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Evidence for Universal Grammar in Nicaraguan Sign Language and Development of a Survey for Use with Practitioners

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Abstract: This project involves examining the linguistic properties of Nicaraguan Sign Language (ISN) which developed rapidly after the creation of a deaf community in Nicaragua in the late 1970's. Throughout the 1980s, as the language was passed from one cohort of signers to the next, the language became increasingly complex. ISN is one of the very few languages that linguists have had the chance to study as it was created and evolved. Therefore ISN provides a unique opportunity to study the origin of language, language evolution, and universal grammar. The theory of Universal Grammar claims that there are core principles that are universal to all languages (Chomsky, 1965). Humans are able to use their language faculty, their ability to create grammar, because of the existence of universal grammar. Due to the lack of empirical evidence on a primordial language, scholars must make assumptions about the origin of language using languages available today. By examining linguistic properties such as syntax, morphology, and phonology of ISN, we can learn what principles are universal to all languages and how language becomes more complex as rules are added on top of these principles. The goal of this study is to develop an instrument that can be used to interview a specialist of ISN within Nicaragua. Future work would include conducting this interview and drawing additional conclusions from the findings.

Keywords: *Universal Grammar, Nicaraguan Sign Language*

In this paper I argue that there is evidence for universal grammar in Nicaraguan sign language. The history and evolution of ISN provides evidence for universal grammar, the notion that all humans have the capacity to learn and use language. ISN was created by people who had no access to language, which in itself, suggests language is inherent to humans. It is also significant to note that the driving force behind ISN's development were the younger members of the deaf community. This shows that children are inherently capable of language creation and supports previous theories on language faculty and universal grammar.

Purpose and Goals

The purpose of this study is to examine in the literature how Nicaraguan Sign Language provides evidence for the notion of universal grammar. Another goal of the study is to develop a survey instrument, drawing on research of universal grammar, that can be used to interview experts familiar with sign language in general, and ISN in particular.

This paper begins by exploring the history of ISN with an explanation of its creators and how it came to exist. The next section of the paper, titled theoretical framework, is dedicated to the different theories of language evolution, and the theory of universal grammar. The following section examines how ISN fits with these theories and also provides a survey which is designed for interviewing an expert in the field of ISN. The final section embodies the conclusions and final remarks of the study.

History of ISN

It is important to understand that Nicaraguan Sign Language (ISN) is its own language. It is not a reproduction of any other sign language and it has developed to be as complex as any other language. According to Senghas (1995), "the language is not a simple code or gesture system; it has already evolved into a full, natural language" (p. 543). ISN can be used in any way and for any reason another language could be used. ISN, like all other languages, is not limited.

One reason ISN is important to study is because it is so unique. There are very few languages that linguists have had the opportunity to study from the beginning. One of the only others is Al-Sayyid Bedouin sign language in present-day Israel (Senghas, 2005). Although linguists have had the opportunity to study Bedouin sign language as it developed it differs significantly from ISN. Al-Sayyid Bedouin sign language “has been around about twice as long as Nicaraguan Sign Language” (Senghas, 2005, p. R465). It evolved more slowly because it was created as the deaf community grew over three generations (Senghas, 2005). This contrasts the history of ISN, in which the deaf community grew rapidly within a couple years. ISN is so unique, even compared to other recently evolved languages, such as Al-Sayyid Bedouin Sign Language, as it developed within a few years.

The watershed event that allowed for ISN to develop was the Nicaraguan Revolution that occurred in the late 1970’s. From 1936 until the triumph of the revolution in 1979 the country was run by the Somoza family who “owned nearly all of Nicaragua that was worth owning” (Kinzer, 2007, p. 33). In 1963, Anastasio “Tachito” Somoza took power and became known for his cruelty. In 1972, Somoza profited from a devastating earthquake in Nicaragua. Kinzer explains:

During the 1960’s and 1970’s, they made new and highly profitable investments in gambling, drug smuggling, and prostitution. Tachito Somoza’s avarice, the extent of which became fully clear after the earthquake, reflected the decadence into which his regime had fallen. Public sentiment was newly outraged, and even once-neutral businessmen began to call for the dictator’s ouster (Kinzer, 2007, p. 33).

Somoza expanded the power and wealth of his family to an extent that alienated sectors of society who had previously maintained their neutrality.

The group that would overthrow the Somoza dictatorship was the FSLN or the Sandinista Front of National Liberation. The Sandinistas were a

diverse group. Their leadership consisted of a 12-person junta. The group was made up of the guerrilla leaders: Daniel and Humberto Ortega, the novelist Sergio Ramírez, two priests, a catholic-business man, a lawyer, and an economist (Kinzer, 2007). This junta assumed power after the overthrow of Somoza in 1979.

In 1979, when the Sandinista government took power they instituted a program throughout the country that focused on teaching literacy. Under this program the deaf students entered into the education system often for the first time (Senghas, 2003; as cited in Monaghan, Schmaling, Nakamura, & Turner, 2003).

Prior to the Nicaraguan Revolution deaf people had little access to special education and little communication with other deaf people. This is not to say that there was no special education and no communication between deaf people before the Revolution. Polich (2005) explains that ISN did not arrive spontaneously after the Nicaraguan Revolution. Other sign languages had been introduced in Nicaragua before, including American Sign Language (ASL) and other European sign languages. Although there was access to special education prior to the revolution, it was limited and special education programs were greatly expanded after the Revolution.

Another important aspect of special education prior to the revolution was its focus. Rather than being taught how to sign, educators focused primarily on teaching deaf students how to read lips and how to speak. This did not foster the development of ISN. Students were not encouraged to express themselves in a more natural way. Although access to special education was improved, this method of teaching deaf students did not improve. The education programs under the Sandinista government still maintained the focus on making deaf students speak (Polich, 2005).

Although the focus of deaf education stayed the same, the Nicaraguan revolution created the deaf community. Unlike the case of Bedouin sign language, marital patterns largely prevented hereditary deafness in Nicaragua. This caused

people to be born deaf but of hearing parents (Senghas & Coppola, 2001) and hampered the creation of a deaf community. Without a deaf community deaf people will not create a language because they have no one to communicate with. They will depend primarily on homesigns. In Nicaragua, deafness was largely perceived to be a problem. Before the revolution, the majority of deaf individuals had little communication with each other. One of the first schools for the deaf was founded in the country capital of Managua in 1977. At the time of its founding the school had “25 students but expanded to include 100 students in 1979 when it became more publicly accessible” (Senghas & Coppola, 2001, p. 324).

Deaf Nicaraguans developed homesigns in order to communicate with their families and neighbors. Homesigns are individual gesture systems that are limited in their complexity. According to Senghas, “homesign lexicons, sentence patterns, and use of the signing space while internally consistent, are idiosyncratic and vary widely from one deaf homesigner to another” (Senghas & Coppola, 2011, p. 129). Although each individual develops a system of homesigns, it is unique to each homesigner.

The lack of a deaf community is what keeps homesigns from developing into a complete language. “The fact that homesigners are not part of a larger signing community and are therefore unable to pass their system along to new learners seems to limit the complexity of homesign systems” (Senghas & Coppola, 2011, p. 129). These systems of homesigns are unable to evolve into full language because homesigners are not a part of a community. They are unable to communicate with others and develop their system of homesigns into a fully developed language.

ISN has also allowed for deaf Nicaraguans to gain social agency. Nicaraguans who were previously excluded from society are using ISN to be involved in their community. One factor that has contributed to the development of ISN and the improvements for deaf Nicaraguans is the National Nicaraguan Association of the Deaf

(ANSNIC formerly APRIAS, Association for the Integration of and Aid to the Deaf) which was founded in 1986. ANSNIC is an organization that serves the deaf community in Nicaragua. ANSNIC first began as an organization whose goal was to help the deaf integrate into society. In 1996 the group altered its focus and made its primary goal “to be a central social focus for the deaf, and to provide as many educational and employment possibilities as possible” (Polich, 2005, p. 97). The organization owns what they call the “deaf house” in Managua in which members meet and people come to become educated about deafness (Polich, 2005).

Another key achievement of the ANSNIC has been the publication of a dictionary of ISN. Members of the association participated in workshops during the late 1980’s and early 1990’s. In these workshops they discussed which variations of signs should be included in “standard” ISN. After taking a vote they created a hand drawn and mimeographed dictionary (Polich, 2005).

As noted earlier, although ISN is its own language it does have some influence from foreign languages. Many people came from the US and European countries to help in the education programs during the early stages of development of the language. ASL and other European sign languages were taught and signers of these languages conversed with deaf Nicaraguans. Foreign influence such as ASL can be seen in the certain numbers and letters in the alphabet of ISN.

In order to understand how ISN evolved one must examine the different stages in ISN’s history and the different cohorts of signers. As deaf students poured into schools and education programs, they began to communicate with their peers. According to Senghas and Coppola (2001), “Every year since 1980, new students of all ages entered school and learned to sign among their peers” (p. 324). These students had previously only had communication with speaking people. As they interacted with one another for the first time they began to develop their own way of

communicating. Students who entered the deaf community had only their homesigns to rely on. The cohorts are divided by the year they entered into the deaf community and the age at which they entered the deaf community. Senghas and Coppola (2001) explain “the year in which participants were first exposed to the deaf community ranged from 1978 to 1990, with the median at 1983” (p. 325). The researchers divided the participants into two cohorts: the first was composed of those who had entered the deaf community in 1983 or before, and the second cohort was composed of those who had entered after 1983.

When the second cohort of ISN signers entered the deaf community ISN had already developed into a pidgin. Senghas and Coppola (2001) note, “the language-learning situation for each new cohort was extremely unusual in that their model was not a fully formed language” (p. 324). Although ISN had not developed into a fully formed language it had developed into a pidgin. A pidgin is method of communication created by adults who do not speak the same language (Edmonson & Wilbur, 1996). The first cohort of signers, whose means of communication varied from person to person because of their differing homesign systems, created a pidgin. A creole, on the other hand, is a full language created by the children of pidgin speakers (Edmonson & Wilbur, 1996). ISN is very similar to a creole in the way it developed. As the second cohort entered the deaf community they took the pidgin and developed it further, thus creating a creole.

It is important to note that the driving force of ISN’s evolution were the younger children. Members of each cohort would develop the language during their childhood but stabilize their grammar as they entered adolescence (Senghas, Senghas, & Pyers, 2005; as cited in Langer, Parker, & Milbrath, 2004). In this way, the evolution of ISN was a process that spanned several cohorts and did not emerge spontaneously. According to Langer, Parker, and Milbrath (2004), “every cohort has played an indispensable role in the emergence of NSL” (p. 301).

Theoretical Framework

We can also learn about language evolution and the origin of language through the study of ISN. Therefore, it is important to understand certain theories on how language appeared and how it evolved to become what it is today. There are different theories on how language originated. One of these is that language came to be as a result of genetic mutation.

Steven Pinker and Paul Bloom spearhead another theory of language. Their theory is that language evolved due to natural selection (Pinker & Bloom, 1990). They combated the idea that language was a spandrel, a byproduct of other evolutionary processes. They argued that due to the complexity of human language it was most likely a result of natural selection and must have evolved. Spandrels are typically very basic and it is unlikely that something as complicated as language was a byproduct of the evolution of another trait. Pinker and Bloom (1990) argue that like other products of evolution, language most likely evolved in small steps. Language did not appear suddenly as the complex system that it is today but rather became more systematized over the course of time. Language became more systematic for the use of survival and reproduction (Kenneally, 2007).

A major concept in the field of linguistics is the theory of a universal grammar (Chomsky, 1965). As mentioned above universal grammar is the core principles that are universal to all languages. Noam Chomsky who came up with the theory revolutionized the way linguistics are studied. Chomsky came upon this theory through his extensive study of syntax. Instead of just focusing on cataloging languages, Chomsky took a deeper look and examined how language in general functions (Kenneally, 2007). He “collapsed all of language into a set of rules” (Kenneally, 2007, p. 27). Chomsky was the first to look at the similarities between all languages. Chomsky (1965) found that universal grammar is what makes all the rules of any given language. Universal grammar is therefore the principles of

any and all languages when they are broken down to the core.

Chomsky influenced generative linguistics. Generative linguistics is the subfield of linguistics that attempts to break down language to its basics in order to discover the core of language (Kenneally, 2007). In addition to generative linguistics; Chomsky (1986) provided the theory of the infinitude of linguistics. By breaking down language to its basics it becomes possible to rebuild them in an infinite amount of ways. Language allows us to create an infinite number of different sentences. Due to universal grammar and the infinitude of language, we can create sentences that have never been uttered before.

Another theory provided by Chomsky is the theory of a language faculty (Hauser, M. D., Chomsky, N., & Fitch, W. T., 2002). A language faculty is a biological trait that is innate to humans which allows the development of grammar (Radford, 2004). Chomsky originally theorized the existence of a language organ, this theory is very similar to the theory of language faculty but it posited that there was a specific organ in the brain that allowed for language creation (Kenneally, 2007). According to Radford (2004), as children are exposed to grammar, “this experience serves as input to the child’s language faculty, which provides the child with a procedure for (subconsciously) analyzing the experience and devising a grammar” (p. 8). According to Radford (2004), all typical humans have a language faculty that allows them to acquire language. When immersed in a language the child’s language faculty allows them to create the language.

The theory of a language faculty is compelling but also brings up certain questions when applied to the origin of language and creation of languages such as ISN. According to Radford (2004), the language faculty takes language experience and outputs grammar. If this is true, how would a primordial language originated? How can the creation of a language such as ISN be possible if language experience is necessary?

The theories given by Chomsky can be evaluated using ISN. ISN provides a unique

opportunity to study universal grammar because it can show universality between oral and sign language. It would also be possible to take a generative approach and break down ISN to its basics to compare it with the basic structure of oral language. It would also be beneficial to the field to examine whether ISN and other sign languages are infinitesimal like oral language.

How ISN applies to the theories

Studies have also been conducted on ISN and Theory of Mind (ToM) (Morgan & Kegl, 2006; Pyers, & Senghas, 2009). Morgan and Kegl (2006) conducted research on how well signers of ISN performed on false-belief understanding tests. They found that signers who had not been exposed to language until the age of ten or older performed more poorly on false-belief understanding tests than signers exposed to language before the age of ten. This suggests that language effects the development of the brain. The correlation of exposure to language and brain development can be used to argue that there is not a “language organ” within the brain. If there was a language organ inherent to all humans, the brain would not develop concurrently with exposure to language. It can also be argued that if there is a language organ in the brain then isolated deaf Nicaraguans should have had the capability to create language. Homesigns should be more systematic and have a higher level of syntax.

Senghas and Coppola (2001) have studied the role of spatial modulations in ISN. Spatial modulations are the location or direction of a sign. Spatial modulations have different functions in developed sign languages. According to Senghas and Coppola (2001), spatial modulations can be used for, “indicating person or number; providing deictic, locative or temporal information; or indicating grammatical relationships, such as a verb’s subject and object” (p. 324). One example of a spatial modulation is pointing.

In sign languages pointing can be used for many reasons.¹ Senghas and Coppola (2001) categorized the points they found in ISN into two types: nominal and locative. A locative point is a point that refers to location while a nominal point refers to an object or a person (Senghas & Coppola, 2011). They looked at how homesigners, and the first 3 cohorts of signers use pointing, and found that nominal points are being used more frequently among later cohorts (Senghas & Coppola, 2011).

In addition to being used more frequently, Senghas and Coppola (2011) found that nominal points are being used in combination to verbs. This appears to Senghas and Coppola to be a change in the function of nominal points. According to Senghas and Coppola (2011), “in this way, signers can show who is doing what to whom without repeating nouns or the names of characters” (p. 136). This is prime example of the more recent cohorts making ISN more structured.

Senghas and Coppola (2011) suggested that the evolution of ISN is similar to how all languages have developed. They argue, “this same process most likely is responsible for historical changes in all languages as they are passed from one generation to the next, each generation tweaking the system before passing it on” (p. 139).

What they found is interesting because of what it suggests about language faculty and universal grammar. It is unknown how much access people have to their language faculty after the onset of puberty. The evolution of ISN suggests that after the onset of puberty people are not able to use their language faculty to create language to the same degree as children are. It does not show that there is no access to language faculty after the onset of puberty because the older cohort still managed to develop ISN, just not to the degree of the younger cohorts. This conclusion about access to language faculty is

similar to that argued by Rothman and Pascual y Cabo (2014) in their study of the acquisition of Spanish as a second language.

Rothman and Pascual y Cabo (2014) stated two questions that are central to their study: “(i) do adult learners continue to access UG after puberty (what would be the offset of the so-called critical period if it affected UG accessibility)?” and “(ii) what is the role of L1 transfer in adult acquisition?” (p. 50). The first question is more relevant to the study of ISN because of the conditions regarding the first cohorts’ experience, especially the older members of the first cohort. The process older member learners of ISN went through is similar to the process one goes through in order to learn a second language.

Rothman and Pascual (2014) found that “binary answers to such complex questions were not particularly useful. They came to the conclusion that these questions cannot be answered with just a yes or a no. It is insufficient to say yes or no to question (i) mentioned above. Instead a better answer is adult learners continue to access universal grammar to a certain degree after puberty. This response then brings up questions such as: what aspects of universal grammar do adult learners continue to access after puberty? or to what degree is universal grammar accessible to adult learners?” (pp. 50-51).

In another study conducted by Senghas and Coppola (2001), they studied the signing rate of ISN signers in the 1st and 2nd cohorts in order to measure their fluency in ISN. Senghas and Coppola defined signing rate by the amount of morphemes produced per minute. They found that the second cohort signed at a rate faster than the first cohort. The second cohort at a rate of 234 mpm compared to first cohort whom signed at an average of 194 mpm. In addition, they found that those who had entered the deaf community at a younger age signed faster than those who had entered later in life. According to Senghas and

¹ According to Senghas and Coppola (2011), points “indicate the participants of events and their roles by linking verbs to nouns to make it clear who does what to whom. They can serve as determiners by combining with nouns to

indicate that a referent is either a specific one that has been mentioned before, a generic one, or a new referent. They are also used to describe the locations of objects and events.” (p. 132)

Coppola (2001), “no difference was detected between the late-exposed signers of the first and second cohorts” (p. 325). This suggests that age plays a crucial role in language creation.

Evidence for universal grammar lies in the process children go through in acquiring a language. The following chart is of the average stages of development up to 24 months (Figure 1). By comparing the stages of acquisition of oral languages with that of sign languages we can learn more about universal grammar. If the stages of acquisition appear the same this would be evidence for universal grammar. By comparing the stages of acquisition we may be able to note similarities and differences between how children acquire sign and oral languages. By finding differences and similarities we would get a better idea of what is universal to all languages. If we are to come up with a valid theory of universal grammar it must include sign languages because sign languages are just as complete and natural as oral languages.

Although at first glance sign language and oral languages appear very different, they are actually very similar. The obvious differences between sign languages and oral languages are caused by their different modality. Oral languages are spoken while sign languages are signed. Oral languages utilize different anatomical structures than sign languages, and therefore, create differences between the two types of language.

These differences are called modality effects. Examples of modality effects of sign languages are the use of space, simultaneity, and iconicity/motivatedness (Sandler & Lillo-Martin, 2006). The use of space is the manner in which three-dimensional space is used in sign language. This can include the direction of a sign, the location of a sign in regards to the body, and other ways of manipulating space. Simultaneity is the

simultaneous layering of information in sign language. Iconicity/motivatedness is the symbolism behind signs. Unlike spoken languages, sign languages are not completely arbitrary; signs can be an obvious representation of their meaning. This is a significant difference; however, it is noteworthy that there is a certain degree of iconicity/motivatedness in oral languages as well, as oral languages have onomatopoeia.

The time it takes a child to acquire sign languages is about the same as it takes to acquire spoken language. Sign languages are just as efficient and easy to use as oral languages. The rate of transmission is the same. That is to say the rate at which prepositions are expressed are the same in both types of languages. Alongside rate of transmission, the intelligibility of both oral and sign language deteriorate at the same point when sped up (Sandler & Lillo-Martin, 2006). It is also worth noting that both oral and sign languages are used in the same manner: they can be used for “social interaction, oratory, education, scientific exchange, introspection and dreaming, storytelling, theater and poetry” (Sandler & Lillo-Martin, 2006, p. 4). Just as any person who speaks an oral language can use that language to talk with family, purchase items, engage in art etc., a person who signs can use sign language to do the exact same thing. Another way sign language and oral language are similar is their organization. There are properties of syntax, morphology, and phonology that seem to be universal to language both oral and sign.

Figure 1 shows the average stages of acquisition of communication, according to Singleton & Shulman (2014). This is significant because if the stages of acquisition of ISN are similar and follow the same timeline as the stages of acquisition of other languages, this would be evidence of the notion of universal grammar.

Age Range	Communication	Social-Emotional
Birth to 1 month	<ul style="list-style-type: none"> • Reflexive smile • Crying • Cooing 	<ul style="list-style-type: none"> • Homeostasis • Self-regulation and interest in environment
2-7 months	<ul style="list-style-type: none"> • Selective attention between faces • Discriminates between faces • Social smile • Development of mutual eye gaze • Imitates some sounds • Responds to name • Smiles and vocalizes to mirror • Can make basic wants and needs known to influence environment 	<ul style="list-style-type: none"> • Attachment formation with significant others • Has a “falling in love” look with others
7-12 months	<ul style="list-style-type: none"> • Obeys some commands • Speaks one or more “words” • Imitates inflections, rhythms, facial expression • Babbles • Develops jargon 	<ul style="list-style-type: none"> • Expresses different emotions • Takes turns with others • Realizes he/she can have an effect on the environment
12-24 months	<ul style="list-style-type: none"> • First true words and phrases • Tries to “tell” stories • Vocabulary growth spurt around 18 months • Begins two-word combinations 	<ul style="list-style-type: none"> • Develops independence • Engages in interactive play with adults

Figure 1. Acquisition of communication and social-emotional milestones from Singleton, N. & B. Shulman (2014).

The examination of ISN and its relationship with Universal Grammar should continue to be studied. In continuation of this study, contact with experts in the field of ISN would be beneficial. Whether it is with a teacher, speech therapist or linguist, it would be valuable to conduct interviews. Appendix A is a survey developed for use with practitioners of ISN. This survey is included only for development purposes. No data using the instrument has been collected as of the date of publication of this paper, and IRB approval would be obtained properly before any actual use of the survey to collect data for the purposes of research.

After conducting interviews, it would be necessary to transcribe and translate them into

English. If necessary, secondary questions could be created after the initial interview. The goal of conducting interviews is to create a bridge between previous research and the insight of an expert working with signers of ISN currently. These interviews can be used to identify any anomalies that present themselves. They can also be used to identify any differences and similarities between the principles and parameters of ISN and other languages, both oral and sign. After conducting the interviews, this paper can be revised to incorporate findings. ISN provides evidence for universal grammar through its history and evolution. It is crucial that ISN is studied further. It would be extremely beneficial to interview an expert in the field. These interviews would synthesize the previous work

that has been completed on ISN and sign language in general. Answers to the questions provided above would give us a better understanding of ISN, sign languages, and universal grammar.

CONCLUSIONS

The purpose of this study was to examine in the literature how Nicaraguan Sign Language provides evidence for the notion of universal grammar. Another goal of the study was to develop a survey instrument drawing on research of universal grammar, that could be used to interview an expert familiar with sign language in general, and ISN in particular.

As suggested by the research, both Nicaraguan and all other varieties of sign language are not simply systems of codes or gestures. Rather, they are fully developed language systems. Although sign language has some differing properties from oral language (such as the increased visual-spatial efficiency that sign language possesses, as opposed to oral language, which is less efficient in this respect), what they both have in common are properties that demonstrate the ability to learn, create, and use signs that are mutually intelligible and usable by others. In addition, complex structural rules at phonological, morphological, and syntactic levels apply to both sign and oral languages.

The next steps proposed for this study, namely, use of the survey instrument developed in this study for ISN practitioners, and incorporation of findings and observations made with the instrument, will shed additional light on the topic of this paper in terms of what professionals working with ISN in the field are seeing with regards to particular characteristics of ISN that support a theory of universal grammar.

It can be said that the research undertaken for this study was helpful in determining what is needed to create a large-scale project that adds to the scholarly debate over a given subject. Some key components that must be kept in mind when undertaking such a study are: 1) the importance of developing an adequate survey instrument that can ultimately provide the data that you are

looking for, 2) the steps and time necessary to apply and obtain IRB approval of this instrument, and 3) the challenges one might find in identifying and making contact with practitioners in another country.

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Appendix A

Survey for Use with Practitioners

1. What is your experience with Nicaraguan Sign Language? In what capacity do you use it or have you used it?
2. Are you familiar with the theory of universal grammar (UG) and the concept of the language faculty? Researchers who have studied the acquisition of spoken language have found that children who are learning their first language tend to exhibit similar phases and processes over time, no matter the target language they are exposed to. These same researchers have posited the existence of a universal grammar and a language faculty that we all possess at birth and which makes it not only easy, but natural for healthy humans to learn, produce, and understand language. I am doing a research project that examines how more general characteristics that have been observed for the acquisition of Nicaraguan sign language might also serve as evidence for the existence of universal grammar.
3. One of the most common characteristics that has been observed in the acquisition of a child's first spoken language has been the uncanny similarity in timing of particular milestones a child reaches successively over the first several years. These steps include an initial phase of babbling in which the child first practices the sounds of the language s/he is exposed to. A second phase is the production of utterances of no more than a single word. A third phase is where a child joins two words together. Finally, the fourth stage consists of the construction of utterances of three or more words. Does Nicaraguan sign language as it is acquired by children exhibit similar patterns or stages, or perhaps it even has some stages of its own that are different from the acquisition of spoken language?
4. If stages have been found to appear in the acquisition of Nicaraguan sign language, is there a particular timeline that has been observed for these?
5. At what age do children begin to learn ISN?
6. Other evidence that has been attributed to the existence of a universal grammar in children is the different ways in which children and adults learn to speak a language, which suggests a biological predisposition for language. For example, very young children who learn a language tend to master the pronunciation of that language better than adults who are exposed to it later in life. This is referred to as the critical period when a child's brain has more elasticity and flexibility than an adult's. In your experience, are there any differences between the way children learn to sign and the way adults learn to sign? For example, are there differences in terms of how fast they sign, or do you perceive any differences in "accents" they might exhibit?
7. The previous question asked what differences you've observed between child and adult signers of Nicaraguan sign language. What characteristics do adult signers of Nicaraguan sign language have in common with children who sign?
8. Have you observed there to be a timeline for the acquisition of sign language as a second language by adults?
9. Is there a difference between the time it takes an adult to learn ISN and a child who learns ISN?
10. One of the many characteristics of spoken languages is the fact that they change over time. Have you personally observed any changes in the structure of Nicaraguan sign language over time or has it remained static in your opinion? Has the meaning of any signs changed over time? Do younger signers use sign in a different way than adults?
11. If you have seen changes over time, what are some examples? In what age group(s) of signers have you seen these changes first appear? If you have seen changes over time, what are some examples? In what age group(s) of signers have you seen these changes first appear?
12. Is there anything else you would like to add about your work on Nicaraguan sign language in general?