

Cognitive Hypothesis

- Idea that language is a “product” of cognitive development, not a specific module or system
 - “there is nothing special about language”
- Piaget focused on cognitive and social bases to language development
 - E.g., Means-end and object permanence as precursors
- Strong (form) cognitive hypothesis
 - Cognition is necessary and sufficient for language development
- Weak (form) cognitive hypothesis
 - Cognition is necessary but not sufficient for language development

What about clinical populations?

- Clinical populations demonstrate how cognition and language can be separate.
- Williams Syndrome:
 - Children often have very low IQs, around 50.
 - However, they are verbally fluent, have relatively correct grammar, learn new words well, and show good nonword repetition
- Autism:
 - Some children will have good grammatical skills but poor social communication

Language and Thought

- 4 Possible Relationships:
1. Cognitive development determines language development (strong form)
Piaget credited
 2. Language and Cognition are separate faculties
 3. Language and Cognition arise separately but become interdependent
Vygotsky credited
 4. Language determines cognition (Sapir-Whorf hypothesis)

Sapir-Whorf hypothesis

- "The form of our language determines the structure of our thought processes."
 - p. 89 Harley (2008)
- Linguistic determinism: our language determines the way we think, remember and perceive
- Linguistic relativism: different languages will generate different cognitive concepts
- Strong version, weaker version, and weakest version

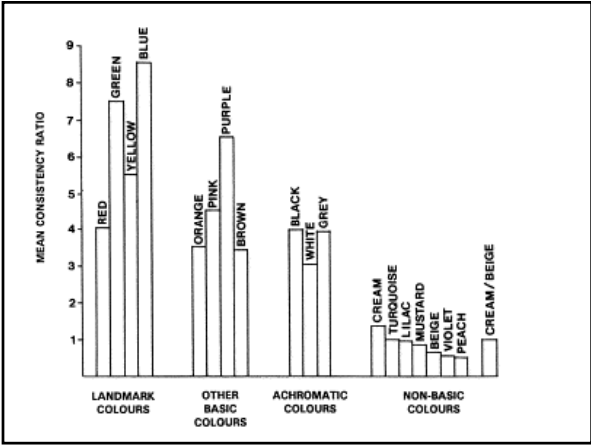
Language's Indirect Effects on Cognition

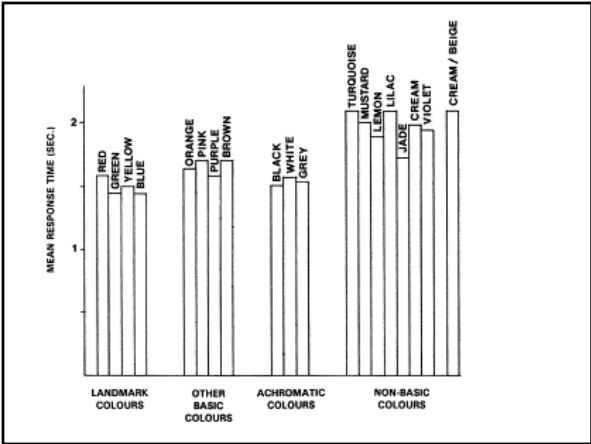
- "Functional fixedness" – words or labels can create a type of functional fixedness when it comes to problem-solving
 - Example of box full of materials and problem
- Leonard Carmichael [click here to try it](#)
 - Neutral visual images (p. 93) with differing labels resulted in images being re-drawn more like the label/concept
 - Perceptual recall is not limited to the stimulus, instead influenced by knowledge (language)

Labels for numbers affects learning and memory

- Chinese numbering system:
 - 11 terms/labels for 0 – 10, then special labels for 100, 1000, and 10,000
 - Chinese children outperform English-speaking children for learning counting in the "teens"
 - Also arithmetic concepts are clearer
- Welsh numbers take longer to say than English numbers due to vowels
 - Welsh/English speakers did not perform as well on digit span tasks in Welsh compared to English

- Having a label supports memory tasks
 - Brown & Lenneberg, 1954, color studies
 - See next two slides
- Ways languages encode time, space, motion, shape, and gender can influence the way speakers of those languages think – but still controversial





Conclusion

- Relationship between language and cognition is complex and not well understood
- Languages around the world are free to vary, such that the way they dissect the world varies
 - These differences can then affect aspects of perception and cognition
- Claim that talking/language can help problem-solving
 - East/West cultural differences
 - West believe you should talk through the problem, East believes talking interferes with thinking
