

### TUTORIAL QUESTIONS

1) The Wild Child:

What does the case of Genie tell us about the nature-nurture debate?

2) How about PKU?

3) Can you think of anything which is 100% nature / nurture?

### Genie: The Wild Child

How old was Genie when she was found?

13 Years and 7 months

Why was Genie isolated?

When she was a baby her father concluded that she was severely mentally retarded, a view which intensified as she got older, causing him to dislike her and withhold care and attention. At approximately the time she reached the age of 20 months he decided to keep her as socially isolated as possible, so from that time until she reached the age of 13 years and 7 months he kept her locked alone in a room.

What stimuli was Genie brought up with?

Her father kept Genie's room extremely dark, and the only stimuli available were the crib, the chair, curtains on each of the windows, three pieces of furniture, and two plastic rain jackets hanging on the wall; Researchers concluded that, if Genie vocalized or made any other noise, her father beat her with a large plank he kept in her room

What was the result of such an upbringing?

Genie learned to make as little sound as possible and to otherwise give no outward expressions

### Genie: The Wild Child (cont)

How were Genie's motor, cognitive and social skill affected?

Genie's **gross motor skills** were extremely weak; she could neither stand up straight nor fully straighten any of her limbs, and had very little endurance. Her movements were very hesitant and unsteady and her characteristic "bunny walk", in which she held her hands in front of her like claws while ambulating, *suggested extreme difficulty with sensory processing and an inability to integrate visual and tactile information*, Doctors found it extremely difficult to test or estimate Genie's mental age or any of her **cognitive abilities**, but on two attempts they found Genie scored at the *level of a 13-month-old*; Genie's behavior was typically **highly antisocial**, and proved extremely difficult for others to control, *lacked situational awareness*

What was abnormal about Genie's brain functions?

Genie's entire brain was **physically intact** and Shurley's sleep-studies found sleep patterns typical of a left-hemisphere dominant person, leading scientists to believe she was *most likely right-handed*. Based on their early tests, doctors suspected Genie's brain was **extremely right-hemisphere dominant**;

### Genie: The Wild Child (cont)

Reasons for Genie's right-hemispherical dominance despite being right handed

Bellugi and Klima believed that Genie had been developing as a typical right-handed person until the time her father began isolating her. They attributed the imbalance between Genie's hemispheres to the fact that Genie's **sensory input as a child was almost exclusively visual and tactile, stimulating functions which are predominantly controlled in the right hemisphere** of a right-handed person, and although this input had been extremely minimal it was sufficient to cause their lateralization to the right hemisphere



### Genie: The Wild Child (cont)

How was Genie's progress with language acquisition?

Throughout testing, the size of Genie's **vocabulary and the speed with which she expanded it continued to outstrip all anticipations**. By mid-1975 she could accurately name most objects she encountered, and clearly *knew more words than she regularly used*. By contrast, Genie had far more **difficulty with learning and using basic grammar**. She clearly mastered certain principles of grammar, and her *receptive comprehension consistently remained significantly ahead of her production*, but the rate at which her grammar acquisition occurred was far slower than normal and resulted in an unusually large disparity between her vocabulary and grammar. In everyday conversations Genie typically *spoke only in short utterances and inconsistently used what grammar she knew*, although her use of grammar remained significantly better in imitation, and her conversational competence markedly improved during her stay but remained very low, which the scientists found unsurprising and suggested provided evidence that **the ability to engage in conversation was a separate skill from knowing language**.

How else did Genie communicate?

In contrast to her linguistic abilities, Genie's nonverbal communication continued to excel. She *invented her own system of gestures* and pantomimed certain words as she said them, and also acted out events which she could not express in language. To take full advantage of her nonverbal communication abilities, in 1974 the Riglens arranged for her to **learn a form of sign language**.

### Genie: The Wild Child (cont)

What impact did Genie's case have on the *critical period hypothesis*?

Susan Curtiss argued that, even if humans possess the innate ability to acquire language, Genie demonstrated **the necessity of early language stimulation in the left hemisphere** of the brain to start. Since *Genie never fully acquired grammar*, Curtiss submitted that Genie provided evidence for a weaker variation of the critical period hypothesis

The study of Genie's brain aided scientists in refining several existing hypotheses regarding brain lateralization, especially its effect on language. The disparity between Genie's linguistic abilities and her competence in other aspects of human development strongly suggested there was a separation of cognition and language acquisition

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### Bulgaria's Abandoned Children

BULGARIA, **Mogilino Institute**

- the highest number of *physically and mentally disabled* children growing up in institutions in Europe,
- country of extremes
- at the Mogilino Institute, 75 physically and mentally disabled children resided,
- half the children have been abandoned by their parents
- many remain *confined* within the building
- staff handed over to only ONE worker, in charge of all 75 children for the next 12 hours

*Didi*

- arrived at Mogilino just before filming began. Her mother could no longer cope with her teenage daughter's autism at home, so she abandoned her to the institute.
- she was thrown into an environment where she could not make any friends or continue with her education, because Mogilino is a *place for the uneducable and those living here do not speak*.
- Didi deteriorated rapidly and would rock back and forth relentlessly. She shut down - just like all the others around her.

#### INTERVENTION

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- The Bulgarian government put Unicef in charge of finding new placements for all the children of Mogilino, with the plan that the institute will shut once every child has been re-housed.
- The problems were not all about poverty or money, but rather about having a *good level of genuine care* that transformed a miserable existence into a fulfilling one.
- **"Their cognitive development has changed at all levels (perception, attention, memory, and thinking)... they have become part of particular groups and spend more time playing."**



### Bulgaria's Abandoned Children (cont)

after the intervention,

- Didi lives in a special boarding school for those with behavioural and learning difficulties. She has wonderful carers and has made good friends.
- She goes to school every day and is top of her maths class.
- She makes her own clothes, goes to the shops to buy things she likes and visits museums and art galleries.

### Isabelle: Language Deprivation and Neuroplasticity

Who was Isabelle?

Isabelle was born in 1932. She was an illegitimate child and was kept in seclusion for this reason

What characteristics did Isabelle's mother have?

Her mother had developed normally up to the age of two years and then, as a result of an accident, had become **deaf-mute** and *had not been educated*

How old was Isabelle when she was found

6 Years and 6 months

How was Isabelle brought up?

mother and child spent their time together in a dark room with the blinds drawn, separated from the rest of the family. The parents of the mother did not permit her to leave the house alone

### Isabelle: Language Deprivation and Neuroplasticity (cont)

What was the result of such an upbringing?

When her intelligence was first tested at the age of six and a half, her **mental age appeared to be about nineteen months**.

In place of normal speech, she made a croaking sound. As a result of lack of sunlight, fresh air, and proper nutrition, Isabelle had developed a rachitic condition that made locomotion virtually impossible. This condition yielded to proper treatment, including surgery, and Isabelle learned to walk and move normally. As a result of lack of sunlight, fresh air, and proper nutrition, Isabelle had developed a rachitic condition that made locomotion virtually impossible.

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How was Isabelle's progress?

Eighteen months into her training her repertoire of words was estimated to be 1500–2500 words; she was also able to produce complex sentence structures. Throughout her training she began to use correct inflectional morphology, pronouns, and prepositions. By means of intensive training and a stimulating environment, Isabelle improved so much that she was considered a child of normal intelligence by the age of eight.

The "critical period of learning" hypothesis states that for a must be exposed the language by a certain age to acquire language. It is said to be associated with a period of increased neuroplasticity. It is also thought to end around the onset of puberty.

