

Resetting the polysynthesis parameter: a preliminary proposal*

Misha Becker
UNC Chapel Hill

1 Introduction

The existing literature on the L1 acquisition of polysynthetic languages makes two observations: first, when children make errors of omission, those omissions tend to be based on phonological rather than morphological units (e.g., maintenance of a stressed syllable, rather than the word root; [Pye 1983](#), [Mithun 1989](#)). Second, children have relatively little difficulty acquiring the morphological systems of these languages and use both derivational and inflectional morphology productively from age 2 ([Fortescue 1984](#), [Mithun 1989](#), [Allen & Crago 1996](#), [Pye 1992](#); see [Kelly et al. 2014](#) for an overview). However, very little is known about child L2 acquisition of polysynthetic languages, and the sparse evidence available suggests that the L2 acquisition of polysynthesis is quite different from its L1 counterpart. The purpose of this squib is to consider the relevant questions for studying child L2 acquisition of Cherokee, a severely endangered polysynthetic language, by children whose L1 is English, a majority language that is morphologically analytic/isolating. Such a study would be interesting as it can add to what is known about child L2 learners' acquisition of inflectional morphology and their representation of morphosyntax, in particular in comparison to L1 acquisition of inflection and polysynthesis.

An interesting possibility to consider is that the development of morphological structure may take the form of a type of parameter setting (see [Baker 1996](#)). While it does not seem practical to propose that a single parameter distinguishes analytic/isolating from synthetic/inflecting languages, since many languages exhibit mixed types, a parameter could distinguish polysynthetic languages from all others, as Baker suggests (see below). If child L2 acquisition involves transfer from the L1 but also access to UG (as in the Full Transfer/Full Access model; [Schwartz & Sprouse 1996](#)), L2 learners of polysynthetic languages whose L1 is isolating would need to “reset” this parameter, but they would be able to do so via access to

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UG. Predictions can be made, then, about what else might be acquired “for free” once the parameter has been reset.

2 A polysynthesis parameter

Baker (1996) proposed that polysynthetic languages differ from non-polysynthetic languages in a fundamental way, and that this fundamental difference should be conceived as a kind of macroparameter. Informally, Baker defined the polysynthesis parameter as follows:

Every argument of a head element [typically V] must be related to a morpheme in the word containing that head. (Baker 1996: 14)

In other words, polysynthetic languages realize (theta-role bearing) arguments of the main predicate as empty categories that are coindexed with affixes bound to the predicate (a similar proposal was put forth by Jelinek (1984); I will focus here on Baker’s version, but the underlying insights in both proposals are, I believe, equivalent for my purposes). According to Baker, a number of important syntactic patterns fall out from this property, and all of them distinguish polysynthetic from non-polysynthetic languages. For example, one important reflex of the polysynthesis parameter is that full NPs (NPs realized as free morphemes) always have adjunct status. This is because the arguments themselves are null pronouns linked to bound morphemes on the verbal complex, and if one assumes the Theta Criterion, both the null pronoun and the full NP cannot bear the same theta-role. Other properties that derive from the polysynthesis parameter include obligatory noun incorporation, the absence of NP anaphors, and the absence of referential quantified NPs.

3 Cherokee

Although Cherokee (Southern Iroquois) does not strictly meet all of Baker’s criteria for polysynthesis,¹ it is both typologically and genetically similar to Mohawk (Northern Iroquois), a major source of data in Baker’s work. Moreover, it is polysynthetic in the (widely accepted) sense that its verbs typically bear a large number of affixes that indicate the subject, object, as well as temporal and aspectual properties of the verb. A typical Cherokee verb is exemplified in (1) (from Montgomery-Anderson 2015: 116).²

1 For example, it has infinitive verb forms, which Baker claims are absent in polysynthetic languages. According to Mithun (2000), Cherokee infinitives are likely an innovation based on a reanalysis of causative/instrumental markers in Proto-Iroquoian, possibly inspired by contact with speakers of Muskogean languages, such as Creek.

2 CMF = completive future, CMP = completive, APL = applicative, B = set B verb.

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- (1) daàgiiluhcheéli
da-iigii-luhj-eél-i
CMF-1B.PL-arrive:CMF-APL:CMF-CMF
“He will come up to us”

The question is, when an English-speaking child learns Cherokee as an L2, what does the changing of this parameter setting look like? This is a question about language acquisition, specifically child L2 acquisition, but the question cannot be asked in isolation from issues of language contact, in particular as there is some evidence that speakers’ representation of polysynthetic morphological systems may be changing under contact conditions (Rice et al. 2002).³

4 Preliminary evidence

There is some preliminary data on child L2 acquisition of Cherokee. Peter et al. (2008) studied the linguistic abilities of thirteen kindergarten children in a Cherokee immersion school in the Cherokee Nation (CN) in Oklahoma. Their tests were designed to measure the productive and receptive vocabularies of the children, their ability to produce certain bound morphemes, and their ability to comprehend a short narrative in Cherokee. Eight of the children had been in the immersion preschool for one year before kindergarten, and five of the children had been in the preschool program for two years prior to kindergarten (for a total of 3 years of school-based exposure to the language). In studying the children’s language production Peter and her colleagues focused on the verb system, and the children’s ability to produce 3rd person singular and plural forms of verbs in the present continuous form (present tense, continuous aspect).

The overall result can be summarized as follows: children performed better on singular than plural verbs, they were better able to produce verb roots (uninflected verb stems) than verbs inflected with pronominal prefixes (agreement) or tense/aspect suffixes, and they were more accurate in producing pronominal prefixes than tense/aspect suffixes. Still, their best performance was only 51% correct, and this was simply the production of verb roots without any inflectional morphology added (i.e., they produced the right verb root but didn’t inflect it). The results for verbs overall (singular and plural combined) are reproduced in Table 1.

The children’s errors commonly involved overgeneralization of certain prefixes such as the 3pl *ani-* when another person or the singular form was required, as

³ Rice et al. found that younger speakers of Dene Suliné (Athapaskan) were more likely than older speakers to segment words within certain morphemic “zones” (as opposed to between those zones), and they were somewhat more willing than older speakers to accept (judge to be real words) words with vowels that had been altered in non-stem morphemes.

Verb Morpheme	N Correct	% Correct (out of 312)
Roots	160	51%
Pronominal prefixes	50	16%
Aspect/tense	43	14%
Totally correct verbs	40	13%

Table 1 Child L2 Cherokee speakers' production of verbs (from Peter et al. 2008)

well as use of the 3sg prefix when plural was needed; failure to use the obligatory distributive prefix; use of a nominal form in place of a verb (e.g., N for 'paint' instead of the V); and, quite frequently, use of the imperative in place of the inflected present continuous verb.

While the children's overall rate of correct verb production seems low, a few observations are worth noting. First, Cherokee is a fusional language, so the fact that the children were able to identify and reproduce the verb root at least half the time means that the children were successfully applying a morpheme-based analytical procedure. This is already different from what is observed in the early stages of L1 acquisition of polysynthetic languages, where L1 learners' omissions tend to be syllable-based (e.g., Mithun 1989). Second, the children studied here had been exposed to between one and three years of Cherokee in a classroom setting. The amount of exposure to the language outside of the school is likely to be negligible, and the teachers are not specifically trained in content-based language instruction or other L2 pedagogy; a large proportion of the verbs in the children's input are likely to be imperatives (Peter et al. 2008; Benjamin Frey, p.c.). Thus, it is unsurprising that the children would have overgeneralized the imperative form.

I have collected some pilot data from children acquiring Eastern Cherokee, a dialect of Cherokee spoken in North Carolina, and these data paint a similar picture: spontaneous speech recorded from seven children ages four to twelve years revealed that only 31% of their verbs were correct without being prompted (i.e., the verb was entirely correct including the root and any inflections); another 26% were correct but only after being prompted by an adult native speaker. The remaining verb productions displayed various morphological errors, including imperative overgeneralizations (as in the CN data), incorrect prefixes or incorrect verb stems. Importantly, however, children did not appear broadly to omit weak syllables and preserve stressed syllables.

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- (2) hilhvna (target: gahliha) (age 6)
sleep-IMP (target: 3SG-sleep)

Another pattern observed in the children's spontaneous language is that 50% of transitive sentences containing a verb and an NP object exhibited VO word order rather than OV order. Both word orders are acceptable in Cherokee, but OV is less marked.

- (3) gadita ama (age 7)
drink water

"I am drinking water"

Correct OV utterances, like that in (4), typically came after a prompt from the adult:

- (4) gadu tsigia (age 7)
bread eat

"I am eating the bread"

The tendency to produce VO word orders could be indicative of the influence of English, the children's L1 and the majority language in the community; it could also be part of a more general shift toward a rigid SVO word order found in other contact situations, though much of the available data also involve English as the majority language (Schmidt 1985).

Another indicator of the influence of English is a reliance on the form *aya* '1sg' where this form is only required for emphasis in Cherokee, not as a subject pronoun, and also some apparently pidginized forms based on English. This is found especially among the younger children. Both of the following examples come from children in a kindergarten classroom.

- (5) aya o:st hani
1sg good here

"I'm good here"

- (6) na aya's name on it
that 1SG-POSS name on it

"That's I's name on it"

These pilot data are preliminary and so a full conclusion about the children's language knowledge cannot be formed yet.

5 Relevant questions

With these observations as background, the specific questions I'd like to pursue in future work are the following:

- i. If child L2 learners of Cherokee make errors of omission, will these omissions segment along phonological/syllable-based boundaries, as has been reported for L1 acquisition of K'iche' Mayan (Pye 1983) and Mohawk (Mithun 1989), or along morphological boundaries? Note that there is currently no available data on L1 acquisition of Cherokee. As noted above, the preliminary evidence suggests that child L2 learners do not do this.
- ii. In child L2 acquisition, children have some difficulty early on with bound inflectional morphology that marks tense, but this difficulty is relatively short-lived compared to adult L2 learners (e.g. Haznedar 2001, Blom et al. 2006). Thus, child L2 learners are more similar to L1 learners in their trajectory of acquiring (certain types of) bound morphology. Will the same be true when the L2 is polysynthetic?
- iii. Baker (1996) claims that various syntactic properties follow if a language is polysynthetic, such as the absence of NP anaphors and referential quantified NPs. Is there evidence that child L2 learners of Cherokee, once they reach sufficient proficiency to reliably produce verbs with noun incorporation and other complex morphological affixation, also show signs of knowing these other grammatical properties? It remains to be determined to what extent adult Cherokee in fact exhibits these particular properties, which Baker claims are found in Mohawk.
- iv. In a contact situation in which a minority language is losing ground to the majority language, bound morphology (both inflectional and derivational) is rapidly lost in favor of periphrastic expressions of tense, aspect, purpose, etc. (Schmidt 1985). Also, word order becomes rigidified and becomes the primary means of indicating grammatical relations (as opposed to case markers, for example, which Cherokee does not have). How does this play out in child L2 acquisition of Cherokee?

6 Conclusion

To summarize, a thorough study of English L1 children's acquisition of Cherokee as an L2 can: (a) be informative about child L2 learners' representation of morphosyntax, (b) provide a comparison of L2 and L1 learners of polysynthetic languages, (c) tell us about the process of language shift and how child L2 learning happens in

contact situations, and (d) shed light on the hypothesis of a polysynthesis parameter. These and other important questions remain to be answered.

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