What is Development?

• Learning vs. Development
• Types of Development
  – Cognitive
  – Physical
  – Social
  – Emotional
  – Moral

Themes in Development

• Nature vs. Nurture
  – Genetics or experience
• Continuity vs. Discontinuity
  – Ramp or staircase?
• Biological “unfolding”
  – Like a butterfly
• Implications: Readiness to learn
Jean Piaget

- Assimilation
  - Means to fit experience to existing cognitive structures
- Accommodation
  - Means to change cognitive structures in response to experience
  - In order to make internal (cognitive structures) and external (experience, perception) compatible
  - In response to disequilibrium
    - (incompatibility of knowledge with experience)

Piagetian Stages

- Sensorimotor (Birth to 2)
  - "Understanding is rooted in present action"
- Preoperational (2 to 7)
  - Object permanence as early as one year
- Concrete Operational (7 to 11)
  - Reversibility of operations
  - Classification (multi-way); seriation
- Formal Operational (11 to Adult)
  - Abstract and hypothetical reasoning

Neo-Piagetian Theory

- The American Challenge
  - Decalage: Uneven development
    - Children can sometimes think abstractly
  - Domain specificity of stages
    - Sometimes dependent on knowledge
      - e.g., about dinosaurs
    - Processing constraints are relevant
      - Such as working memory
- Robbie Case’s Theory
  - WM increases with age/experience
  - Chunking/automaticity important
  - Control processes important
Knowledge Representation
- Enactive (motor)
- Iconic (mental images)
- Symbolic (e.g., text, numerals)

Not a Stage Theory
- Rather, an accumulation of representations

Bruner’s Bold Claim
- Any content can be taught in meaningful fashion to learners of any age
- A bit of a challenge to Piaget

Cognitive Changes in Development
- Executive Control (Metacognition) Improves
- WM Capacity Increases
- Automaticity Increases
- Specific Knowledge Accumulates

Socioeconomic Status
- SES Includes Both
  - Family income
  - Parent education levels
- SES is Descriptive, Not Explanatory
  - What are the proximal causes?
    - Computers, books, games, travel
    - Language? Values?
- Are Schools & Classrooms Middle Class Institutions?
- Are Role Models Important for Promoting Social Mobility?
Other Influences On Development

- **Home Environment**
  - Not the same as SES
  - Presence of books
  - Question asking
  - Encouragement for exploration
  - Amount of adult-child language

- **Peer Influence**

- **Parental Involvement in Schools**