A Five-to-Seven Shift?

- An artifact of educational practices, or cause of them?
- Historical background:
  - Piaget: Shift to *concrete operational* period
  - Vygotsky; Luria: New ability to control own thought through internalized “cultural tools”
    - Language, strategies, “scripts”
- Examples of social and ecological changes:
  - Shift to more elaborate, formalized learning environments
  - Greater orientation to social world of peers
  - Interest in games, rules, justice
Cognitive changes: 5 to 7

- Attention
- Memory
- Reasoning
- Language
- Metacognition
  - another theory of “what develops”
Attention changes: 5 to 7

- Sustained attention
- Strategic attention:
  - Vurpillot’s study of visual search...
Memory changes: 5 to 7

- Child has…
  - Passed lower bounds of infantile amnesia
- Child begins using memory strategies:
  - Rehearsal
  - Categorical clustering
- Metamemory improves
  - Estimating memory span:
  - Source monitoring
Reasoning & Logic: 5 to 7

- Piaget’s emphasis: *Logical Operations*
  - Poor grasp of causal mechanisms
    - “He fell off his bike ‘cause he broke his arm”
  - Associationistic reasoning
  - Conservation: examples; importance
  - Class inclusion reasoning…
    - *Why is it important?*
Class inclusion reasoning...

- Piagetian class inclusion task: “Are there more mice or more animals?”

- Smith’s verbal task:
  - “A pug is a kind of dog. Is a pug an animal?”
  - “A pug is a kind of animal. Is a pug a dog?”

- Factors affect children’s accuracy include:
  - kind of items, perceptual features, numbers in each subset, *kind of question***

![Bar chart showing mean % correct for 4 years, 5 years, and 6 years]
Language changes: 5 to 7

- Consolidation of syntactic “details”
- Metalanguage:
  - Reflecting on “goodness” of utterance vs. accuracy
  - “Which word is bigger: mosquito or cow?”
- Discourse comprehension skill:
  - Non-literal meaning: humor, teasing, sarcasm, deception
  - Using context to interpret ambiguous meanings…
    - Campbell & Bowe: “…a hare ran across the road…”
Changes in metacognition: Mentalists in the 5-to-7 shift

- What were you thinking about? (Flavell et al., 1995, Exp. 13)

- In general, 4-5-year-olds don’t readily infer what a person is thinking about from that person’s (passive) activities
  - don’t infer a “stream of consciousness
“Engines” of cognitive development in childhood

1. Gaining conscious control over cognitive activity:
   - Metacognition
   - Strategy use

2. Social structures and cognitive skills…
   - Apprenticeship relationships as a paradigm for learning advanced, complex skills

3. Variability in thought and action
1. Conscious control over cognition

- Where does consciousness of cognition come from?
  - Do animals have anything like metacognition?

- Found in inferences of intentionality? Event memory? Use of strategies?
  - Learning to predict, classify, and symbolize different mental events and outcomes

- Development of “executive function” of cognition:
  - control over memory
  - inhibition
  - flexibly shifting attention and representations
2. Social structures: Teaching and apprenticeship

- Sociocultural context of cognitive development: Individuals solving problems in groups & social systems
- How do children learn about their social environment?
  - Guided participation: children engage in skilled activities of a community, with others, to carry out culturally valued activity.
  - Appropriation: how do individuals change through their involvement in activities and preparation for future activities?
- Apprenticeship is a method for ensuring the transmission of cultural practices
  - Very little educational failure!
  - Synthesizes language, “showing,” imitation, memory, classification, problem solving, selective & sustained attention
  - Apprentices gradually take on more tasks, as they can manage them
Wrapping up:

- What do you see as the most important themes, questions, or areas for future study?

- What are the most challenging concepts in research & theory on cognitive development?

- How can we tie together, e.g., infant attention & metacognitive control over strategy choice?
Finally…

Thank you for your attention!