Nature versus Nurture

Lloyd Williams
W00634255
lloydvw@yahoo.com
Nature

• People are born with some innate abilities that they use to interact with and understand the world.

• Through prolonged use, learners will eventually achieve proficiency in the target language.
Nurture

• People are born “*tabula rasa*” (or blank slate) and become who they are through the course of their lives alone.

• Students need to be taught their language.
Naturists vs. Nurturists

• Noam Chomsky
• Stephen Krashen
• Gardner

• Vygotsky
• Piaget
• Pavlov
• Skinner

Chomsky  Krashen  Piaget  Skinner
The Intelligence Quotient (IQ)

- Test created in 1905 to predict which students would benefit from teaching.
- Attempts to objectively measure “intelligence”
- Scores are given as numbers that show the test taker’s results relative to others.
- When adjusted for age, a person’s IQ generally does not vary greatly over the course of their life.
- IQ tests can be given on various skills (linguistic, math, etc)
Nurture Theories (Skinner)
Behaviorism

- Knowledge and Linguistic ability results from stimulus-response conditioning.
- Focus is on controlling behavior, not cognitive processes.
- Concerned only with observable/measurable behavior.
The Audio-lingual Method

- Based on Behaviorism
  - Positive reinforcement of desired production
  - Emphasis on “correctness”
  - Seeks to create language habits
  - Repetition
Nature Theories (Chomsky)
Universal Grammar

• Humans are born with a Language Acquisition Device that allows us to understand languages in terms of universal principles.
Nature Theories (Chomsky)
Language Acquisition Device

- The LAD is said to have 4 aspects
  - The ability to distinguish speech sound from non-speech sound
  - The ability to organize linguistic data into classes
  - The ability to constantly re-evaluate and simplify the developing linguistic system
  - The knowledge that only a certain kind of linguistic system is possible and others are not.
Nature Theories (Chomsky)
Universal Grammar (cont’d)

• Theories about how UG affects L2 learning.
  - **No Access** – The learner cannot draw on UG for assistance and relies instead on general learning ability.
  - **Direct Access** – The learner has access to the same aspects of UG as a L1 learner.
  - **Indirect Access** – The L2 learner uses whatever parts of UG they used to acquire their first language.
Nature Theories (Krashen)

Krashen’s 5 Hypotheses

• Acquisition of grammar follows a natural progression.
• Learners require comprehensible input (i + 1).
• Language acquisition is different from language learning.
• Conscious learning allows us to function above our acquired level of learning.
• The learners emotional state and anxiety level can inhibit acquisition.
Natural affects of aging.

- Chomsky’s LAD may be subject to shutdown at roughly the onset of puberty.
- As age increases, heredity’s role in determining who we are increases.
How to study Nature vs. Nurture

• Hundreds of studies of twins have been conducted since the beginning of the 20th century.
Studying Twins

• Monozygotic Twins (MZ)
  - same genetic information.

• Dizygotic Twins (DZ)
  - differing genetic material
Monozygotic Twins

• More commonly called “identical” twins.
• If reared apart, allow us to scientifically hold Nature as the constant and judge the effects of Nurture.
• Have abilities that correlate more consistently than DZ twins, even when reared apart.
Correlation of test results for MZ and DZ twins
A look at Gender

• Girls are more proficient at language related skills, particularly listening and writing.
• Boys are more proficient at geometry, problem solving, or spatial skills.

...or are they?
Figure 2  DIF on the English Proficiency Test (Males vs. Females)
Bibliography


