

## Born to Sign

By Tsafi Sa'ar

**A sign language that evolved in a Bedouin village in the Negev is providing a rare opportunity to study how language comes into being –and is reinforcing the theory of innate language ability.**



Photos: Shai Davidi, Sign Language Research Lab, University of Haifa

**Deaf man from the Al Sayyid village describing a short movie in the local sign language. Linguistic richness can develop over the course of only a few decades.**

On one of their visits to the Al Sayyid village in the Negev, Israeli and American researchers walked toward a four-year-old girl. The child immediately began "talking" to them using the village's unique sign language, clearly expecting them to understand her.

This incident took place during a research project being carried out for the past two years by a research team led by Dr. Wendy Sandler of the University of Haifa. Some of the study's findings, published at the beginning of February in the *Proceedings of the National Academy of Science*, shed light on how language comes into being.

The Al Sayyid clan has provided researchers with an extremely rare opportunity to study how language is created. For years scientists have debated whether the mechanism for language acquisition is innate or whether children learn language from their surroundings, improving their

proficiency by trial and error. All spoken languages are thousands of years old, and because children learn to speak from those around them, it is difficult to differentiate between what is learned and what is inborn. The unique sign language of the Al Sayyid clan, which is only 70 years old, allows researchers to investigate the miracle known as the creation of human language.

The clan, numbering 3,500 people, all the descendants of one man who arrived from Egypt in the 19<sup>th</sup> century, lives in an unrecognized village in the Negev. Two of this man's five children were deaf, as are 150 community members today. The village's unique sign language probably began to develop spontaneously around 70 years ago, without the influence of any other language, either spoken or signed. Moreover, the language is used not only by the deaf members of the community, but is used by those who hear as well in order to communicate with their relatives. This is likely the reason that the four-year-old girl naturally began speaking with the guests using sign language.

The other members of Dr. Sandler's team are Dr. Irit Meir of Haifa University, Dr. Carol Padden of the University of California at San Diego and Dr. Mark Aronoff of State University of New York at Stony Brook. According to Dr. Sandler, the language of these villagers, which emerged without any linguistic model, enables linguists to investigate the human basis for language. The researchers attempted to determine what type of language would develop under such circumstances.

The study focused on the village's second generation, around 20 deaf people between the ages of 30 and 40 who use the sign language. Most of them have no formal education, and they do not speak Arabic, Hebrew or Israel Sign Language. For the most part they have had practically no language contact with people outside the village, either hearing or deaf. The researchers received permission to photograph them, and asked them to sign objects, describe events and tell stories in front of the camera. "Water," for example, is signed using a gesture of drinking from one's palm, while the sign for "man" is the twirl of a finger over the upper lip, indicating a moustache.

In this way, the researchers discovered a rich and highly developed language. Not only does it have a unique vocabulary of signs, but its sentence structure is distinctive as well. Dr. Sandler explains that the descriptive capacity of this language enables its speakers to describe things "for which they have no word," as can speakers of older and more familiar languages. Speakers can also use the language to imagine or to speak of the past and of clan customs that are no more.

In addition to the language's descriptive possibilities, which testify to its linguistic richness, the Bedouin Sign Language also has a fixed word order. According to Sandler, this is not necessarily obvious. The specific word order of the Al Sayyid language was not expected to arise so quickly in a small community with a shared set of concepts. And yet, despite everything, the language exhibits regularity. The human brain, it seems, "'imposes' a formal structure on sentences and on communication in every language at a very early stage. We attribute importance to this," she says.

This regularity – which emerges when a language is still in its infancy – is one of the major reinforcements found by the researchers for the theory of innate linguistic ability. According to this theory, human beings have unique brain mechanisms for language which enable them to speak. These mechanisms do not depend upon development over generations or on a cumulative linguistic cultural tradition.

The word order in the Bedouin Sign Language is subject-object-verb, as in the sentence, "*A man a ball gives.*" Another feature of the language is that words of negation come at the end of the sentence, as in "*Sit not.*" According to Sandler, the unique nature of this word order provides evidence that the language developed on its own, without a model to help characterize it.

Another language that has been investigated in recent years is Nicaraguan sign language, which also developed spontaneously among children at a school for the deaf. Determining which features of the two languages are shared – for example, the preference for a fixed word order – is, according to the researchers, likely to attest to propensities favored by the brain in developing language and, indeed, to the specific mechanisms involved in exciting process. All this supports the notion of an innate capacity. Dr. Sandler also notes that if the mechanism for developing language were primarily cultural and based upon trial and error, many generations would have to pass until language structure was formulated. In this case, it is clear that linguistic structure and richness can develop over the course of only a few decades.

Sandler was not only impressed by the sign language developed among the members of the Al Sayyid community, but also by the community's openness and their acceptance of the deaf people among them. The sign language is considered an alternative language in the village, and the deaf people are completely integrated into the community, which does not happen in the world at large. S. Al Sayyid, a village resident and activist who serves as interpreter and local organizer for the researchers, explains

that the deaf villagers are treated like everyone else and not like people with a disability. Currently, Al Sayyid is helping the researchers put together a dictionary of the village sign language. The children, he explains, are learning Israeli Sign Language at school, and the village's unique language is a heritage that deserves to be preserved.

*The article was translated from Hebrew by Donna Bossin*