GRAMMATICAL CATEGORIES*

†BENJAMIN LEE WHORF

[The paper outlines a general theory of grammatical categories. These fall into two main types, descriptive and taxonomic. Descriptive categories are either specific or generic. There are three kinds of specific categories: overt (phenotype), covert (cryptotype), and isosemantic; each of these is subdivided into selective categories and modulus categories. All terms in this classification are defined and illustrated.]

The very natural tendency to use terms derived from traditional grammar, like verb, noun, adjective, passive voice, in describing languages outside of Indo-European, is fraught with grave possibilities of misunderstanding. At the same time it is desirable to define these terms in such a way that we can avail ourselves of their great convenience and where possible apply them to exotic languages in a scientific and consistent way. To do this, we must re-examine the types of grammatical category that are found in languages, using a world-wide view of linguistic phenomena, frame concepts more or less new, and make needed additions to terminology. These observations apply pari passu to English, which hardly less than some American Indian languages is off the pattern of general Indo-European.[1]

In the reaction from conventional grammars of American languages based on classical models, there has been a tendency to restrict attention to the morphemes by which many grammatical forms are marked. This view loses sight of various word-classes that are marked not by morphemic tags but by types of patterning, e.g. by the systematic avoidance of certain morphemes, by lexical selection, by word-order that is also CLASS-ORDER; in general by association with definite linguistic configurations. At the beginning of investigation of a language, the 'functional' type of definition, e.g. that a word of a certain class, say a 'noun', is 'a word which does so-and-so', is to be avoided when this is the ONLY test of distinction applied; for people's conceptions of what a given word 'does' in an unfamiliar language may be as diverse as their own native languages, linguistic educations, and philosophical predilections. The categories studied in grammar are those recognizable through facts of a configurational sort, and these facts are the same for all observers. Yet I do not share the complete distrust of all functional definitions which a few modern grammarians seem to show. After categories have been outlined according to configurative facts, it may be desirable to employ functional or operational symbolism as the investigation proceeds. Linked with configurative data, operational descriptions becomes valid as possible ways of stating the MEANING of the forms, 'meaning' in such cases being

* [This paper was written late in 1937 at the request of Franz Boas, then editor of the International Journal of American Linguistics. The manuscript was found in the Boas collection by C. F. Voegelin and Z. S. Harris. The author died on July 26, 1941. BB]

[1] The author wishes to acknowledge his indebtedness to his colleagues, Dr. George L. Trager and Dr. Morris Swadesh, with whom some of these questions of category have been discussed.

a characterization which succinctly accounts for all the semantic and configurational facts, known or predictable.

We may first distinguish between OVERT CATEGORIES and COVERT CATEGORIES.

An overt category is a category having a formal mark which is present (with only infrequent exceptions) in every sentence containing a member of the category. The mark need not be part of the same word to which the category may be said to be attached in a paradigmatic sense, i.e. it need not be a suffix, prefix, vowel-change, or other 'inflection', but may be a detached word or a certain patterning of the whole sentence. Thus in English the plural of nouns is an overt category, marked usually in the paradigm word (the noun in question) by the suffix *-s* or a vowel-change, but in the case of words like *fish*, *sheep*, and certain gentilic plurals, marked by the form of the verb, the manner of use of the articles, etc. In *fish appeared* the absence of any article denotes plural, in *the fish will be plentiful* a pluralizing adjective denotes it, in *the Chinese arrived* and *the Kwakiutl arrived*, the definite article coupled with lack of a singular marker like *person*, *Chinaman*, or *Indian* denotes plural. In all these cases plural is overtly marked, and so with few exceptions are all noun plurals in English, so that noun-plural is an overt category in English.[2] In Southern Paiute the subject-person of a verb is marked by a sub-lexical element (or 'bound morpheme') that cannot stand alone, like Eng. *-s*; but it need not be attached to the verb, it may be attached to the first important word of the sentence. In English what may be called the potential mode of the verb is an overt category marked by the morpheme *can* or *could*, a word separate in the sentence from the verb but appearing in every sentence containing the category. This category is as much a part of the verb system of morphology as though it were denoted by a bound element in a synthetic Algonkian or Sanskrit verb; its morpheme *can* may replace coordinate elements in the same modal system, e.g. *may*, *will*, but it may not, like a mere lexical item (e.g. *possibly*) be simply added to them. In Hopi also there is a rigid system of mutually exclusive 'modalities' denoted by detached words.

A covert category is marked, whether morphemically or by sentence-pattern, only in certain types of sentence and not in every sentence in which a word or element belonging to the category occurs. The class-membership of the word is not apparent until there is a question of using it or referring to it in one of these special types of sentence, and then we find that this word belongs to a class requiring some sort of distinctive treatment, which may even be the negative treatment of excluding that type of sentence. This distinctive treatment we may call the REACTANCE of the category. In English, intransitive verbs form a covert category marked by lack of the passive participle and the passive and causative voices; we cannot substitute a verb of this class (e.g. *go*, *lie*, *sit*, *rise*,

[2] There is of course a minority group of possible or theoretically possible sentences, e.g. *The fish appeared*, in which plural is not distinguished from singular. But in actual speech such sentences are embedded in a larger context which has already established the plurality or the singularity of the thing discussed. (Otherwise such a sentence is not likely to occur.) Such minority types are not considered in the distinction between overt and covert, i.e. they do not prevent a category from being classed as overt. In covert categories the unmarked forms are relatively numerous, often in the majority, and are undistinguished even by context.

gleam, sleep, arrive, appear, rejoice) into such sentences as *It was cooked, It was being cooked, I had it cooked to order.* An intransitive thus configuratively defined is quite a different thing from the 'dummy' intransitive used in traditional English grammar; it is a true grammatical class marked by these and other constant grammatical features, such as non-occurrence of nouns or pronouns after the verb; one does not say *I gleamed it, I appeared the table.* Of course compound formations involving these same lexemes may be transitive, e.g. *sleep (it) off, go (him) one better.* In the American colloquial forms *go haywire, go South Sea Islander*, etc., the word or phrase after the verb is a covert adjective, cf. *go completely haywire.*

Another type of covert category is represented by English gender. Each common noun and personal given name belongs to a certain gender class, but a characteristic overt mark appears only when there is occasion to refer to the noun by a personal pronoun in the singular number—or in the case of the neuter it may be marked by the interrogative and relative pronouns *what, which.* The grammatical alignment is no less strict than in an overt gender system like that of Latin, where most nouns bear their gender mark. No doubt for many English common nouns a knowledge of actual sex and of scientific biological and physical classification of objects could serve a foreigner in lieu of knowledge of the grammatical classes themselves, but such knowledge would be of only limited use after all, for the greater part of the masculine and feminine classes consists of thousands of personal names, and a foreigner who knows nothing of the cultural background of Western European Christian names must simply learn, i.e. observe, that *Jane* belongs to the 'she' group and *John* to the 'he' group. There are plenty of names of overt similarity but contrasted gender, e.g. *Alice*: *Ellis*, *Alison* : *Addison*, *Audrey* : *Aubrey*, *Winifred* : *Wilfred*, *Myra* : *Ira*, *Esther* : *Lester*.[3] Nor would knowledge of any 'natural' properties tell our observer that the names of biological classes themselves (e.g. *animal, bird, fish*, etc.) are 'it'; that smaller animals usually are 'it'; larger animals often 'he'; dogs, eagles, and turkeys usually 'he'; cats and wrens usually 'she'; body-parts and the whole botanical world 'it'; countries and states as fictive persons (but not as localities) 'she'; cities, societies, and corporations as fictive persons 'it'; the human body 'it'; a ghost 'it'; nature 'she'; watercraft with sail or power and named small craft 'she'; unnamed rowboats, canoes, rafts 'it', etc. The mistakes in English gender made by learners of the language, including those whose own languages are without gender, would alone show that we have here covert grammatical categories, and not reflections in speech of natural and non-cultural differences.

The classes of nouns based actually or ostensibly upon shape, in various American languages, may be either overt or covert. In Navaho they are covert. Some terms belong to the round (or roundish) class, others to the long-object class, others fall into classes not dependent on shape. No overt mark designates the class in every sentence. The class mark as in English gender is a reactance;

[3] There are a very few names of indeterminate or double gender: *Frances* (*Francis*), *Jessie* (*Jesse*) or *Jess*, *Jean* (*Gene*), *Jocelyn*, *Sidney*, *Wynne*, and perhaps a few others. The number is increased if we include nicknames like *Bobby, Jerry*, etc.; but all in all such cases are relatively so few that they in no way disturb our alignment of facts.

not a pronoun, however, but a choice between certain verb stems that go definitely with one class and no other, although there are very many verb stems indifferent to this distinction. I doubt that such distinctions, at least in Navaho, are simply linguistic recognitions of non-linguistic, objective differences that would be the same for all observers, any more than the English genders are; they seem rather to be covert grammatical categories. Thus one must learn as a part of learning Navaho that 'sorrow' belongs in the 'round' class. One's first and 'common-sense' impression of covert categories like English gender and Navaho shape-class is that they are simply distinctions between different kinds of experience or knowledge; that we say *Jane went to her house* because we know that Jane is a female. Actually we need not know anything about Jane, Jane may be a mere name; yet having heard this name, perhaps over the telephone, we say *What about her?*. Common-sense may then retreat a step further and say that we know the name Jane to be given only to females. But such experience is linguistic; it is learning English by observation. Moreover it is easy to show that the pronoun agrees with the name only, not with the experience. I can bestow the name *Jane* on an automobile, a skeleton, or a cannon, and it will still require *she* in pronominal references. I have two goldfish; I name one *Jane* and one *Dick*. I can still say *Each goldfish likes its food*, but not *Jane likes its food better than Dick*. I must say *Jane likes her food*. The word *dog* belongs to a common gender class with a preference for *he* and *it*, but the gender-classed given name of a dog determines its own pronoun; we do not say *Tom came out of its kennel*, but *Tom came out of his kennel*, *Lady came out of her kennel*, *The female dog came out of its* (or *her*) *kennel*. 'Doggish' names like *Fido* are of the 'he' class: *Towser came out of his kennel*. We say *See the cat chase her tail*, but never *See Dick chase her tail*. The words *child*, *baby*, *infant* belong to the common class and can take *it*, but the given names of children take either *he* or *she*. I can say *My baby enjoys its food*, but it would be linguistically wrong to say *My baby's name is Helen—see how Helen enjoys its food*. Nor can I say *My little daughter enjoys its food*, for *daughter*, unlike *baby*, is grammatically in the feminine class.

Likewise with various covert categories of exotic languages; where they have been thought to be recognitions of objective differences, it may rather be that they are grammatical categories that merely accord up to a certain point with objective experience. They may represent experience, it is true, but experience seen in terms of a definite linguistic scheme, not experience that is the same for all observers. On the other hand, the distinctions between present and absent, visible and invisible, made in many American languages, may well represent experiential differences; and again we may have such experiential differences engrafted upon purely grammatical classifications, yielding mixed classes such as 'experiential-present plus grammatical-feminine'.

A covert category may also be termed a CRYPTOTYPE, a name which calls attention to the rather hidden, cryptic nature of such word-groups, especially when they are not strongly contrasted in idea, nor marked by frequently-occurring reactances such as pronouns. They easily escape notice and may be hard to define, and yet may have profound influence on linguistic behavior. The English intransitive verbs as configuratively defined above are a cryptotype. A similar

cryptotype comprises the verbs of 'copulative resolution' (*be, become, seem, stay, remain,* etc.), which also lack the passive and causative but may be followed by nouns, pronouns, and adjectives. Transitives (a cryptotype which includes *run, walk, return,* etc.—indeed most English verbs) possess the passive and causative and may be followed by nouns and pronouns but not by adjectives alone. Names of countries and cities in English form a cryptotype with the reactance that they are not referred to by personal pronouns as object of the prepositions *in, at, to, from.* We can say *I live in Boston* but not *That's Boston—I live in it.* A word of this cryptotype is referred to by *there* or *here* in place of *in it, at it, to it,* and by *from there* (*here*) in place of *from it.* In various American languages such place-names constitute a grammatical class; in Hopi they lack the nominative and objective cases, occurring only in locational cases; in Aztec they bear characteristic endings and exclude the use of certain prepositions.

English adjectives form two main cryptotypes with sub-classes. A group referring to 'inherent' qualities—including color, material, physical state (solid, liquid, porous, hard, etc.), provenience, breed, nationality, function, use—has the reactance of being placed nearer the noun than the other group, which we may call one of non-inherent qualities, though it is rather the residuum outside the first group—including adjectives of size, shape, position, evaluation (ethical, esthetic, or economic). These come before the inherent group, e.g. *large red house* (not *red large house*), *steep rocky hill, nice smooth floor.* The order may be reversed to make a balanced contrast, but only by changing the normal stress pattern, and the form is at once sensed as being reversed and peculiar. The normal pattern has primary stress either on the noun (*steep rocky hi'll*) or on the inherent adjective (*pretty Fre'nch girl*). We cannot simply reverse the order of adjectives and say *French pre'tty girl*—the form suggests a contrasted *French plai'n girl* but the pattern of so contrasting adjectives is un-English; the proper contrast is *plai'n French girl.* We can however reverse the adjectives by altering the stress pattern and say *Fre'nch pretty girl,* if in contrast with e.g. *Spa'nish pretty girl,* though such forms are clearly exceptional.

The contrasting term PHENOTYPE may be applied to the overt category and, when no ambiguity results, to the mark which accompanies the overt category in the sentence.

The distinction between overt and covert categories, or PHENOTYPES and CRYPTOTYPES, is one of two distinctions of supreme importance in the theory of grammatical categories. The other is the distinction between what may be called SELECTIVE CATEGORIES and MODULUS CATEGORIES.

A selective category is a grammatical class with membership fixed, and limited as compared with some larger class. A PRIMARY selective category, or LEXEMIC category, is one compared to which the next larger class is the total lexicon of the language. Certain semantic and grammatical properties are assured in the word by selecting it from a certain class of fixed membership not coterminous with the whole vocabulary. In order that a certain grammatical property may be 'in the lexeme' it cannot be in all lexemes. The familiar 'parts of speech' of most European languages, but not of English, are lexemic categories. The situation in English is peculiar, and will be touched upon later. Lexemic cate-

gories may be either overt or covert. Hopi is an example of a language in which they are covert. Possibly Maya may be another such case, though we lack clear information on that point. In Hopi there is no distinction in the simplex (bare stem) forms between nouns and verbs, and sentences are possible in which there is no distinction in the sentence. Thus *le·'na* or *pam le·'na* means 'it is a flute' and *pe·'na* or *pam pe·'na* means 'he writes it'. Hence nouns and verbs MAY BE alike in overt characteristics. But it is easily possible to make sentences in which *le·'na* appears with case suffixes and in other forms quite impossible for *pe·'na*, and vice versa. One has to learn, and cannot always tell from the sentence, that *le·'na* and *pe·'na* belong to different compartments of the lexicon.

It is probably more common to find lexemic classes that are overt, as in Latin, French, Aztec, Tübatulabal, Taos, and Navaho. In French, *ange* and *mange* belong to different compartments of the vocabulary (noun and verb) and there is always a feature in the sentence that tells which; one does not find such pairs as *il mange* : *il ange*, *c'est un ange* : *c'est un mange*. It may be possible to have *Ange!* versus *Mange!*, but special and abbreviated types of sentence like these with their lack of formal distinctions do not justify calling the categories covert. In Latin, Aztec, Tübatulabal, and Taos, the distinction is marked not only in the sentence, but usually in the paradigm word itself. Yet this overt mark of the noun, verb, or other 'part of speech' cannot usually be transferred to a lexeme outside of the proper group. The mark that goes with a covert lexemic class need not stand for any other category such as case, person, or tense, though it does e.g. in Latin, Greek, and Sanskrit. The 'absolutive suffixes' found attached to lexemic nouns in most Uto-Aztecan languages have basically no other character than that of such class-marks, though in Aztec they are also tied up with number; and needless ingenuity has been wasted in trying to make them out to be 'articles' or the like. The absolutive suffixes in Taos go with the selective class of nouns but indicate gender and number also. In Latin the distinction between the nouns (including in this class the adjectives) and the verbs is selective and overt, but that between adjectives and substantives is selective and covert; compare *est gladius* and *est bonus*. As with all covert classes, the distinction is revealed upon forming the proper type of sentence; *est bona* occurs, but not *est gladia*.

Lexemic categories include not only nouns, verbs, adjectives, and other 'parts of speech', but also 'full' words and 'empty'[4] words or stems, as in Chinese and perhaps the Wakashan languages, and still other types of distinction; e.g. in Algonkian the lexemic classes include large groups of stems having different combinatory powers and different positions in the verbal complex.

A modulus category is a non-selective category, i.e. it is generally applicable and removable at will. Depending on its type it may be applied either to any 'major word' (any word excepting small and specialized selective classes, e.g. 'particles'), or, more often, to any word coming within a certain pre-requisite

[4] An 'empty' word or stem is probably one that is highly specialized for grammatical or syntactic indication, perhaps in a way that does not admit of being assigned a concrete meaning. For example, such a form might have no other meaning than to serve as the reactance of some other category, or as the signature of a modulus category (see the next paragraph).

larger category, which may be either selective or another modulus category. The cases, tenses, aspects, modes, and voices of Indo-European and Azteco-Tanoan[5] languages are modulus categories, applicable at will to words belonging to the proper larger category—cases being moduli of the larger category of nouns; aspects, tenses, etc. moduli of the larger category of verbs. Hence the person versed only in Indo-European types of grammar poses to himself the distinction between selective and modulus classes (or between selectivity and modulation) as the distinction between 'parts of speech' on the one hand and 'grammatical forms' of the aspect, tense, and voice type on the other. But in widely different types of speech these familiar types of meaning and function cease to be associated with selectivity and modulation in the same way; entirely different alignments there hold sway in the grammar, and until this is recognized an adequate conception of the grammar cannot be obtained. It is not necessary to have large categories, such as nouns and verbs, in order to have such modulus categories as aspect. In Nitinat[6] (and presumably in the closely related Nootka and Kwakiutl) all major words have aspects, such as durative, momentaneous, inceptive, etc.—both the word for 'run' and the word for 'house' always bear some element marking this aspect.

We may use the term modulus alone to denote the distinctive class meaning and function of the category; thus the present-participle meaning is a modulus in English. We may also use modulus to mean the grammatical operation of producing one such meaning, and hence, where no ambiguity results, to mean the element or pattern that marks the modulus. Thus we can say that in English the present-participle modulus is the suffixing of *-ing*, or for short that it is *-ing*. Where greater preciseness is desirable, we may call the overt mark the (or a) SIGNATURE of the modulus. This distinction is ultimately important; sometimes it is necessary to distinguish several signatures of the same modulus. In illustrating overt categories we cited the English noun-plural, which is a modulus category. The modulus, or plural type of meaning, is one and the same thing throughout the various examples; but the signatures whereby this plural modulus may be applied to the word *fish* are different from one example to the next. To these signatures we may add *-s* or *-es*, giving *fishes*. Since *sheep*, *deer*, *moose*, *caribou*, etc. belong to a cryptotype that excludes *-s*, and 'fishermen's fish' such as *trout*, *bass*, *salmon*, *mackerel*, *cod*, etc. (contrasted with 'low-grade fish', e.g. *sharks*, *skates*, *eels*, *sculpins*, etc.) belong to another such cryptotype, we cannot use this last signature for them. As this example shows, it is not necessary to have one-to-one correspondence between moduli and signatures. Where a high degree of such one-to-one correspondence obtains it has often been the custom to apply the graphic but not very scientific catchword 'agglutinative' to the language. Languages of the typical 'agglutinative' type, such as Turkish, have been referred to as if they had such one-to-one correspondence, and moreover as if they had no categories but modulus categories. The grammar of Yana (Hokan stock, California) consists largely of moduli, but has also a few selective cate-

[5] B. L. Whorf and G. L. Trager, The Relationship of Uto-Aztecan and Tanoan, American Anthropologist 39.609–24 (1937).

[6] See Mary Haas Swadesh and Morris Swadesh, A Visit to the Other World: a Nitinat Text, IJAL 7.3–4 (1933).

gories, e.g. a class of stems which must stand first in the verbal complex and a class which must stand second.

A distinction of the same semantic type as that between verbs and nouns in selective categories may be handled by modulus categories instead. That is, the possible moduli include not only voice, aspect, etc., but also VERBATION and STATIVATION.[7] Whenever, as e.g. in Yana, the mere application of certain distinctive suffixes or other signatures makes a 'verb' out of any stem, then we do not have a class of verbs in the same sense as in French, Latin, Greek, Hopi, Axtec, Taos, and Navaho, i.e. a selective class. We have verbations instead of such verbs. The so-called verbs and nouns of Semitic are moduli, applicable to lexemes in general by signatures consisting largely of vowel-consonant sequence patterns, though there may be occasional gaps in the universality of lexical applicability. In Hebrew we have *e-e* as one of several signatures for stativation and *ā-a* as one of several for verbation, e.g. *berek*[8] 'knee' : *bārak* 'he kneeled', *derek* 'road' : *dārak* 'he marched', *geber* 'man, as virile or strong' : *gābar* 'he was strong', *ḥebel* 'cord' : *ḥābal* 'he bound', *melek* 'king' : *mālak* 'he reigned', *qedem* 'antecedence' : *qādam* 'he was before', *regel* 'foot' : *rāgal* 'he went on foot'. There are no doubt many Hebrew 'nouns' for which we do not know the verbation form in texts, but this seems to be largely because the textual Hebrew that we know does not represent the full resources of the ancient living language; Arabic shows better the general applicability of these moduli to the great majority of lexemes. But verbs and nouns which are modulus categories may be found nearer home than Semitic. The lexicon of English contains two major selective divisions. One division, consisting mostly of long words and words with certain endings, contains selective verbs like *reduce, survive, undertake, perplex, magnify, reciprocate*, and selective nouns like *instrument, elephant, longevity, altruism*. A limited number of short words belong also to the group of selective nouns and verbs, e.g. *heart, boy, street, road, town; sit, see, hear, think*. In this selective vocabulary English is like French or Hopi. The other part of the lexicon, mostly the shorter words but some long ones, contains bare lexemes to which either verbation or stativation may be applied at will, e.g. *head, hand, stand, walk, exchange, sight, skin, weave, dog, surrender, massage*, etc.[9] This part of the vocabulary is like Arabic, though the signatures are of a quite different sort. Those

[7] Stativation is a term used to denote the modulus of forms which are contrasted with verbations in a way similar to that in which nouns, as a selective category, are contrasted with verbs in the languages that have such a contrast. It is used here instead of 'nomination' or 'nominalization' because these terms through past usage have come to suggest derivations rather than moduli, while 'stativation' helps us to think of the form not as a noun derived from a verb, but simply as a lexeme which has been affected by a certain meaningful grammatical coloring as a part of certain configurations.

[8] Since these Hebrew examples are used only to illustrate vowel-patterns, they are written in approximate morphophonemic orthography, which does not attempt to show the distinction between the stops *b, g, k*, etc. and the spirants which replace them after vowels under regular statable conditions.

[9] Adjectivation in English is another modulus which is applied both to bare lexemes and to selective nouns, but there are also selective adjectives, and these are not modulated into substantives.

for stativation include the articles, plural signatures, position after possessive pronouns and selective adjectives; those for verbation include position after a nominative pronoun, position before a pronoun, noun, or stativation, the tense forms, the verbal auxiliaries and modal particles, etc.

There may be wide variability in the semantic relations between verbations and stativations in the same language. When contrasted with the corresponding stativations, verbations may seem to add in an inconstant manner such ideas as 'he engaged in' (*hunt, jump, dance*), 'behave like' (*mother, carpenter, dog*), 'be in' (*lodge, hive*), 'put in' (*place, seat, pocket, garage*), 'make, add, install' (*weave, plant, roof, pipe, tin*), 'take away' (*skin, peel, husk, bone*), 'get' (*fish, mouse*), 'use' (*spear, hammer, fiddle, bugle*); while on the other hand stativations seem to add inconstantly such ideas as 'result' (*weave, plant, form*), 'means' (*paint, trail*), 'action or place' (*walk, slide, step, drop*), 'instrument' (*lift, cover, clasp, clip*), etc. This inconstancy, or better elasticity, in certain aspects of the meaning, seen in Semitic as well as English, is characteristic of the simple moduli of verbation and stativation, and it may be contrasted with the condition of having a number of different moduli, each a different specialized type of verbation or stativation, which appears to be the situation in Alaskan Eskimo. It merely means that in a language with simple primary types of moduli the meaning of the individual lexeme is more or less under the sway of the entire sentence, and at the mercy of the manifold potentialities of connotation and suggestion which thereby arise.

Can there be languages not only without selective nouns and verbs, but even without stativations and verbations? Certainly. The power of making predications or declarative sentences and of taking on such moduli as voice, aspect, and tense, may be a property of every major word, without the addition of a preparatory modulus. This seems to be the case in Nitinat and the other Wakashan languages. An isolated word is a sentence; a sequence of such sentence words is like a compound sentence. We might ape such a compound sentence in English, e.g. 'There is one who is a man who is yonder who does running which traverses-it which is a street which elongates', though the exotic sentence consists simply of the predicative lexemes 'one', 'man', 'yonder', 'run', 'transverse', 'street', and 'long', and the proper translation is 'A man yonder is running down the long street'. Such a structure might or might not be found in an isolating language; again it might or might not be found in a polysynthetic one like Nitinat. The polysynthetic language might or might not fuse some of the lexemes into long synthetic words, but it would doubtless have the power in any case of fusing in a great many aspectual, modal, and connective elements (signatures of moduli). Of such a polysynthetic tongue it is sometimes said that all the words are verbs, or again that all the words are nouns with verb-forming elements added. Actually the terms verb and noun in such a language are meaningless. The situation therein is radically different from e.g. Hopi, for though in the latter *le·'na* 'it is a flute' and *pe·'na* 'he writes it' are both complete sentences, they are words which are not equally predicative in all positions of a sentence, and they also belong to selective covert classes of noun and verb that in general take different inflections, and look alike only in particular types of

sentence. In Hopi the verb-noun distinction is important on a selective basis; in English it is important on a modulus basis; in Nitinat it seems not to exist.

So far we have dealt with categories which are distinct both configuratively and semantically, and these are the typical formulations of grammar. But we also have word groups which are configuratively distinct yet have no difference in meaning; these we may call ISOSEMANTIC or purely formal classes. They in turn are of two sorts corresponding to selective and modulus in the semantic categories, but here better styled SELECTIVE and ALTERNATIVE. Selective isosemantic classes are typified by 'declensions' and 'conjugations', those very common features of languages the world over; richly developed in Latin, Sanskrit, Hopi, and Maya, less developed in Semitic, English ('strong' and 'weak' verbs), and Aztec, and almost lacking in Southern Paiute. They also include gender-like classes without semantic difference, as in Bantu and in certain of the genders of Taos (all these might be called 'declensions' with pronominal agreement or the like); classes requiring different position in a sentence or complex without difference in type of meaning (stem-position classes in Algonkian); and classes requiring different signatures for the same modulus without difference in type of meaning, e.g. in Hebrew the segholate (*e-e*) 'nouns' and parallel stativation-groups. Alternative isosemantic classes are what their name implies, e.g. the English group comprising *don't, won't, shan't, can't,* etc. and the group of *do not, will not, shall not, cannot.* In this case we could perhaps speak of a modulus of brevity, convenience, or colloquial attitude which is applied in the former group. Alternative classes sometimes show STYLISTIC as opposed to grammatical difference. In other cases there seems to be no generalizable difference, as in English *electrical, cubical, cyclical, historical, geometrical* versus *electric, cubic, cyclic, historic, geometric.*

There remains another type of distinction: SPECIFIC CATEGORIES and GENERIC ones. A specific category is an individual class existing in an individual language, e.g. English passive voice, Hopi segmentative aspect. A generic category, in the restricted sense of application to a particular language, is a hierarchy formed by grouping classes of similar or (and) complementary types, e.g. case in Latin, voice in Hopi. Here much depends on both the insight and the predilections of the systematizer or grammarian, for it may be easy to build up specific categories into very logical schemes, yet what is rather desired is that such generic categories should represent systems which the language itself contains. We do well to be skeptical of a grammarian's systematization when it is full of ENANTIOMORPHISM, the pairing with every category of an opposite which is merely the lack of it. Specific categories of seemingly opposite meaning such as passive voice and active voice (when this term 'active' means merely 'non-passive') should be brought into one generic category ('voice') only when they are more than two, or when, if only two, taken together they contrast as a unit with some other system of forms.

Finally, in a still wider sense generic categories may be so formulated as to become equivalent to the concepts of a general science of grammar. Such categories are made by grouping what seem to us to be SIMILAR SPECIFIC CATEGORIES IN DIFFERENT LANGUAGES. Only in such a sense can we speak of a

category of 'passive voice' which would embrace the forms called by that name in English, Latin, Aztec, and other tongues. Such categories or concepts we may call TAXONOMIC categories, as opposed to DESCRIPTIVE categories. Taxonomic categories may be of the first degree, e.g. passive voice, objective case; or of the second degree, e.g. voice, case. Perhaps those of the second degree are the more important and ultimately the more valuable as linguistic concepts, as generalizations of the largest systemic formations and outlines found in language when language is considered and described in terms of the whole human species.