General Psychology

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Chapter 8 – Thinking, Language and Intelligence

Thinking

- Cognitive psychology
- Thinking

Thinking

- Visual imagery
Thinking

- Concepts:
- Prototype:

Thinking

- Problems:

Thinking

- Well-defined problems have three specified characteristics:
  - a clearly specified...
  - a set of clearly specified...
  - a clearly specified...
- Ill-defined problems…
One strategy you could use to solve some problems guarantees a correct solution in time (provided that a solution exists).

An algorithm:

Heuristics:

Experts vs. non-experts

Rigidity is the tendency to rely on past experiences to solve problems.

One form of rigidity, **functional fixedness**:

Set effect:
Thinking
- Confirmation bias.
- When we use the *representativeness heuristic*:

Thinking
- The availability heuristic:

Thinking
- Framing.
Thinking

- Creativity:

Thinking

- Creativity depends on divergent thinking, rather than the convergent thinking assessed in tests of intelligence.
- Convergent thinking:
- Divergent thinking:

Thinking

- Creativity typically involves…
- Another mark of a creative person is…
Thinking

- Creativity often emerges when we rearrange what is known in new and unusual ways that can yield creative ideas, goods, and services.
- A task-focusing motivator:
- A goal-focusing motivator:

Thinking

- The business community is interested in enhancing creativity to develop and market products and services.
- There is no magic in enhancing creativity; it...
- Among the other important organizational influences on creativity...

Language

- Between birth and the beginning of formal schooling, children learn to speak and understand language.
- Speech is:
Language

Phonemes:
Morphemes:
Syntax:

Language

No matter what language their parents speak (and even if the parents are deaf), babies make the same sounds at about the same time.

At about 2 months of age:
At about 6 months of age:
Toddlers who hear English at home…

Language

Psychologists are especially interested in three characteristics of the infant’s language.
1.
2.
3.
Language

• According to behaviorists:
• According to the nativist theory of language:
• Most psychologists favor:

Language

• When we think of a language, we often think of . . .
• Not all languages fit this category, however.
• A prominent example:

Language

• The linguistic relativity hypothesis (aka the Whorfian Hypothesis):
There are many current examples of the use of language to influence and control thinking. One form of doublespeak is the euphemism...

The word “he” may not be intended to convey whether the person is a man or a woman, but most people assume the speaker meant that the person was a man. The words he, his, and man refer to men, but they are often also used to encompass both men and women. These examples demonstrate how the words we use can guide our thinking, perhaps in ways we had not intended or recognized.
Intelligence
- A psychological test…

Intelligence
- How a person defines intelligence depends on whom we ask, and the answers differ across time and place.

Intelligence
- We can define intelligence as…
We can trace the study of differences in intelligence to an Englishman, Sir Francis Galton.

Alfred Binet and Theodore Simon developed an intelligence test to evaluate French schoolchildren. They proposed the concept of mental age:

The intelligence quotient (IQ) is the...
Intelligence

- The three characteristics of a good psychological test are reliability, validity, and standardization.
  - Reliability:
  - Validity:
  - Standardization:
  - Norms:

Intelligence

- Intelligence test scores are distributed in the shape of a bell curve or normal curve.

Intelligence

- Public Law 94-142 (Individuals with Disabilities Education Act, IDEA), includes provisions for educating all children with handicaps.
Intelligence

- Savant syndrome:

Intelligence

- Charles Spearman:

Intelligence

- Robert Sternberg proposed the triarchic theory of intelligence.
- This model is comprised of:
  a) analytical intelligence:
  b) creative intelligence:
  c) practical intelligence:
Intelligence

• Howard Gardner proposes the existence of...

• The high reliability coefficients that characterize most intelligence tests should not lead to the incorrect conclusion that assessments based on such tests are always accurate (valid).

• The eugenics movement proposed...

Intelligence

• The heritability of intelligence is...

[Bar chart showing heritability by age group]
Correlations between the IQ scores of identical twins suggest that intelligence is strongly influenced by heredity.

Although individual differences in intelligence are due in part to heredity, the existence of group differences in IQ scores does not necessarily suggest that there are innate differences in intelligence among groups.

Critics of intelligence tests argue that we must take a closer look at the tests themselves.

Group differences in test scores might reflect certain characteristics of the tests themselves.
Intelligence

- Claude Steele of Stanford University has proposed that...
- The debate over differences in test scores is not merely an intellectual exercise; it has scientific, political, and social implications. Read the *Bell Curve* (1994).