

# **Vygotsky: Genetic and Linguistic Theories**

Chapters 2, 3 of Vygotsky and the Social Formation of Mind, James Wertsch, Harvard U. Press, 1985

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# Vygotsky's Fundamental Claim

- “We need to concentrate not on the *product* of development but on the *very process* by which higher forms are established.”
- To understand the human mental process
  - Need to know **how** and **where** they occur in growth

# Phenotypic vs Genotypic

- **Phenotypic** (descriptive) – “analysis that begins directly with an object’s current feature and manifestations.”
- **Genotypic** (explanatory) – “By a developmental study of a problem, I mean the disclosure of its genesis, it’s causal dynamic basis.”

- Descriptive research can help provide overall picture of psychology
- Without genetic analysis, there is no understanding
- Study of change
  - Comparative-genetic (deafness, mental retardation, blindness)
  - Experimental-developmental (experimenter intervention)

# Multiple Forces

- No single set of explanatory principles can account for all development
- Must account for changing relationships among multiple forces of development
- Reject the sole use of quantitative increments of psychological units
- Development is not black and white

# Reformulation

- The explanatory framework needs to be able to incorporate new factors
- Darwinian evolution + psychological signs = more complex explanatory system
- Reduced role of biological factors

# Elementary vs Higher Mental Functions

- Elementary forms
  - Memory
  - Attention
  - Perception
  - Thinking



- Elementary forms develop **naturally**
- **Cultural** development transform elementary forms into higher mental process
  - Notched sticks and knots as memory aids

# Higher Mental Functions

- Self-generation (Autostimulation)
  - Creation and use of artificial stimulus
- Intellectualization
  - Conscious realization
  - Voluntary
- Social origin/nature
  - “It is not nature, but society that above all else must be considered to be the determining factor in human behavior.”
- Mediation
  - Psychological tools and signs
  - Counting, mnemonic devices, symbols, writing, maps, etc.

# Apes vs Humans

- The invention of tools is a prerequisite
  - Necessary, but not sufficient
- Rejected reflexology and behaviorism
  - They reduced human behavior to animal behavior
  - An exercise of “trial and error”



# Labor

- The transformation of ape to human requires labor (Engels)
  - “there must emerge a special, new form of adapting to nature, one that is alien to the ape – namely labor.”
- Speech is also important
- Organic evolution proceeds until culture can emerge
- Contrary to Vygotsky’s assumption, culture preceded the end of organic evolution (Geertz)
  - Culture may have influenced the biological

# Sociocultural History

- Historical development of human behavior and biological evolution are governed by their own laws.
- “Man learns from the errors – and still more from the successes – of other people while each generation of animal can learn solely from its own.”
- Treating mankind as a whole, law of natural selection becomes invalid

# Decontextualization

- The meaning of signs becomes less dependent in the spatiotemporal context
- For example, counting:
  - Primitively, counting relies on concrete objects
  - Decontextualized, counting is abstract

# Cross-Historical Study

- Nonliterate vs Literate
  - Given pictures of a hammer, saw, log, and hatchet
    - Literate subjects group items based on if they are tools
    - Nonliterate subjects group items based on concrete setting
- Literate (schooled) subjects are willing to operate in “a linguistically created reality”
  - Higher social evolution

# Literacy ≠ Decontextualization

- Nonschooled literacy (for learning the Qur'an) vs. literacy in English
  - English-literate subjects provide better verbal accounts of a task (Scribner and Cole)
- Scribner and Cole found there is a more complex relationship between literacy and decontextualization
- Schooling is impermanent
- Still, decontextualization suggests higher mental function

# Mingling of Natural and Cultural Forces

- Ontogenesis - “Both planes of development – the natural and the cultural – coincide and mingle with one another.”
- Difficult to isolate the effects of one another
- Natural – elementary mental functions
- Cultural – higher mental functions
- Must account for both

# Vygotsky's Inconsistency

- Focused primarily on one factor
  - How cultural forces transform the natural line of development
  - Considered the factor that imparts the biggest change
- Claimed factor independence of factors in early development
  - More modern study shows factors are intertwined in the earliest stages of human development

# Vygotsky the Superficial

- Utilized phylogeny to describe elementary functions
  - Ape studies
- The notion of “natural” is unclear in Vygotsky’s writing
- Extreme emphasis on social development
  - The natural line plays almost no role
- His empirical studies leaves a lot to be desired

# Ginsburg to the Rescue?

- Mathematical cognitive systems
  - System I (informal, natural)
    - The perception of more
    - Judgments of one-to-one correspondence, equivalence, seriation
  - System II (informal, cultural)
    - Using the number system in concrete settings
  - System III (formal, cultural)
    - Context independent mathematical principles

- System 1 (elementary)
  - Skills found widespread across cultures
  - Skills differ with age, suggesting natural development
- System 2 (rudimentary higher)
  - Unschooled adults developed informal procedures for counting that were still efficient/accurate
- System 3 (advanced higher)
  - Cross-cultural differences for complex, written addition problems
- Issue of how natural and cultural are intertwined in ontogenesis still unresolved

# Saxe's Counting

- For quantitative comparisons, young children count, but do not use that information
- Young Oksapmin children were similar (System I)
- Counted using body parts (premediational)
  - Natural and cultural independent growth
- Premediation → Mediation:  
Decontextualization
  - Young children looked at physical similarity
  - Older children used role of numeration

# Summary of Vygotsky's Genetic Method

- Must examine the origins and transitions of the human mental process.
- Both revolutionary and evolutionary changes are involved.
- Progression and transition defined in terms of mediational means (tools and signs).
- Many domains must be examined to complete the overall picture.
- Different forces have different explanatory principles.

# Social → Individual

- Interpsychological – small groups of individual engaged in concrete social interaction
- Intrapsychological – within oneself
- Cultural development: Interpsychological → Intrapsychological
  - Functions appear twice
  - Voluntary attention, logical memory, concepts, volition

# Internalization

- “Any higher mental function was external because it was social at some point before becoming an internal, truly mental function.”
- Piaget – natural line
- Vygotsky – cultural line
- Internalization is not the copy of the external inter- to intrapsychological
- Internalization has transformative effects

# Movement as Indication

- A child grasps, but cannot physically reach object
- Mother aids, responds to gesture
  - Interpsychological plane
- Child uses gesture to indicate
- Child is now conscious of gesture, voluntary
  - Intrapsychological plane

# Zone of Proximal Development

- ZPD is the distance between a child's independent abilities and potential ability through guidance
- Two children both have mental age of seven
  - With guidance, one is two years above, the other is only half a year above
  - These children differ in mental development
- Learning speeds not predicted by IQ

# Instruction

- Instruction creates ZPD
- ZPD limited by development
- ZPD determined by child's level of development and form of instruction
- Instruction is part of social development that leads to higher mental function

# In Summary

Vygotsky = Social + Natural

# Discussion

- Vygotsky focuses a lot on the social line of development, but do you think the natural line continues to develop with age? If so, in what way?
- Decontextualization is indicative of higher mental function. Why do you think decontextualization is important?
- If anything IQ tests are a measure of current mental ability. What are ways to measure potential mental ability?
- Discuss whatever interests you.