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Language Acquisition
Under Exceptional Circumstances:
Reduced Input in the Acquisition of ASL

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1. Introduction

In her article "Reduced Input in the Acquisition of Signed Languages: Contributions to the Study of Creolization" Elissa L. Newport is concerned with the study of the acquisition of American Sign Language under exceptional circumstances, i.e. acquisition from impoverished input data. Additionally, the author contrasts her findings to the process of creolization.

So far, much research has been done to examine the possibility of a relation between regular language acquisition and the processes of creolization. By way of example, Bickerton (1975, 1981) suggested that innate tendencies of native language learners to inflict linguistic principles upon their input are the reason for radical and sudden changes in the grammatical structure found in many instances of creolization, in which a young and ill-formed pidgin was involved. In other words, if it could be shown that there is a relation between grammaticalization processes in native language acquisition on the one hand and creolization on the other, then such findings would support Bickerton's Bioprogram Hypothesis.

However, it is most commonly in circumstances where several situational factors appear together that creolization processes occur. Thus, it is impossible to have structural outcome explicitly attributed to one such factor over the others. Moreover, creole languages come into being in circumstances where the pidgin/creole is surrounded by a number of native languages that may share structural characteristics. In addition, the languages's functions expand simultaneously with its acquisition by children. Thus, expansion and regularization of the grammar might be the result of different mechanisms: these phenomena may be due to the inherent nature of language acquisition, but they may as well be due to expansion of functional needs and/or to borrowing from the surrounding superstrate and substrate languages. Given this uncertainty, it may help to analyze data of studies which do not involve all of these factors. Such proceeding could probably highlight the effects of an individual factor. Accordingly, the most promising studies are such that focus on phenomena within the acquisition of signed languages that, on the one hand, resemble creolization processes in some aspects, but on the other hand do clearly not resemble creolization.

The text I will deal with is concerned with some of these studies, particularly those involving the author herself. Finally, the results of these studies might help to answer the question to what extent structural changes in creolization could be due to native

language acquisition processes. The aim of this paper is to summarize the author's examinations and thereby to shed critical light on the comparability of the process of creolization and the acquisition of American Sign Language on the basis of reduced input. I will follow the author in abbreviating American Sign Language as ASL.

2. The Acquisition of Signed Languages

2.1 *Differences and Similarities in Signed and Spoken Languages*

To begin, Newport states that, so far, much research has been done on what are generally considered "natural" signed languages, i.e. sign languages which have evolved spontaneously within communities of deaf users. It has been shown that within such communities the signed language is both rich and grammatically complex. Moreover, the signed language has been demonstrated to be structurally different from the surrounding spoken language. Another interesting result concerns the fact that signed languages are also structurally different from as well as mutually unintelligible with each other. In other words, a signer using British Sign Language might not be able to understand a signer using ASL because of the differing language structures. In this sense, natural signed languages apparently equal natural spoken languages. Accordingly, precisely the same opportunities for linguistic studies are offered by both natural signed languages and natural spoken languages.

There are, however, important differences between signed- and spoken language communities that leave the first especially relevant to studies of creolization. Spoken-language communities are characterized by the fact that the surrounding language is spoken by most individuals. Moreover, most children are exposed to this language from birth. Thus, native language acquisition from native linguistic input is the norm. On the other hand, within signed-language communities there are only very few native signers with native-signing parents. Most signers are late-learners and a small but nonetheless considerable minority forms a group of native learners who acquired the language from late-learning parents. This distribution can be explained by the fact that most deaf children are born into hearing families, i.e. where usually no family member is a signer. Only 5 % of deaf children are born to two deaf parents and are therefore exposed to the surrounding signed language from birth.

However, since the parents have also been born into families that were confronted with these factors, one can easily conclude that there are only very few members of any Deaf

community who were in a position to natively acquire a signed language from native linguistic input, thus forming the linguistic norm. Accordingly, most research has been done on these very individuals. Newport states that it is from these individuals that linguists know that signed languages and spoken languages can be compared in terms of structure and acquisition. Newport and Meier in their article “The Acquisition of American Sign Language” (1985) summarize their findings as follows:

“[...] Comparisons of the acquisition of ASL with the acquisition of spoken languages have afforded us the opportunity to contrast the acquisition of language in the visual modality with the acquisition in the more familiar speech modality, to contrast the acquisition of a language with substantial iconicity to the acquisition of spoken languages with virtually complete arbitrariness, and to contrast the acquisition of simultaneously-organized morphology with the acquisition of differently organized spoken-language morphologies. In each case, these comparisons help to reveal the biases and processing strategies which the child, deaf or hearing, signing or speaking, brings to bear on the task of language acquisition. [...]”

2.2 The Effects of Age of Exposure on the Acquisition of a Primary Language

However, the remaining signers offer opportunities for examining the structures of languages which are usually nearly impossible to find. The eventual acquisition of signed languages by deaf children having been born into a non-signing family occurs at highly variable ages and has therefore been of interest for many linguistic studies focusing on the effects of age of exposure on the acquisition of a primary language. Newport refers to several studies which have shown that deaf individuals having acquired ASL only late in life exhibit quite variable control over the grammatical structure of the language, while on the other hand showing reduced complexity and/or high degrees of inconsistency concerning both morphology and syntax (Emmorey 1991; Emmorey and Corina 1990; Mayberry, Fischer and Hatfield 1983; Mayberry and Fischer 1989; Newport and Supalla 1980; Newport 1988, 1990).

The author sets forth that many deaf children born to deaf parents have their late-learning parents as their only input. It is these children having been exposed to the signed language from birth, but merely from a simplified and grammatically unstable source, who might therefore establish a link to some of the circumstances of creolization processes. Susan D. Fisher in her article “Sign Language and Creoles” (1978) has expounded that

“ASL shares many of the social determinants of creoles; it also shares many similar means of grammatical expression. [...] (T)his is no accident; the process of creating a creole out of a pidgin is common to both situations. The very fact that the burden of creolization is on children who have characteristic learning strategies can largely provide explanation for this phenomenon on one level. [...]“

Newport goes on in offering the similarity between creole learners and ASL learners in so far as the two of them are exposed from birth to an input language lacking a full and grammatically regular linguistic system. As far as the author’s studies are concerned, the only input to the children is provided by their parents being nonnative users themselves. Parents therefore vary with respect to the complexity of ASL they produce.

2.2.1 Exposure in the Late Teens

Newport then focuses on her most detailed study in which the parents are deaf signers having acquired ASL in their teens. Accordingly, they control well only the simplest structures. In addition, it has been found out that more complex structures are either omitted in their speech or indeed produced, but showing a substantial level of inconsistency along with violations of both the grammatical principles of ASL and the grammatical principles of natural languages in general. Newport points out that the study of their child during his process of language acquisition may help to answer the question whether it is true that native learners are in fact capable of correcting such impoverished input and, additionally, whether native learners can reassemble from this input a usual, natural language.

2.2.2 Exposure after Birth of a Deaf Son

The author then turns to another of her studies in which the parents are deaf signers who acquired ASL only after the birth of their deaf child. Consequently, their control of ASL is heavily restricted. Newport legitimately claims that it is the input provided by these parents that might be an approximation to the input circumstances that children acquiring quite young pidgins will come across. Combining the data of these studies, Newport enters a position enabling her to interpret the origins of the children’s own structures with much more confidence than by a mere examination of spoken-language creolization.

2.3 Differences with Respect to Creolization: The Emergence of Nicaraguan Sign Language

However, the author then points out that one should not forget the ways in which such cases are different from creolization processes. First and foremost, many of the circumstances to be found in creolization are absent in the acquisition of ASL since there is neither a multilingual community surrounding the child nor an antecedent pidgin that served as a contact language. Newport, then, is right in arguing that this difference has a scientific advantage in so far as similar acquisition phenomena in their cases cannot be attributed to the factor of borrowing or transfer from surrounding languages. Here, the author points to an article by Kegl, Senghas and Coppola focusing on sign language emergence in Nicaragua. Kegl et al. argue that the full-blown Nicaraguan Sign Language might have involved a pidginization stage and could have been influenced by limited transfer from Spanish. According to the authors, the Nicaraguan Sign Language Idioma de Señas Nicaraguense (ISN) is the result of a complex interaction between the superstrate language Spanish, various homesigns, i.e. gesture systems developed by deaf children who have not been exposed to a signed language, in the substrate languages, the language form Lenguaje de Señas Nicaraguense (LSN) which is considered by the authors to be a peer-group pidgin or jargon between signers, and finally the communication form El Pidgin de Señas Nicaraguense (PSN) which is labeled a pidgin used between hearing individuals and deaf signers. Hence, it can be easily deduced that the situation concerning the Nicaraguan ISN is quite different from the circumstances occurring in Newport's studies. Language acquisition in the children observed in Newport's studies is clearly restricted to the impoverished input on the one hand and to their internal linguistic capacities to structure this input into a native language on the other. Although the results of such studies cannot exhibit whether creole languages do in fact arise from acquisition rather than by virtue of other factor, Newport, in my opinion, is absolutely right in claiming that such studies can show whether creole languages could *in principle* arise in this way.

2.4 Further Differences: A Possible Source of Contamination?

As a next step, other differences between the circumstances in Newport's studies and creolization are pointed out since they could bear a possible source of contamination. First, Newport's studies all focused on signed rather than on spoken languages. In addition, some cases involved users whose language usage was more fluent and whose

structures were more complex than those of pidgin speakers. Newport is thus right in indicating that either one or both of these factors could possibly produce a linguistically more complex outcome than might be the case for spoken creolization.

3. The Acquisition of ASL from Reduced Input: A Case Study

Referring to Singleton, Ross and herself (Singleton 1989; Singleton and Newport 1994; Ross and Newport 1996), the author introduces a study focusing on the longitudinal outcome of ASL acquisition in Simon who is a congenitally deaf son born to two deaf parents and who has acquired ASL as his native language. His only input to ASL was offered by his parents who were both late-learners but since then have used ASL as their primary language. Simon's parents displayed quite variable control of ASL, i.e. they appeared consistent with regard to the simplest structures but were quite inconsistent with regard to more complex structures such as ASL morphology or aspects of ASL syntax. Interestingly, Simon managed to construct forms of ASL that were different from the forms his parents used, although he clearly used his input to finally arrive at the correct form.

3.1 *Simon's Acquisition of Morphology from Inconsistent Input*

One of the structural domains analyzed in this study concerned the morphology of verbs of motion in ASL. Such verbs are quite complex with regard to morphology in native ASL since as many as seven to fifteen morphemes are required to form a single word. Simon's parents used nearly all of the morphemes but they did not always use them correctly. Hence, Simon's parents may well have offered the ASL morphological structure but, crucially, they did not offer its rule-governed nature. Accordingly, this situation was of special interest to the researchers since Simon's outcome might help to answer the question how children in such a situation come to acquire the morphology when the morphemes and the verb structure are specific for the language but the general architecture of a morphological system should universally be distinct from what Simon could retrieve from his input.

3.1.1 *The Structure of Verbs of Motion in ASL*

A typical event of motion in ASL minimally requires a subject noun which refers to the theme and a following verb which describes the motion of the theme. The

morphologically complex verb includes a root morpheme for the path of motion (e.g. straight, circular), other morphemes to identify the manner of motion (e.g. rolling), and also classifier morphemes to establish size or shape or the semantic category (e.g. human, vehicle). In case a secondary (ground) object is involved to which the moving object moves, then the verb of motion also contains classifier morphemes for this noun as well as morphemes for the location and orientation of this noun (e.g. a doll moving toward a tree). Given these highly complex morphological structures it is not surprising that they are only acquired over a long period of time by native-signing children, thus paralleling the acquisition of morphologically complex forms in spoken languages. Moreover, as might have been expected, late-learners of ASL reveal many errors in this area.

In order to examine Simon's input and outcome an elicitation task was presented to Simon and his parents eliciting verbs of motion. The following analyses are based on this task while being fully consistent with the spontaneous usage of both Simon and his parents.

3.1.2 *Simon's Input and Output*

3.1.2.1 *Simon's Parents' Usage of Verb Morphology at a Moderate Level of Consistency*

In order to answer the question how Simon would acquire morphemes for which his input was inconsistent, the data of Simon's parents, i.e. their use of the morphology of verbs of motion, have been compared to Simon's own constructions including a separate analysis of each elicited morpheme. Due to the experimental design the researchers were able to find out not only whether the correct ASL morphemes were used by Simon and his parents at all, but also to identify the level of consistency. In sum, Simon's parents mostly used the correct ASL morphemes but also mirrored other late-learners in that they often made typical mistakes, e.g. omitting morphemes. Newport points out that the alternative forms used by Simon's parents seemed to be errors rather than a result of any alternative rules. Hence, they appeared probabilistically, with no discernable linguistic context and, even more interesting, there was only little similarity between the two parents with respect to when they used such alternative forms or what form they chose. Accordingly, Simon was confronted with a somewhat troublesome input: it is by means of sheer probability that each morpheme was distributed over a set of linguistic contexts.

3.1.2.2 *Simon's Reaction to His Input*

Due to this situation research could now focus on the question whether Simon would mirror these probabilistic distributions of his input or whether he would produce a set of deterministic rules which would be more typical for a native language with regard to architecture. As a result, Simon's input and outcome made up two different categories. First, one large set of morphemes, namely those acquired early by native-signing children and also quite well by late-learners, was used by his parents on a moderate level of consistency. The author points out that although this level is clearly far from being native performance, it has well been an adequate basis for Simon to form a somewhat more deterministic set of morphological rules. Newport argues further that with respect to these morphemes Simon managed to surpass his input by far. Moreover, he regularized every morpheme to which he was exposed. In fact, his performance was entirely parallel to that of children with native-signing parents. And, interestingly enough, Simon did not acquire any of the inconsistent errors his parents exhibited. A relevant example is presented below.¹

- (1) Event: female doll moving in a straight path, passing a stationary dog
- (1) Correct ASL verb: HUMAN – LINEAR – MID – ANIMAL
- (2) Mother's verb: Ztip -- LINEAR
- (3) Father's verb: HUMAN – LINEAR –WALK
- (4) Simon's verb, age 7: HUMAN – LINEAR – MID –FLAT

3.1.2.3 *Simon's Parents' Usage of Verb Morphology at a Lower Level of Consistency*

The author points out that a different result was obtained with respect to the morphemes Simon's parents used at a level of much less consistency. For instance, Simon's parents showed a 40 % mastery of classifier morphemes. Such morphemes are acquired last by native learners. The study has shown that Simon was still able to surpass his parents. However, at ages 7-9 he seemed to have stuck in his morphological system which did not reveal the same level of complexity as is to be found in native ASL. Moreover, this system was shown to be petrified. Finally, where particular morphemes were missing in Simon's input, he would omit these morphemes.

¹Morphemes are indicated in English glosses and connected by hyphens.
 Notation: HUMAN = classifier for human; ANIMAL = classifier for animal; Ztip = tip of the index finger tracing the path; FLAT = classifier for flat object; LINEAR = movement in a straight, or linear, path; MID = secondary object at midpoint of path; WALK = walking manner

3.1.2.4 Results

Newport summarizes the results by suggesting that Simon, given his highly language-specific arena, used his input as a basis, but he also reorganized this input in order to construct a more rule-governed system. Instead of reproducing his parents' probabilistic structures Simon altered the language and finally constructed his own version of ASL which displayed more similarities to other natural languages with regard to structure. In short: where Simon's input was adequate, his mastery of morphology equaled that of native ASL. Where Simon's input was less adequate, he still stepped towards native ASL. Simon only stopped at a relatively advanced level when the disorder of data and his maturational process intervened.

3.1.3 Probabilistic Rules

As a next step, the author relates the suggestion that Simon did not acquire his parents' probabilistic structures but instead modeled his input into a more deterministic rule system to the literature concerned with the nature of rules in natural languages. Newport sets forth that despite the fact that morphological as well as phonological rules are generally regarded as deterministic, one should not forget that there is also much literature concerned with the field of sociolinguistic variation, historical change and creolization. According to this view, rules are distributed on an enduring basis over communities and are used in variable or probabilistic ways by individuals. Newport argues that if such phenomena occur in natural languages, then children must be capable of acquiring such rules.

The author poses the question why, then, Simon failed to acquire his parents' probabilistic structures and also why he produced a deterministic rule system. The author provides an explanation, at least partly, in pointing to the considerable differences between Simon's input on the one hand and the nature of rule variability within natural languages on the other. The probabilistic nature of Simon's parents' usages has been displayed in several ways. First, for any given morphological context they used one form most of the time whereas other forms were each used infrequently. Comparing this distribution to the typical variable rule, i.e. statistical alternation between two forms with each form being used with relatively high frequency, Newport states that this distribution might be unstable from the learning perspective. Second, there is a variation between Simon's parents with respect to their use of incorrect forms; they only mirrored each other in their common use of correct ASL forms. Third, since these incorrect forms are viewed

to be errors they lack conditioning linguistic contexts. Newport argues that one or all of these factors might play an important role in Simon's tendency to reorganize language. In other words, Newport suggests that Simon might have possibly reorganized his language only because he did not manage to acquire his parents' inconsistent alternations. Newport, legitimately, argues further that if this is true, examining the quantitative details of variability might be of importance for comprehending language change, and, especially, for understanding the point in time when a child is about to dramatically change a language.

3.2 Simon's Acquisition of the Architecture of Morphological and Syntactic Rule Systems from No Input

Newport summarizes the previous analyses by stating that these cases have all been instances in which Simon, admittedly, received the relevant input but in which this input was inconsistent. Hence, another arena of interest has been the examination of instances in which Simon's parents showed an even more reduced usage. The author is surely justified in arguing that it is these instances that offer the possibility to determine whether children are able to acquire certain types of rule systems when the relevant input is missing.

3.2.1 Inflectional Morphology in ASL: Marking of Aspect and Number

Hereby, a special focus has been the field of rule systems that exhibit a stronger universality in natural languages, as for example the inflectional morphology of ASL used for marking aspect and number on verbs. As far as native ASL is concerned, the morphemes for continuous aspect and the morphemes used for marking dual or multiple plural are characterized by individual occurrence within appropriate contexts. Moreover, these morphemes must be combined in a complex context involving both aspect and number. In order to retrieve more information about the usage of such morphology, an elicited production task was carried out involving events in which an action is performed by a person once, twice, repeatedly or displaying a more complex combination of aspect and number. Native ASL signers having been tested in advance showed verb constructions that were, respectively, uninflected, marked with a DUAL inflection, marked with a REPEATED (REP) inflection and finally marked with both a DUAL and a REP inflection. See the examples above for some results on this task.

- (2) Event: person blowing out many candles on cake 1, then on cake 2
- (1) Correct ASL verb: [BLOW – REP] – DUAL
 - (2) Mother's verb phrase: BLOW – REP, NEXT, BLOW – REP
- Event: person blowing out one candle on cake one, then one on cake two, and so forth
- (3) Correct ASL verb: [BLOW – DUAL] – REP
 - (4) Mother's verb phrase: BLOW – DUAL BACKandFORTH

Simon's parents' results were clearly not target-consistent. To be more precise, in instances requiring only one of these inflections, they displayed a medium level of consistency. However, with respect to instances requiring two morphemes combined, they revealed no such constructions. In contrast, they produced only one inflection and used a periphrastic description for the other. See for example line (4) where Simon's mother replaced the correct ASL form REP by the adverbial phrase BACKandFORTH. In sum, Simon might have deduced from his input that there is kind of an exclusionary rule prohibiting the occurrence of two inflections within one context.

It should be kept in mind, however, that native languages reveal no such pattern. In contrast, inflections generally appear whenever they are required to, henceforth naturally allowing simultaneous occurrence of two inflections when required. As for Simon, no use of his parents' pattern was displayed. Instead, Simon produced two inflections when the context required him to. Since Simon's performance on these tasks matched the target constructions at a level of 100 %, the author legitimately claims that Simon's outcome seems to invite the inference that he surely based his learning of inflections on his input, but his development of a combinatorial architecture did clearly not come from his input.

3.2.2 Topicalization in ASL

Newport then turns to another interesting domain, namely the use of topicalization in ASL. It has been shown that Simon, in this field, also displayed an architectural constraint that he could not have deduced from his input but which is universal to natural languages. Concerning native ASL, SVO sentences are allowed to undergo topicalization as long as the relevant topics observe structure dependence. Hence, it is possible to topicalize the subject NP, the object NP or the whole VP. Moreover, topicalization in ASL is marked by a facial expression, i.e. raised eyebrows and head tilted forward, that extends throughout the phrase. Research has shown that in spontaneous speech

production, out of the possible structures Simon's parents only used one, namely SV²O. A relevant example is provided below.

- (3) Simon's father: SIMON'S TEACHER, LIKE POINT at Simon.
(English translation: 'As for Simon's teacher, she likes him.')

Hence, due to the fact that Simon's parents never used any of the other topicalization possibilities, Simon never had any other examples for topicalization than SV²O. To test Simon on this issue, another elicitation task was carried out involving the untopicalized regular sentence type as well as the three possibilities of topicalization in ASL, i.e. SVO, SV²O, QSV and VOS. Simon and his parents were presented with native ASL signing on videotape and two different pictures, only one of which depicting the corresponding action. The observers' task was to identify the correct picture.

Results have shown that Simon's parents correctly assumed the basic word order in ASL to be SVO in that they perfectly responded to SVO and SV²O. However, they consistently violated structure dependence every time they were confronted with sentence types they did not produce themselves, i.e. QSV and VOS. These results, then, invite the inference that Simon's parents' analyses of complex sentences did clearly not observe structure dependence. To underline this point, Newport gives an example which shows that a VN, N structure was interpreted by Simon's mother as VS, O. Obviously, this word order cannot be derived from a basic SVO order by means of any single phrasal movement rule, hence resulting in a violation of structure dependence. However, at the age of 9 Simon's performance on this task revealed perfect structure dependence, i. e. Simon always correctly interpreted VN, N structures as VO, S.

To sum up, Newport seems right in claiming that, most probably, Simon's input may have served a twofold purpose in that Simon might have learned that the basic word order of ASL is SVO, and also that topicalization in ASL is marked by facial expressions. However, Simon's parents never produced the relevant types of word sequences to which the process of topicalization might be generalized. Moreover, their understanding of these relevant sequences obviously suggested that they did not themselves obey an identifiable natural language principle. Hence, Newport correctly claims that it is not Simon's input that seems to be the reason for his obeying structure dependence, but that it is his own innate tendencies to bring the phrasal structure of sentences into accord with

² The underlining indicates the topicalized constituent.

their extensions into more complex constructions. Finally, Simon seems to have used his input only for obtaining information about the basic forms concerning morphological and syntactic rules. In addition, however, he managed to surpass his input with respect to rule organization by adding universal principles of rule architecture that he could not have deduced from his input. Newport therefore correctly claims that her examples highlight a native learner's capacity to restructure an input language, thus supporting Bickerton's Bioprogram Hypothesis.

4. The Acquisition of ASL from Extremely Reduced Input: Ongoing Studies

An important factor concerning the previous studies lies in the fact that the input for deaf children came from other deaf individuals. Hearing families did not contribute to ASL input for hearing parents who sign are virtually not existent.

Nowadays, however, things have changed. Due to the spread of linguistic findings on ASL and changes in the political climate as far as deafness and signed languages are concerned, hearing parents of deaf children have also begun to acquire signed languages. Thus, research has been offered new possibilities, namely the examination of children who acquire native languages from reduced and, crucially, extremely simplified input. The author here refers to an ongoing study by D. Ross and herself the focus of which is put on deaf children acquiring a signed language with their input being provided by hearing parents who are still learning to sign themselves. Although data cannot be provided yet, the author, in my eyes, correctly hypothesizes that such studies are perfectly suited to find out more about the enormous capacity of language acquisition in a child learner under these circumstances. Luckily, there is considerable variation with respect to the level of mastery among the families involved, so that comparisons among them might be likely to shed light on the types of input required for various types of grammatical structures.

5. What Constraints the Native Learner?

So far, the results have shown that native language learners have the ability not only to overcome reduced or disordered input but also to construct from this input a complex and well-formed grammatical system. It has also been demonstrated that late-learning parents, in contrast, obviously lack this ability. Newport here refers to other studies

(Newport 1990; Johnson and Newport 1989, 1991; Johnson et al. 1996) which have demonstrated that adult learners, even if presented with normal linguistic input, do not manage to acquire a well-structured grammar. Hence, the author is right in claiming that, firstly, young language learners must dispose of innate tendencies in order to be able to perform these types of learning processes and, secondly, that maturation is the key for the change and decline of these tendencies.

5.1 The Nature of Innate Constraints: A Possible Interpretation of the Results

In this context, Newport turns to the nature of innate constraints. The common view among linguists considers these innate constraints to be the principles of Universal Grammar. Brought into relation with the results of the studies described it can be said that the results are consistent with the theory of Universal Grammar in so far as the reason for Simon's having acquired his language may well lie in the fact that he knew innately that languages must obey certain rules such as for example structure dependence.

5.2 An Alternative Interpretation

However, Newport points to another interpretation that is also consistent with her results, although this interpretation is much less specified. This interpretation concerns the question whether phenomena such as those demonstrated in Simon's language acquisition might be also present in nonlinguistic learning by children, thus posing the question whether the constraints in question might not simply be constraints on language but rather embody a more general nature. In this context, the author points out that although theorists commonly claim that the phenomena of interest are language-unique, only very little research has been conducted on this topic so far. In order to fill this gap of information the author is currently doing research in this area.

However, a preliminary example study by B. Goldowsky (1995) is referred to by Newport. In this study, a nonlinguistic pattern-learning task which was constructed formally on Simon's inconsistent input for morphology was presented to young children and adults. Perceptual dimensions of visual objects, i.e. their size, shape and color, mapped onto the dimensions of their movements across a screen, i.e. their path, manner and direction of motion. Crucially, mappings over example stimuli were both imperfect and probabilistic, i.e. mappings occurred in 70 % of the stimuli rather than in 100 %, thus paralleling Simon's input for morphology.

Results have shown that children and adults differ greatly in this task. Adults were impaired in their learning by the inconsistent input, i.e. an average performance was worse than the 70 % probabilities they were exposed to. On the other hand, children revealed a tendency to form mapping rules which were much more systematic than the data they were exposed to. In fact, some children regularized their input and acquired almost perfect mappings with regard to the consistent data. Other children showed an equally regular performance but on mappings that were not the most common. Newport comments these results by admitting that it would be too early at this stage to claim that children exhibit the same phenomena in nonlinguistic learning as they do in language learning. However, in my opinion, the author is absolutely right in pointing out that the results indeed offer this possibility.

6. What do these Studies Contribute to Creolization?

6.1 *A First Interpretation*

The results provided strongly invite the inference that many of the phenomena having been demonstrated in the field of pidgin/creole studies, i.e. greatly reduced and simplified systems that are used by adults versus sharply expanded and more linguistically natural systems that have been acquired by children, might in principle be derived from the different abilities in children and adults when it comes to language learning. Newport here refers to her former statement that it is impossible to use studies such as the ones described to deduce from them whether the mechanisms of language acquisition are indeed the only or prime cause of genuine pidgin and creole languages. This is due to the fact that both pidginization and creolization involve many additional contributing factors than do the studies described. It should also be kept in mind that similar results may always be due to different causes. Despite these facts the author argues that since it was possible to record the actual input and to compare this input with the outcome, Newport et al. in their studies are in a position to offer more evidence than usually available in creole studies with respect to the contributions a child learner makes to the language acquired. Hence, here, their results are consistent with general claims that differences between pidgins and creoles might be due to the learners' innate differences.

6.2 A Different Approach

However, Newport points out that, simultaneously, the results could also be interpreted in a way that might encourage the approach of creolists who hold another view, namely that the presence of surrounding languages during the process of language acquisition might contribute suitable input to the structures children acquire.

6.2.1 Simon's Case

Having a closer look at Simon's input and outcome, it has to be stated that he does not seem to create a new language on the basis of his innate principles, but, rather, Simon seems to follow the dominant tendencies of his input, sharpen them, extend them and make them internally consistent. The author legitimately points out that Simon's most striking innovations have not occurred when he did not receive any input at all, but when patterns in his input were conflicting. Where Simon's parents, for example, used inflectional processes only in individual occurrences, Simon, in contrast, changed the architecture of such processes in order to create a grammar characterized by a greater degree of uniformity. Hence, Simon created rules on the basis of tendencies, and he created coherent rule systems on the basis of conflicting processes in his input.

6.2.2 The Circumstances of Creolizing Children

Having a look at creolizing children, similar phenomena can be observed. These children also may not ignore their inconsistent and ill-structured input, but also apply their organizational biases to the dominating tendencies in their input. Newport points out that because of the inability of most creole studies to offer quantitative data concerning the usages surrounding the child learner, the distinction she wishes to outline might often be impossible to draw. The author is certainly right in arguing that studies such as those carried out by herself along with detailed observations of ongoing creolization might probably help when it comes to the examination of mechanisms used by children in changing languages.

6.3 Potential Concerns

6.3.1 Parents' Productions as the Only Source of Input?

Newport then turns to potential concerns about her studies. One such issue concerns the question whether children like Simon indeed have their parents' productions as their only source of input, or whether there are surrounding languages from which children could

potentially borrow structures, as is the case with creolizing children. As far as Simon is concerned, the possibility that he might have used surrounding languages as an additional source of his input is considered to be extremely unlikely. Beside Manually Coded English, which is not a natural language, the only natural language Simon is exposed to is English, as spoken by people around him (other than his parents) and as learned by himself at school.

6.3.2 Possible Transfer from English into ASL?

Here, the question arises whether Simon's knowledge of English has any effects on his acquisition of ASL. Newport provides two reasons why she thinks this question should be negated. The first reason concerns the fact that the grammatical devices demonstrated in Simon are not to be found within the English language. Hence, English could not have been a source from which to transfer. To be more precise, English verb morphology does not mirror the morphology of verbs of motion in ASL. Moreover, English syntax and ASL syntax differ from each other in that they do not allow the same types of topicalization processes. And what is more, the broad typology of ASL with its complex morphological system and its enormous frequency of topicalization is clearly not the typology of English.

Another question is raised here: Could it be possible that Simon transferred abstract principles such as the principle of structure dependence from English into ASL? Newport claims that although this might be possible, it appears to be extremely unlikely. The literature on language acquisition by deaf individuals clearly states that profoundly and congenitally deaf children have not been shown to readily acquire much English by means of oral, manual or written methods. In fact, most congenitally and profoundly deaf children have failed to master any spoken language, at the time they finish high school: 88 % of them have no mastery over the complex structures in English. Presumably, this is due to the difficulty of language acquisition without natural exposure and immersion. Thus, it is very unlikely that Simon could have acquired English to a better degree than he could acquire ASL from his parents.

6.3.3 Applying Simon's Case to Creolization

Newport then addresses another question: Could it be possible that the differences between Simon's circumstances on the one hand and those of creole learners on the other render it inappropriate to apply an account of Simon's acquisition of ASL to the process of creolization? The author suggests that two factors should be under

consideration to approach an answer to this question. First, Simon's case involved a signed language whereas most creolization processes involve spoken languages. To the extent that there might be modality differences between signed and spoken languages with respect to the structure or the process of acquisition, it is these modality effects that could intrude on comparisons. Second, one cannot label the input Simon received as a pidgin language, rather, it is, admittedly, a late-acquired but nevertheless full language.

A further, very important question arises here: Could it be that Simon's input is therefore much more complex than the input received by creolizing children, hence making Simon's case uncomparable to creole studies? Newport's answer to this question is that these concerns require further research and that, inbetween, they have to be kept in mind. So far, most research has been done on ASL. The results of these studies undoubtedly show that ASL resembles spoken languages to a great degree with respect to both structure and acquisition. Therefore, many researchers expected no significant modality differences between the two language types. Moreover, they also expected the range of linguistic universals and variation to be exactly the same for both signed and spoken languages. The author states that early results raise the possibility that signed languages might be more similar to one another in typology than are spoken languages, at least in the field of morphophonology. Hence, there is the possibility that, at least in the field of morphophonology, linguistic universals could possibly be more extensive in signed languages than in spoken languages. Moreover, the picture of innate principles in the process of acquisition within the two modalities might be slightly changed.

Newport then presents another way of argumentation by stating that Simon's acquisition of ASL to a fairly good degree is, at least partly, due to the rich nature of his input. Surely, Simon's parents' performance was nowhere near native ASL. However, as compared to pidgin speakers, they had much more mastery of complex structures and therefore might have provided Simon with more extensive materials for structuring a complex language than most creole learners would be presented with. The author thus concludes that Simon's circumstances might therefore not be precisely enough like the ones to be found in creolization processes.

7. Conclusion

This paper tried to sum up Newport's observations in the field of sign language acquisition on the basis of reduced and inconsistent input. Differences as well as similarities between the acquisition of ASL under these specific circumstances on the one hand, and the process of creolization on the other have been elaborated. In my opinion, the author is legitimate in believing that, to some extents, it is the differences that are suitable to shed new light on creolization: while emerging creoles are surrounded by various factors, the results offered here allow for a closer examination of some isolated factors. However, exactly these differences render it impossible to draw general parallels when it comes to the question whether it is adequate to take language acquisition patterns in children for an explanation for the phenomenon of language reorganization. Rather, I hope to have shown that these parallels can only be drawn *in principle*. Nonetheless, in my eyes, the author provided interesting data. Even if Simon's case finally did not reveal perfect symmetry to the circumstances under which creolization takes place, I still consider the data to be of great importance for creole studies in that they share the crucial aspect, namely that children are able to acquire a complex grammar on the basis of impoverished input.

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