

The Invention of Nicaraguan Sign Language

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Introduction

In the 1980s, Nicaragua was a poor country, emerging from civil war, lacking in specialist resources and with low levels of literacy even amongst the hearing population, and was a country in which the deaf had no sign language. If a new sign language were to be created from scratch, it was hardly likely that children with no language capacity to begin with were going to be the ones to do it.

So linguists and psychologists were stunned when it was reported* that in the 1980s, in Nicaragua, without even the awareness, let alone assistance of adults, deaf children themselves had *invented* a brand new sign language, Nicaraguan Sign Language (NSL), linguistically distinct both from spoken Spanish and other sign languages – a fully-fledged mature language with syntax, recursion and the capacity to reference abstract concepts and hypothetical or distant events. Since the children had no access to *any* language – spoken Spanish or sign language, and mostly not even written Spanish – it seemed impossible that children should have been able to acquire a language, let alone collectively *invent* one, unaided, from scratch. It was the only recorded case of the creation of an entirely new language, as opposed to a dialect or a creole of existing languages, like the Pidgin English spoken in Hawaii or New Guinea, or AUSLAN, which is derivative from British, New Zealand, US and Irish sign languages.

"[Normal speech] development is achieved," said Lev Vygotsky (1934a), "under particular conditions of interaction with the environment, where the final or ideal form [of speech] ... is not only already there in the environment and from the very start in contact with the child, but actually interacts and exerts a real influence on the primary form, on the first steps of the child's development." It follows from this that a deaf child will not develop either spoken language or sign language if he or she is denied the possibility of interacting with others using such a language. Denied the possibility of acquiring the knowledge and wisdom of their community, their entire psychological development will be stunted. In a minority of cases, deaf children *can* master speech without the aid of sign language, through lip reading and intensive professional training, and with the aid of the written word (where that is the norm) go on to achieve a normal cognitive development or better. But for the vast majority, in the absence of sign language, development of language is entirely blocked and consequently, the normal psychological development associated with language use is also blocked.

So Vygotsky's claim – that ontogenetic development was unique and distinct from any other kind of development (historical, cultural or biological evolution) in that the final point of development must be present throughout to act as the *model* and *source* of development – must be wrong. It appeared that language could develop among a limited group of children hitherto lacking any language beyond 'home sign' (see below) without interaction with the final form functioning as the source of development, and achieve the complexity of a mature language in a couple of decades.

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The solution to the puzzle is simple. This *did not in fact happen*. Nonetheless, it is true that in 1980 there was no sign language in Nicaragua and only a handful of the thousands of deaf Nicaraguans could speak intelligibly and lip read and the vast majority were illiterate. But by 1990, there was a self-conscious Deaf community with its own sign language distinct from that of other countries, whilst the education system, far from having taught children to sign, continued to actively *suppress* the use of gesture and signing by their deaf pupils.

So somehow, during the 1980s, a new sign language developed in Nicaragua simultaneously with young deaf people acquiring it and beginning to use it. So the puzzle remains as intriguing as ever and the answer should tell us about the minimal conditions for the development of a new language and the minimal conditions of interaction with an ideal for the normal cognitive and linguistic development of individuals.

* See the Wikipedia entry: https://en.wikipedia.org/wiki/Nicaraguan_Sign_Language for the conventional wisdom on this event.

The problem of language development posed by NSL is particularly sharp because we depend on speech for our socialisation which is in turn the source of the development of virtually *all* of our personality. But Vygotsky's point cited above was not made exclusively in relation to language. He made the point about child development in general and made the same point explicitly in connection with arithmetic. A language is in a strong sense a concrete concept or 'science' of the world, and every one of our higher psychological functions also is a kind of 'science', expressing the world in its own unique way, so in a strong sense this problem of the ontogenesis of language is an archetype for the development of all forms of human activity, that is, of all our psychological functions and activities and of all our institutions. Children *cannot* learn a new concept or subject matter by talking amongst themselves, unless amongst their number at least one has already acquired a facility in the relevant subject matter and can teach the others.

Vygotsky on the ideal form

Before turning to the case of Nicaraguan Sign Language, I would like to briefly review what Vygotsky said in *The Problem of the Environment* which makes the claims in relation to NSL challenging for Vygotsky's theory. Vygotsky wrote:

... environment is a factor in the realm of personality development and its specific human traits, and its role is to act as the *source* of this development, i.e. environment is the *source* of development and not simply its setting.

What does this mean? First of all it indicates a very simple thing, namely that if no appropriate *ideal* form can be found in the environment, and the development of the child, for whatever reasons, has to take place outside these specific conditions (described earlier), i.e. without any interaction with the final form, then this proper form will fail to develop properly in the child.

Try to imagine a [hearing] child who is growing up among deaf people and is surrounded by deaf and dumb parents and children his own age. Will he be able to develop speech? No ...

1934a

The ideal form is that which sets the expectations for "a member of a certain social group, ... a certain historical unit living at a certain historical period and in certain historical circumstances" (Vygotsky, 1934a). In the overwhelming majority of communities, this includes a particular spoken, grammatical language, capable of referencing hypothetical or remote events and situations, and abstract ideas and characterised by recursiveness. 'Ideal' means the *norm* for the given community, not any individual instance. The norm finds its expression, however, only through ontogenesis – many individuals, each of them being different *realisations* of the ideal. The ideal is implicit in each and every individual, even if not a single individual in the community perfectly matches that ideal. The ideal differs from any individual in that while individuals live and die, cultural history continues, consisting in the evolution of this norm, this ideal, and it is in this sense that the norm of a given society is said to be 'ideal'. The ideal is an expression and product of *cultural history*, which in turn provides the model for each individual at the same time as generating the social interactions which promote the development of each individual. Normal development does not mean 'matching' the norm, for implicit within a norm is also an understanding of which differences constitute the normal range of diversity, and which differences represent some kind of pathology or deviance.

Vygotsky goes on:

Secondly, try to imagine that this ideal form is not to be found in the child's environment, ... the child develops among other children, i.e. that his environment is made up of children of his own age who are all at the lower, rudimentary form stage. In such a situation, will the proper activity and traits develop in this child? Research shows that it will, but in an extremely peculiar way. They will always develop very slowly and in an unusual manner, and will never attain the level which they reach when the suitable ideal form is present in the environment.

op. cit.

So, children working amongst themselves might find a solution to some arithmetical problem, a solution which differs from that which the teacher expected of them but neglected to teach them. The children have solved the given problem, but what they have missed out on, and which was the teacher's responsibility to provide for them, is that method of solution which contains the germ of further development leading to the acquisition of higher mathematics or other more advanced forms, solutions to problems only implicit in the problem before them, something which the children will *never* acquire by themselves, without the aid of text books and/or instruction. A true concept, the ideal, does not inhere in the *problem* as such, but in the culturally evolved *solution* to a socially evolved problem.

'Ideal' does *not* mean 'perfect'. 'Ideal' has these three interconnected meanings: it is what is *expected of* the child in the given community, that is, the norm; it is the ideological formation which exerts pressure on the child to *draw them* towards itself, and which alone gives meaning to the child's actions; and it is a cultural and historical formation which evolves over many generations in and through the birth, life and death of every individual in the community.

According to Vygotsky, not only the presence, but adequate *interaction* with the ideal, is a precondition for the attainment of the norm, or ideal, by a child of the given community.

Deaf children in Nicaragua

I rely for the history of NSL on Laura Polich (2005), an audiologist who conducted exhaustive historical research into the deaf community in Nicaragua, interviewing every deaf person she could find in the country in a ten-year-long research project, as well as all those who had been involved in deaf education over the decades. Polich's testimony differs from that of all others who have written on NSL in that she investigated, on the ground, the *actual history* of NSL, rather than drawing conclusions based solely on the final product and hearsay about its genesis.

Until 1946, deaf children in Nicaragua were considered a punishment visited upon a family for past wrongs, a point of shame, to be kept out of sight and isolated from the rest of the world. Deafness was taken as a variety of mental retardation (and this remained largely the case into the 1990s). It is of course hardly surprising that deaf children exhibited mental retardation, given the conditions under which they were kept – isolated from any interaction with other human beings. Deaf children were either cared for with kindness or chained up like animals, but in no case did they have a chance to develop beyond childhood. Even today, despite the developments of the past 25 years, an unknown number of deaf people in Nicaragua are kept by their families in this condition, and though there were by 2005 ten qualified NSL-Spanish translators in Nicaragua, there was hardly a single deaf child who could communicate by sign language with their hearing parents.

It is obvious that under the conditions pertaining in 1946 there was no possibility for the development of a sign language in Nicaragua. But in 1946 the government made a decision that deaf children had a right to education, albeit in special schools together with mentally retarded children, and with no real prospect of becoming useful members of the community. So, something went on prior to 1946 which led the government to begin treating deaf children as human beings with rights like other human beings. I have no knowledge of exactly what prompted this change in the expectations which the country had for its deaf citizens, but whatever it was, it was one of the necessary precursors to the formation of NSL.

From 1946 until the Revolution in 1979, a minority of deaf children in the capital, Managua, were given an elementary education up to the age of 15. This meant that ten or 20 or on occasion up to 30 deaf children would be brought together at school, rather than being isolated in their own homes. However, the children would be taken directly to and from school in a school bus, ensuring that outside school they had no interaction with each other or ever had the need to make their own way through the city by public transport, interacting with the general public. The Nicaraguan education system right up until 1992 aimed solely at the integration of deaf children into the general community by means of speech and lip reading – the 'oral method'. However, although sign language was unknown, teachers did use gesture, writing, mime, pointing, or whatever means worked in the process of trying to teach deaf children to speak and lip read. Sign language was regarded as a *negative* in the 'oral method' because it was presumed that only Deaf

people used it, and therefore to learn sign language would be to ensure isolation from the general community.

In reality, very few of these deaf children ever learnt to speak, and those few who did, who are alive today, generally prefer to sign. The children did have a chance to meet each other in the playground during breaks and used their 'home signs' to talk to each other, a process which led to a pooling of home signs and a consequent expansion of the vocabulary of home signs. This did *not*, however, lead to a development of a sign language.

'Home sign' is a limited form of communication which uses the stock of natural gestures of the general community, together with pointing at objects, parts of the body, etc., and the iconic representation of actions (see Goldin-Meadow, 1977). Home sign can only reference real entities and feelings and is extremely limited in the range of ideas it can represent outside of the home environment. A genuine language on the other hand, can represent an open-ended and infinite variety of ideas. Illiteracy and limitation to home signing bars the way to the formation of true concepts and entry into adult life in the wider community, leaving the deaf person in a condition of dependency akin to childhood, able to execute commands and express feelings, but unable to discuss ideas and remote, complex or hypothetical events.

So, although deaf children were able to meet each other in groups of 20 or 30 over a period of decades, this was *not in itself enough* for a sign language to emerge from a collection of home signs.

The effect of the 1979 revolution

The Sandinista Revolution of 1979 had an impact on the formation of the Deaf community in Nicaragua and its language, NSL, but as it happens, despite itself. The Sandinista government appointed a Russian expert, Natalia Popova, to be in charge of education of the deaf, and whereas the teaching of spoken Spanish to deaf children had hitherto proceeded somewhat eclectically under the Somoza dictatorship, under Popova's regime the 'oral method' was enforced as an absolute dogma. Teachers were barred from using gestures or mime or anything other than the spoken word to get their meaning across, even outside the classroom, and pupils likewise were forbidden to use gestures insofar as it was in the power of the teachers to prevent it. Manual communication was *denigrated*, not only blocking the way to the education of deaf children in school, but also undermining the children's *own* efforts to communicate with their hands. This dogmatic enforcement of the oral method and active suppression of manual communication continued until 1992 despite its manifest failure to give any but a tiny minority of deaf children the gift of intelligible speech.

On the eve of the Revolution, a vocational training school for deaf and mentally retarded children, Centro Ocupacional para los Discapacitados (COD) had been set up, and it was restarted in 1980, once the chaos of the Revolution had passed. Also, the new political regime provided an opening which I will come to shortly.

Teachers at COD, being charged exclusively with making the children 'employable', were freed of the ban on gesture and could again use whatever means of communicating with their students worked, and as a consequence, the youngsters did learn. But more important than the meagre job skills they acquired in the workshops, was that they were treated as *adults*. Instead of attending for the limited hours of elementary school, they were expected to arrive on time at 8am, work till 5pm, five days a week, and rather than being picked up and dropped home by the school bus, they were expected to make their own way to and from the school on the public bus system, paying their fares and navigating the city. On completion, the COD actively sought job placements for them.

In other words, they *were treated as adults* and were expected to behave accordingly and many of them did in fact go on to find jobs, albeit unskilled work at exploitative wages. Also, their education together was continued into their mid-20s, and having been drawn out of the family home into the public transport system, they had freedom of movement and were now no longer confined indoors. So now we had a situation where *young adults*, rather than children, were gathering together in their own spaces, and *freely communicating as aspiring citizens* of the nation. As a result of this, the young people began to socialise and build friendship networks outside of working hours and visit each other's homes. This led to young Deaf people in Nicaragua developing *a sense of shared community* of their own, in their common

situation in life. They sought each other out, and insofar as they could, talked to each other about their shared situation. Before 1986 there was only one instance of a deaf couple marrying, but now they were increasingly finding jobs and making friends in the Deaf community, and would go on to marry, set up households and raise children. In other words, despite still being without a true language, by the fact that they were being *treated as* adults, more and more they *became* adults and entered into the range of tasks and problems of the wider community, albeit invariably in extreme poverty.

Those who are familiar with Vygotsky's (1934) writing on concept formation will recognise that this is one of the preconditions to the formation of true concepts. The extension of deaf education into young adulthood and the expectation that the deaf adolescents would behave as adults and enter to some degree into the life of the community was the next essential step towards the formation of NSL. *Nothing* they had experienced during their elementary oral education had contributed significantly, however.

Nicaragua was a country of six million people. By 1984, enrolment of deaf children at school had reached 200 and remained at that level until 1997. Laura Polich shows by an analysis of the numbers of deaf children gathered together at various stages in the growth of deaf education that the hypothesis that a 'critical mass' of deaf children in communication with one another can explain the emergence of Nicaraguan Sign Language does not stack up. No number of children interacting in the playground or on the school bus would ever develop a new sign language. When NSL did emerge, only a *small number* of Deaf people were involved, whereas when much larger numbers were gathered together at school, sign language did not emerge.

However, the opening of the world of work to a cohort of Deaf *young adults* under conditions where they were treated as adults and gained sufficient independence to get about and seek out their own friends among other young deaf people did create the conditions for the emergence of sign language.

There are some individuals whose role in this story is such that they deserve to be known by name. In 1983, Gloria Minero was appointed to supervise the vocational workshops at COD. Her daughter, Morena, had been born deaf and Gloria had been training her to lip read and speak since she was a baby, and Morena attended a mainstream school. Through her job it was Gloria who first made contact with the Royal Swedish Association of the Deaf (SDR) which immediately took an interest in the position of deaf people in Nicaragua. SDR advocated a *cultural* approach to deafness, that is, that Deaf people should cherish their sign language and the Deaf culture which may be built upon it (see Padden, 2005). A touching incident between mother and daughter is not only a key turning point in the history of the Deaf community in Nicaragua, but encapsulates the necessity for Deaf people to build their own culture based on sign language. Gloria heard Morena talking in her room, and went in to find Morena talking to herself in the mirror. Asked what she was doing, Morena replied that since no one else would talk to her, she would speak to herself. It appeared that although Morena's speech was intelligible, the other children ridiculed her deaf accent and would not talk to her. Gloria determined that since Morena could not make friends among the hearing community, then she would see that Morena could make friends among young deaf people. In 1983, Gloria invited a number of her vocational students from COD to meet at her home to socialise. Morena was considerably younger than the students from COD, all products of the 1962 rubella epidemic, but was included. It was this group of young deaf adults who met regularly at Gloria Minero's house who invented Nicaraguan Sign Language. It took a number of years to form, but the linguist Judy Kegl first identified the existence of NSL in 1986. Laura Polich has determined with certainty that there was no sign language in use prior to the beginning of these meetings, and the evidence points to it being the members of this small group of friends who created NSL, achieving the level of a true language within three years.

Among the young people meeting at Gloria Minero's house, there is another individual whose importance in this story warrants his being named; that is Javier López Gómez. Javier López's interest in sign language began when he was given a sign language dictionary in 1978 or 1979, possibly during an athletics visit to Costa Rica by students at COD. He also met the American deaf educator Thomas Gibson in 1979. From this time onwards Javier practised signing and is reported to have taught other students at COD to sign in 1981, although it was abbreviated and apparently hard to understand. He actively sought out all the information he could find about signing. He also taught the other young people meeting at Gloria's to sign, though it has not been possible to reconstruct *how* he went about that. Previous to what they learnt

from Javier, they had used only home signs and finger spelling to communicate with each other. At the time of the meetings at Gloria's, Javier was regarded as having good oral skills.

APRIAS (Association to Help and Integrate the Deaf)

In 1984 or 1985, Gloria Minero suggested that if the young Deaf adults wanted to do anything to improve their future, they would need to organise themselves formally into a self-help group to act on behalf of Deaf people. The main benefit of the Sandinista Revolution is that it legitimised the formation of an organisation to represent the interests of such a disadvantaged section of the population. The group who had been meeting at Gloria's home took the initiative, worked their way through the considerable mountain of paperwork required to register an association in Nicaragua and made up the core of founding members. The name was suggested by Gloria – Association to Help and Integrate the Deaf – but was decided upon by a vote on 22 April 1986, the date which is recognised as its founding date by what now calls itself the National Nicaraguan Association of the Deaf (ANSNIC). In 1989, Gloria secured a grant of \$50,000 from the SDR to purchase a permanent building to house ANSNIC in Managua, located at the junction of the main bus routes to ensure that Deaf people could get to it.

APRIAS defined itself as a national association, that is, for *all* deaf people in Nicaragua, a qualitative leap in self-consciousness from the group of friends who had been meeting in Gloria's home. Polich points out that the purchase of a permanent building, now a landmark in Managua, meant that any deaf person who wanted to get in touch could always find their way to APRIAS without needing an introduction through the friendship network, making APRIAS a genuine national body, not just in name only. Gloria's contact with the Swedish Society, already at that time advocates for a cultural conception of the Deaf, might suggest that this moment also represented an embrace of the cultural concept of deafness and an embrace of sign language. But this is not quite the case. The name implied the object of *integrating* the deaf into the wider society, that is, learning to speak and lip read. Its slogan was "breaking down the wall of silence" and its constitution made it clear that its aim was that deaf people should gain a voice, not just figuratively but literally. As a result, all the members elected to the founding National Committee were young Deaf people who were regarded as successful in oral communication. Javier López drew the logo which illustrates a speaking voice and a hearing ear breaking down the 'wall of silence'. So even Javier, at this point the Nicaraguan most proficient in sign language, was an advocate of integration.

However, the critical point had been reached with the formation of APRIAS, what was formerly just a group of people sharing a common problem, had transformed itself into a *collaborative project* with the aim of achieving the emancipation of their class. At first they did not (as the Swedes had) clearly conceptualise what that emancipation entailed, but they had formed a concept of a voice for the Deaf, and organised themselves to realise that object.

An election of officers for APRIAS held in October 1990 was the occasion for a small group to form a slate and overturn the former Committee. The new Committee, with Javier López as their President, set a new course. No longer was their ambition the *integration* of deaf people into society by means of each individual mastering speech, but the Deaf would form *their own* community in which the language of choice would be Nicaraguan Sign Language. There were enough Deaf people able to speak and enough hearing people could be trained in NSL to communicate between the Deaf community and the wider community to ensure that integration of a Deaf individual into a Deaf community would mediate their socialisation and acceptance into the society as a whole.

In 1996, APRIAS changed its name to the National Nicaraguan Association for the Deaf and more recently changed that to the National Nicaraguan Association *of* the Deaf.

By the late 1980s, the great majority of deaf people involved with ANSNIC were married and raising a family. They were still extremely poor, many working at exploitative wages in the Free Trade Zone, mostly in unskilled jobs, but nonetheless, they were part of the community, and through their organisation, they are now able to influence the government, intervene in the country's education policies and overturn the oral method and work to bring their younger Deaf brothers and sisters out into the world. Alas, older deaf people, with few exceptions, have not been touched by this project, and in the main remain on the margins of society and lack a voice of any kind.

NSL is still undergoing development, and it still has not reached the majority of deaf people in what remains one of the most underdeveloped countries in the Americas. But there is every reason to believe that ANSNIC will achieve its goal of emancipating the Deaf of Nicaragua.

The Deaf community, and its language, NSL, was created by a small group of people, between 1984 and 1986, who continued to develop it and propagate it between 1984 and 1992. And this was *not a spontaneous process*. Javier López was recognised as the arbiter of disputes over signing standards and chaired Sign Standardisation Workshops during the 1980s which voted on its decisions. Javier visited Sweden for ten months, as a guest of Royal Swedish Deaf Society, returning in the summer of 1992, giving increased impetus to the development of NSL. His two hearing sisters have also been employed by ANSNIC as interpreter and secretary/receptionist, intensifying Javier's influence on the development of ANSNIC. ANSNIC members are noted for their vigilance in defending the standardisation of their sign language while many are also skilled in interpreting and translating other sign languages.

Was ANSNIC acting alone?

Judging by Google results, almost everyone believes that Nicaraguan children created NSL by themselves. So, it is worth reviewing the range of contacts which contributed to the formation of NSL during this period. Linguists say that NSL exhibits the influence of Costa Rican, Spanish, Swedish and American Sign Language, and this is not surprising.

By 1975, neighbouring Costa Rica had their own sign language, LESCO. Young deaf people had founded their own self-help and advocacy group, ANASCOR, on 8 June 1974 and had used sign language from the beginning. A number of them had been educated in Spain where they learnt Spanish Sign Language. Also, Deaf adolescents from Costa Rica had attended the Deaf university in the US, Gallaudet College, where they would have learnt ASL. A teaching approach known as 'Total Communication' was established in 1976, probably thanks to a Costa Rican Deaf educator who had studied in New York and returned to Costa Rica in 1974. In this approach, teachers used sign language simultaneously with speech to communicate with students. Word about this method reached Managua and special education teachers from Managua attended a workshop on Total Communication in the late 1970s shortly before the Revolution and were impressed with what they saw. But thanks to the Revolution, they never had the chance to implement this new-found insight.

Javier López was among Deaf students who participated in a sporting visit to Costa Rica by COD students in May 1978, where they contested against Deaf Costa Rican students and would have witnessed Costa Rican Sign Language in action. A Deaf youngster, Adrián Pérez, left Nicaragua in 1974 to receive an oral education in Spain, and was an accomplished speaker and lip reader by the time he returned from Spain in 1982 and was also able to use Spanish Sign Language. He was one of the founding members of APRIAS, and a major contributor in the formulation of NSL. He was not as enthusiastic an activist for APRIAS as Javier, however.

Thomas Gibson visited Nicaragua in April-May 1979 as a Peace Corps volunteer, assigned to teach sign language to special education teachers for two years, but his visit was cut short by the Revolution before it had hardly begun, and he was sent to Costa Rica instead. All the people he met were impressed with his sign language and during the three weeks he spent at the special school, he gave an ASL sign language dictionary to Douglas Vega, a friend of Javier López and later another founding member of APRIAS, and the two friends closely studied the dictionary, and were observed conversing using sign language. Vega later left Nicaragua.

Between 1988 and 1993 a number of volunteer Deaf educators visited Nicaragua. An American couple worked as volunteers from 1988 to 1992 running a kindergarten using Total Communication approach in the provincial town of Léon. A Swedish volunteer made multiple visits to Nicaragua over a ten-year period around the late-1980s and early 1990s encouraging the use of sign language in the classroom and helped set up a regional branch of ANSNIC. In 1990, officials from the Swedish Association for the Deaf visited Managua and may have been a factor prompting the change of leadership in ANSNIC. A Deaf educator from Finland worked at the head office of the Education Department 1992-93 and advocated for the use of sign language and participated in activities with ANSNIC. In addition to the early sporting trips to by students at

COD, officers of ANSNIC went on fact-finding and fraternal journeys to other Central American countries where they met with Deaf organisations in their region.

So it is not the case that Javier and his friends invented and proliferated Nicaraguan Sign Language all on their own and unaided by adults and other young people who had acquired a fluency and understanding of sign language from Costa Rica, the United States, Finland, Sweden and Spain. NSL was a link in the cultural-historical chain of Deaf people across the world, not a unique and isolated creation. Nonetheless, everything that has been said about the preconditions for the formation of a *self-conscious, autonomous Deaf community* within the larger community remains the case. No number of Peace Corps volunteers and individual deaf children could have accomplished what APRIAS achieved. And no number of illiterate, speechless children could have done it on their own either.

Minimal conditions for acquisition of a sign language

The precise extent of exposure to a spoken or manual language, and opportunity to interact with it, which is needed for deaf children to learn it, are a matter for professionals in that discipline. The experience of Nicaragua has shown that young deaf people are drawn as if by a magnet to sign language in the event that they come across it. It can be taught with no more skill than every mother and father exercises in teaching their own children to talk, provided they take the trouble to become fluent in sign language themselves. If, however, deaf children are not *surrounded* by sign language, but on the contrary are growing up in a hearing community, then even the sight of other children communicating with signs seems to have been enough to stimulate the interest of a minimally socialised child. Just as the hearing children of Deaf parents have no difficulty in acquiring speech from friends and neighbours, given exposure of at least five to ten hours per week, the Deaf children of hearing parents can acquire the beginnings of sign language if given the opportunity to learn from their Deaf peers or second-language signing parents.

However, the experience of ANSNIC has been that deaf people who grow to maturity without the gift of communicating with others, having been raised as 'eternal children' (Polich's phrase) or kept in childlike dependence on their families, generally do *not* develop an interest in sign language when exposed to it in later life. And without an interest in learning a language it is impossible to do so.

Minimal conditions for the formation of a new sign language

We now know that NSL did not develop out of nothing, but in fact drew on Spanish, Swedish, American and Finnish Sign Language which was introduced to the creators of NSL by professional Deaf educators. Several of the main creators of NSL were also proficient in spoken Spanish, and the group which met at Gloria's in 1984 created the beginnings of a sign language in a couple of years, refining it over the several years following, so that it subsequently continued to develop into one of the world's fully-fledged languages.

This was an impressive achievement but now that the facts are known, having been thoroughly documented by Linda Pollich (2005), it is not something which will cause us to rewrite the textbooks. The real achievement lay in taking that precious creation from Gloria's living room and turning it into a national language, in *institutionalising* NSL. What we have learnt from the Nicaraguan experience is that this is not a spontaneous process, a kind of 'contagion' or 'emergent process'. The formation of the Deaf community in Nicaragua, and which is the same thing, the creation of their language, Nicaraguan Sign Language, an 'ideal' prized by the Deaf community, acting as both the model and source for the development of Deaf children in Nicaragua, was the achievement of a *self-conscious project* on the part of the Deaf community, a project which constituted the Deaf community itself. It was carried through by *Deaf young adults*, not by children.

This one case is not sufficient basis on its own to formulate an idea of the minimum conditions for the formation of a new language. Deaf children in Nicaragua faced special difficulties in the prejudice that led to their isolation from one another and the particularly dogmatic enforcement of the 'oral method', which was fashionable for much of the post-World War Two period across the world. But what has been the experience elsewhere?

In what sense may the case of NSL be generalised?

For a review of the case of NSL in relation to the history of sign languages generally, I will rely mainly on the paper by Meir, Sandler, Padden and Aronoff (2010).

According to Meir et al, sign languages are of two kinds, distinguished by their genesis: village sign languages and Deaf community sign languages.

Village Sign Languages

Most existing village sign languages (VSL) are quite ancient, having developed a long time ago in an isolated community in which genetics had raised the incidence of babies born deaf to a relatively high level, say 3%, and provided stable conditions for linguistic development free of the impact of migration and outside influences. In these cases, the number of hearing users of the sign language is commonly greater than the number of deaf members of the community – in one case 35 adults used a sign language to communicate with one Deaf child! This situation is the opposite in every way from the situation of Nicaraguan deaf children. Although the VSL is normally a distinct creation, not bearing the marks of the influence of sign languages from elsewhere, members of the hearing community, speaking a dialect of one of the world's languages, are active participants in the formation and maintenance of the language, which is nonetheless frequently quite distinct in its grammar and ontology from the spoken language, not a code for it. According to Padden (2005), to the extent that the members of the general hearing community treat their Deaf neighbours as adults and equals and make an effort to communicate with them, then a fully-fledged, albeit parochial, sign language will result.

However, Padden et al mention that PSL – the sign language of Providence Island – did not develop into a 'fully structured' language because of the 'paternalistic attitudes' of the community towards deaf people. In the isolated conditions under which VSLs are created, deaf people are generally speaking subjected to the attitudes of the majority community, and the development of their language will reflect the place of the Deaf in the wider community.

Deaf Community Sign Languages

Deaf Community Sign Languages (DCSLs) on the other hand have grown up in modern societies, where deaf people from differing backgrounds have been brought together, or brought themselves together, most often for specialist education, and form themselves into a Deaf community. They may have been taught sign language by the institution which brought them together, or having been gathered together, they may have taken the opportunity to create a project and formed an association even without any assistance from the majority community. In either case, to the extent that the Deaf community is successful in constructing and defending its own culture, their language will, in time, become fully structured and be subject to the influences of all the world's languages with which it interacts, like any other language, and any other culture. Invariably, a mixture of home signs and VSLs provide the initial material by means of which a Deaf community first forms and creates a DCSL in the form of some kind of creole. But once having formed as a self-conscious project in a modern society, the way is open for the DCSL to become a fully-fledged, structured language.

The following examples of DCSLs exhibit the range of histories of these languages.

French Sign Language (LSF). Charles Michel de l'Épée accidentally stumbled upon an existing sign language (Old French Sign Language) used by a Deaf Community in Paris of about 200 deaf adults. In about 1771, de l'Épée learnt the language and established a free school for the Deaf. De l'Épée codified and systematised LSF but his creation was too complex and impracticable. Nevertheless, by a large number of Deaf people having been brought together and it having been made known to the general community that Deaf people could be educated, the Deaf community in France was able to take charge of LSF and it entered into a normal process of standardisation and development. LSF was instrumental in the formation of the Sign Languages in Dutch, German, Flemish, Irish, American and Russian societies. LSF has 50–100,000 native signers.

American Sign Language (ASL) originated in the American School for the Deaf established in 1817 in Hartford Connecticut, by Thomas Hopkins Gallaudet, who travelled to Europe to learn about education for the deaf. The British refused to share their methods, and he chose LSF as the sign language of choice, and

appointed Laurent Clerc as director for his knowledge of LSF. Clerc taught in LSF. 58% of signs in ASL are cognate with Old LSF, but ASL evidently both drew from the LSF taught by Clerc and incorporated the various VSLs and home sign languages which deaf people first brought with them and more expressions added in the 200 years since. Even as Clerc taught in LSF, he was obliged to acquire signs from his pupils and adapt to the sign language his pupils were constructing.

ASL was developed and propagated by Deaf associations such as the National Association of the Deaf. Meanwhile, the education system did not regard ASL as a genuine language and used the 'oral method' for deaf education. ASL was maintained by the Deaf alone, through their own organisations. The linguist William Stokoe challenged the claim that ASL was not a true language, and side-by-side with the Civil Rights Movement and the other social movements of the 1960s, the Deaf Community fought, as described by Carol Padden (2005), to promote their right to be educated in their own language and for various social rights, such as interpreter services, facilitating the maintenance of Deaf culture. ASL has between 250,000 and 500,000 users, hearing and Deaf, across Anglophone North America.

British Sign Language (BSL) and ASL are not mutually comprehensible, but BSL has dialects such as AUSLAN and NZSL. Sign language was in use by the Deaf in the UK at least as far back as 1570. Thomas Braidwood set up an Academy for the Deaf and Dumb in 1760 for the deaf sons of the middle and upper classes. Braidwood's codification of sign language was the first effort to standardise what was to become BSL, but until the 1940s, BSL was maintained and passed on solely thanks to the Deaf, whilst signing was actively discouraged in schools, and the 'oral method' enforced, backed up by punishment of offenders. Only from the 1970s has BSL begun to be used in some schools, thanks to organised agitation by Deaf organisations. There are about 150,000 users of BSL in the UK.

Israeli Sign Language (ISL). ISL dates from Germany in 1873 when Marcus Reich, a German Jew, opened a special school for deaf Jewish children. In 1932, several of his teachers set up a school in Jerusalem. The sign language used here was based on German Sign Language, but absorbed sign systems brought in by Jewish immigrants from all over the world. ISL became well established during the 1940s and is used by the Deaf from all the religious communities in Israel today.

There are many other DCSLs which are also of long standing. Meir et al separate out sign languages of the DCSL type which are still developing, such as *Nicaraguan Sign Language* (NSL) and *Costa Rican Sign Language* (LESCO), which we have already dealt with above.

The development of language communities

Historically, in modern societies, the sign languages of the Deaf have been suppressed, though in all cases, the initiative of individuals from the hearing community has aided in the formation and ultimate acceptance of Sign Language. The story is somewhat parallel to the story of indigenous and ethnic minority languages, which were routinely suppressed until the changes in social attitudes which were wrought by social movements in the 1960s and 1970s, among which the Deaf Communities themselves were active players.

Languages obviously do evolve as well as merge, absorb and borrow from one another and so on in *spontaneous* processes reflecting the movement of peoples and changes in social relations and activities in the communities affected. But other things being equal, the Deaf are only ever going to have a true language, appropriate to a community which is fully participating in the affairs of the world, insofar as they can organise and fight for it, together, as independent citizens. Conversely, a Deaf community exists only insofar as it has a sign language of its own.

A fully structured Sign Language – capable of discussing the reasons for the election of the latest President, the danger posed by Ebola, whether computers are an aid to learning and whether Andy Warhol's work is art – is always therefore the mark of a *self-conscious project* expressing the shared needs and aspirations of the Deaf, because for the overwhelming majority of the Deaf, it is only by means of such a Sign Language that they can *fully participate* as equals in such activities.

There is one powerfully argued body of work, supported by extensive observation, indicating that it is in fact possible for deaf children to develop their own language in isolation from Sign Language, as was

erroneously claimed to have happened in Nicaragua, without the aid of hearing adults or practitioners of an established Sign Language, that is the work of Susan Goldin-Meadow and her colleagues.

Goldin-Meadow on the structure of personal sign

Susan Goldin-Meadow has conducted a comprehensive study of the gestures of a number of deaf children raised in isolation from sign language by hearing parents, in order to establish that:

Despite their lack of linguistic input, the children use gesture to communicate. ... these gestures assume the form of a rudimentary linguistic system, a system that displays structure at both word and sentence levels.

2005, p. 50

and that:

A conventional language model is *not* necessary for children to use their communications for basic and not-so-basic functions of language.

2005, p. 150

The chief subjects of the study were ten children aged from 16 months to four years and ten months. The children were all born deaf to hearing, middle-class American parents who were raising them in isolation from sign language with the aim of them learning lip reading and speech, but despite on-going efforts by the parents, these were children who had not made any progress in mastery of the spoken word. Their parents continued to converse with them, accompanying their speech with conventional gestures and interpreting the children's gestures in the same spirit.

So in contrast to Nicaraguan children of the pre-1946 period, these deaf children were not treated as objects of shame and isolated from human contact, and in contrast to most Nicaraguan deaf children pre-1992, they were not treated as mentally retarded with no prospect of leading a useful life, but were, on the contrary, addressed by their parents as intelligent, free agents. This would be expected to open the opportunity for the children to become full participants in the life of their own family and to acquire its norms, customs, and values.

However, being among that majority of children raised under such conditions who fail to acquire speech, their life prospects would remain extremely limited as they would lack a language by means of which they could communicate with strangers, read, and access the ideas, customs and concerns of the wider world, and could expect to remain dependent on their families with limited opportunities for work and social life.

The unique and startling contribution of Goldin-Meadow is that by bringing a team of skilled linguists armed with video recorders into the homes of these children, she was able to discover a linguistic structure within the children's developing gesture systems. Only one of the ten subjects exhibited all of the structures described, but the others exhibited significant steps towards such a structure. According to Goldin-Meadow's somewhat generous analysis, this structure included segmentation of gestures into stable units (words) and the concatenation of these units into sentences according to stable structural rules; a consistent morphology governing the composition of signs into words; the structural differentiation of noun-like, verb-like and adjective-like gestures; some basic syntactical rules governing word order, omission of subject and branching. Although no representation of tense was found in the children's gesturing (they could however indicate the immediate future and immediate past), utilising the resources of their immediate environment, they were able to use their gesture system to make requests, comments and questions about the here-and-now, communicate about the non-present, future and hypothetical, and make generic statements, talk to themselves and talk about their own and others' gestures. Although the children did appropriate their parents' emblematic gestures, there is no evidence that the structure of spoken English was the source of any of their structure, and even the appropriated gestures are transformed by their inclusion in the child's system. A truly remarkable achievement.

The pity of it is that *their parents were quite unaware* of this structure which was revealed by the linguistic investigation, simply interpreting their children's iconic gestures and pointing in the context of the household activity as more or less conventional, if somewhat idiosyncratic gestures. So, this linguistic structure added nothing to the communicative power of the children's gestures, of which the child alone was an aficionado. It took the video cameras and the expertise of linguists to bring this linguistic structure to light.

The need to communicate with their families whilst lacking a grammar or vocabulary of conventional signs beyond the limited stock of gestures provided by the family, meant that the children made full use of the resources of their environment. 'Chair' could be indicated by pointing to a particular chair, but pointing to the chair could also be used as a sign for the person who usually sits in that chair but is not present, or even chairs in general – the difference in meaning emerging from context. Thus the geography of their own home enters into the substance of their signing, and the child's vocabulary is expanded, but in a way which is tied to the home environment and is useless for communicating in the outside world. Also, a small minority of Deaf children (Javier López and Morena Minero for example), do master speech under the conditions in which Goldin-Meadow's subjects were being raised, and even many hearing children do not actually speak until after the age of 16 months. So, while Goldin-Meadow has established that nothing of the grammar of English entered into the grammar of the children's gestures, one must suppose a considerable cultural impact from this kind of parenting.

The extent to which the adult culture penetrates the child's language is brought out in a comparative study (Goldin-Meadow, et al, 2006) with a group of deaf Chinese children. The relatively frequent use of evaluative gestures by Chinese parents in talking to their children shows up in a corresponding use of the same evaluative gestures in the children's signing. And quite apart from what is conveyed by what is taken to be explicit gesturing by family members, the totality of the movements and use of artefacts and physical interactions with the child must surely communicate a great deal. But not grammar. The grammar created by the child, which remains *unknown to all those around them* barring the trained linguists with video cameras, is a spontaneous creation, free of the influence of the local culture. Chinese or American deaf children will certainly grow up to be culturally Chinese or American, though they will not speak the Chinese or American languages. That children spontaneously create language-like structures, structures which will provide the foundation for any fully-fledged language which the child may go on to learn, is obviously of great interest, and forces us to ask where this comes from? It may help us to better understand how children learn language, but it does not help the child communicate even with their own family, let alone strangers or work associates. A certain minimum of mutual comprehensibility and expression is needed before interaction in the general community can bring about language development appropriate to a sovereign member of the broader community.

Vygotsky's claim was that successful ontogenesis presupposes the presence of and participation in the ideal or final form, that is, in order to grow up to be a competent English-speaking adult one must be exposed to English speaking (for at least five-ten hours per week according to Goldin-Meadow). Goldin-Meadow seems to have taken the claim to be rather that to develop *language competence* in general one must be exposed to *a language* while growing up. This interpretation seems to be negated by Goldin-Meadow's work. Children not exposed to any language do develop a system of gestures which has the properties of language except that *no one except the child themselves understands it*, beyond the crude interpretation of pointing and iconic gestures commonly referred to as home signs. No one previously would have guessed that the home sign of deaf children isolated from both a conventional sign language and a spoken language would have a grammatical structure, and Vygotsky would doubtless have been just as surprised as we all are. However, what is at question is a normative standard of activity, including a *particular* language required for taking up a recognised social position, and acquiring the use of true concepts, in which knowledge beyond the horizons of everyday life is contained – not language *in general*.

The fact that the deaf children evidently comment on their own and others' use of their signs (their vocabulary, but not their grammar) means that they are consciously aware of their signs, though probably not their grammar. The fact that they can use their signs to talk to themselves and command their own actions means that their signing can contribute to the early development of their intellect.

However, not “having a community of speakers or signers or, at least, a willing communication partner” (Goldin-Meadow, 2005, p. 222) bars the child’s way to the achievement of mature adult citizenship. And this is the question to which we addressed ourselves. If the child’s personal signing system has the capacity to reference distant and hypothetical events, tell stories and evaluate, and allows the child to talk to themselves and talk-about-talk, what elements of language are missing (other than the existence of a community of users) which is required for a person to achieve sovereign independence as an adult citizen of their community? The content: the true concepts of the society into which the child is growing up.

I would contend that it is not any linguistic *form* as such which is missing, but the *content*. The form must be adequate to the content, and the content interacts with and modifies the form, but the content can only be acquired with the aid of appropriately well-developed language skills through participation in the world, mediated through a substantial, self-sufficient community of like-speakers, such as a Deaf community. Mastery of the true concepts which have marked every human culture since humans became humans is achieved only by means of participation in social life. Though not the end itself, language is a means to that participation. A Deaf community opens this door for the Deaf.

Aside from this, Goldin-Meadow’s work obliges us to reflect on where this propensity for creation or acquisition of language comes from, if it can be manifested even in the absence of a linguistic environment. The first steps – single-sign comments, questions and commands – come easily enough thanks to pointing and the appropriation of emblematic gestures, expressing good and bad, yes, no and maybe, stop, come and so on. Goldin-Meadow speculates that lacking linguistic input from others, the child builds on *their own* gestures as input. It seems to me that an Hegelian rather than a Kantian schema for this process makes perfect sense. Having one’s needs met by other people poses communicative problems which must find their solution within the figures *already developed* in the system. The child works through the *immanent logic* of language-creation implicit in each stage of their constructive work. The same process works out differently if linguistic input from communicative others outweighs their own productions, but without such input, it is the immanent logic of the stock of gestures available to any deaf child which is exhibited in language learning. All that is presupposed are some basic human propensities – such as looking to others to meet one’s needs, and the propensity to perceive objects as symbols – but not a neo-Kantian universal grammar.

What participation in the wider community gives a person, however, is the logic of problems which have arisen on a much wider horizon, the solutions to which are carried by language. But solutions to these problems simply do not arise within the home.

The information which Goldin-Meadow has received about Nicaragua, in the *absence of first-hand research or any knowledge of the history of NSL*, has led her to believe that the same process which she observed in young deaf children, at home in a hearing family, can be extended if children are brought together to share their home sign, up to the point of creating a fully-fledged language, without any input from the spoken language or a developed Sign Language. However, in the case of Nicaragua, *historical* investigation, rather than linguistic investigation of the final product, has shown that this did *not* happen, and indeed *could not* have happened.

The myth that NSL was the spontaneous creation of illiterate school children is cited as proof of the existence of Chomsky’s innate Language Acquisition Device (LAD), but the reality is the opposite. People who already believed in the LAD seized upon NSL to prove their point, without bothering to look into the actual history of NSL. This is not to deny that human beings alone are *able* to learn language without instruction, but simply that this ability is not located in a specific neural structure embodying a universal grammar. (See Chapter 12, this volume).

Conclusion

Deaf children participating in home life can develop home sign, and given sympathetic parents can manage quite well within the confines of home life, without exposure to a DCSL. Deaf children participating in village life, to whatever extent the expectations placed upon them by villagers permit, can learn a village sign language shared with other villagers, hearing and deaf. To be members of a modern community requires a Deaf Community Sign Language. Home signs cannot form the basis of such a community. Only

an institution and/or a social movement can create the necessary basis for a shared true sign language and the capacity to participate in the wider society. Broadly speaking, the scope of a 'true language', is the same as what Vygotsky called 'true concepts'.

In order to grasp and express a true concept, a certain minimal level of language development is a prerequisite, a level which young adolescents have normally already thoroughly acquired whether speaking or using an established sign language. Content and form interact. Discourse concerning true concepts – through participation in work and social life generally, and through reading and writing – stimulates the development of language, expanding the vocabulary and complicating the structure of relations expressed. From the standpoint of the linguist there is no qualitative shift from the structure of adolescent language to that of the mature adult, but the content of adult life is reflected in the content of adult language, rather than its structure.

It is a credit to Meir et al (2010) that they classified VSLs and DCSLs according to their *genesis* and *not* according to their linguistic features. So for example, NSL was categorically the same as ASL, even if at a given moment it were barely capable of expressing more than home sign. I would contend that home sign can *never* make the transition to a true sign language, without an institution and/or social movement intervening in children's development into adult life, offering Deaf children recognition as equals through their own sign language. Susan Goldin-Meadow's (1977, 2005, 2007) interesting studies tell us nothing about how the transition to adult life with a true *shared* language is achieved.

A new language can develop only thanks to a project having as its object the interests of the relevant community.

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