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## Remarks on Polysynthesis<sup>1</sup>

In this paper I intend, first, to defend the traditional concept of 'polysynthetic language' against the new definition offered by Baker (1995). Second, I shall consider some typological parallels to polysynthetic structure. Such parallels have an intrinsic interest. In addition, they may conceivably have something to say about the origin of polysynthetic languages.

Within the 'principles-and-parameters' approach there is a division of labor such that the principles are assumed to be common to all languages while the typological differences are meant to be accounted for by the fact that languages receive different values on various parameters. Although a committed generativist, Baker (1995: 7) has to admit that "parameters have tended to become smaller and more construction-specific, rather than larger and more general", which has produced "[a] trend toward fragmentation rather than unification". He wishes to remedy this situation by returning to Sapir's (1921: chap. VI) view of what linguistic typology is about. It is (or should be) immediately evident that a language like Latin has a different 'genius' than a language like Chinese. It is the linguist's task to uncover the genius characteristic of a given language (or language type). Research based on shrinking parameters cannot do this. Thus, in Baker's view, "Sapir's notion clearly goes deeper than Chomsky's" (*ibidem*).

What is, then, the genius of polysynthetic languages according to Baker (1995)? It is constituted by two criteria: on the one hand,

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<sup>1</sup>I wish to thank prof. Michael Fortescue for his comments on an earlier version of this paper. -- Diacritics will be missing in the Yoruba, Sanskrit, and Tamil examples.

subject-object-marking (or agent-patient-marking) in the verb; on the other, productive noun-incorporation. (It seems to be no accident that these criteria are exhibited by Baker's favorite language Mohawk, a member of the Iroquoian family.)

The first of these criteria may be illustrated with the aid of the following examples from West Greenlandic (a member of the Eskimoan family):

- (1) kapi-vara  
stab-AG:1SG&PAT:3SG  
'I stabbed him/her/it'
- (2) kapi-vaanga  
stab-AG:3SG&PAT:1SG  
'(S)he stabbed me'
- (3) kapi-vaa  
stab-AG:3SG&PAT:3SG  
'(S)he stabbed him/her/it'
- (4) angut-ip                    nanuq                    kapi-vaa  
man-ERG&SG    bear&ABS&SG    stab-AG:3SG&PAT:3SG  
'The man stabbed the bear'
- (5) illu                    taku-vaa (> takuaa)  
house&ABS&SG    see-AG:3SG&PAT:3SG  
'(S)he saw the house'

From the synchronic point of view, the ending of a transitive verb in West Greenlandic is a portmanteau morph which expresses simultaneously the agent and the patient. When the patient is the 3rd person singular or plural in the indicative mood (as in the above examples, apart from 2), the structure of the verb is *V-va-x*, where *x* = the absolutive ending of the possessive declension. The agent is the possessor and the patient is the possessed. Thus, the etymology of *kapi-vara* is 'stab-*va-my&him/it*'.

Now the following problem arises for Baker (1995). On the one hand, the subject-object-marking is absent in languages which

generally qualify as polysynthetic. On the other, it is present in languages which generally qualify as non-polysynthetic.

The first aspect of this problem is exemplified by Kwakiutl (alias Kwakwala, a member of the Wakashan family), whose close neighbor Nootka was adduced by Sapir (1921: 142-143) as an example of the 'agglutinative-polysynthetic' language type. When a Kwakiutl sentence contains an independent object NP, it is never marked in the verb; and the subject NP is marked in the verb only when the former does not immediately follow the latter. Because Kwakiutl is a strict VSO language (i.e. the subject NP follows immediately the main verb), this condition is fulfilled only when the sentence begins with an *auxiliary* verb. It is only in this case that the subject marking *-i* occurs (cf. Anderson 1984: 26-27):

(6) AUX-*i* V S O

The second aspect of the problem may be exemplified by Swahili (a member of the Bantu family). Consider these sentences:

(7) ni-li-mw-ona  
AG:1SG-PRET-PAT:3SG&HUM-see  
'I saw him/her'

(8) a-li-ni-ona  
AG:3SG-PRET-PAT:1SG-see  
'(S)he saw me'

(9) a-li-mw-ona  
AG:3SG-PRET-PAT:3SG&HUM-see  
'(S)he saw him/her'

(10) a-li-mw-ona                      mw-alimu  
AG:3SG-PRET-PAT:3SG&HUM-see    SG&HUM-teacher  
'(S)he saw a/the teacher'

(11) \*a-li-ona mwalimu

- (12) a-li-ki-soma  
 AG:3SG-PRET-PAT:SG&'THING'-read  
 '(S)he read it'
- (13) a-li-soma                      ki-tabu  
 AG:3SG-PRET-read    SG&'THING'-book  
 '(S)he read a/the book'
- (14) a-li-ki-soma                                      ki-tabu  
 AG:3SG-PRET-PAT:SG&'THING'-read SG&'THING'-book  
 '(S)he read *the* book'

Thus, the Swahili verb always marks the subject and the human object. The non-human object is marked only if it is emphasized. It is customarily said that "the marking of the non-human object is optional in Swahili". On reflection, this is a misleading formulation because the marking of the *important* non-human object is clearly obligatory in Swahili (just like the non-marking of the non-important non-human object).

It is interesting to note that the structure exemplified by (5) and (14) is impossible in Mohawk. That is, if the patient (or the object) is inanimate, the verb has to be in the intransitive form: "the agreement morphology on a transitive verb with subject X and inanimate object is always identical to the agreement morphology on an intransitive verb with subject X" (Baker 1995: 20). This is very surprising, considering how important the marking of subject *and* object is in Baker's overall conception. It seems that Swahili (not to speak of West Greenlandic) is 'more polysynthetic' than Mohawk. Being a well-trained generativist, however, Baker knows how to deal with counter-examples: "This problem disappears if we assume that Mohawk has a phonologically null third person neuter morpheme on the verb in these cases" (p. 21).

This has always been the basic methodological weakness of generativism. If the theory requires X to be the case, but in reality Y is the case, you do not revise the theory (as you obviously should), but you postulate 'under' Y an 'abstract' structure where X is the case. This is how Baker manages to 'save' his thesis that, the

appearances notwithstanding, Mohawk does possess a systematic subject-object-marking in *all* cases. What is more, he is now in a position to claim (p. 18) that e.g. in Swahili this marking is not 'systematic' (although it can easily be made just as systematic by postulation of the corresponding 'invisible' entities).

Up to now, we have seen that the first of Baker's criteria for polysynthesis, i.e. subject-object-marking, is full of problems. What about the second criterion, i.e. productive noun-incorporation? It meets exactly the same difficulties as those discussed above. On the one hand, it is well-known that there are languages with noun-incorporation that have never been thought of as polysynthetic (cf. Mithun 1984). On the other, Baker's criterion excludes West Greenlandic which, together with other Eskimoan languages, has always been considered as the prototype of polysynthesis. This latter point needs to be dealt with in more detail.

Baker defines (p. 19) 'incorporation' in such a way that the units which participate in it, i.e. noun and verb, must be able to occur independently in the sentence. In West Greenlandic the verbs which take NP objects are divided in two classes, viz. 'lexical' and 'affixal'. The lexical verbs are in the transitive and take an independent NP object in the absolutive, whereas the affixal verbs are in the intransitive and take an incorporated NP object. The former cannot take an incorporated object whereas the latter cannot occur independently, i.e. without an incorporated object. The referent of the absolutive object is definite whereas the referent of the incorporated object is indefinite or generic. A sort of intermediate case is constituted by an (antipassive) construction, where the lexical verb is in the intransitive and its (indefinite) object is in the instrumental:

- (15) niqi                      niri-vaa  
 meat&ABS&SG eat-AG:3SG&PAT:3SG  
 '(S)he ate the meat'

- (16) niqi-mik                      niri-vuq  
 meat-INSTR&SG            eat-3SG  
 '(S)he ate some meat'
- (17) niqi-tur-vuq (> niqiturpuq)  
 meat-eat-3SG  
 '(S)he ate meat' (lit. '(S)he meat-ate')

Thus, *niri-* is the lexical verb with the meaning 'to eat', and *-tur-* is its affixal counterpart (with a more general or nonspecific meaning); they occur in a complementary distribution. The example (16) represents the antipassive construction (where the verb may also contain an explicit antipassive marker).

In sum, it is very odd that Baker's criteria exclude Kwakiutl, on the one hand, and West Greenlandic, on the other. It is time that we ask *why*, exactly, he has chosen these criteria, and not some others.

The subject-object-marking in the verb may be understood in two different ways. In the current discussion it is generally understood in such a way that the verb encodes two *arguments* which function as the subject and the object of the sentence; as such, they are comparable to *pronouns*. (NP's which also occur in the sentence are then taken to be appositions or adjuncts of the subject and object 'pronouns'.) Baker's position is more conservative, because he regards the subject-object-marking as a sign of *agreement*. Because a unit can agree only with something that lies outside it, Baker has to assume that always when a sentence contains a transitive verb with subject-object-marking, it also contains the corresponding NP's. Typically this is *not* the case, because the verb already expresses the person, number, and (often) gender/class of the subject and the object. Being a generativist, however, Baker need not be bothered by this because he feels free to postulate the corresponding 'invisible' units in the 'underlying' structure.

The connection with the other criterion, i.e. (productive) noun-incorporation is now as follows. As Baker sees it (p. 13), the process of incorporation in Mohawk is preceded by a stage where

the grammar base-generates "ordinary (i.e., English-like [*sic*]) complementation structures", or VP's, in which the NP object follows the verb; and as a result of the incorporation this NP object is then placed in front of the verb by a movement transformation. Now the following generalization has been achieved (or so it seems): the genius of the polysynthesis consists in that elements encoded by the verb (= either markers for subject-object-agreement or an incorporated noun) refer to some elements *outside* the verb. In the incorporation this element is *always* a zero, i.e. a 'trace' left by the movement transformation. In the subject-object-marking it is *usually* a zero, i.e. a subject or object NP which does not occur in the sentence, but has to be imagined as occurring in the 'underlying structure' of the sentence.

Personally, I see no reason at all for defining polysynthesis in this way, i.e. as a kind of correspondence between elements contained in the verb and invisible or nonexistent entities outside the verb. What is, then, the alternative definition? It is the traditional one. The genius of polysynthetic languages consists in the *sentence-like* character of the finite verb, primarily, and of the nominals, secondarily. This results, in turn, from the existence of *lexical affixes*, i.e. affixal nouns, verbs, adjectives, and adverbs; the incorporated noun is the limiting case of affixal noun. (To be sure, determining the 'affixal' word-classes is not always an easy undertaking.)

Sapir (1921: 134) characterizes the lexical affixes in Nootka as follows: "We recognize at once that [these elements] ... have a psychological independence that our affixes never have. They are typically agglutinated elements, though they have no greater external independence, are no more capable of living apart from the radical elements to which they are suffixed, than the *-ness* of *goodness* or the *-s* of *books*." It is only logical that, as far as Sapir's notion of polysynthesis is concerned, affixes expressing typical grammatical meanings play a role clearly inferior to that played by affixes expressing lexical meanings: "[In a polysynthetic language] concepts which we should never dream of treating in a subordinate

fashion are symbolized by derivational affixes or 'symbolic' changes in the radical element, while the more abstract notions, including the syntactic relations, *may also* be conveyed by the word" (p. 128; emphasis added). Baker (1995: 17) quotes the same passage, but in light of what precedes, we can see that he draws the wrong conclusion from it: "For both Boas and Sapir, polysynthetic languages make the most use of morphology to represent *grammatical* notions" (emphasis added).

If the capacity to express many grammatical meanings in a single word were a sufficient criterion for polysynthesis, Navajo (a member of the Athabaskan family) would be at least as polysynthetic as Mohawk. This is so because the Navajo verb is taken to contain about 12 strictly ordered 'positions', which precede the verb stem and are filled (although not all of them simultaneously) by units expressing such typical grammatical meanings as tense, aspect, modality, location, number, and person (cf. Young 1995). Because of the paucity of lexical affixes, however, Navajo is only "moderately polysynthetic" according to Sapir (1921: p. 128, n. 12); and the lack of noun-incorporation makes Baker consider (p. 18) Navajo as non-polysynthetic *tout court*.

Thus, I repeat that lexical affixes are crucial for defining polysynthesis. Its genius rests on the interplay between lexical and grammatical affixes, as shown by the following West Greenlandic examples, taken from Fortescue (1984: 315-316).

- (18) atuakkiurtunngurtussaavutit <  
 atuakk-liur-suq-nngur-sussaa-vutit  
 book-make-IntrPart-become-should-2SG&IND  
 'You should (have) become a writer'
- (19) tusaanngitsuusaartuannaarsinnaanngivipputit <  
 tusar-nngit-suq-usaar-juannaar-sinnaa-nngit-vig-vutit  
 hear-NEG-IntrPart-pretend-always-can-NEG-really-2SG&IND  
 'You simply cannot pretend not to hear all the time'



- (20) annirulirsinniqaarsinnaasurinngikkaluarpakka <  
 angi-niru-lir-tit-niqar-sinnaa-suri-nngit-galuar-vakka  
 be&big-more-begin-CAUS-PASS-can-think&that-NEG-'yes&but'-  
 AG:1SG&PAT:3PL&IND  
 'I don't think they can be made any bigger, but...'
- (21) aamarutissarsiurvituaasuq <  
 aamaruti-ssaq-siur-vik-tuak-u-suq  
 coal-FUT-seek-place-the&only-be-IntrPart  
 'which is the only place to look for coal'

The example (18) already shows the general structure of West Greenlandic 'macrowords': between the lexical element on the 'left' and the inflectional ending on the 'right' there are 0 ~10 elements whose form is that of 'derivational affixes' and whose meanings cover the whole spectrum from purely grammatical to purely lexical. (Thus, as far as affixes are concerned, the distinctions 'lexical vs. grammatical' and 'derivational vs. inflectional' are meaning-based and form-based, respectively.) The relations of semantic scope between the elements inside the macroword go straightforwardly from 'the right to the left' insofar as an element to the left belongs to the scope of an element to the right. To be sure, some elements belong together more tightly than others and constitute, as it were, 'microcompounds' within the macroword.

The construction *atuakk-liur-suq* ('book-make-er') in (18) expresses the meaning 'writer' in a transparent way and thus illustrates the notion of 'microcompound'. The affix *-sussaa-* ('should'), which specifies the meaning of the (affixal) main verb *-nngur-* ('become'), goes back to the construction *-suq-ssaq-u-* (= IntrPart-FUT-be). Also the example (21) contains *-ssaq-*, which expresses the future in connection with nominals. Apart from (21), all examples are in the indicative mood. The basic form of the indicative does not distinguish between the past and the present. Therefore, the meaning of the verb and the context together decide whether e.g. *-vuitit*, when directly attached to the verb root, expresses the past or the present.

On the other hand, there is a great number of optional means to express distinctions of tense and/or aspect, for instance *-junnaar-* in (19), which may be equally well understood as a marker for habituality or as an affixal temporal adverb. The example (20) illustrates the expressive capacity of the polysynthetic macroword because, in addition to the lexical affixes for '(be) big' and 'think', it contains the following (grammatical) markers: comparative, inchoative, causative, passive, mood, and negation. The main verb *-suri-* ('think', 'believe') is an exceptional affixal verb because, unlike *-tur-* in (17), it can occur in the transitive (as in this example). The object of *-suri-* is, however, never incorporated; if it is expressed, it is an independent NP in the absolutive. The example (21) is important insofar as it shows that, instead of being restricted to finite verbs, polysynthesis is also characteristic of nominals. In this context, the 'sentence-like' polysynthetic structure equals a *relative* clause, rather than a main clause. Applying this insight makes it possible to extend the notion of polysynthesis beyond its customary limits (cf. below).

Fortescue (1980) enumerates and classifies the productive derivational affixes of West Greenlandic; the same classification recurs in Fortescue (1984). It is notoriously difficult to draw a line between 'productive' and 'lexicalized'. In any case, Fortescue (1980) ends up with a list of 435 derivational affixes. These are divided into two main groups, viz. verbal and nominal. The verbal group is further divided into three main subgroups, viz. verbalizing (= 70), verb-extending (= 79), and verb-modifying (= 106). In addition, there are verbal affixes for tense, modality, negation, subjective coloration, and conjunction (= 78 in all). This division corresponds to the movement 'from the left to the right', which coincides, roughly, with the movement from lexical to grammatical meanings. The nominalizing affixes (= 92) are divided into nominalizing, noun-extending, and noun-modifying.

It is quite interesting to compare this list with the one in which Boas (1947: 237-245) enumerates the derivational affixes of Kwakiutl, 331 in all. As far as the semantic classification is

concerned, it seems that if West Greenlandic has a certain type of derivational affix, then Kwakiutl has it too, but not vice versa. The most prominent type of Kwakiutl affix with no (direct) counterpart in West Greenlandic are the *locative* affixes. Boas distinguishes between three principal subtypes: general locatives (e.g. 'down', 'across', 'away'), special locatives (e.g. 'into the woods', 'upriver', 'on the beach'), and body parts (e.g. 'head', 'nose', 'eye'). There are 106 locative affixes in all. In West Greenlandic, by contrast, the basic spatial relations are expressed either by (affixal) verbs ('to be in', 'to go to', 'to come from', 'to move through') or by relational nouns with a postpositional function, which constitute a comprehensive and well-articulated system ('inside', 'outside', 'upside', 'downside', 'frontside', 'backside', etc.)

The second type of affix with no counterpart in West Greenlandic is the shape classifier ('flat', 'long', 'round'), which occurs mainly together with numerals. In fact, some of the general locatives turn out, on closer inspection, to be shape classifiers ('tip of a long vertical object', 'on the surface of a flat object', 'on the surface of a round object').

In sum, lexical affixes in Kwakiutl express a great number of concrete meanings, related to objects and places, which are expressed by other means in West Greenlandic. From this point of view, Kwakiutl might qualify as the 'more polysynthetic' of the two. To be sure, polysynthesis is a matter not just of the (paradigmatic) multiplicity of affixes but also of their (syntagmatic) complexity. It may be added that Mohawk has only five verbal affixes, or affixes functioning as 'higher verbs', expressing e.g. causativity or inchoativity (Baker 1995: 25). In this respect then, Mohawk sharply diverges from both West Greenlandic and Kwakiutl, and appears nearly the opposite of a polysynthetic language.

Just like Kwakiutl, Bella Coola (a member of the Salishan family) has nominal affixes expressing very concrete meanings ('head', 'nose', 'eye', 'rock'). More precisely, these units are suffixes that follow verbs or nouns. On the other hand, the verbal affixes, which express such relatively general meanings as 'prepare', 'catch',

or 'go', are prefixed to nouns. It is easy to see that both nominal affixes (apart from the nominal compounds) and verbal affixes go back to the structure 'Verb + Noun', with only the difference that in prefixation it is the verb which has become grammaticalized whereas in suffixation it is the noun. Mithun (1997) proposes this as a general account of the origin of polysynthesis.

This proposal actually says less than it appears to do. It is certainly plausible that polysynthetic words are 'condensations' of earlier syntactic structures. (What would be the alternative?) But 'Verb + Noun' is much too restricted as a general source structure. In particular, it allows no place for the accumulation of verbal affixes, which is so characteristic of West Greenlandic (cf. examples 18 - 21), and which, incidentally, seems to be absent in Bella Coola.

In the remainder of this paper I shall explore some typological parallels to polysynthetic structure. In doing so, I shall pursue a line of thinking which Sapir (1921: 128) announced by noting that the 'principles' exhibited by polysynthetic languages are also exhibited, in some form, by non-polysynthetic languages.

The sentence-like nature of the *finite verb* is the principal criterion of polysynthesis: if the finite verb contains many derivational affixes some of which express lexical and others grammatical meanings, then the construction as a whole *must* qualify as polysynthetic. The status of sentence-like *nominals* is much less clear. Such constructions occur in many languages, only some of which are generally considered as polysynthetic. The standard dividing line between polysynthetic and non-polysynthetic coincides here with the distinction between affixal and lexical: a nominal constituted by a lexical unit plus lexical affixes qualifies as a polysynthetic word whereas a nominal constituted by two or more lexical units qualifies as a compound word. However, it is possible to seek a case where the distinction between lexical and affixal (= grammatical) and, by implication, that between non-polysynthetic and polysynthetic becomes minimal. This case is provided by analytical (or isolating) languages because the existence of

grammatical morphemes is, by definition, minimal in languages of this type.

Consider some cases of noun formation in Yoruba (a member of the Niger-Congo family): "The productive prefix *a-* attaches to a verb phrase to form an agentive nominal that means 'the person or the thing that performs the action of X' (X, the particular verb phrase)" (Pulleyblank & Akinlabi 1988: 142). The presence of VP's containing serial verbs makes possible an accumulation of verbal elements, as shown by the following examples (*ibidem*, p. 143, 151):

- (22) a-pa-eja (> apeja)  
A-kill-fish  
'fisherman'
- (23) a-pa-eni-kú (> apanikú)  
A-kill-person-die  
'one who kills a person completely'
- (24) a-pa-eni-je (> apanije)  
A-kill-person-eat  
'cannibal'

In addition, there are constructions where *a-* attaches to a structure which has no direct VP counterpart:

- (25) a-ní-apá-má-se-isé (> alápámásisé)  
A-have-arm-NEG-do-work  
'lazybones'
- (26) a-pa-eni-má-yo-idà (> apanimáyodà)  
A-kill-person-NEG-draw-sword  
'silent killer'

That is, examples (25) and (26) exhibit the structure 'a + VP + má + VP' but, although both VP's are well-formed, the sentence that results from replacing *a-* by a (subject) NP is ill-formed (unlike in

the examples 22 - 24). - Of course, there are other nominalizers in Yoruba in addition to *a-* (cf. Rowlands 1969: chaps 33 and 34).

It seems undeniable that there is a high-level analogy between (21) and (22 - 26) insofar as they are rather complex sentence-like nominalizations formed by the suffix *-suq* and by the prefix *a-*, respectively. (It may be added that, as shown by Yimas, a language of New Guinea, serial verbs may occur also inside polysynthetic finite verbs.) Let us now extend the analogy a bit further, namely by moving from analytic to synthetic languages. Consider the following type of bahuvrihi-construction in Sanskrit (a member of the Indo-European family): an SOV sentence is transformed into a compound adjective by deleting the inflections in S, replacing the finite V by a corresponding non-inflected non-finite form, placing this between S and O, and making O, or rather the new [S-V-O] structure, agree with its head noun (cf. Coulson 1976: 122, 189).

- (27) mrgapracarasucitasvapadam aranyam <  
 [mrga-pracara-sucita-svapada]-m aranya-m  
 deer-movement-indicate&PassPart-beast-NOM&SG&N forest-NOM  
 &SG&N

'The forest is one in which the beasts are indicated by the movements of the deer'

- (28) aribalam sribalaharyasastram vartate <  
 ari-bala-m [stri-bala-harya-sastra]-m  
 enemy-force-NOM&SG&N woman-child-take&GER-weapon-  
 NOM&SG&N

vartate

exists

'The enemy's forces are in a state where their weapons could be taken (lit. '[are] takeable') by women and children'

Of course, the examples (27) and (28) contain compound words (= adjectives), not polysynthetic words, because their components are full lexical units and, in particular, because the verbal element is not just a root, but either a passive participle, as in (27), or a gerundive, as in (28). Yet, there is a recognizable 'family

resemblance' with the preceding examples. It may be added that sentence-like ('quotative') adjectives are quite common in spoken English too; cf. *Don't give me that 'I am so handsome you can't resist me' look!*

Ancient Tamil (a member of the Dravidian family) seems to have an even greater capacity to form sentence-like compound words than Sanskrit. That is, although Ancient Tamil has fully developed noun and verb inflections (as witnessed by the contemporary grammar *Tolkaappiyam*), it allows the possibility to form very complex 'Modifier + Noun' constructions just by piling up mere nominal and verbal roots; as will be seen, the modifier may contain several equivalents of relative clauses. The following examples are taken from Lehmann (1974: 124, 156, 158).

- (29) mancai      arai      in      muttai  
 peacock      rock      hatch egg  
 'the egg hatched on the rock by the peacock'
- (30) vanku      amai      men      tol  
 bend      bamboo      delicate      shoulder  
 'a delicate shoulder (which is) similar to a bending bamboo'
- (31) karanku      icai      aruvi      mal      varai      mali      cunai      malar  
 murmur sound waterfall magnitude mountain be-full pond blossom  
 'the blossom (which is) beside the brimming pond (which is) on the big mountain where there is a waterfall with a murmuring sound'

Constructions of this type are insofar ambivalent as they could be interpreted either as phrases (with analytic components) or as compounds (with 'quasi-polysynthetic' components). Lehmann (1994: 17) prefers the former interpretation (which is reflected by the practice of separating the components in the modern orthography). In any case, the ubiquity of these constructions in the preserved texts of Ancient Tamil might seem to show, *prima facie*, that there was an 'analytic streak' in Ancient Tamil, which might have led to polysynthesis, but did not. However, this interpretation is called into question by the fact that all preserved texts are of

poetic nature; and according to Lehmann (p.c.), it is possible, albeit by no means certain, that we are dealing here with an artefact produced by the exigencies of poetic meter.

The core of polysynthesis is the sentence-like finite verb (cf. above). For the sake of completeness, it is good to mention that the opposite construction, i.e. the verb-like sentence, has also been documented. Wari' (a member of the Chapakuran family) has a basic VOS structure, where V is followed by a clitic (= CL), which expresses the person, number, and gender of O and S as well as tense. Now, reported speech (and thought) is expressed by the following construction (cf. Everett & Kern 1997: 58-68).

- (32) (V-CL O1 S1)-CL O2 S2  
 'S2 [said] to O2 [that] V O1 S1'

In other words, the main verb that should express 'saying' is absent, and its semantic equivalent has to be inferred from the construction as whole. In Wari' there are also other types of 'verbalized sentences', to use Everett & Kern's (1997) term. In any case, it should be obvious that there is a certain structural similarity between treating a verb as if it were a sentence (as in e.g. West Greenlandic) and treating a sentence as if it were a verb (as in Wari').

In the preceding discussion it has been tacitly assumed that there is a continuum 'analytic ~ synthetic ~ polysynthetic'. It has become clear, however, that this continuum is not linear, but *circular*, because sometimes, as in the case of Yoruba and, more tentatively, of Ancient Tamil, it seems easier to go from 'analytic' to 'polysynthetic' directly, rather than indirectly via 'synthetic'. Sapir (1921: 128) seems to vacillate between the linear conception and the circular one. First he espouses the former: "A polysynthetic language illustrates no principles that are not already exemplified in the more familiar synthetic languages. It is related to them very much as a synthetic language [e.g. Latin, Arabic, Finnish] is related to our own analytic English." But then he espouses the circular



view, noting that "underneath [the] present moderately polysynthetic form [of Chinook and Nootka] is discernible an analytic base ..." Notice that the circular view allows the two transitions 'analytic > polysynthetic' and 'synthetic > polysynthetic'.

Sapir (1921: *ibidem*) notes expressly that the triad 'analytic - synthetic - polysynthetic' is non-discrete, in two senses: "the three terms are purely quantitative - and relative, that is, a language may be 'analytic' from one standpoint, 'synthetic' from another". Recent research on linguistic typology vindicates this position. Anderson (1992: 329) disagrees, because "it is not at all the sort of categorial description that we expect of a typology". The word "we" refers here to generativists. Notice, however, that the categorial or discrete nature of generative descriptions is purely illusory. It is achieved simply by not specifying the relation between the formalization and the data. This makes it possible to describe non-discrete data in a discrete fashion and, more generally, to prevent the description from ever being falsified (cf. Itkonen 1996, esp. p. 485-486, 490-494). We have already seen good illustrations of this strategy in Baker's account of polysynthesis. Although the data concerning the subject-object-marking in Mohawk is non-discrete (because inanimate objects are not marked), the description is made discrete (by assuming that inanimate objects *are* marked, namely in the 'depth'). Similarly, although the data concerning the occurrence of subject and objects NP's in Baker-type 'polysynthetic' languages is non-discrete (because very often they are not present), the description is made discrete (by assuming that they are *always* present, namely in the 'depth').

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