Grammaticized verbs

Three types of verb-like entities occur that are more grammatical in their properties than lexical: auxiliaries, copulas and proverbs.

### 8.1. Auxiliaries

Auxiliaries (see Art. 78) are usually derived from lexical verbs diachronically but have arrived at a stage in which they always occur

in a 'helping' status – as the finite verb in a clause that contains a lexical non-finite verb. Auxiliaries typically code a full range of aspectual and modal functions, though they can also be used for passive voice and future tense. They differ from lexical verbs in their inflections: in some cases they code more morphological distinctions than full verbs (as with the English auxiliary verb *be*, which distinguishes first and second singular in the present, or the Basque auxiliaries); in other cases they code fewer distinctions, (e.g. the English modal auxiliaries lack third person inflection and do not have participles or infinitives) (cf. Steele et al. 1981).

### 8.2. Copulas

Copulas are grammatical words that serve the predicating function in clauses with predicate nominals (*Bob is a rancher*). The same form often occurs with predicate adjectives (*Bob is short*) and locatives (*Jane is down by the windmill*). Semantically, copulas are highly generalized stative predicates, but they are not always totally lacking in meaning, as evidenced by the fact that some languages (e.g. Spanish, Portuguese and Irish) have two copulas, one indicating a permanent or stable state and the other indicating a more temporary state. Copulas often carry the morphological markers of verbs, indicating tense, aspect and person/number. However, they can also be defective, lacking certain markers that appear on other verbs. One source of this defectiveness is the fact that they are stative verbs, and stative verbs often mark fewer aspectual distinctions than active verbs. In some languages (e.g. Russian) the copula is omitted when it occurs in unmarked verbal categories, such as present tense, but it appears in non-present contexts bearing the markers of tense.

Another reason for their defectiveness in verbal categories is that some copulas are not derived from verbs at all, but rather from pronouns. Even in these cases, however, person/number or gender agreement with the subject may be present. For instance, in Dakota agreement with plural subjects is marked with the suffix *-pi* on the 'defective verb' *e*, which is derived from an emphatic pronoun. Complete lack of inflection can arise if one form of the pronominal copula (usually the third singular masculine form) generalizes to be used with all subjects, as for instance in Tigré (Semitic) where the singular masculine pronominal copula *tu* can be used with all subjects in copula constructions.

### 8.3. Pro-verbs

Some languages have highly generalized dynamic verbs that can take the place of lexical verbs under certain grammatical conditions. The best-studied situation of this type occurs in English, where the verb *do* stands for lexical verbs in constructions such as *Bob likes ice cream and so do I*. The pro-verb *do* also fills the auxiliary position when no other auxiliary is present in negative constructions (*Jane doesn't like ice cream*) and in questions (*Do you like ice cream?*).

Another function for highly generalized dynamic verbs is the formation of new verbs, especially from nouns. For instance, Japanese forms verbs from nouns (especially of Chinese origin) by adding the verb *suru* 'do, perform, make' to the noun: *benkyoo-suru* ('study-do = study'). In Kanuri a large number of verbs are conjugated with the inflected form of the verb 'to say' added to their stem.

## 9. Uncommon Abbreviations

AGR	agreement
AGT	agent
APPL	applicative
COMP	completive
DIST	distributive
DYN	dynamic
EVI	evidential
FIN	finite
MED	medial
SUBJ	subject
VBZ	verbalizer

## 10. References

- Anceaux, J. C. (1965). *The Nimboran Language: Phonology and Morphology*. 'S-Gravenhage: Nijhoff
- Bates, Elizabeth & MacWhinney, Brian (1982). "Functionalist Approaches to Grammar". In: Wanner, Eric & Gleitman, Lila (eds.), *Language Acquisition: The State of the Art*. Cambridge: Cambridge University Press, 173–218
- Bright, William (1957). *The Karok Language*. Berkeley: University of California Press
- Braine, Jean Critchfield (1970). *Nicobarese Grammar (Car Dialect)*. Ph.D. dissertation, Univ. of California at Berkeley
- Bybee, Joan L. (1985). *Morphology: A Study of the Relation between Meaning and Form*. Amsterdam: Benjamins
- Bybee, Joan L. & Pagliuca, William & Perkins, Revere D. (1990). "On the Asymmetries in the Affixa-

tion of Grammatical Material". In: Croft, William & Denning, Keith & Kemmer, Suzanne (eds.), *Studies in Typology and Diachrony for Joseph Greenberg*. Amsterdam: Benjamins, 2–42

Bybee, Joan & Perkins, Revere D. & Pagliuca, William (1994). *The Evolution of Tense, Aspect and Modality in the Languages of the World*. Chicago: University of Chicago Press

Comrie, Bernard (1976). *Aspect*. Cambridge: Cambridge University Press

Croft, William (1990). "Possible Verbs and the Structure of Events". In: Tsohatzidis, Savas L. (ed.), *Meanings and Prototypes: Studies in Linguistic Categorization*. London: Routledge, 48–75

Dahl, Östen (1985). *Tense and Aspect Systems*. Oxford: Basil Blackwell

Davies, John (1981). *Kobon*. Amsterdam: North Holland (Lingua Descriptive Studies 3)

Dixon, R[obert] M. W. (1980). *The Languages of Australia*. Cambridge: Cambridge University Press

Foley, William (1986). *The Papuan Languages of New Guinea*. Cambridge: Cambridge University Press

Freeland, L. S. (1951). *Language of the Sierra Miwok*. Bloomington/IN: Indiana University (Publications in Anthropology and Linguistics 6)

Gentner, Dedre (1981). "Some Interesting Differences between Nouns and Verbs". *Cognition and Brain Theory* 4, 161–178

Givón, Talmy (1979). *On Understanding Grammar*. New York: Academic Press

Givón, Talmy (1990). *Syntax: A Functional-typological Introduction, Vol. II*. Amsterdam: Benjamins

Greenberg, Joseph (1963). "Some Universals of Grammar with Particular Reference to the Order of Meaningful Elements". In: Greenberg, John (ed.), *Universals of Language*. Cambridge/MA: MIT Press, 73–113

Harford, Carolyn (1993). "The Applicative in Chishona and Lexical Mapping Theory". In: Mchombo, Sam A. (ed.), *Theoretical Aspects of Bantu Grammar, Vol. I*. Stanford/CA: Center for the Study of Language and Information, 93–110

Harries, Lyndon (1950). *A Grammar of Mweru*. Johannesburg: Witwatersrand University

Haspelmath, Martin (1991). "From Purposive to Infinitive: A Universal Path of Grammaticization". *Folia Linguistica Historica* 12, 287–310

Hewitt, B. G. (1979). *Abkhaz*. Amsterdam: North Holland (Lingua Descriptive Studies 2)

Hopper, Paul J. & Thompson, Sandra A. (1984). "The Discourse Basis for Lexical Categories in Universal Grammar". *Language* 60, 703–752

Mithun, Marianne (1984). "The Evolution of Noun Incorporation". *Language* 60, 847–894

Mithun, Marianne (1986). "When Zero Isn't There". In: *Proceedings of the Twelfth Annual*

- Meeting of the Berkeley Linguistics Society*. Berkeley/CA: Soc., 195–211
- Noonan, Michael (1985). "Complementation". In: Shopen, Timothy (ed.), *Language Typology and Syntactic Description, Vol. II*. Cambridge: Cambridge University Press, 42–140
- Osborne, C. R. (1974). *The Tivi Language*. Canberra: Australian Institute of Aboriginal Studies
- Parks, Douglas R. (1976). *A Grammar of Pawnee*. New York: Garland Publishing
- Reh, Mechthild (1985). *Die Krongo Sprache (Ninò Mò-Dì): Beschreibung, Texte, Wortverzeichnis*. Berlin: Reimer
- Reh, Mechthild (1986). "Where Have All the Case Prefixes Gone?". *Afrikanistische Arbeitspapiere* 5, 121–34
- Slobin, Dan I. (1997). "Mind, Code and Text". In: Bybee, Joan & Haiman, John & Thompson, Sandra A. (eds.), *Essays on Language Function and Language Type*. Amsterdam: Benjamins, 437–467

- Snyman, J. W. (1969). *An Introduction to the !Xu (!Kung) Language*. Cape Town: Balkema (University of Cape Town School of African Studies Communication 34)
- Sorensen, Arthur P., Jr. (1969). *The Morphology of Tucano*. Ph.D. dissertation, Columbia Univ.
- Steele, Susan, et al. (1981). *An Encyclopedia of AUX: A Study of Cross-Linguistic Equivalence*. Cambridge/MA: MIT Press (Linguistic Inquiry Monograph 5)
- Talmy, Leonard (1985). "Lexicalization Patterns: Semantic Structure in Lexical Forms". In: Shopen, Timothy (ed.), *Language Typology and Syntactic Description, Vol. III*. Cambridge: Cambridge University Press, 57–149
- Woodworth, Nancy (1991). *From Noun to Verb and Verb to Noun: A Cross-linguistic Study of Class-changing Morphology*. Ph.D. dissertation, SUNY at Buffalo

Joan Bybee, Albuquerque (U.S.A)

## 78. Auxiliary

1. Auxiliaries as a morphological class
2. Paradigmatic vs. syntactic auxiliaries
3. Auxiliaries and verbhood
4. References

### 1. Auxiliaries as a morphological class

Auxiliaries reflect in their morphology categories which may also be marked morphologically on (other) verbs. Their distinctiveness lies in their paradigmatic and syntagmatic relationships with (other) verbs. In much of the linguistic tradition the paradigmatic relationship has been taken to be the salient one.

#### 1.1. A traditional view: helping verbs

Traditionally, the term *auxiliary* is applied to a verb which in combination with another verb regularly supplies part of the **paradigm** or potential paradigm of the second verb. In such terms, the Latin verb form *est* in (1d):

- (1) (a) *monet* 'he advises'  
 (b) *monuit* 'he (has) advised'  
 (c) *monetur* 'he is advised'  
 (d) *monitus est* 'he was / has been advised'

can be described as manifesting an auxiliary: this auxiliary has the distribution and morphology of a verb; and in combination with

another verb, here *MONERE* 'advise', in its perfect participle form, it supplies a term in the paradigm of the latter which is not expressed morphologically, the passive perfect; it helps complete the paradigm (cf. Vincent 1987: Art. 62). (1b) and (1c) illustrate respectively the (morphological) active perfect and passive present. (1d) is often described as a **periphrastic form** of the verb *MONERE* (cf. Art. 68); and the construction is said to be grammaticalised (cf. Art. 145).

The notion of **potential paradigm** is important here, however. For the English verb form *is* of (2b):

- (2) (a) *He advises*  
 (b) *He is advised*

is likewise described as an auxiliary, even though there is no morphological realisation of passive in present-day English; its expression always requires an auxiliary. Thus, in order to confer auxiliarihood, in this traditional sense, we need to know the set of inherent categories in principle available for expression in the morphology of verbs. It is desirable that this set should be well-defined. At any rate, it will include the categories of tense, aspect, voice, polarity, mood and modality; these, in turn, will require definition, of course, if they are to be identified cross-lin-