
Language Creation and Language Change edited by Michel DeGraff

Creolization, Diachrony, and
Development

The MIT Press
Cambridge, Massachusetts
London, England

Chapter 6

Reduced Input in the Acquisition of Signed Languages: Contributions to the Study of Creolization

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Many researchers have been interested in the possibility that creolization processes and the processes of normal language acquisition are related (see particularly Sankoff and Laberge 1973; Bickerton 1975, 1981; Slobin 1977). For example, Sankoff and Laberge (1973) suggested that certain crucial parts of the grammaticalization of the future-tense marker in Tok Pisin were performed by the children acquiring Tok Pisin as a native language; Slobin (1977) suggested that creolization, historical change, and child language acquisition shared many common phenomena as well as underlying mechanisms; and, most notably, Bickerton (1975, 1981) has hypothesized that the radical and sudden changes of grammatical structure found in many instances of creolization from a young, ill-formed pidgin are due to the innate tendencies of native language learners to impose linguistic principles on their input. At the same time, however, creolization processes most commonly occur in circumstances where a number of situational factors appear together, and it is therefore impossible to assign structural outcomes decisively to the influence of one of these factors over the others. Creole languages emerge in circumstances where several native languages, sometimes with common structural characteristics, surround the pidgin/creole, and where the language's functions expand concurrently with its acquisition by children. Thus the fascinating phenomena involving expansion and regularization of grammatical devices may be due to the inherent nature of native language acquisition, but they may as well be due to expansion of functional needs and/or to borrowing from surrounding superstrate and substrate languages. (For discussion, see Sankoff and Brown 1976; Sankoff 1979; Bickerton 1984; and the commentaries and reply to Bickerton 1984.)

In view of this problem, it is possible that studies in which some of these factors occur without the others may help to shed light on the effects of such factors individually. A number of researches have therefore begun to examine phenomena within the acquisition of signed languages that in some regards (notably, acquisition from reduced input) are like creolization, but that in other regards (for example, the presence of multiple surrounding languages) are clearly *not* like creolization. In this chapter I will review several of these studies, focusing particularly on those conducted by myself and my collaborators. To the extent that the outcomes we have observed are the same as, or similar to, those occurring in creolization, our results may help to reveal the extent to which native language acquisition processes could in principle be the underlying cause of structural changes in creolization.

Before turning to the details of particular studies, I will first give a brief background to the varied circumstances surrounding the acquisition of signed languages, and therefore why these acquisition processes (rather than the more commonly studied acquisition of spoken languages) have appeared to be a fertile area for understanding creolization.

6.1 The Acquisition of Signed Languages

Extensive linguistic research in the last 30 years has focused on signed languages that have evolved spontaneously within communities of deaf users. These are generally considered "natural" signed languages and therefore have been of interest to investigators studying natural language structure and its acquisition.¹ Because much of this research has been conducted in the United States, it has concentrated heavily on one particular language, American Sign Language (ASL), which is used by the Deaf community of the United States and parts of Canada. However, researchers have also begun to investigate other natural signed languages of the world, including Nicaraguan Sign Language (Kegl, Senghas, and Coppola, this volume), Japanese Sign Language, Swedish Sign Language, British Sign Language, and many others. Taken together, this research has shown that, in each of the regions of the world where there are communities of interacting deaf people, there is a rich and grammatically complex signed language that is structurally distinct from the surrounding spoken language (and that is also structurally distinct from, and mutually unintelligible with, the signed languages of other regions). In this sense, then, natural signed languages are apparently entirely equivalent to natural spoken languages, and they offer precisely the same opportunities for linguistic study as do spoken languages of the world.

However, there are some important and pertinent differences between spoken- and signed-language communities that make the latter unusually relevant to creole studies. In spoken-language communities, most individuals are native speakers of the surrounding language, and most children are exposed to native speakers from birth. Native language acquisition from native linguistic input is thus the norm; opportunities for studying the effects of late acquisition, and especially for studying the effects of native acquisition from reduced linguistic input, are very rare and almost never occur in the absence of confounding factors (particularly the presence of other languages). In contrast, these relative proportions are reversed in signed-language communities: very few users of signed languages are native signers with native-signing parents; most are late learners; and a small but substantial minority are native learners who have acquired the language from late-learning parents.

Because of the varied genetic and adventitious causes of deafness, most deaf children (90%) are born in hearing families where no one signs; only 5% of deaf children are born in families with two deaf parents and therefore in a home in which there is a surrounding signed language from birth (Schein and Delk 1974). (The remaining 5% of deaf children have one deaf parent.) Since the parents have also been born in families assorted by the same factors and proportions, only a tiny percentage of the

members of any Deaf community has acquired a signed language by native acquisition from native linguistic input. However, because they are the usual linguistic norm, this tiny population of native signers with native signing parents is the group on which most of the linguistic work on signed languages has been performed. It is from these quite rare individuals that we know that the structure and acquisition of signed languages are comparable to those of spoken languages (Stokoe, Casterline, and Croneberg 1965; Klima, Bellugi, et al. 1979; Newport and Meier 1985; Supalla 1995).

However, it is the remaining, and more numerous, members of signing communities who offer opportunities for observing the structure of languages that have been acquired under circumstances ordinarily almost impossible to find. Because 90% of deaf children are born in families where no one signs, their eventual acquisition of signed language occurs at highly variable ages (through contact with other deaf children or adults outside the home) and has been studied by a number of researchers investigating the effects of age of exposure on the acquisition of a primary language (Emmorey 1991; Emmorey and Corina 1990; Mayberry, Fischer, and Hatfield 1983; Mayberry and Fischer 1989; Newport and Supalla 1980; Newport 1988, 1990). These studies have shown that deaf individuals who have acquired ASL late in life show quite variable control over the grammatical structure of the language, with reduced complexity and/or high degrees of inconsistency in both the morphology and the syntax. Most pertinent to the present topic, many of the deaf children born to deaf parents have late-learning parents as their only input to ASL. It is thus these children, exposed to the language from birth, but only from a simplified and grammatically unstable source, who may provide an approximation to some of the circumstances of creolization (Fischer 1978; Newport and Supalla 1980; Newport 1982; Singleton and Newport 1994).

In the present chapter I will review a set of studies of the acquisition of ASL under these circumstances. Similar to creole learners, the ASL learners on whom my colleagues and I have focused are exposed from birth to an input language that is not a full and grammatically regular linguistic system. The children we have observed have no exposure to ASL except from their parents, who are themselves nonnative users of the language. The parents vary in the complexity of ASL that they produce to their children. In the most detailed of our studies thus far, the parents are deaf signers who first acquired ASL as teenagers and who therefore control well only the simplest structures of the language. More complex structures (e.g., complex combinations of inflectional morphemes, and various topicalization structures in syntax) either are omitted altogether in their use of the language or are produced with high degrees of inconsistency and sometimes frank violations of both the grammatical principles of ASL and the grammatical principles of natural languages in general. Observation of the ASL acquired by their child thus permits us to determine whether native learners are indeed capable of rectifying such input and reassembling from it a natural language of the usual sort. In our most recent and still ongoing studies, the parents are hearing signers who first acquired ASL shortly after the birth of their deaf child and who therefore have even more limited control of ASL. The input these parents

offer their children perhaps more closely approximates the input circumstances of children learning quite young pidgins. In both types of cases, because we have available to us information about the full range of linguistic input the children receive, we can more confidently interpret where the children's own structures may come from than is typically the case in studying spoken-language creolization.

At the same time, there are certain crucial ways in which these cases differ from creolization. First, because there is no surrounding multilingual community and no antecedent pidgin formed as a contact language, many of the circumstances of creolization are absent. This difference has the scientific advantage that, to the extent that the resulting acquisition phenomena are similar to those found in creolization, such results cannot in our cases be assigned to such factors as borrowing from surrounding languages or transfer from the simultaneous acquisition of these languages along with the emerging creole.² Perhaps more clearly than children forming a creole language, the children we observe in the studies reported here are solely dependent for their learning on the degraded input they receive and their own internal capacities for structuring this input into a native language. Thus, although the results of studies like ours cannot show whether creole languages *in fact* arise from acquisition rather than from other factors, they can show whether creole languages could *in principle* arise in this way.

On the other hand, there are other differences between these cases and creolization that may contaminate such comparisons and therefore must be considered with caution. All of our studies involve signed rather than spoken languages, and in some cases users who are more fluent and whose structures are more complex than those of pidgin speakers. Either or both of these factors could conceivably produce different, and perhaps more linguistically complex, outcomes than might be the case for spoken-language creolization. In subsequent sections I will hold aside these concerns and will try to describe what I think, most optimistically, our studies can say about creolization issues. In section 6.5, however, I will return to considering the ways in which our results might be influenced by differences in modality and in complexity of the input.

6.2 The Acquisition of ASL from Reduced Input: A Case Study

Jenny Singleton, Danielle Ross, and I have been closely examining the longitudinal progress and final outcome of ASL acquisition in a single child, Simon (Singleton and Newport 1994; Singleton 1989; Ross and Newport 1996). Simon is the only congenitally deaf son of two deaf parents and has acquired ASL as his native language. The unique features of Simon's case for our research were that Simon's *only* input to ASL came from his parents and that his parents were both late learners of the language. Both parents were first exposed to ASL in their late teens, but since that time have used it as their primary language, with each other and their friends, and (then later) with Simon. We videotaped Simon and his parents, both in spontaneous interactions and in elicited tests of production and comprehension of a variety of grammatical structures of ASL, from the time Simon was 2 years old until he was 9.

We therefore have extensive samples of the input Simon received, as well as the outcomes he achieved, in his acquisition of ASL.

When Simon was very young, he spent his time at home interacting with his parents. At school age, in addition to continuing to interact with his parents, he attended a day school where none of the teachers or other students knew ASL; the school communicated in a form of Signed English that does not contain the morphology or syntax of ASL that we have studied in Simon. Moreover, research on other children's acquisition of this Manually Coded English has shown that it is not a natural language, and its grammatical devices are therefore not acquired by children (Supalla 1991; Schick and Moeller 1992). Although this research raises other important issues for language acquisition, for present purposes it suggests that Simon's exposure to an artificial Signed English system at school was unlikely to have played a significant role in his acquisition of the morphology and syntax of ASL. All of the teachers in Simon's school were hearing and did not know ASL. All of the students in the school, other than Simon, had hearing parents who did not know ASL. Simon's parents' friends were also nonnative learners of ASL and did not interact substantially with Simon. In short, then, Simon's only input to ASL came from his parents.

As I describe below in more detail, Simon's parents' use of ASL (like that of other late learners we have studied) varied across the different structures we have examined. With regard to the simplest constructions of ASL (e.g., basic word order), his parents (and other late learners) looked reasonably consistent. However, with regard to the use of ASL morphology and various aspects of complex ASL syntax, his parents were quite inconsistent, or they omitted structures found in the output of native signers. These differences have permitted us to investigate the effects of these types of input on Simon's own acquisition. As I will show, in each of these cases Simon succeeded in constructing a form of ASL that was architecturally quite distinct from his parents', though clearly derived from their input.

6.2.1 Simon's Acquisition of Morphology from Inconsistent Input

One of the structural domains we have analyzed most closely concerns the morphology of verbs of motion in ASL. In native ASL, verbs of motion are morphologically quite complex, with as many as 7 to 15 morphemes required to form a single verb. Simon's parents used almost all of the morphemes in this domain, but not always correctly: on elicitation tasks, they each correctly used each of the morphemes we tested in 40% to 75% of the obligatory contexts; the remaining usages involved omitting a required morpheme or replacing it with an ungrammatical form. Their verbs of motion thus probabilistically exemplified the ASL morphological structure but failed to exemplify its rule-governed nature. This input thus allowed us to ask how Simon would acquire the morphology, in an arena where the morphemes and the verb structure are language-specific but where the general architecture of a morphological system should universally be quite different from that of Simon's input. (We know of no natively acquired natural language in which morphemes are present on a truly probabilistic basis, with no linguistic factors conditioning the pertinent variation. See section 6.2.1.3 for further discussion.)

