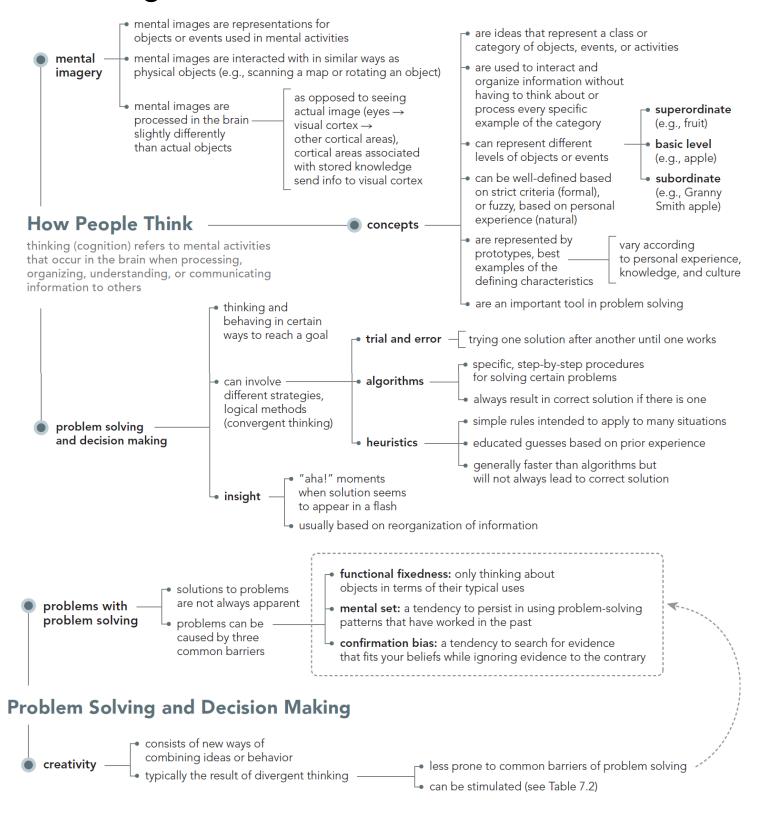
Thinking

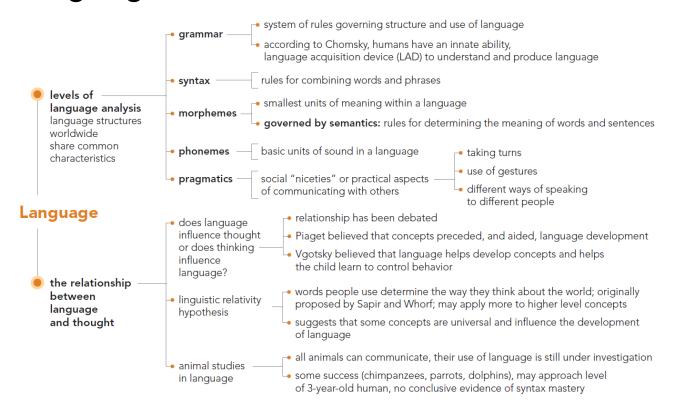


Intelligence (the ability to learn from one's experiences, acquire knowledge, and use resources effectively) g factor: general intelligence Spearman's g factor: intelligence comprises two different abilities theories -→ Gardner's multiple intelligences: overall intelligence comprises nine different types analytical • Sternberg's triarchic theory: intelligence comprises three different aspects first formal test → Binet's Mental Ability Test — key element to be tested was child's mental age created by Alfred Binet and Theodore Simon Terman (researcher at Stanford) translated and revised Binet's test to help identify French students • first test to adopt intelligence quotient (IQ): IQ = mental age/chronological age × 100 now uses age-group who needed more comparison norms help with learning as the Wechsler does uses a variety of verbal and nonverbal subtests to provide an overall estimate Measuring of intelligence and scores related to five areas of cognition (see Table 7.4) Intelligence uses a variety of verbal and performance subtests to provide Wechsler Tests an overall score of intelligence and index scores related to four specific cognitive domains (see Table 7.5) good tests are both valid and reliable standardized administration, scoring, and comparison against norms test construction intelligence is assumed to follow a normal curve different definitions of intelligence and multiple ways to assess them is challenging difficult to design tests that are completely free of cultural bias criteria — IQ > 130 (2 SD above mean) IQ > 140 are called geniuses giftedness typically grow up to be well-adjusted adults EXCEPT characteristics when "pushed" to achieve at younger and younger ages extreme geniuses may experience social and behavioral adjustment issues as children IQ < 70 (2 SD below mean) adaptive skills significantly below age-appropriate level limitations present before age 18 mild individual differences intellectual IQ tests can be used disability/ classifications severe to identify individuals developmental who differ significantly delay profound p from those of average intelligence Intelligence nature vs. nurture awareness of and ability to manage one's own emotions, emotional self-motivation, empathy, and social skills identical twins intelligence reared together may be related to traditional intelligence but data is still being collected show a correlation of .86 between their IQs correlation is not 1.00, so environment also has to play a part

• heritability estimates apply within groups of people, not between groups, — current heritability estimate is about .50

not to individuals, and only in a general sense

Language





7 cognition

thinking, intelligence, and language



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- mental images are representations for objects or events used in mental activities
- mental images are interacted with in similar ways as physical objects (e.g., scanning a map or rotating an object)
- mental images are processed in the brain slightly differently than actual objects

How People Think

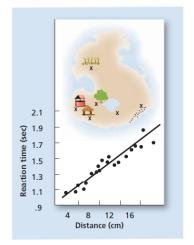
mental imagery

thinking (cognition) refers to mental activities that occur in the brain when processing, organizing, understanding, or communicating information to others



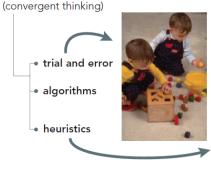
- are ideas that represent a class or category of objects, events, or activities
- are used to interact and organize information without having to think about or process every specific example of the category
- can represent different levels of objects or events
- can be well-defined based on strict criteria (formal), or fuzzy, based on personal experience (natural)
- are represented by prototypes, best examples of the defining characteristics
- are an important tool in problem solving





problem solving and decision making

- thinking and behaving in certain ways to reach a goal
- can involve different strategies, logical methods
 (convergent thinking)





- "aha!" moments when solution seems to appear in a flash
 - usually based on reorganization of information



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problems with problem solving

solutions to problems are not always apparent problems can be caused by three common barriers

Problem Solving and Decision Making







- consists of new ways of combining ideas or behavior
- typically the result of divergent thinking





theories

(the ability to learn from one's experiences, acquire knowledge,



Gardner's multiple intelligences: overall intelligence comprises nine different types

• Sternberg's triarchic theory: intelligence comprises three different aspects

first formal test created by Alfred Binet and Theodore Simon to help identify French students who needed more help with learning Binet's Mental

Measuring Intelligence — **Ability Test** tests Stanford-Binet **Wechsler Tests** test construction

good tests are both valid and reliable

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7.10

- standardized administration, scoring, and comparison against norms
- intelligence is assumed to follow a normal curve
- is challenging (e.g., different definitions, ways to assess, culture bias)



Number of scores



0.1%

34% | 34% | 14% 100 115

