

THE ARGUMENT STATUS OF NPs IN SOUTHEAST PUEBLA NAHUATL:  
COMMENTS ON THE POLYSYNTHESIS PARAMETER

JEFF MACSWAN  
*Arizona State University*

ABSTRACT. Baker (1996) defines polysynthetic languages as having both productive noun incorporation and full, obligatory agreement paradigms for subjects and objects. This cluster of properties is triggered by the Polysynthesis Parameter, a macro-parameter, which states that a phrase X is visible for  $\theta$ -role assignment by a head Y only if it is coindexed with a morpheme in the word containing Y by (i) an agreement relation or (ii) a movement relation. Baker further assumes that agreement morphemes absorb case, forcing all NPs to be adjuncts in polysynthetic languages.

Nahuatl meets Baker's definition of a polysynthetic language, but does not exhibit the syntactic peculiarities which Baker attributes to these languages. In particular, it neither has free word order nor lacks nonreferential quantified NPs, as Baker claims. Nahuatl, therefore, serves as a counterexample to Baker's claims about implicational universals in polysynthetic languages. I conclude that the Polysynthesis Parameter does not exist, and that Baker's case for the existence of macro-parameters is not compelling. This conclusion suggests that polysynthetic languages do not exist as a formal typological class, contrary to Baker's proposals.

INTRODUCTION. In his recent book on polysynthetic languages, Baker (1996) makes a number of bold and ingenious proposals regarding the basic clause structure of these languages, and in the process he attempts to relate a number of properties of polysynthetic languages to the operation of a single parameter. However, despite its initial appeal, there are significant problems with the approach Baker develops. I will outline some of these here.

Nineteenth-century philologists described the newly discovered languages of America as POLYSYNTHETIC, by which they meant to denote a class of languages in which a single word could stand for a complete sentence in a European language. For purposes of his study, Baker (1996:17-20) restricts the class of polysynthetic languages to those which have both productive noun incorporation

(NI) and full, obligatory agreement paradigms for subjects and objects. This cluster of properties is triggered by Baker's (1996) Polysynthesis Parameter, a MACRO-PARAMETER, which states that a phrase X is visible for  $\theta$ -role assignment by a head Y only if it is coindexed with a morpheme in the word containing Y by (i) an agreement relation or (ii) a movement relation.

Baker (1996) also postulates that an agreement morpheme adjoined to an  $X^0$  receives structural case from that  $X^0$ . Since, on the Polysynthesis Parameter, there must be an agreement morpheme or incorporated noun root for each  $\theta$ -role represented in the argument structure of the verb, all NPs are forced to be adjuncts in polysynthetic languages while case is assigned to the verb's agreement morphemes (Jelinek's (1984) class of PRONOMINAL ARGUMENT LANGUAGES). This assumption is intended to explain the flexible word order of these languages and the optionality of overt subjects and objects. Thus, on Baker's view, a sentence like English 1a can only be expressed with the structure of 1b in a polysynthetic language, where *John* and *Mary* may occur fairly freely to the left or right of the S (=IP).

- (1) a. John loves Mary
- b. John, Mary, he loves her

The attraction of the Polysynthesis Parameter is that it appears to account for a number of tightly-associated linguistic characteristics in a single operation. Baker (1996) attributes to this parameter the following properties:

- (2) Major characteristics of polysynthetic languages  
(Baker 1996:498-499)
  - a. Syntactic noun incorporation (NI)
  - b. Object agreement is obligatory
  - c. Free pro-drop
  - d. Free word order
  - e. No NP reflexive
  - f. No true quantifiers
  - g. Obligatory wh-movement
  - h. N agrees with R argument
  - i. No true determiners
  - j. N agrees with possessor
  - k. Restricted morphocausative
  - l. NI or agreement in PP
  - m. CP arguments only if nominal
  - n. No infinitives

Note that 2a and 2b are independent variables in Baker's study, since he defines polysynthetic languages as all and only those languages which have both productive NI and full, obligatory agreement paradigms for subjects and objects. In this paper, 'polysynthetic language' should be understood in this strict sense.

While Southeast Puebla Nahuatl is indeed a polysynthetic language, it differs from Mohawk and other such languages in many of the respects listed in 2. In particular, it has relatively fixed word order and true quantifiers, suggesting that NPs may indeed be arguments in Southeast Puebla Nahuatl, contrary to Baker's proposal. If this is correct, then the basic motivation for postulating that all NPs must be adjuncts in this class of languages is severely weakened.

Below, after illustrating Nahuatl's polysynthetic characteristics, I review the facts regarding basic word order and provide a salient example of a TRUE QUANTIFIER to show that NPs have argument status in Nahuatl. I claim that Nahuatl, in this respect, is not essentially different from English or other well-studied languages. I then briefly survey other typological characteristics listed in 2, and show that they also do not correlate with 2a and 2b. In other words, whether or not a language has any one of the characteristics 2c through 2n is independent of its being a *polysynthetic language*. Finally, I conclude that Baker (1996) does not make a compelling case for the existence of non-lexical macro-parameters.

1. SOUTHEAST PUEBLA NAHUATL AS A POLYSYNTHETIC LANGUAGE. As noted, Baker (1996) defines polysynthetic languages as all and only those languages which (i) allow NI and (ii) have full agreement paradigms for subjects and objects. Consider the examples in 3 and 4 from Southeast Puebla Nahuatl. In 3, *nitlakekoas* contains a subject agreement morpheme *ni-* (first person), followed by an incorporated object *tlake-* 'garment,' then the verb root *-koa-* 'buy' and its future tense suffix *-s*. This construction illustrates NI in Southeast Puebla Nahuatl, a process that is fully productive and referentially active in the discourse.<sup>1</sup> As shown in 4, the verb and noun may also be used independently; the object agreement morpheme *-k-* (third person), which appears in complementary distribution with incorporated nouns, is also illustrated here.

- (3) Nitlakekoas  
 ni-tlake-koa-s  
 1S-garment-buy-FUT  
 'I will buy some clothes'

---

<sup>1</sup>That NI is referentially active in the discourse is illustrated in (i) below, where the incorporated noun 'clothes' in the second clause may have a definite interpretation and refer to the 'clothes' mentioned in the first clause. See Mithun (1984) for more on tests of productivity for NI.

- (i) Onikitak tlakemetl, gika nitlakekoas  
 o-ni-k-itak tlake-me-tl, gika ni-tlake-koa-s  
 past-1S-3O-see garment-PL-NSF, so 1S-garment-buy-FUT  
 'I saw some clothes, so I'm going to buy the clothes'

- (4) Nikoas tlakemetl  
 ni-k-koa-s tlake-me-tl  
 1S-3Os-buy-FUT garment-PL-NSF  
 'I will buy some clothes'

Thus, Southeast Puebla Nahuatl has the essential characteristics of Baker's (1996) Polysynthesis Parameter, and should therefore also exhibit the related syntactic properties listed in 2 if his basic thesis is correct. In the next section, I focus on the status of NPs in Southeast Puebla Nahuatl, arguing that these elements may be arguments in this language. If this is correct, then 2d and 2f are not properties of polysynthetic languages. This conclusion, together with other considerations presented below, lead us to doubt the existence of the Polysynthesis Parameter, since it is assumed to be responsible for the entire cluster of properties listed in 2.

2. THE STATUS OF NPs. As mentioned, the primary motivation for the claim that all NPs must be adjuncts in polysynthetic languages is to explain the flexible word order of these languages, as well as the optionality of overt NPs. In the present section I show that word order is, in fact, *not* flexible in Nahuatl, and I present a salient example of a true quantifier, predicted not to exist in such languages (since nonreferential quantified NPs cannot be adjuncts on independent grounds). These facts suggest that the basic clause structure of Southeast Puebla Nahuatl is not significantly different from that of English, Spanish or other well-studied languages.

First, consider the proposal that word order is free in polysynthetic languages. Judgments on word orders are presented in 5 for one such language, Southeast Puebla Nahuatl. Consultants reported that the SVO order in 5a is 'most natural', while VSO in 5b was judged to be possible for focus or contrast only. The SOV order in 5c was said to be somewhat marked but also possible for focus or contrast. The OVS order in 5d is unacceptable. Thus, Nahuatl appears to be much like Spanish and other Romance languages; it has a basic SVO word order, but also allows postverbal subjects and perhaps preverbal objects for purposes of focus.

- (5) a. Ne niktlasojtla in Maria  
 ne ni-k-tlasojtla in Maria  
 I 1S-3Os-love IN Maria  
 'I love Maria'
- b. Niktlasojtla ne in Maria  
 ni-k-tlasojtla ne in Maria  
 1S-3Os-love I IN Maria  
 'I love Maria'

- c. Ne in Maria niktlasojtla  
 ne ni-k-tlasojtla in Maria  
 I 1S-3Os-love IN Maria  
 'I love Maria'
- d. \*In Maria niktlasojtla ne  
 in Maria ni-k-tlasojtla ne  
 IN Maria 1S-3Os-love I  
 'I love Maria'

Textual evidence also strongly suggests that Southeast Puebla Nahuatl has a rather rigid SVO word order. Five short essays, written by residents of San Sebastián Zinacatepec, in Puebla's Tehuacán Valley, show a statistical preference for SVO word order; the findings are reported in Table 1.<sup>2</sup>

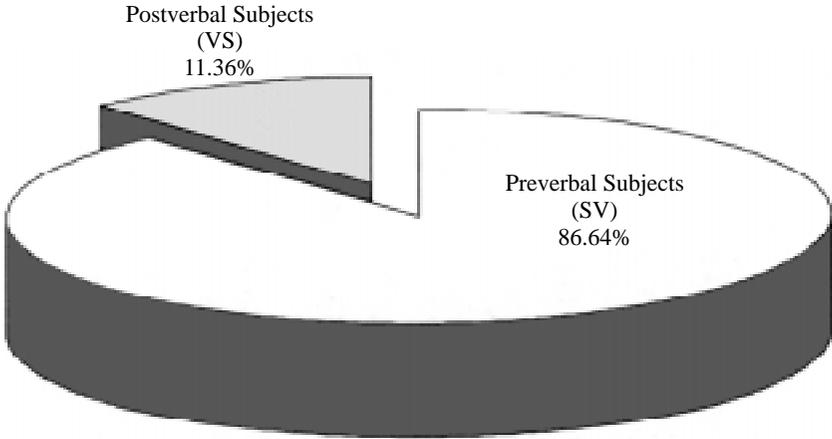
WORD ORDERS	TEXT #1	TEXT #2	TEXT #3	TEXT #4	TEXT #5	TOTALS	RELATIVE FREQUENCIES
V	17	28	27	32	9	<b>113</b>	<b>42.80%</b>
VO	7	11	19	19	7	<b>63</b>	<b>23.86%</b>
SV	1	6	24	4	1	<b>36</b>	<b>13.64%</b>
SVO	0	10	23	5	4	<b>42</b>	<b>15.91%</b>
VS	5	1	1	0	2	<b>9</b>	<b>3.41%</b>
VSO	0	0	1	0	0	<b>1</b>	<b>0.38%</b>
Totals	30	56	95	60	23	264	100.00%

Texts used: (1) 'Sej Welta Onia Acapulco' by Lidia Cedillo Hernández, (2) 'Sej Welta Onechmak Tokes' by Jaime Pablo Ignacio, (3) 'David iwan Galiat' by Antonia Cortés Hernández, (4) 'Pancho Loko' by Arnulfo Prado Bernardo, (5) 'Chokotzi Non Okinekia Tekitis' by Isafas Feliciano Santiago.

TABLE 1. *Frequencies of Nahuatl Basic Word Orders in Five Texts from San Sebastián Zinacatepec, Puebla*

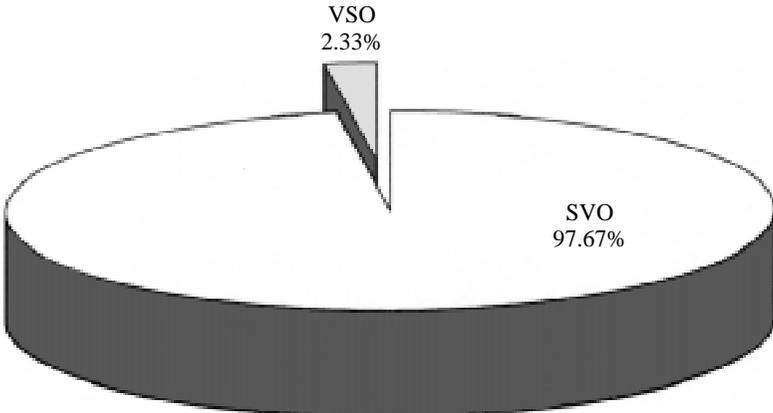
Vs occurred very frequently in these texts without an overt subject or object, making it difficult to detect a basic word order. However, subjects occurred with verbs in SV, SVO, VS and VSO constructions, preverbally nearly 90% of the time and postverbally only about 10% of the time (Figure 1). Objects never occurred before verbs in the texts I examined. When subject, verb and object were all overtly present, SVO occurred about 98% of the time and VSO about 2% of the time, as shown in Figure 2.

<sup>2</sup>Constructions involving *wh*-elements, negative QPs, passives and *be* were excluded since these exhibit syntactic peculiarities. Complement clauses and quoted speech were counted as objects of their verbs.



Texts used: (1) 'Sej Welta Onia Acapulco' by Lidia Cedillo Hernández, (2) 'Sej Welta Onechmak Tokes' by Jaime Pablo Ignacio, (3) 'David iwan Galiat' by Antonia Cortés Hernández, (4) 'Pancho Loko' by Arnulfo Prado Bernardo, (5) 'Chokotzi Non Okinekia Tekitis' by Isafas Feliciano Santiago.

FIGURE 1. *The Relative Frequencies of Word Orders for Subjects (n = 79) When Overt in Five Nahuatl Texts from San Sebastián Zinacatepec, Puebla*



Texts used: (1) 'Sej Welta Onia Acapulco' by Lidia Cedillo Hernández, (2) 'Sej Welta Onechmak Tokes' by Jaime Pablo Ignacio, (3) 'David iwan Galiat' by Antonia Cortés Hernández, (4) 'Pancho Loko' by Arnulfo Prado Bernardo, (5) 'Chokotzi Non Okinekia Tekitis' by Isafas Feliciano Santiago.

FIGURE 2. *The Relative Frequencies of Word Orders for Subject, Verb and Object When Overt (n = 38) in Five Nahuatl Texts from San Sebastián Zinacatepec, Puebla*

Taken alone, it may be that statistical information of this sort should not be fully trusted. After all, a similar analysis of English novels might make English out to be an OSV language. However, taken together with the judgments in 5, Figures 1 and 2 provide strong evidence that Southeast Puebla Nahuatl is an SVO language which allows postverbal subjects and occasionally preverbal objects for purposes of focus and contrast.

In addition, it should be noted that others have reported a relatively fixed SVO word order for other modern varieties of Nahuatl. For instance, Tuggy (1979), Brockway (1979) and Sischo (1979) characterize Nahuatl as an SVO language, and Brockway additionally remarks that the 'order of major constituents is relatively fixed ...' (146). Beller and Beller (1979), on the other hand, classify Huasteca Nahuatl as most commonly VSO with flexibility for SVO and even VOS. Launey (1992:36-37) similarly regards Classical Nahuatl to be a VSO language, adding that topicalization of the subject (SVO), object (OVS) or both (SOV) is also possible. Hill and Hill (1986) also regard the Nahuatl of the Malinche area to be VSO. It may be that some varieties of Nahuatl do or did have VSO word order, or that further study will reconcile these apparent inconsistencies.<sup>3</sup> What is important for present purposes, however, is the observation that Nahuatl is reported to have relatively fixed word order in a good variety of sources.

Moreover, word order is relatively free in a number of languages which cannot be characterized as polysynthetic, in Baker's sense. German, which lacks NI and object agreement morphology, is one of the paradigm cases of NON-CONFIGURATIONALITY of the early 1980s. While Hungarian has object agreement morphology and free word order, it does not have NI like polysynthetic languages do. In addition, like Nahuatl and other polysynthetic languages, Spanish and Korean freely allow subject pro-drop. Spanish, Catalan, Italian and Portuguese additionally allow object pro-drop under conditions similar to those under which Nahuatl allows it. Thus, neither flexible word order nor optionality of overt NPs can be a defining characteristic of polysynthetic languages.

Furthermore, as Baker (1996) notes, if all NPs must be adjuncts in polysynthetic languages, then such languages cannot have true quantifiers, since nonreferential quantified NPs cannot occur in adjunct or dislocated positions (Rizzi 1986; Cinque 1990). Using evidence from number agreement and the absence of weak cross-over effects, Baker (1996:54-58) argues that Mohawk *akwé:ku*, generally translated as 'everyone' or 'everything', is much more like *all* than *every* in terms of

---

<sup>3</sup>It should be noted, for instance, that Hill and Hill (1986) found a VSO analysis of Malinche Nahuatl attractive partly because this is regarded to be a Mesoamerican areal feature. (See Campbell et al. 1986.) However, in their collection of sixty-six narratives, only sixteen sentences occurred with overt subjects and objects, with the following frequencies: VSO = 5, SVO = 6, OVS = 3, and IoVS = 1 (IO = Indirect Object). Although the sample is quite small, the actual data might suggest an SVO order, as in Southeast Puebla Nahuatl.

its syntactic behavior. He concludes from this and additional discussion of negative and existential quantification that Mohawk lacks true quantifiers. Baker further speculates that this is a property of other polysynthetic languages.

However, while elements like *every* may have been absent from Classical Nahuatl, they are not absent from the modern varieties, largely as a result of Spanish contact. Suárez (1977) lists *kada* 'each' as a loan word used in the modern varieties of Nahuatl, borrowed from Spanish *cada* 'each' (used by monolinguals and bilinguals alike).<sup>4,5</sup> Consider the examples in 6, from Southeast Puebla Nahuatl, where *kada tlakatl* 'each man' occurs in subject and object positions.

- (6) a. *Kada tlakatl okipipitzo in isywa*  
       *kada tlaka-tl o-0-ki-pipitzo in i-siwa*  
       each man-NSF PAST-3S-3Os-kiss IN 3SPOS-wife  
       'Each man kissed his wife'
- b. *Ye kitlasojtla kada tlakatl*  
       *ye 0-ki-tlasojtla kada tlaka-tl*  
       (s)he 3S-3Os-love each man-nsf  
       '(S)he loves each man'

*Kada* 'each' further exhibits the weak crossover effect, as expected of a true quantifier. Reinhart (1984) showed that quantified NPs can have anaphoric relations only with pronouns that they bind (c-command and are coindexed with). Thus, in English the examples in 7 are ill-formed with the indicated co-reference between the quantified NPs and the pronouns; in contrast, those in 8 are well-formed.

- (7) a. \*His<sub>i</sub> mother loves [every man]<sub>i</sub>  
       b. \*His<sub>i</sub> mother loves [each man]<sub>i</sub>
- (8) a. [Every man]<sub>i</sub> loves his<sub>i</sub> mother  
       b. [Each man]<sub>i</sub> loves his<sub>i</sub> mother

The difference in interpretation between *every* and *each* relates to the universe of discourse over which each of these words quantifies; however, their scopal properties are the same with respect to the weak crossover effect, as illustrated in 7 and 8.

Now consider Nahuatl *kada* with respect to the weak crossover effect. As in English, 9a is ill-formed with the indicated co-reference, whereas 9b is not.

<sup>4</sup>See MacSwan (1997) for some discussion of Nahuatl monolingualism and Spanish-Nahuatl bilingualism in contemporary Mexico.

<sup>5</sup>*Nochte*, used before plural nouns, means 'all' in Southeast Puebla Nahuatl, and has the properties of Mohawk *akwé:ku*.

- (9) a. \*Nikni kitlasojtla kada ichpochtle  
 n-i-kni 0-ki-tlasojtla kada ichpochtle  
 IN-3SPOS-brother 3S-3Os-love each girl  
 ‘Her<sub>i</sub> brother loves [each girl]<sub>i</sub>’  
 b. Kada ichpochtle kitlasojtla nikni  
 kada ichpochtle 0-ki-tlasojtla n-i-kni  
 each girl 3S-3Os-love IN-3SPOS-brother  
 ‘[Each girl]<sub>i</sub> loves her<sub>i</sub> brother’

Also consider 10 in which the lexical NP *Maria* has replaced *kada ichpochtle* ‘each girl.’ The fact that 10a is well-formed in comparison to 9a tells us that the observed restriction relates to the quantificational nature of *kada* and not to a general constraint on backward anaphora in Nahuatl.

- (10) a. Nikni kitlasojtla Maria  
 n-i-kni 0-ki-tlasojtla Maria  
 IN-3SPOS-brother 3S-3Os-love Maria  
 ‘Her<sub>i</sub> brother loves Maria<sub>i</sub>’  
 b. Maria kitlasojtla nikni  
 Maria 0-ki-tlasojtla n-i-kni  
 Maria 3S-3Os-love IN-3SPOS-brother  
 ‘Maria<sub>i</sub> loves her<sub>i</sub> brother’

In addition, like English *each* and Spanish *cada*, Nahuatl *kada* can only occur with singular nouns; it differs in this respect from *all*. Moreover, it cannot occur without a lexical restriction (that is, changing *kada ichpochtle* ‘each girl’ to *kada* ‘each’ would render 9b ungrammatical).<sup>6</sup> Baker (1996:58) notes that Mohawk also has a quantifier *skátshu* ‘each,’ but unlike Spanish and English ‘each’ this element triggers plural agreement on the noun and verb and binds plural pronouns. Actually, very much the same may be said of *izquintin* ‘each’ of Classical Nahuatl, an element which triggers plural morphology on the head noun and the verb, as Launey (1979:398, cited in Baker 1996:64) observes. However, Baker reports no evidence regarding weak crossover effects for *skátshu*, and nothing is known about the behavior of Classical *izquintin* in this regard either.

It must be emphasized that many languages, perhaps most, lack a word like English *every*, a fact which Baker (1996:91, n20) notes in passing. Thus, the absence of such quantifiers is not a unique characteristic of polysynthetic languages. In other words, whether or not L is a polysynthetic language has no relation to

<sup>6</sup>Thus, Nahuatl *kada* ‘each’ differs from Swampy Cree *kahkinaw* ‘all, every,’ which Reinholtz and Russell (1994) say can trigger singular agreement when it has a lexical restriction but must be plural when it is unrestricted, facts they interpret as evidence in favor of Baker’s (1996) version of the pronominal argument hypothesis.

whether L has quantifiers of the *every* type. In addition, since at least one polysynthetic language has a very salient, clear example of a true quantifier, it cannot be a correct generalization of polysynthetic languages that they must lack such elements.

Since Southeast Puebla Nahuatl has true quantifiers (at least one), it cannot be true that NPs must be adjuncts in this language. I conclude that the basic clause structure of Nahuatl is not radically different from that of English or Spanish. Since Nahuatl meets Baker's definition of a polysynthetic language but does not exhibit all of the characteristics listed in 2, I furthermore conclude that the Polysynthesis Parameter does not exist. In the next Section I briefly review some of the other characteristics listed in 2.

3. OTHER TYPOLOGICAL CHARACTERISTICS. Let us consider once again the cluster of properties which Baker attributes to the Polysynthesis Parameter. (See 2 above.) The first two features simply define the class of polysynthetic languages, so they are characteristics of such languages by definition. I have pointed out that 2e pro-drop, of both objects and subjects, is widely attested in numerous languages which do not have the characteristics of 2a and 2b (Spanish, Catalan, Portuguese, and others). Furthermore, 2d free word order has been observed in numerous nonpolysynthetic languages (Hungarian, German, Korean and Japanese), and I have shown that it does not hold for at least one clear member of this class (Southeast Puebla Nahuatl). Also, I have argued that Southeast Puebla Nahuatl has true quantifiers, so 2f is not a property of polysynthetic languages.

That leaves 2e and 2g through 2n. The claim that polysynthetic languages lack true determiners (2i) is very much like the claim that they lack NP arguments; however, Southeast Puebla Nahuatl determiners are not very different from determiners in English and other well-studied languages, and this is also true of other modern varieties. (See Tuggy (1979:67), Brockway (1979:160-161), and Beller and Beller (1979:211-233).)<sup>7</sup> On the other hand, Polish and Serbian determiners behave very much like Mohawk determiners (judging from Baker's descriptions), but these are not polysynthetic languages. Also, regarding the absence of infinitives 2n, a similar claim might be made for Romanian, Modern Greek and Albanian.

These observations make it fairly clear that 2a and 2b, which simply define the class of polysynthetic languages in Baker's system, cannot reliably predict many of the other properties Baker lists for these languages. Furthermore, many languages which do not have the characteristics 2a and 2b do have other characteris-

---

<sup>7</sup>Launey's (1979, 1992) introduction to classical Nahuatl does indeed provide examples of postnominal *in* in some constructions. Thus, Nahuatl word order internal to DP may have once been considerably more flexible than it is in the modern varieties.

tics in 2, suggesting that the particular cluster of properties which Baker observes for Mohwak is coincidental in nature.

Finally, Sapir (1911) points out on the basis of Southern Paiute data that ‘nominal and pronominal incorporation do not necessitate each other’ (262). While Paiute has productive NI, the argument morphemes which Baker takes to be the true arguments of the verb may appear as enclitics to any word in the sentence (Also see Sapir (1992 [1930])). Thus, not even 2a and 2b may be said to co-occur with any certainty.

It should be emphasized that Baker’s claims about polysynthetic languages are implicational in nature. If a language has 2a and 2b, then it will also have 2c-2n. To refute this claim, one must simply exhibit a language which has 2a and 2b but lacks one or more of 2c-2n, as I have done here. In addition, however, by pointing out that the linguistic features 2c-2n are in fact quite common across a wide range of languages, I have tried to suggest that the particular cluster of features Baker observes for Mohawk and attributes to other polysynthetic languages is a coincidence and not a consequence of 2a and 2b, and hence not the consequence of a Polysynthesis Parameter.

These observations are summed up in Table 2, where only those characteristics about which something has been said here are listed. Southern Paiute, which is generally regarded as a polysynthetic language, is not regarded as such for the purposes of Table 2 since its agreement morphology does not conform to the operationalized definition of polysynthesis used here (See Potter (1997) for other arguments based upon Western Apache.).

SOME OF BAKER’S CHARACTERISTICS OF POLYSYNTHETIC LANGUAGES	POLYSYNTHETIC LANGUAGES WITHOUT THESE CHARACTERISTICS	NONPOLYSYNTHETIC LANGUAGES WITH THESE CHARACTERISTICS
Syntactic noun incorporation	None, by definition.	Southern Paiute
Object agreement is obligatory	None, by definition.	Hungarian
Free pro-drop (subjects and objects)		Spanish, Catalan, Portuguese, Korean, ...
Free word order	Nahuatl	Hungarian, German, Japanese, ...
No true quantifiers	Nahuatl	
Obligatory <i>wh</i> -movement		English, Swahili, ...
No true determiners	Nahuatl	Polish, Serbian, ...
NI or agreement in PP	Some varieties of Nahuatl	
CP arguments only if nominal	Nahuatl	
No infinitives		Romanian, Modern Greek, Albanian, ...

TABLE 2. *Major Characteristics of Some Polysynthetic and Nonpolysynthetic Languages*

4. ARE THERE MACRO-PARAMETERS? In Sections 2 and 3, I concluded that the Polysynthesis Parameter is not a principle of grammar. A deeper, farther reaching question remains, however, regarding the sort of parameters that should be pursued in linguistic research. As Baker puts the matter,

A priori, there are two extreme positions one can take toward the superficial differences among languages. On the one hand, it could be that Mohawk, for example, actually differs from, say, English in many minor ways, and that it is the cumulative effect of all these little differences that makes Mohawk seem so alien to an English speaker. The other approach would be to say that Mohawk differs from English in one essential way, but this difference is so deeply embedded in the grammatical system that it affects all kinds of linguistic structures. Which view is the correct one—or perhaps which mixture or intermediate position between the two extremes—is a central concern of linguistic theory. (1996:3)

Baker suggests that the one essential way in which languages might differ is related to a cluster of cross-linguistic differences, which he calls macro-parameters. He conjectures that these macro-parameters relate to VISIBILITY CONDITIONS that are set as parametric values within the computational system (Baker, 1996:504-506). Other parameters, which are lexically encoded, might be called micro-parameters.

Apart from his own proposal, Baker (1996:505) can provide only one other example of a macro-parameter in the syntactic literature, one proposed in Travis (1984) and Koopman (1984) which states that directionality of  $\theta$ -role assignment is to the right or left, as determined by the value of the parameter. This parameter, like his, relies upon visibility conditions. However, in recent proposals, directionality in phrase structure is determined by micro-parameters, lexically encoded morphological properties by virtue of which case (for instance) is assigned overtly or covertly (Chomsky 1994, 1995). Indeed, recent work in syntactic theory has attempted to reduce all syntactic variation to a small set of such micro- or lexical parameters. This project provides only a very small set of options, radically reducing the hypothesis space for language acquisition.

Baker's case for the existence or need of such parameters is far from convincing. In the case of the Polysynthesis Parameter, the properties he attributes to it are not properties of all the languages in the class he defined, suggesting that there are indeed parameters of much narrower consequences at work. In the case of the other macro-parameter Baker discusses, new directions have turned away from visibility conditions on directionality, favoring instead lexically encoded micro-parameters. Further work on the characteristics of polysynthetic languages should similarly turn to an analysis of lexically encoded morphological properties, in keeping with new and promising directions within the Minimalist Program of Chomsky (1995).

The conclusions reached here indicate that the basic clause structure of Nahuatl, and perhaps that of other polysynthetic languages, is not radically different from

English, Spanish or other well-studied languages. For this reason, while it may be useful for some purposes to refer to polysynthetic languages informally as those languages which are characterized by rich agreement morphology on the verb (sometimes called HEAD-MARKING LANGUAGES) plus productive NI, it does not seem likely that polysynthetic languages exist as a formal typological class, contrary to Baker's proposals.

## REFERENCES

- BAKER, MARK C. 1996. *The polysynthesis parameter*. New York: Oxford University Press.
- BELLER, RICHARD and PATRICIA BELLER. 1979. Huasteca Nahuatl. Langacker (ed.), 199-306.
- BROCKWAY, EARL. 1979. North Puebla Nahuatl. Langacker (ed.), 141-98.
- CAMPBELL, LYLE, TERENCE KAUFMAN, and TOM SMITH-STARK. 1986. Mesoamerica as a linguistic area. *Language* 62.530-570.
- CHOMSKY, NOAM. 1994. Bare phrase structure. *Evolution and revolution in linguistic theory: Essays in honor of Carlos P. Otero*, ed. by Hector Campos and Paula Kempchinsky, 51-109. Washington, DC: Georgetown University Press.
- . 1995. *The minimalist program*. Cambridge, MA: MIT Press.
- CINQUE, GUGLIELMO. 1990. *Types of A-bar dependencies*. Cambridge, MA: MIT Press.
- HILL, JANE H., and KENNETH C. HILL. 1986. *Speaking Mexicano: Dynamics of syncretic language in Central Mexico*. Tucson: The University of Arizona Press.
- JELINEK, ELOISE. 1984. Empty categories, case, and configurationality. *Natural Language and Linguistic Theory* 2.39-76.
- KOOPMAN, HILDA. 1984. *The syntax of verbs: from verb movement rules in the Kru languages to universal grammar*. Dordrecht: Foris.
- LANGACKER, RONALD (ed.) 1979. *Modern Aztec grammatical sketches*. Arlington, TX: Summer Institute of Linguistics.
- LAUNEY, MICHEL. 1979. *Introduction à la langue et à la littérature Aztèques, tome 1, Grammaire*. Paris: L'Harmattan.
- . 1992. *Introducción a la lengua y a la literatura Náhuatl*. México, D.F.: Universidad Nacional Autónoma de México.
- MACSWAN, JEFF. 1997. *A minimalist approach to intrasentential code switching: Spanish-Nahuatl bilingualism in Central Mexico*. Los Angeles: UCLA dissertation.
- MITHUN, MARIANNE. 1984. The evolution of noun incorporation. *Language* 60.847-94.
- POTTER, BRIAN. 1997. *Wh/Indefinite variables and the structure of the clause in Western Apache*. Los Angeles: UCLA dissertation.

- REINHART, TANYA. 1984. *Anaphora and semantic interpretation*. Chicago: University of Chicago Press.
- REINHOLTZ, CHARLOTTE, and KEVIN RUSSELL. 1994. Quantified NPs in pronominal argument languages: evidence from Swampy Cree. *North Eastern Linguistic Society 25*, ed. by Jill N. Beckman, 389-403. Philadelphia: Graduate Linguistics Student Association, University of Pennsylvania.
- RIZZI, LUIGI. 1986. Null objects in Italian and the theory of pro. *Linguistic Inquiry 17*.501-57.
- SAPIR, EDWARD. 1911. The problem of noun incorporation in American Languages. *American Anthropologist 13*.250-282.
- . 1992 [1930]. *Southern Paiute and Ute: linguistics and ethnography*. *American Indian languages. The collected works of Edward Sapir*, ed. by William Bright, 1-296. Berlin: Mouton de Gruyter.
- SISCHO, WILLIAM. 1979. Michoacán Nahuatl. Langacker (ed.), 307-80.
- SUÁREZ, JORGE A. 1977. La influencia del español en la estructura gramatical del Náhuatl. *Anuario de Letras 15*.115-164.
- TRAVIS, LISA. 1984. *Parameters and effects of word order variation*. Cambridge, MA: MIT dissertation.
- TUGGY, DAVID. 1979. Tetelcingo Nahuatl. Langacker (ed.), 1-140.

MacSwan, Jeff. 1998. The argument status of NPs in Southeast Puebla Nahuatl: Comments on the Polysynthesis Parameter. *Southwest Journal of Linguistics* 17:101-114.

Mahajan, Anoop. 2003. Word order and (remnant) VP movement. In *Word order and scrambling*, ed. Karimi, Simin, 217-237. Maiden, MA: Blackwell.

The polysynthesis parameter states that all phrasal heads must be marked with either agreement morphemes of their direct argument or else incorporate these arguments in that head.[20] This definition of polysynthesis leaves out some languages that are commonly stated as examples of polysynthetic languages (such as Inuktitut), but can be seen as the reason for certain common structural properties in others, such as Mohawk and Nahuatl. Baker's definition, probably because of its heavy dependence on generative theory, has not been accepted[citation needed] as a general definition of polysyn...

^ See Mattissen: "On the Ontology and Diachronis of Polysynthesis"; in Wunderlich (editor): *Advances in the theory of the lexicon*, p. 337.

^ Spencer, Andrew (1995). Southeast Puebla Nahuatl in Mexico, as well as languages stemming from Australia and Siberia, in order to form a comprehensive picture and understanding of polysynthetic grammar. Baker. (1996) also states that, through this parameter, there are two different types of polysynthetic languages that emerge: head-marking and dependent-marking. Perhaps the biggest take away.

^ The Argument Status of NPS in Southeast Puebla Nahuatl: Comments on the Polysynthesis Parameter. *Southwest Journal of Linguistics*, 17(2).

Mahieu, M. (2000). Polysynthesis in the Arctic. In *Variations on polysynthesis the Eskaleut languages*. Amsterdam: John Benjamins Pub.

Mithun, M. (1989). The incipient obsolescence of polysynthesis: Cayuga in Ontario and Oklahoma. 243-257.