COGNITIVE DEVELOPMENT OCCURS IN
SOCIAL INTERACTION

The Internalization of Socially Shared
Processes

Every psychological function occurs twice,
first at the “intermental” level (between
people who are involved in social interaction),
and later at the “intramental” level (within
the individual)
An Example of Internalization of Socially Shared Processes

The development of pointing:

• infant unsuccessfully reaches for desired object

• adult interprets action as an attempt to draw attention to object

• meaning of instrumental attempt changed to an attempt to communicate

• infant links reaching action to social situation, comes to understand movement as directed at another person

• social meaning of action is internalized, becoming a true gesture
An Example of Internalization of Socially Shared Processes

A child learning to tie her shoes:

• at first, an adult assists the child, providing verbal guidance (e.g., “now make a loop, and bring the other lace around it …”)

• with time, the child internalizes the sequence of steps so that she can control her own actions without adult assistance

• the child may “hear” the adult’s instructions in her “mind’s ear,” but she no longer needs the adult to provide external support for her performance
COGNITIVE DEVELOPMENT OCCURS IN SOCIAL INTERACTION

The Zone of Proximal Development

“the distance between what a child can do independently, and what a child can do in interaction with an adult or a more advanced peer”

Moms

Teachers

Siblings
An Example of Social Scaffolding

**Scene:** Mom is helping child construct a puzzle. They have a model that they can refer to. The child tries to place green pieces where they do not belong.

Mom: Did we find any green up here? (points to model)

Child: (looks at model) This one. (points to incorrect place in the model)

Mom: I think maybe that’s a leftover. Do you think so?

Child: (nods)

Mom: Maybe we don’t need the green one, cause there isn’t any green one up there, is there. Remember?

Child: (looks at pieces pile, puts green pieces back, chooses two appropriate pieces.)
Key Factors in Sensitive Adult-Child Interaction

- tailor support to child’s level of skill development (cognitive readiness)
  - one step ahead is best
- monitor child’s attention to intervene at appropriate time
  e.g., mothers who label objects for their toddlers by following where the child focuses his/her attention
Key Factors in Sensitive Adult-Child Interaction *continued*

- prompt metacognitive awareness
  - outline goals of the task
  - discuss strategies for meeting goals
  - involve child in making decisions
Peer Collaboration - Does it Work?

- helps to motivate child to try difficult tasks
- provides opportunities to imitate and learn each other’s skills
- opportunities to explain, put their knowledge into words, enhances understanding

Answer: Sometimes it Does, Sometimes it Doesn’t
Vygotsky on Language and Thought

Thought and speech have different roots. The two functions develop along different lines and independently of each other. (p. 41)

At a certain point these lines meet, whereupon thought becomes verbal and speech rational. (p.44)

[Thought and Language, 1962, MIT press]
[original published in Russian, 1934]
Vygotsky’s basic idea of language and thought
Language as a Psychological Tool

Private Speech

Children talking to themselves as they play, explore, and solve problems.

An intermediate phase in which language guides thought and behavior, but it must be overt.

Eventually private speech is internalized and becomes inner speech.
Piaget

- presocial speech
- egocentric speech
- social speech

Vygotsky

- socialized speech
- private speech
- communicative speech
- inner speech
Mary: They wiggle sideways when they kiss.

John: (vaguely) What?

Mary: My bunny slippers. They are brown and red and sort of yellow and white.

John: I have a piece of sugar in red pieces of paper. I’m gonna eat it and maybe its for a horse.

Mary: We bought them. My mom did. We couldn’t find the old ones. They were in the trunk.

John: Can’t eat the piece of sugar, not unless you take the paper off.

Mary: And we found Mother Lamb. Oh, she was in Poughkeepsie in the trunk in the house in the woods.

John: Do you like sugar? I do, and so do horses.
Adam: If I grow up my voice will change and when you grow up your voice will change. My Mom told me. Did your Mommy tell you?

Jenny: No, your Mommy’s wrong. My voice, I don’t want it to change.

Adam: Oh, well, we’ll stay little, right?

Jenny: What?

Adam: We’ll stay little.

Jenny: No, I don’t want to. I want my voice to change. I don’t care if it changes.

Adam: I care.
Key Findings in Language Guided Thought
Preschool Years

- children produce more private speech on more challenging tasks
- children’s private speech declines with age ("goes underground")
- private speech is not egocentric speech talking aloud is not a failure to engage in role taking
The Relationship Between Thought & Language

- Language Determines Thought
  *Whorf – linguistic relativity hypothesis*

- Thought Determines Language
  *Piaget’s demonstration study*

- Thought & Language Interact, *Boot Strap Effect*
  *cognitive readiness*
  *zone of proximal development*
BRUNER’S MODES OF REPRESENTATION

*Enactive Representation* - using actions to represent information, dominant mode of representation in the sensori-motor period (0 to 2 yrs), “thought is action”

*Iconic Representation* - using visualization to represent information, dominant mode of representation during the preschool years, Piaget’s conservation tasks are good examples

*Symbolic Representation* - using language or other symbols to represent information, middle childhood and beyond
BRUNER’S CLASSIC SCREENING STUDY

Participants: 5 to 8 year old children who clearly failed the conservation of liquid substance task.

Step 1: Screen is placed in front of the beakers before the liquid is poured.
BRUNER’S CLASSIC SCREENING STUDY

**Step 2:** Blue liquid is poured from one of the tall beakers to the wide beaker.

**Step 3:** Child is asked whether the liquid is still the same amount.

**Results:** When children do not have the misleading visual information, they say “It’s the same, you only poured it”
Percent of children showing conservation after screening
Bruner’s Interpretation

- Evidence of language as a representational tool
- Evidence of the role of “cognitive readiness” in prompting cognitive change
- Implications for classroom teaching and interventions