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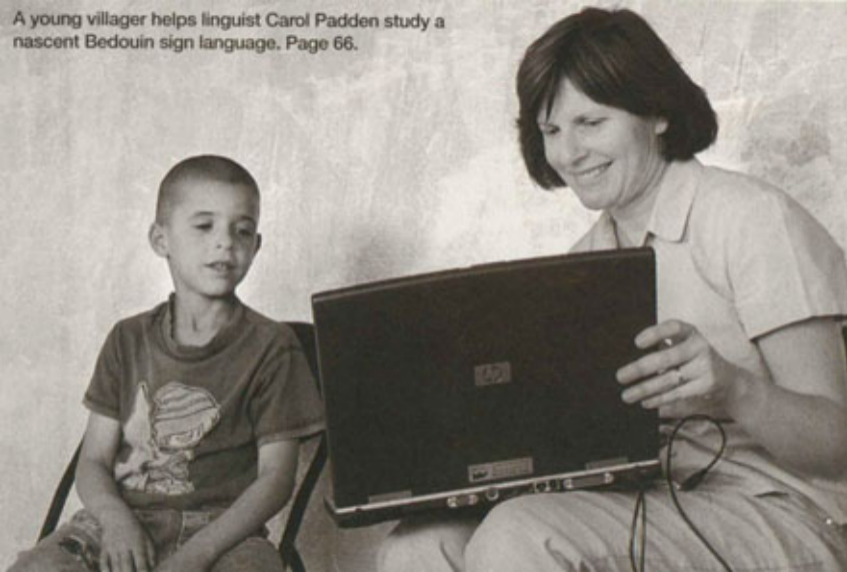
SPECIAL REPORT: The Ultimate Conflict
Between Science And Religion

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A young villager helps linguist Carol Padden study a nascent Bedouin sign language. Page 66.



Al-Sayyid is in Israel; its exact location has been concealed for privacy.



VILLAGE OF THE DEAF

In a Bedouin town, a language is born.

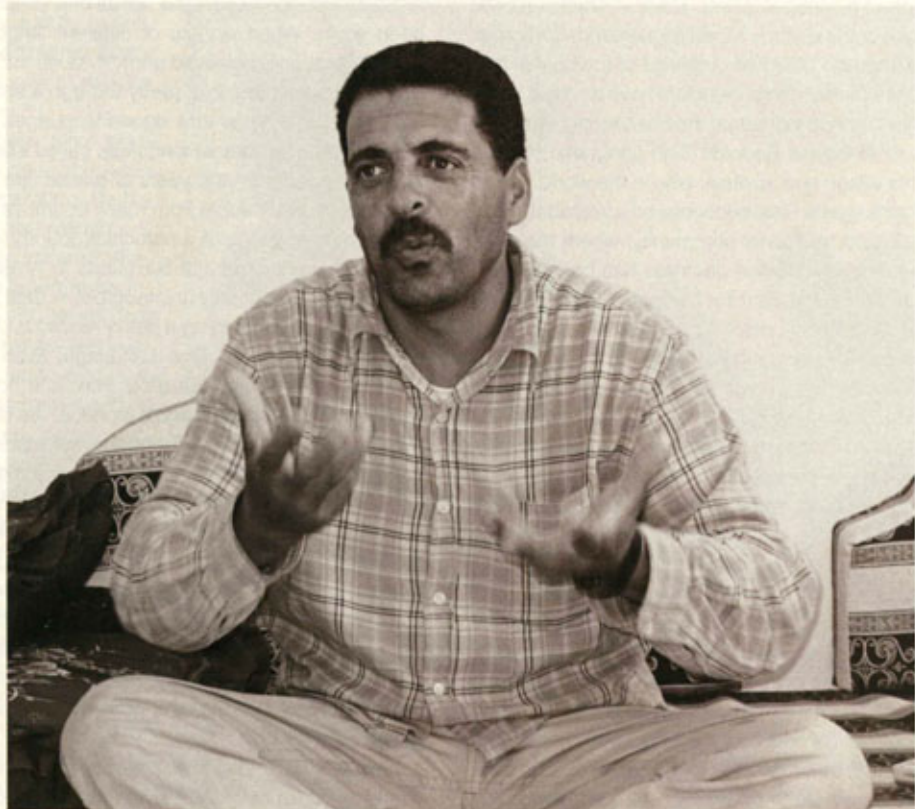
BY MARGALIT FOX

On this summer evening, the house is alive with people. In the main room, the owner of the house, a stocky man in a plaid shirt, has set a long plastic banquet table on the earthen floor, with a dozen plastic patio chairs around it. Children materialize with platters of nuts, sunflower seeds, and miniature fruit. At the head of the table, the owner is joined by a group of men in their thirties and forties. Down one side of the table is a row of boys, from toddlers to teenagers. At the foot of the table sits a knot of six visitors: four linguistics scholars, a video camera operator, and me.

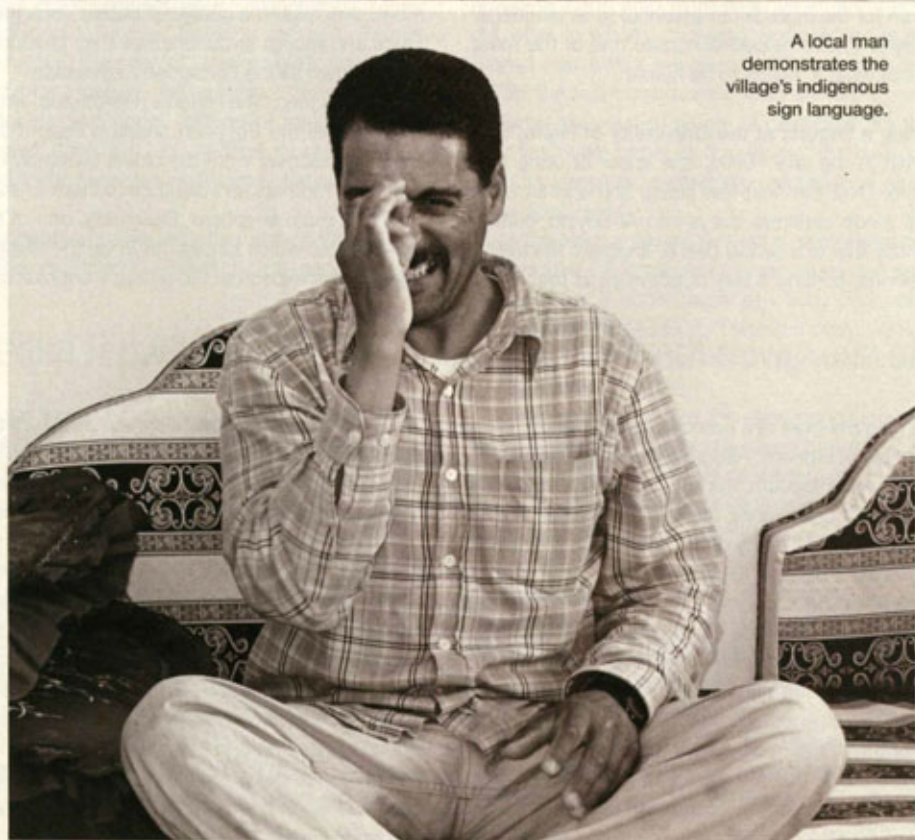
The man and his family are Bedouins, and the house is at the edge of their village, Al-Sayyid. Though they live in the desert, the Bedouins of Al-Sayyid are not nomads. Their people have inhabited this village, tucked into an obscure corner of what is now Israel, miles from the nearest town, for nearly 200 years. They are rooted, even middle class. Men and boys are

bareheaded and dressed in Western clothing, mostly T-shirts and jeans. They own automobiles, computers, and VCRs. But there is something even more remarkable about the Al-Sayyid Bedouins—an unusual language, never documented until now.

The house is a Babel tonight. Around the table, six languages are flowing. There are snatches of English, mostly for my benefit. There is Hebrew: two of the linguists are from an Israeli university, and many men in Al-Sayyid speak Hebrew as well. There is a great deal of Arabic, the language of the home for Bedouins throughout the Middle East. But in the illuminated room, it is the other languages that catch the eye. They are signed languages, the languages of the deaf. As night engulfs the desert and the cameraman's lights throw up huge, signing shadows, it looks as though language itself has become animate, as conversations play out in silhouette on the whitewashed walls.



A local man demonstrates the village's indigenous sign language.



There are three signed languages going. There is American Sign Language, used by one of the visitors, a deaf linguist from California. There is Israeli Sign Language (ISL), the language of the deaf in that country, whose structure the two Israeli scholars have devoted years to analyzing. And there is a third language, the one the linguists have journeyed here to see: Al-Sayyid Bedouin Sign Language (ABSL), which is spoken in this village and nowhere else in the world.

In Al-Sayyid, the four linguists have encountered a veritable island of the deaf. In this isolated traditional community, where marriage to outsiders is rare, a form of inherited deafness has been passed down from one generation to the next for the last 70 years. Of the 3,500 residents of the village today, nearly 150 are deaf, an incidence forty times that of the general population. As a result, an indigenous signed language has sprung up, evolving among the deaf villagers as a means of communication. But what is so striking about the sign language of Al-Sayyid is that many hearing villagers can also speak it. It permeates every aspect of community life, used between parents and children, husbands and wives, from sibling to sibling and neighbor to neighbor.

The team plans to observe the language, to record it, and to produce an illustrated dictionary, the first-ever documentary record of the villagers' signed communication system. But the linguists are after something even larger. Because Al-Sayyid Bedouin Sign Language has arisen entirely on its own, it offers a living demonstration of the "language instinct," man's inborn capacity to create language from thin air. If the linguists can decode this language—if they can isolate the formal elements that make Al-Sayyid Bedouin Sign Language a language—they will be in possession of compelling new evidence in the search for the ingredients essential to all language. And in so doing, they will have helped illuminate one of the most fundamental aspects of what it means to be human.

When Wendy Sandler, a linguist at the University of Haifa, first heard about Al-Sayyid in the late 1990s, she knew at once that she had to investigate. Over the next few years, she and Irit Meir, a colleague at Haifa, made cautious forays into Al-Sayyid, setting in motion the diplomacy that is a critical part of linguistic fieldwork: explaining their intentions, hosting a day of activities at the village

We're able to see, given the fully developed human brain, what happens when it has

school, over time earning the trust of a number of the villagers.

Their work has a sense of urgency. Although the sign language of Al-Sayyid arose in a linguistic vacuum, the social realities of modern life, even in a remote desert community, make it impossible for it to remain that way. Over the years, many of Al-Sayyid's deaf children have been bused to special classes for the deaf in nearby towns, where they are taught all day in spoken language—Hebrew or Arabic—accompanied by signs from Israeli Sign Language, a language utterly different from their own. In just one generation, when the older Bedouin signers die, the unique signed language of the village, at least in its present form, may be significantly altered.

Omar, the owner of the home in which we gathered for the first recording session, greeted us in Hebrew. Although he is hearing, Omar has deaf siblings and knows the village sign language. Carol Padden, a linguist from the University of California, San Diego, who is deaf, starts to sign to him, using gestures international enough that they can be readily understood. Omar replies expansively in

Al-Sayyid Bedouin Sign: the seeds of a simple contact pidgin have been sown. When signers of different languages come together, communication is achieved partly through the use of the most transparent gestures possible, partly through a shared understanding of the particular devices that signed languages use to convey meaning. (Just such a contact language, called International Sign Pidgin, has developed over the years at places like sign-linguistics meetings, where deaf people from many countries converge.)

The sign language of a particular country is rarely contingent on the spoken language that surrounds it. American and British Sign Languages are mutually unintelligible. A deaf American will have an easier time understanding a deaf Frenchman: ASL is historically descended from French Sign Language. Even the manual alphabet used by deaf signers can differ from one country to another. The letters of the American manual alphabet are signed using one hand; those of the British manual alphabet are made with two hands.

In her lab's mission statement, Wendy sums up how studying sign languages can illuminate how the mind works: "It usually comes as a surprise to the layman to learn that nobody sat down and invented the sign languages of the deaf. These languages arise spontaneously, wherever deaf people have an opportunity to congregate. That shows that they are the natural product of the human brain, just like spoken languages. But because these languages exist in a different physical modality, researchers believe that they offer a unique window into the kind of mental system that all human language belongs to."

Linguists have long believed that the ideal language to analyze would be one in its infancy. They even dream of the following experiment: simply grab a couple of babies, lock them in a room for a few years and record the utterances they produce. The scenario came to be known as the Forbidden Experiment.

It's been tried. The historian Herodotus, writing in the fifth century B.C., told of the Egyptian pharaoh Psammetichus, who, in an attempt to discover what the oldest civilization was, took two infants from their mothers and dispatched them to an isolated hut under the care of a mute shepherd. Eventually, one of the babies uttered the word *bekos*, which turned out to be the Phrygian word for "bread," bringing the experiment to a happy conclusion.

But near the end of the twentieth century, linguists began to realize that their sought-after virgin language existed in the sign language of the deaf. Signed languages spring from the same mental machinery that spoken languages do, but they are linguistic saplings.

The conditions that create an Al-Sayyid—a place where hundreds of people are habitual signers—are extremely particular. First, you need a gene for a form of inherited deafness. Second, you need huge families to pass the gene along, yielding an unusually large deaf population in a short span of time. Of Al-Sayyid's 3,500 residents, about one in 25 is deaf—4 percent of the population. For deafness, a rate of 4 percent is a staggering figure: in the United States, the incidence of deafness in the general population is about one in 1,000. The presence of so many deaf signers in their midst also encourages widespread signing among the hearing. This helps keep the indigenous signed language alive for the village as a whole.

Wendy and her colleagues aren't claiming that Al-Sayyid Bedouin Sign Language (ABSL) mirrors the evolutionary development of

language in *Homo sapiens*. Rather, as Wendy explained, "we're able to see, given the fully developed human brain, what happens when it has to make a language out of nothing."

The first deaf children were born in Al-Sayyid 70 years ago, about ten of them in a single generation. By the time of our visit, only one member of the first deaf generation was still alive, an elderly woman too infirm to be interviewed. Today, the 150 or so deaf people of Al-Sayyid include the second generation, men and women in their thirties and forties; and the third generation, their children.

When they were small, the first-generation signers had developed systems of gestures, called homesigns, to communicate with their families. With so many homesigners in close proximity, a functional pidgin could develop quickly. And in just one generation, the children of these signers, like children of pidgin speakers everywhere, took their parents' signed pidgin and gave it grammar, spontaneously transforming it into the signed language of Al-Sayyid.

Over time, the language developed complexity. "People can talk about things that are not in the here-and-now," says Wendy. "They can talk about the traditional folklore of the tribe and say, 'People used to do it this way and now they don't.' They're able to transmit a lot of information—and things that are quite abstract." For example, "A signer told us about the traditional method of making babies immune to scorpion bites. It takes a high degree of sophistication about their culture, and it also takes a high degree of abstraction to be able to convey it."

Another villager, Anwar, is a particularly fine signer. On the linguists' previous visit, they recorded him telling a story nearly half an



The research team videotapes conversations with the Bedouin villagers.

hour long, of how he was lost in Egypt for several years as a child. Without ambiguity, who did what to whom. Identifying the way in which they did so was the team's first important discovery.

When Anwar was about eight, he somehow found his way onto a bus bound for Egypt. Because he couldn't communicate with anyone, he had no idea where he was supposed to be going, or where to get off. He left the bus somewhere in Egypt, where he knew no one. He was taken in by a local family and lived with them for three years. One day, someone from Al-Sayyid passed through and heard the story of the mysterious deaf boy. He recognized Anwar and brought him home. Anwar recounted this for the linguists entirely in the village sign language.

In all human languages, the task of showing who did what to whom is one of the principal functions of grammar. Many languages do this through verb agreement. But as a young, relatively bare language, ABSL displayed little of the elaborate verb agreement—made by altering the path of a verb's movement through space—that is the hallmark of established sign languages. Yet in the sentences they signed every day, the people of Al-Sayyid conveyed, clearly and

without ambiguity, who did what to whom. Identifying the way in which they did so was the team's first important discovery. In most spoken languages, there is a trade-off between verb agreement and rigid word order when it comes to expressing who did what to whom. And rigid word order the sign language of Al-Sayyid had with a vengeance. The second-generation signers of ABSL, the team discovered, routinely rely on word order to encode the who-did-what-to-whom of discourse. As the linguists wrote in their first major paper on the village, "In the space of one generation from its inception, systematic grammatical structure has emerged in the language."

As the team analyzed sentence after sentence of ABSL, they saw signers use the same word order again and again: subject-object-verb, or SOV. In some sentences, subject or object might be absent (as in MONEY COLLECT, "I saved money," which has no overt subject). But in almost all of them, the verb appeared at the very end of the sentence or clause.

It was noteworthy that this very young language already had word order of any kind, especially given that ABSL, like any signed language, could just as easily do without it. This was truly astonishing: the emerging language of Al-Sayyid makes vigorous use of word order even though it doesn't have to. As long as the grant money holds out, and as long as the people of Al-Sayyid will have them, the linguists will come back to the village at least twice a year. It is too soon to tell whether the village sign language in the pure, isolated form will endure much beyond this generation. The signing of the deaf children, Al-Sayyid's third generation, is already permeated with ISL. Most parents in Al-Sayyid believe that for their deaf children to make their way in Israeli society, they will need to know the national signed language, and no one disputes their point. "We don't know how the language will change, and for us, that's where the drama is," Wendy wrote me in an e-mail message a few years after our trip. "And that's why we have to keep studying it very carefully across the generations." ■

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