Linguistics: A Case Study Of Genie Essay, Research Paper

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Humanities 132

Introduction to Linguistics

M. Trommelen

Language acquisition: Nature or Nurture?

A case study: Genie

Based on a book by Russ rymer:

?Genie, a scientific tragedy?

The story of Genie is undoubtedly one of the saddest ones one can imagine. What has been done to her is something no one would ever wish to anyone, not even to their worst enemies.

Her story begins on November 4th, 1970, when she and her blind mother walk into the general social services office early in the morning. Her mother had not been seeking help for Genie, but for herself. Three weeks before that she had finally been able to flee from an abusive marriage, and that morning she did not have the intention to go to the general social services office. Instead she had wanted to go to the services for the blind. By fate or simply by luck for Genie she stumbled into this office. The eligibility worker noticed Genie, and thought he had found an unreported case of autism: this girl had a manner of walking and standing to her that was very unnatural. He alerted his supervisor, he noticed the girl was not autistic, but that there was something unmistakenly wrong. A social worker visited her home, and had her transferred to the Childrens Hospital of Los Angeles.

Genie, the daughter of Clark and Irene was the victim of an abusive father. Her parents had already had two babies die in their early years: one baby died after having been locked up in a garage because she cried, the second one died of Rh-blood poisoning soon after birth. Genie had an older brother, who had also suffered from severe neglect. However, his grandmother put him back on track. With Genie, there was no one to put her back on track. She had developmental problems, just like her brother. She was lagging behind in her physical stature and habits. When the family moved after Clark?s mom had died in a car accident, Genie was confined to a small bedroom, harnessed to an infant?s potty seat. She was tied-up there during the day; during the night she was placed in a restraining sleeping bag. The reason her father put her tied-up at all times was because her father believed she was retarded from birth on and felt this was the good solution, so that she would not and could not be exploited. She was beaten for making noise. So she learned to keep silent and to suppress all vocalization. Genie?s father was convinced that Genie would die. He was so convinced of this that he promised Irene that if she would live beyond the age of twelve, she could seek help for Genie. Genie survived, but her father abandoned his promise. Finally, when Genie was 13 ? years old, Genie?s mother got into a violent argument with Clark, and she threatened him to leave unless he called her parents. He did. Later that day mother and child moved out, and found their way to the general social services office. Her parents were then charged with abuse. The morning they were supposed to appear in court on charges of willful abuse or injury to the person or health of a minor, her father committed suicide.

Genie, looking as if she was 6 or 7 was in reality a teenager. She weighed only 4 stone, and was four and a half feet tall. She was incontinent, could not chew food, she could not focus her eyes beyond twelve feet and she could not cry. She could not hop, skip, climb or do anything requiring the full extension of her limbs. She showed no perception of heat or cold.

Furthermore, and most interesting to scientists, she could not speak. And that is what this paper is about.

However before I start to elaborate on Genie?s performance in learning language, I will explain something about the history of linguistics and language acquisition.

Until the high renaissance European philosophers related language to the Bible. It was thought that any human attribute must be as inevitably mysterious and divine beyond investigation as the creator it reflected. Descartes came up with a very unorthodox view of human beings: he divided man in half, in that he thought mind was a completely separate thing from the body. This created much leeway for the initial science of biology, since people figured that they could put the scalpel in the brain, because they were not united there anyway.

Epicurus (a Greek philosopher living 300 BC) also addressed the origins of language. He was one of the first philosophers to say that language was not created by God, nor by man?s intellect. He said it was created by nature and that it was a biological function just like vision or digestion.

In the late 17th century Leibniz proclaimed language ability to be a gift of God, with its form of expression determined by natural instinct. Thus linguistics was left standing with one foot on the theological dock and the other in the naturalist boat. However, when at the end of the 18th century social sciences began to rise, this trouble was somewhat relieved. The problem of where language came from could be considered a problem for anthropologists with linguists on the background since language would be somewhere between theology and biology. In 1957, the same year in which Genie was born, Noam Chomsky, later known as godfather of linguistics wrote a book that changed linguistics. The book was called ?Syntactic Structures?. This book dealt with problems that previously were dealt with by psychologists. Furthermore, until 1957 linguists believed that the biggest issue of linguistics was vocabulary. Then Chomsky made syntax central. It became clear how complicated language was and how difficult it must be for the child to acquire a language. Chomsky was not as much interested in the actual rules of grammar learned in primary school as in the deep structure behind these rules. He claims that seen on a syntactical level, languages do not seem alike, they are identical. The inner rules of language, which are called ?Universal Grammar?, are either the product of an unparalleled achievement, or they are innate and ingrained on a level more basic than thought. Chomsky believed the latter. He hypothesized that we do not learn the inner rules of grammar, we are born with them.

The reason why linguists were interested in her case was because first of all, there had never been a case like this before. A 13-year old girl, having hit puberty and older than twelve, who was not able to speak. This was an ideal ?experiment? to test the theory of Lenneberg. This theory hypothesizes that when a child is twelve and this child?s brain has never learned language before is not be able to anymore.

Susan Curtiss was a graduate student of linguistics, who also believed in the Chomsky theory. She was invited in the Genie case by Victoria Fromkin, and the luck that befell her for being invited was greater than she first realized. There was a lot of competition for access to this case, and even as much as 6 months after Genie was discovered there was no assurance that there would be any linguists included among her scientific observers.

David Rigler, professor of paediatrics and psychology at the University of California got active on research design and he helped the hospital secure initial funding for research on Genie from two foundations. Howard Hansen, head of the psychiatric division of the Childrens Hospital, together with David Rigler and James Kent acted as gatekeepers for the funding process. James Kent was another hospital psychologist, and an expert in child abuse. He had originally been appointed as being Genie?s doctor, giving her therapy and following her case; however he ended up being more her Boswell than her therapist. He found her being the most ?profoundly damaged child he?d ever seen?.

Susan Curtiss and James Kent both questioned what the damage done to her meant in terms of Genie?s emotional and intellectual state. She could not talk, which made it difficult to test her. Her vocabulary was found to comprise only a couple of words, like the names of some colors, Mother, and some verbs like ?walk? and ?go?. Her productive vocabulary was even smaller: she appearantly could only say short negatives like ?Stopit? and ?Nomore?.

However, she was expressive of emotion though. She showed fear and joy. In a 1972 symposium paper Kent reported that she started to show more emotion, repeated words sometimes and showed clear signs of emotion.

Jay Shurley, another outside observer was also very much interested in Genie?s case; specifically in language acquisition. However, he noted, if Genie indeed had been mentally retarded (genetically or because of her diet) she would not be a good case for the study of cognitive development.

Genie?s health, both emotional and physical started to improve. Her laughter, once sounding nervous, had turned into a relaxed and infectious laugh. She started to turn her rage outwards instead of inwards, getting angry at other people instead of at herself. She also started to make friends: she loved men with beards, Shurley in specific, and she got along well with Jean Butler, a school teacher in the rehabilitation center who was very dedicated to her job. In addition to that, she started to achieve speech, although not immediately. She would lead one of her caretakers around, point at something and want to know what it was. According to Curtiss, she could become very frustrated if one of her caretakers could not come up with a word for a specific item or color.

Yet, although her vocabulary increased, her speech stayed limited to a certain amount of short utterances. It became clear that she could understand more than she produced. One day, when she was in the class of Jean Butler in the rehabilitation center, a boy who was holding two balloons was asked how many balloons he had. The child answered he had three balloons and Genie looked startled. Then she handed him one extra balloon, which he needed to make his answer correct.

Intelligence tests were now being administered to her. She progressed very well: in some areas she had gained a year in development in only a few months of time. On some skills she showed the same score as an average nine-year-old, in other areas, like her complete inability to chew food she scored the same as a toddler. In May her progress was suddenly accelerated. She became more assertive in her vocabulary quest, and her spontaneous, yet incoherent verbalizing became more frequent.

A curiosity of Genie?s story is that her discovery almost coincided with the Los Angeles premiere of The wild child,l?enfant sauvage d?Avignon. This boy, called Victor, was discovered in January 1800 in the Languedoc in France. He had no language, and had hardly had any contact with humans whatsoever. He learned to spell one French word, he was tested extensively by his teacher, J.M.G. Itard, but he never learned to talk. There were many striking similarities between him and Genie. Both did not seem to be affected by heat and cold. And both had, how one scientist called it, ?a dissonance between vision and touch? (they could not believe their eyes, so to say, so they ?saw with both hands and eyes). This was somewhat discouraging because Victor?s story did not have a happy ending. The boy, in the end was not seen anymore by Itard, because he clearly showed no interest in him, even after having taught and lived with him for a prolonged period of time. The movie, seen by the investigators, showed the biases that they already had concerning the testing and experimenting with Genie. They came to the conclusion that, as Shurley said, ?If you choose the right questions ?which is to say, if they are the relevant questions- then you get around the content (whether there is an age-restriction to language learning, LV.) and you begin to read what was written there all along?.

Because Genie had not acquired enough language for the scientists to give her standardized tests that determine the child’s linguistic competence, Curtiss and her teacher ms. Fromkin faced the task of inventing a completely new set of linguistics examinations appropriate to her. They eventually invented twenty-six of them, and these tests were carried out together with a set of neurological and psychological tests. Unfortunately, she had a high fundamental pitch that made it impossible to analyze on the instruments used to analyze human speech acoustically. Furthermore, there was a lot of sound distortion, but she did not show any sign of muscle or nerve damage and she was monotonic. Curtiss then realized that formal research could not be carried out because of these things, so she settled for a summer of watching.

During this summer, Curtiss more or less became Genie?s surrogate mom. They often went on trips, to the zoo or shopping, often accompanied by James Kent or Rigler. During these trips Genie loved to repeat one of her new words. Although she often had strange ways of communicating with people, attaching herself to them, grabbing their arms and putting her face directly in front of them, she started to improve on her more ?conventional? communication. She still spoke in one-word fragments, but her vocabulary had become richer. Likewise, she started to understand the give-and-take of conversations. She started to more or less have reached the level that Victor had achieved: she was capable of forming social attachments as well as expressing her needs, because she had picked up enough crude language for that.

On July 7th, Genie moved in with her teacher ms. Butler. She had caught rubella, and would, under normal circumstances have to be quarantined. With her background though, there was no humane way of isolating her, so she was quarantined with Jean Butler. Photographs taken of her that summer at Butler?s house showed Genie animated, cheerful and content. Butler noted that summer that ?The quality of her speech improved and the quantity of her speech increased at least tenfold?. She was now able to say ?yes? appropriately, and she was verbalizing when she was angry instead of throwing fits. Also Butler recorded that Genie ?talked one night for 45 minutes when walking to the pet shop to get four fish. (?) She often described an object with two adjectives? ?Bad orange fish- no eat- bad fish?, the longest expressed thought?.

Meanwhile, the quiet conflict between Butler and the researchers grew worse, and on the morning of August 13th, Genie was turned over to her new foster parents: David and Marilyn Rigler. Butler was angry because of this, and she began a relentless campaign to avenge the wrong she felt she had suffered. The Riglers had told the Social services that if they were not able whatsoever to get anyone else to function as foster parents, they would take her in for a limited period of time, being three months. She stayed with them for four years.

During her stay at the Riglers, Susan Curtiss kept up her almost daily visits and she recorded as much of Genie?s speech as she could. At the beginning of September, she began to take some of the Linguistic tests she and Fromkin had designed. Then she also found out how restless and stubborn Genie could be. She never started anything herself, and was efficient in that she only answered in the most minimal way possible. Curtiss decided she was lazy. This made the test taking hard, as well as finding out whether she really could not speak in full sentences or just did not feel like it. Later, when she started to speak in sentences of more than one word, she also started to compress all these words in one word, using only syllables of the ?original? words. ?Monday Curtiss come? would turn into something like ?Munkuh?. Only when she was firmly requested to do so she would pronounce the uncondensed version. Furthermore, it was very much unclear whether she could answer questions. The fact that she did not do so could have been either out of laziness, or out of incapability. Curtiss started to read stories to Genie, to which she at first, did not respond. On October 13th, she finally began to respond to them: she was now listening, not just simply hearing. Genie?s facial expressions began to reflect the content of the stories. She also learned how to eavesdrop, because she could now listen. She sometimes interrupted conversations between adults, at other times she would just make appropriate comments.

In November, Curtiss started to teach her some nursery songs. To Curtiss? surprise, the child loved them, danced and clapped along. She also sang along, and she changed pitch in a semblance of tonal control she had never shown before. A while after she had been transferred to the Riglers and had come to rest, she was enrolled in a nursery school, and later in a school for the mentally retarded. At home she got speech therapy and was taught some sign language. She remained quiet though. She was not very expressive, except for when she had a tantrum and became self-destructive. Marilyn Rigler taught her how to have a fit. And in these fits as well, Genie seemed to prefer gesture over word. Eventually though, Genie learned how to stamp her feet and slam doors.

By November of 1971, one year after she had been admitted to the Childrens Hospital, Genie?s grammar was like that of a normal 18 to 20 month old child. In the weeks before the convention in November, Genie had finally shown to recognize the difference between singulars and plurals. She also showed to know the difference between negative and positive sentences. Likewise, she showed to know the meaning of some propositions like ?in?, so that when asked where elephants were found she could reply ?in zoo?. She could understand yes or no questions, and could understand possesiveness. She was now producing two-word sentences, instead of one-word sentences, and sometimes she even spoke in a three-word sentence. However, Fromkin explained, a two-word sentence is quite complicated. A lot more complicated that it may seem, since the child can not just choose any two words from that sentence, but it has to choose the two key-words. Fromkin even started to believe that Genie started to learn some of the rules of English grammar. Nonetheless she deleted the notes she took on Genie?s ?existing or not existing- grammar use before she went to the conference. Fromkin at first suspected that Genie could still learn grammar and syntax, which would disprove Lenneberg?s theory.

Lenneberg, meanwhile, knew of Genie?s case. He was not interested in it though, because he felt the case was too muddy for good science. After all, if Genie could not learn language, her failure could be caused either by her emotional problems, or by the fact that she was already 13-years old, and thus had passed the critical period. Then again, if Genie did acquire language, how much stronger would the rebuttal be! At that time, learning language was what she seemed to be doing. When looking back, the 1972 conference seems the point at which optimism was at its peak.

In retrospect the prospects of Genie?s eventual triumph were already clouding over that summer of 1972. Theories about language acquisition state that when children are in the two-word stadium, they are bound for an explosion. So all the scientists were waiting for that explosion to come. It didn?t come, while months were passing. Her speed of progress remained the same: slow and consistent. Curtiss said later on that ?it was not clear to (her) at all then that she would be so limited?.

If we look at the progression children normally make in forming a negative sentence: it starts with ?No have toy?, then comes ?I not have toy? and then the child forms the sentence ?I don(o)t have a toy?. Genie stayed stuck in that first three-word stage for years. Furthermore, she still could not ask a normal question. Wh-movement was a facility not present in Genie?s brain, which made it impossible for her to form a Wh-question. She could understand the questions though, but when she was pushed to form herself, she came with questions like ?I where is graham cracker on top shelf??. She also had a problem with pronouns: she did not distinguish between ?me? and ?you?. She never figured out who she was and who someone else, Rymer says in his book. She could communicate extremely well though: whether it was with gestures, pictures, mime or homomyms. She would come when she was called for, however she could not call for anyone herself. Many scientists had to face her failure: Genie had levelled out in language learning almost immediately after she was discovered. Some scientists claimed that her failure was because she was retarded. Curtiss does not believe this. She stated that Genie scored a perfect adult score on tests measuring her spatial capabilities. Furthermore, her mental age advanced a year for every year she had been out of isolation. This does not happen with retarded children. And she did progress: in March 1974 she combined two skills- fantasizing verbally and manipulating- to tell an outright lie. Furthermore, she started to use language to explain an event that had happened in the past. She told the Rigler family in the late summer of 1974 about how her father had hit her with a stick. This answered the question of whether she would be able to explain events that had happened before language was part of her world.

Later that year, Genie started to pay visits to her mother, whose eyesight had been completely restored. There now was tension between Irene and Marilyn Rigler, as well as between Jean Butler and the group of scientists. Butler lobbied aggressively against Rigler, Hansen and Curtiss with anyone from the scientific community who would listen. She claimed that Genie was not as healthy and happy as had been claimed to be, and that she was most vibrant ever when she was staying with her. Then, when the research grant was not going to be continued with, she was transferred from foster-family to foster-family. Some of these families were abusive, and when one foster-mother tried to extract fecal material with an ice-cream stick, and she felt the world would invade the sovereignity of her body, she felt she could deprive the world of something herself: she did not speak for five months. Curtiss remained a frequent visitor, and she was told by Genie that Genie wanted to live at the Rigler?s house again. In 1977 Curtiss and Fromkin received a grant from the National Science Foundation to continue their linguistic research. They were now the only remaining scientists to be funded to work with Genie.

Curtiss started to sort out all her research, notes and videos from Genie?s time at the Riglers. She sorted out exactly what Genie had learned and what she hadn?t. She found out that Genie had been developing a vocabulary, and she was able to put it in strings to express a complex idea. Although she tried, she never mastered grammar though. She could not use word endings, for instance. ?She had a clear semantic ability but could not learn syntax?, as Curtiss puts it. Furthermore, Genie?s linguistic system developed in bits and pieces, not all at once. This meant that grammar could be seen apart from all the other non-grammatical aspects of language, such as vocabulary etc. It could also be seen apart from other mental faculties. With her, unlike with normal children, language came forth separate from other cognition. With Genie it was seen that language and other cognitive tasks could develop independent from each other.

Genie?s inabilities bore out Lenneberg?s theory, at least partly. She showed that simply being exposed to language did not mean one could still language after one had passed puberty. With her the learned skills, like vocabulary, were completely separated from what are supposed to be the innate skills, like syntax. Her semantic abilities had been burdened by her development. These conclusions raised questions again. How could a child who had been shut away from language be deprived of the innate parts of language? Why was she unable to regain syntax Chomsky said she had been born with?

The scientists were more or less able to find the answer in neurology. The right hemosphere of the brain is used for creative things- listening to music, but also getting a joke and having a sense of what is and what is not appropriate to say in a conversation. The left hemosphere includes mathematics, logic and language. Both sides know the meanings of words. By puberty, the brain is more or less stable, in that all the critical periods have run their course: language, senses. ?Brain damage can interfere with acquisition of language early on, but if it happens during the critical period, other parts of the brain can fill in?, Helen Neville, a neuroscientist at the Salk institute in La Jolla, california explains. She also explains that, for instance with deaf people language changes from the right hemosphere (which includes facial perception and should include sign language) to the left hemosphere, including language and logic. Genie?s brain also seemed to be biased: she did well on tasks involving the right hemosphere, she failed the tasks for which she needed to use her left-hand brain. Curtiss performed a test on her to discover what was really going on: she played different things simultaneously into each of Genie?s ears (the left ear corresponds to the right hemosphere, the right ear corresponds to the left hemosphere) and measured each hemosphere?s response. Each ear alone performed perfectly; both ears with the same sounds were OK, but when the two ears competed, the left ear (and right hemosphere) performed better. This is not very strange, but the degree of asymmetry found was striking. Genie?s brain was found to be processing language just as it did with environmental sounds: on the right hand of the brain. It is normal for the brain to have a preference for one hemosphere. Genie did not just have a pronounced preference, she had an absolute preference. Curtiss explained that ?Genie?s case suggests the possibility that normal cerebral organization may depend on language development occurring at the appropriate time. (?) Lenneberg claimed that the brain organized language learning. Now it seems certain that stimulation is needed to organize the brain.? She also said that language is the only stimulation that would do to organize the brain, and that ?Language is a logic system so organically tuned to the mechanism of the human brain that it actually triggers the brain?s growth?.

Early 1978, Curtiss says that Genie is now becoming confused and traumatized by the frequent moves. She has been moved from one foster-family to the hospital, to another foster-family and back to the hospital. Then, on march 20th, Genie is being transferred back to her biological mother. Rigler later claims Genie?s estate she had received after the death of her father, because he says he has given her lots of therapy and never has been paid for this. Soon afterward, Irene receives the book Curtiss has written about Genie, her family and her background. Irene feels her privacy is not being guarded, so she sues Curtiss with the help of Jean Butler. She accuses them if multiple infractions of patient- therapist and patient-physician confidentiality. Too much information about Genie?s and Irene?s personal life and background had been revealed by this book, she felt. One of her lawyers claims that Butler ?started the whole notion that Curtiss? book was a violation of Irene?s privacy?, probably to take revenge on the scientists. The longer the case dragged on, the stronger the suspicion grew on the part of Irene?s lawyers that they were contesting on marshy grounds. Her lawyers then withdrew from the case, and Irene represented herself in front of the lawyers. A settlement was made: Susan Curtiss was instructed to direct a programme for Genie of linguistic, neurolinguistic and neuropsychological evaluation and language instruction. Any income the scientists made was to be donated to Genie?s estate.

Genie now lives in a home for retarded adults, and visits her mother on one weekend in each month. With the exception of Jay Shurley, none of the scientists has seen her. This is where the story ends; it is undoubtedly a sad story, though we have learned something from it. When the brain has not received enough stimulation in the form of language during the critical period, it can still learn words, but it can not conquer syntax anymore. The brain is then not capable of growing in a way that is needed for it to learn grammar anymore.

Russ Rymer: Genie, A Scientific Tragedy. Penguin Books?.

Written account of the video ?Secret of a Wild Child?.