THE CIVILIZING OF GENIE

MAYA PINES

(from *Teaching English through the Disciplines: Psychology*, Loretta F. Kasper, Ed., Whittier, 1997)

In 1970, a wild child was found in California. Genie, now 24, has stirred up new questions about language and intelligence."

Only a few cases are recorded of human beings who have grown up without any real contact with other humans. So rare is the phenomenon that when a 12-year-old "wild boy" was found in the forest of Aveyron in 18th-century France, the government ordered him brought to Paris to be examined by doctors in an institution for deaf-mutes. There he came under the care of the physician Jean Itard, who also acted as the boy's tutor. Itard left detailed records of his experience, which was later dramatized in the 1970 movie The Wild Child. Although the boy was not deaf, and despite Itard's work, the child never learned to speak.

In 1970, a wild child was found in California: a girl of 13 who had been isolated in a small room and had not been spoken to by her parents since infancy. "Genie," as she was later dubbed to protect her privacy by the psycholinguists who tested her, could not stand erect. At the time, she was unable to speak: she could only whimper.

The case came to light when Genie's 50-year-old mother ran away from her 70-year-old husband after a violent quarrel and took the child along. The mother was partially blind and applied for public assistance. The social worker in the welfare office took one look at Genie and called her supervisor, who called the police. Genie was sent to the Los Angeles Children's Hospital for tests. Charges of willful abuse were filed against both her parents, according to the Los Angeles Times. On the day he was due to appear in court, however, Genie's father shot himself to death. He left a note in which he wrote. "The world will never understand."

The discovery of Genie aroused intense curiosity among psychologists, linguists, neurologists, and others who study brain development. They were eager to know what Genie's mental level was at the time she was found and whether she would be capable of developing her faculties. "It's a terribly important case," says Harlan Lane, a psycholinguist at Northeastern University who wrote The Wild Boy of Aveyron. "Since our morality doesn't allow us to conduct deprivation experiments with human beings, these unfortunate people are all we have to go on."

Genie was 24 years old when this article was written in 1981. Through years of

rehabilitation and special training, she has been observed and repeatedly tested. Hundreds of videotapes record her progress. She has been the subject of several journal articles and a book. Since the book was published in 1977, additional studies have brought into focus some of the issues raised by Genie's case. Far from settling any scientific controversies, she has provided fresh ammunition for arguments on both sides of a major issue: is there a "critical period" in a child's development during which, if language acquisition is not stimulated or encouraged, it may be impaired later on or not emerge at all? She has inspired a California researcher who worked with her, Susan Curtiss, to develop a controversial hypothesis about how language learning affects the two hemispheres of the brain. Genie has also stirred up debate about the relationship between language and other mental abilities. As a result, new research is now in progress on the surprising language ability of some mentally retarded children.

As described in Curtiss's book, *Genie: A Psycholinguistic Study of a Modern-Day "Wild Child"* (Academic Press), Genie is living proof of human resilience. It is surprising that she survived at all. Her father apparently hated children and tried to strangle Genie's mother while she was pregnant with her first child. According to Curtiss's book, when an earlier baby girl was born, he put the child in the garage because he couldn't stand her crying: the baby died of pneumonia at two-and-a half months. A second child, a boy, died two days after birth, allegedly from choking on his own mucus. A third child was rescued and cared for by his grandmother when he was three years old and is still alive. Genie, the fourth child, was denied such help, however, because shortly after she was born, her grandmother was hit by a truck and killed.

From the age of 20 months, when her family moved into her grandmother's house, until she was 13 and a half, Genie lived in nearly total isolation. Curtiss' book and newspaper reports describe Genie's life at the time: naked and restrained by a harness that her father had fashioned, she was left to sit on her potty seat day after day. She could move only her hands and feet. She had nothing to do. At night, when she was not forgotten, she was put into a sort of straitjacket and caged in a crib that had wire-mesh sides and an overhead cover. She was often hungry.

If she made any noise, her father beat her. "He never spoke to her," wrote Curtiss. "He made barking sounds and he growled at her.... Her mother was terrified of him—and besides, she was too blind to take much care of Genie. The task fell largely on Genie's brother, who, following his father's instructions, did not speak to Genie either. He fed her hurriedly and in silence, mostly milk and baby foods. There was little for Genie to listen to. Her mother and brother spoke in low voices for fear of her father.

When Genie arrived in Children's Hospital in November 1970, she was a pitiful, malformed, incontinent, unsocialized, and severely malnourished creature. Although she was beginning to show signs of pubescence, she weighed only 59

pounds. She could not straighten her arms or legs. She did not know how to chew. She salivated a great deal and spent much of her time spitting. And she was eerily silent.

Various physicians, psychologists, and therapists were brought in to examine her during those first months. Shortly after Genie was admitted as a patient, she was given the Vineland Social Maturity Scale and the Preschool Attainment Record, on which she scored as low as normal one-year-olds. At first, she seemed to recognize only her own name and the word sorry. After a while, she began to say two phrases that she used as if they were single words, in a ritualized way: *stopit* and *nomore*.

Psychologists at the hospital did not really know how much she understood. Nor did they know how to evaluate whatever language she had: to what degree did it deviate from the standard pattern? They eventually asked Victoria A. Fromkin, a UCLA psycholinguist, to study Genie's language abilities. Fromkin brought along a graduate student, Susan Curtiss (now an assistant professor of linguistics at UCLA), who became so fascinated by Genie that she devoted much of the next seven years of her life to researching the girl's linguistic development.

Working with Genie was not an easy task. Although she had learned to walk with a jerky motion and became more or less toilet trained during her first seven months at Children's Hospital, Genie still had many disconcerting habits. She salivated and spat constantly, so much so that her body and clothing were filled with spit and "reeked of a foul odor," as Curtiss recounts. When excited or agitated, she urinated, leaving her companion to deal with the results. And she masturbated excessively.

Nevertheless, Genie was decidedly human, and her delight at discovering the world—as well as her obvious progress—made the struggle worthwhile. When Curtiss started working with Genie, she began by simply spending time with her or taking her to visit places, in order to establish a relationship. She took Genie to the supermarket, where Genie walked around the store and examined the meats and the plastic containers with some curiosity. Every house seemed exciting to Genie, who had spent so much of her life cooped up in one room: on walks she would often go up to the front doors of houses, hoping that someone would open the door and let her in.

During her first seven months of freedom, Genie had learned to recognize many new words—probably hundreds by the time Curtiss started investigating her knowledge of language systematically in June 1971. And she had begun to speak. On a visit with Curtiss to the home of one of the therapists, Genie eagerly explored every room, then picked up a decorator pillow: when asked what it was, she replied "pillow." Asked if she wanted to see the family cat, Genie replied, "No. No. Cat," and shook her head vehemently. Most of the time, however, she said nothing.

At first Genie spoke only in one-word utterances, as toddlers do when they start to talk. Then in July of 1971, she began to string two words together on her own, not just while imitating what somebody else had said. She said “big teeth,” “little marble,” “two hand.” A little later she produced some verbs: “Curtiss come,” “Want milk.” In November of the same year she progressed to occasional three-word strings: “small two cup,” “white clear box.”

Unlike normal children, however, Genie never asked questions, despite many efforts to train her to do so. Nor did she understand much grammar. And her speech development was abnormally slow. A few weeks after normal children reach the two-word stage, their speech generally develops so rapidly and explosively that it is difficult to keep track of or describe. No such explosion occurred for Genie. Four years after she began to put words together, her speech remained, for the most part, like a somewhat garbled telegram.

While Genie did not speak in a fully developed, normal way, she acquired some language after she was discovered. That contradicted one aspect of the theory that says language can be learned only during a critical period between two years of age and puberty. According to Eric Lenneberg, a Harvard psychologist who put forth the theory in 1967, the brain of a child before the age of two is not sufficiently mature for the acquisition of language, while after puberty, when the brain’s organization is complete, it has lost its flexibility and can no longer acquire a first language. Genie proved him wrong in one sense. Fromkin says, since the child “showed that a certain amount of language can be learned after the critical period.”

On the other hand, Genie failed to learn the kind of grammatical principles that, according to Noam Chomsky, distinguish the language of human beings from that of animals. For example, she could not grasp the difference between various pronouns, or between active and passive verbs. In that sense, she appeared to suffer from having passed the critical period.

Her language deficiencies could not be attributed to a lack of teachers. Though at first it did not seem possible that she could ever attend any school, within a few months of her arrival at Children’s Hospital she began going to nursery classes for normal children. She soon transferred to a special elementary school for handicapped children. Next, she spent several years in a city high school for the mentally retarded. Outside school, a speech therapist worked with her consistently for many years. Meanwhile, one of the therapists and his wife took Genie into their own home to live with their two teenage sons, a teenage daughter, a dog, and a cat. They tried to teach Genie to trace with her fingers the shape of sandpaper letters, to recognize words or work with Play-Doh, as well as deal with the demands of family life. She apparently had no trouble writing her name, and drew a number of pictures based on experiences she had had.

Nor did Genie's deficiencies appear to be inborn. Although many details of her early history are unclear, and Genie's mother has given contradictory accounts of them. Genie seems to have been a normal baby. She suffered from an Rh blood incompatibility, but received an exchange transfusion one day after birth. During her first year of life, before she was isolated from the rest of her family, she may have been on the road to language, since her mother reported that she heard Genie saying words right after she was locked up.

The gift of language has always been viewed as distinctively human, or even as proof of the existence of the soul. In the early 19th century. Itard tried desperately to teach Victor, the wild boy of Aveyron, to speak. He began when Victor was about 12 years old—around the time of puberty, as with Genie. However. Victor never spoke more than a few single words, perhaps because of an injury to his throat, where he had a scar.

Chomsky believes that human beings are born with a unique competence for language, built into their brains. But he adds that the innate mechanisms that underlie this competence must be activated by exposure to language at the proper time, which Chomsky speculates must occur before puberty.

Among human beings, four-week-old babies can recognize the difference between some 40 consonants that are used in human languages, as shown by how their sucking and heartbeats change when different consonant sounds are presented by audiotape. That ability seems to be innate, since babies respond to many more consonants that are used in their parents' language—English, for example, has only 24 consonant sounds, yet babies of English-speaking parents react to the consonants present in Japanese. Babies lose that ability as they grow up. By the age of six, when children enter school, their ability to hear the difference between sounds to which they have not been exposed in their own language is severely reduced. Feature detectors responsible for recognizing about a dozen consonant sounds have so far been inferred to exist in the human brain. They need to be triggered by the environment, however: if not, they appear to atrophy.

Had something similar happened to Genie's brain? Curtiss raised that possibility when she reported that Genie, unlike 99 percent of righthanded people, seemed to use the right hemisphere of her brain for language. Since the left hemisphere is predisposed for language in righthanded people, that could account for some of the strange features of Genie's language development.

On tests of "dichotic listening," for example, which involve presenting different sounds to both ears simultaneously and asking the subject to react to them, "Genie's left ear outperformed her right ear on every occasion," Curtiss reports in her book. (Sound from the left ear is linked to the right hemisphere: from the right ear, to the left hemisphere.) Furthermore, "the degree of ear advantage is abnormal:

Genie's left ear performed at 100 percent accuracy, while the right ear performed at a level below chance." That indicated Genie was using her right hemisphere as consistently as do people in whom, because of damage or surgery, only the right hemisphere is functioning.

When Genie's brain-wave patterns were examined at the UCLA Brain Research Institute—first as she listened to different sentences, then as she looked at pictures of faces—the data suggested that Genie used her right hemisphere for both language and non-language functions. Genie also proved to be particularly good at tasks involving the right hemisphere, such as recognizing faces. On the Mooney Faces Test, which requires the subject to distinguish real from "false" faces in which features are misplaced and to point out several features on each face, Genie's performance was "the highest reported in the literature for either child or adult," according to Curtiss.

From the very beginning, Genie's vocabulary revealed an extraordinary attention to the visual world, which is the special province of the right hemisphere—to color, shape, and size. All of her first two-word phrases were about static objects. While normal children usually start talking about people and actions or about the relations between people and objects, Genie spoke primarily about the attributes of things: "black shoe," "lot bread."

While summarizing the numerous tests made on Genie until 1979, Curtiss noted that Genie's performance had increased consistently over the years. For example, on the Leiter International Performance Scale, which was developed for use with deaf children and does not require verbal instructions, she had an IQ of 38 in 1971, an IQ of 53 in 1972, an IQ of 65 in 1974, and an IQ of 74 in 1977. However, she had made much less progress on tasks governed primarily by the left hemisphere. Even at the age of 20, she still performed at a three-year-old level on tests of auditory memory (a left-hemisphere task): she scored at a 6-to-12-year-old level on tests of visual memory (which tap both hemispheres), and at an adult level on tests of Gestalt perception (a right-hemisphere task).

The theory of language learning recently offered by Curtiss is an attempt to explain Genie's dependence on her right hemisphere. Possibly, Curtiss wrote in a paper on cognitive linguistics published by UCLA, the acquisition of language is what triggers the normal pattern of hemispheric specialization. Therefore, if language is not acquired at the appropriate time, "the cortical tissue normally committed for language and related abilities may functionally atrophy," Curtiss wrote. That would mean that there are critical periods for the development of the left hemisphere. If such development fails, later learning may be limited to the right hemisphere.

Obviously Genie has many problems besides her lack of syntax or her dependence on the right hemisphere of her brain. During her most formative years—her entire childhood—she was malnourished, abused, unloved, bereft of

any toys or companionship. Naturally, she is strange in many ways. Yet her language deficits remain particularly striking since she often found means of explaining what was important to her. She used gestures if necessary (starting in 1974, she received regular lessons in American Sign Language to complement her spoken language). Once she wanted an egg-shaped container that held panty hose that was made of chrome-colored plastic. She signaled her desire by making the shape of an egg with her hands, and then pointing to many other things with a chromium finish.

In her book, Curtiss describes how Genie occasionally used her limited language to remember her past and to tell about details of her confinement. “Father hit arm. Big wood. Genie cry,” she said once. Another time, when Curtiss took her into the city to browse through shops, Genie said, “Genie happy.”

In 1978, Genie’s mother became her legal guardian. During all the years of Genie’s rehabilitation, her mother had also received help. An eye operation restored her sight, and a social worker tried to improve her behavior toward Genie. Genie’s mother had never been held legally responsible for the child’s inhuman treatment Charges of child abuse were dismissed in 1970, when her lawyer argued that she “was, herself, a victim of the same psychotic individual”—her husband. There was “nothing to show purposeful or willful cruelty,” he said.

Nevertheless, for many years the court assigned a guardian for Genie. Shortly after Genie’s mother was named guardian, she astounded the therapists and researchers who had worked with Genie by filing a suit against Curtiss and the Children’s Hospital among others—on behalf of herself and her daughter—in which she charged that they had disclosed private and confidential information concerning Genie and her mother for “prestige and profit” and had subjected Genie to “unreasonable and outrageous” testing, not for treatment, but to exploit Genie for personal and economic benefits. According to the *Los Angeles Times,* the lawyer who represents Genie’s mother estimated that the actual damages could total $500,000.

As of 1981, the case had not yet come to court, but in the two years since it was filed, Genie has been completely cut off from the professionals at Children’s Hospital and UCLA. Since she is too old to be in a foster home, she apparently is living in a board-and-care home for adults who cannot live alone. The *Los Angeles Times* reported that as of 1979 her mother was working as a domestic servant. All research on Genie’s language and intellectual development has come to a halt.

Apart from Chomsky and his followers, who believe that fundamental language ability is innate and unrelated to intelligence, most psychologists assume that the development of language is tied to—and emerges from—the development of nonverbal intelligence, as described by Piaget. However, Genie’s obvious nonverbal intelligence— her use of tools, her drawings, her knowledge of

causality, her mental maps of space—did not lead her to an equivalent competence in the grammar normal children acquire by the age of five.