Understanding the Language Needs of Deaf/ Hard of Hearing Children

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State College, PA
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Agenda- Good morning Pennsylvania!

8:45	Introduction and overview
9:00	“Understanding” language
9:30	The Brain and Language
	BREAK
10:15	When FORM is important
11:00	An exploration in SEMANTICS
11:30	Why ideals are better than philosophies- and when a balance isn’t fair.


Play Video in:
English Version
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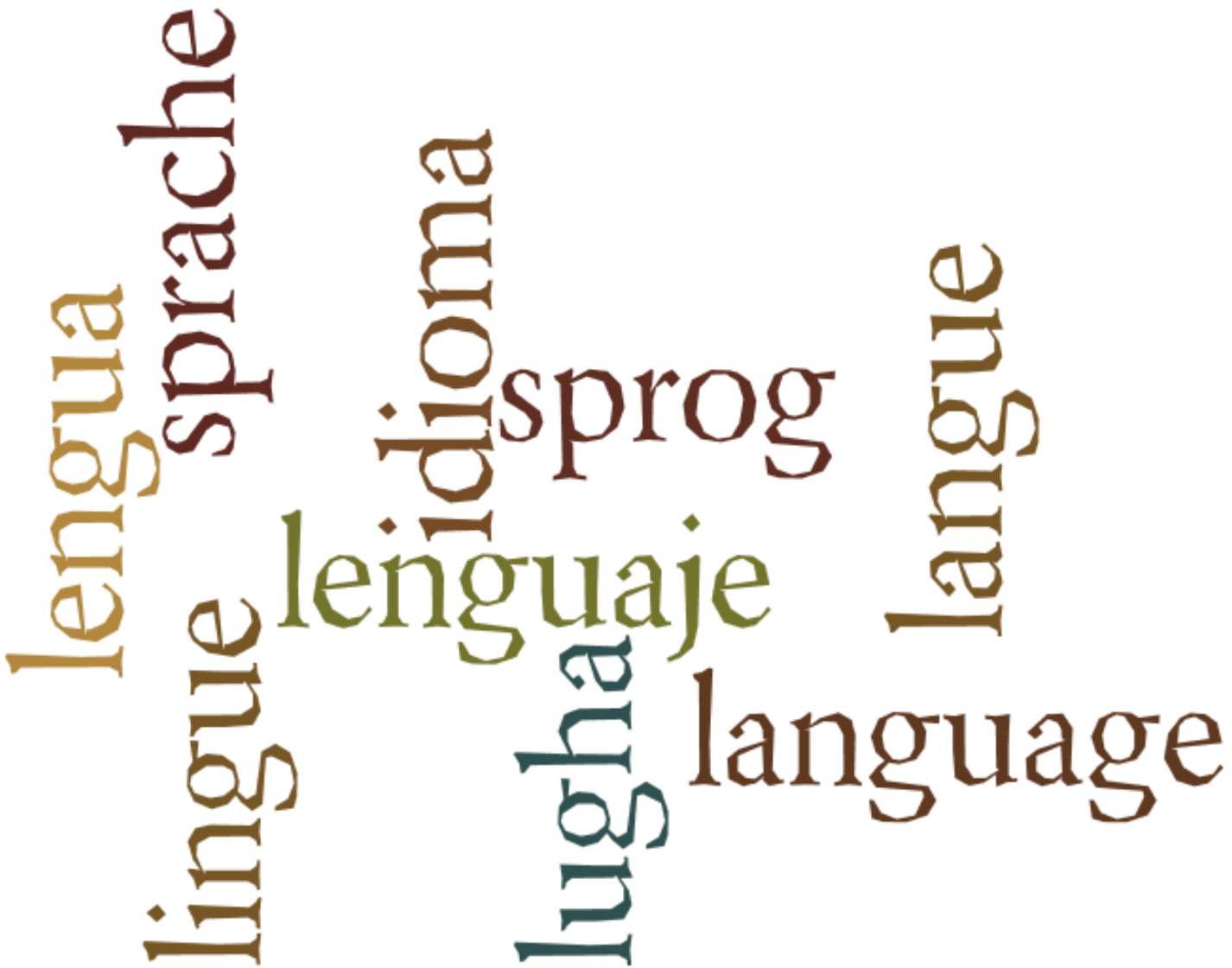
Subtitle
Resources
THROUGH YOUR
CHILD'S EYES:
American Sign Language

Objectives

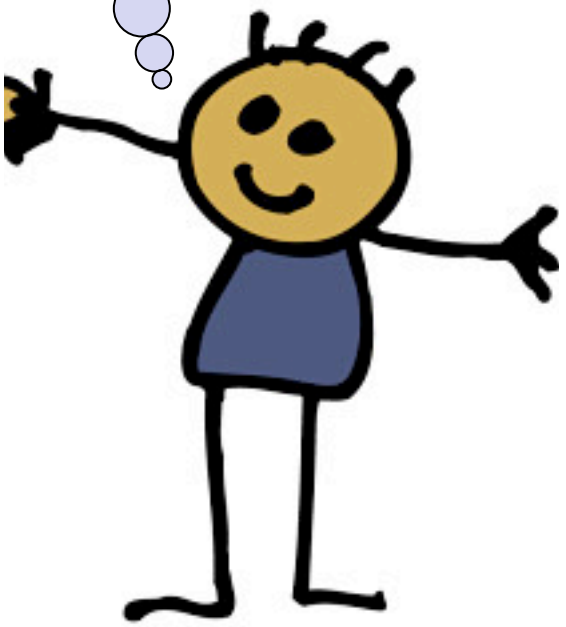
1. To contextualize the term and components of language.
2. To identify the abilities and needs of deaf/ hard of hearing children to develop complete language and self-esteem
3. To examine OUR roles within the development of competent language users.
4. To integrate a parent perspective into our framework.

What does **language** mean to you?

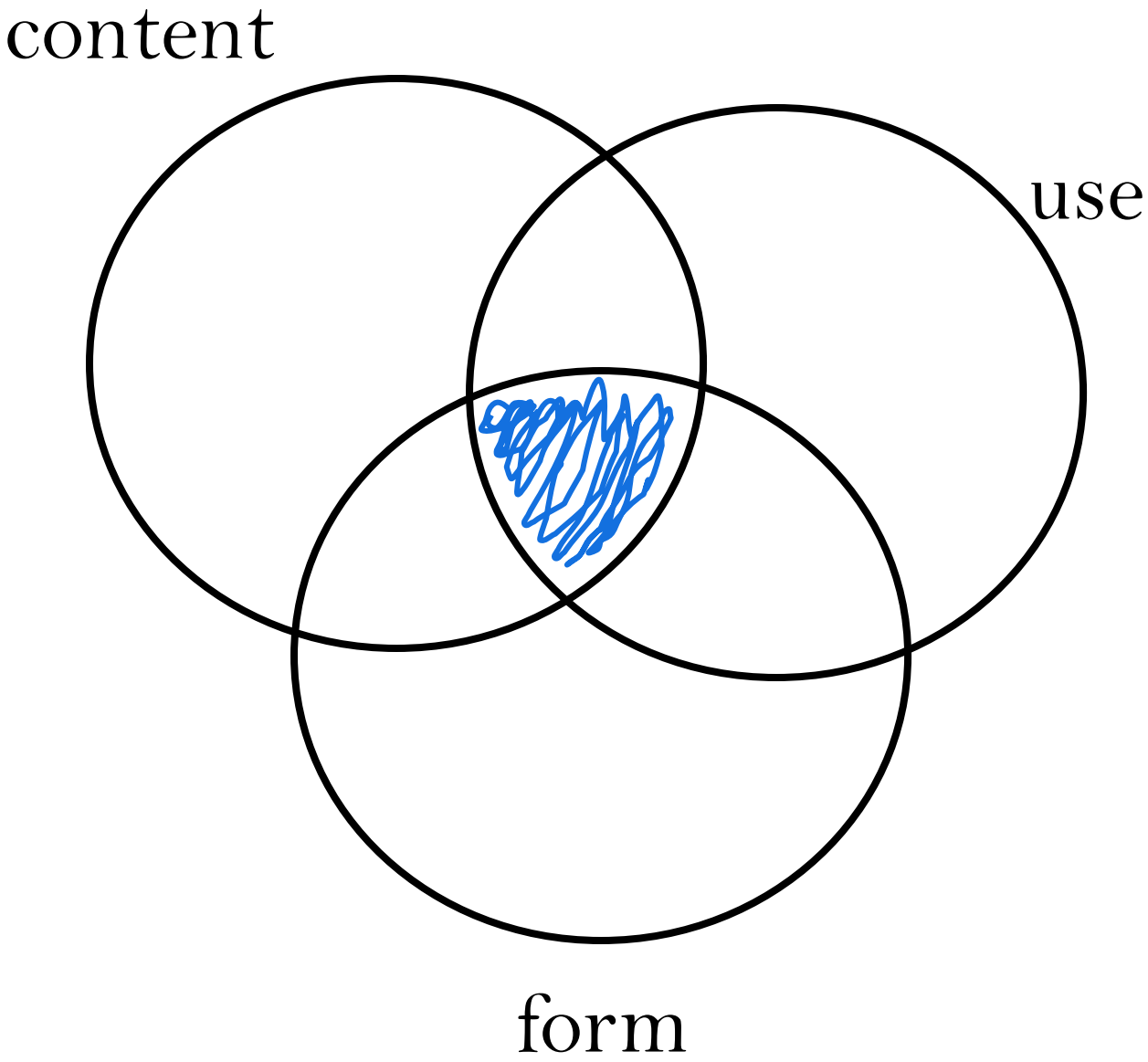


How do terms I use and the way I describe things affect the child?

I need language!! What does language mean for me?



Bloom & Lahey, 1978



Language

- An arbitrary and agreed upon set of symbols or conventions that are rule-governed and used to communicate ideas.
- Language is innate to people.
- Languages evolve naturally within communities of users.
- Languages are infinite.

Lack of language

- Deaf and Hard of Hearing children have a history of impoverished and underdeveloped language.

- It is not "DUE TO" deafness.
- It is due to lack of accessible input.

Spencer, 2004

An opportunity to use and *benefit* from something.

Sensory *access.*

Through hearing technology

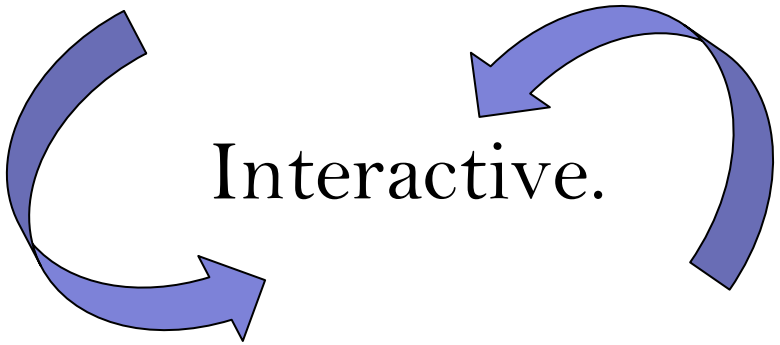
Linguistic *access.*

Through *comprehensible* input

Comprehensible Input

Understandable. Clear.

MEANINGFUL



Interactive.

- For acquisition of a complete language, children need to be able to access it AND understand it.
- All children need to feel good about who they are and what they know.
- Children should not struggle to acquire language.

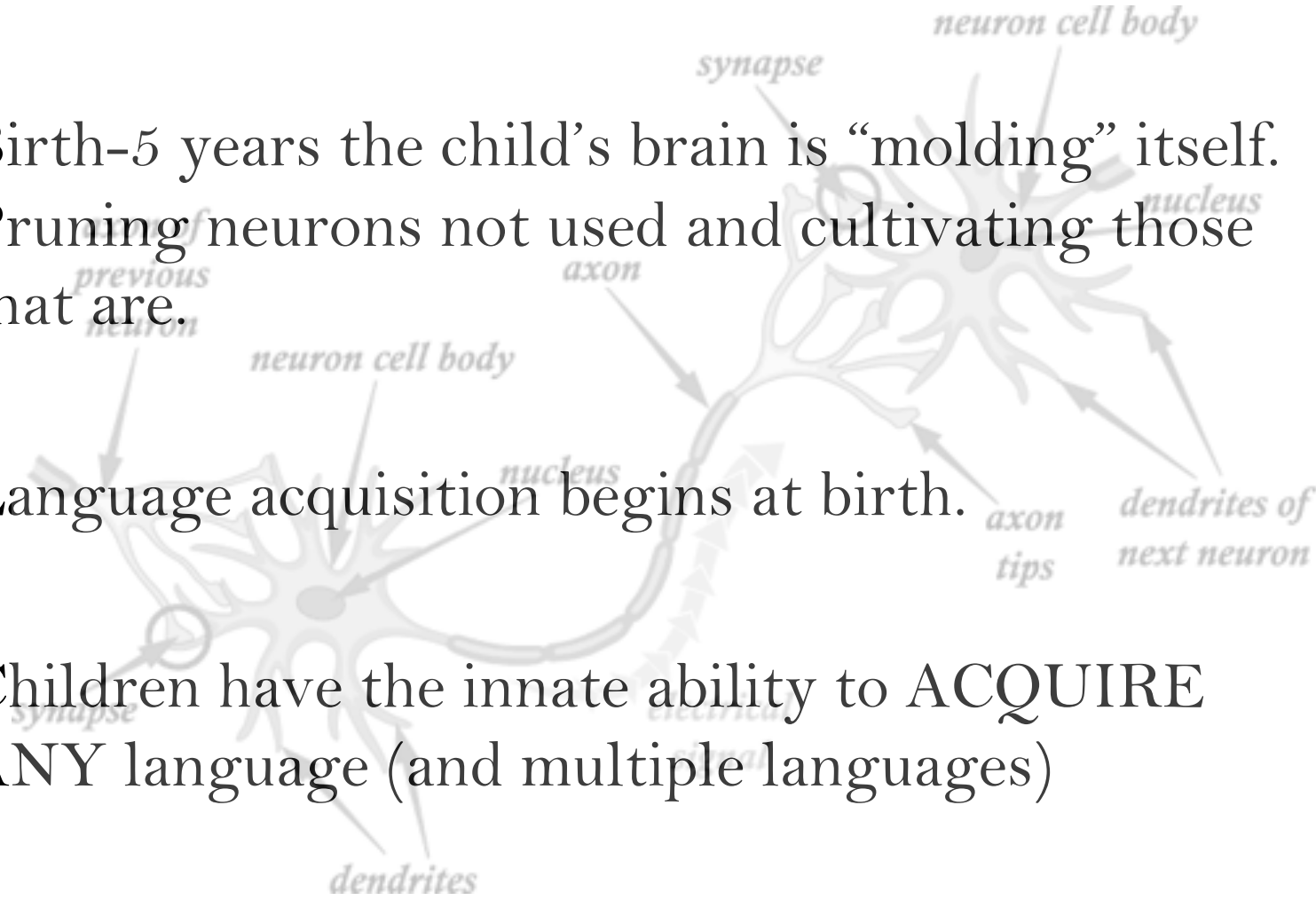
The brain and language

- Neuroscience
- Cognitive Science

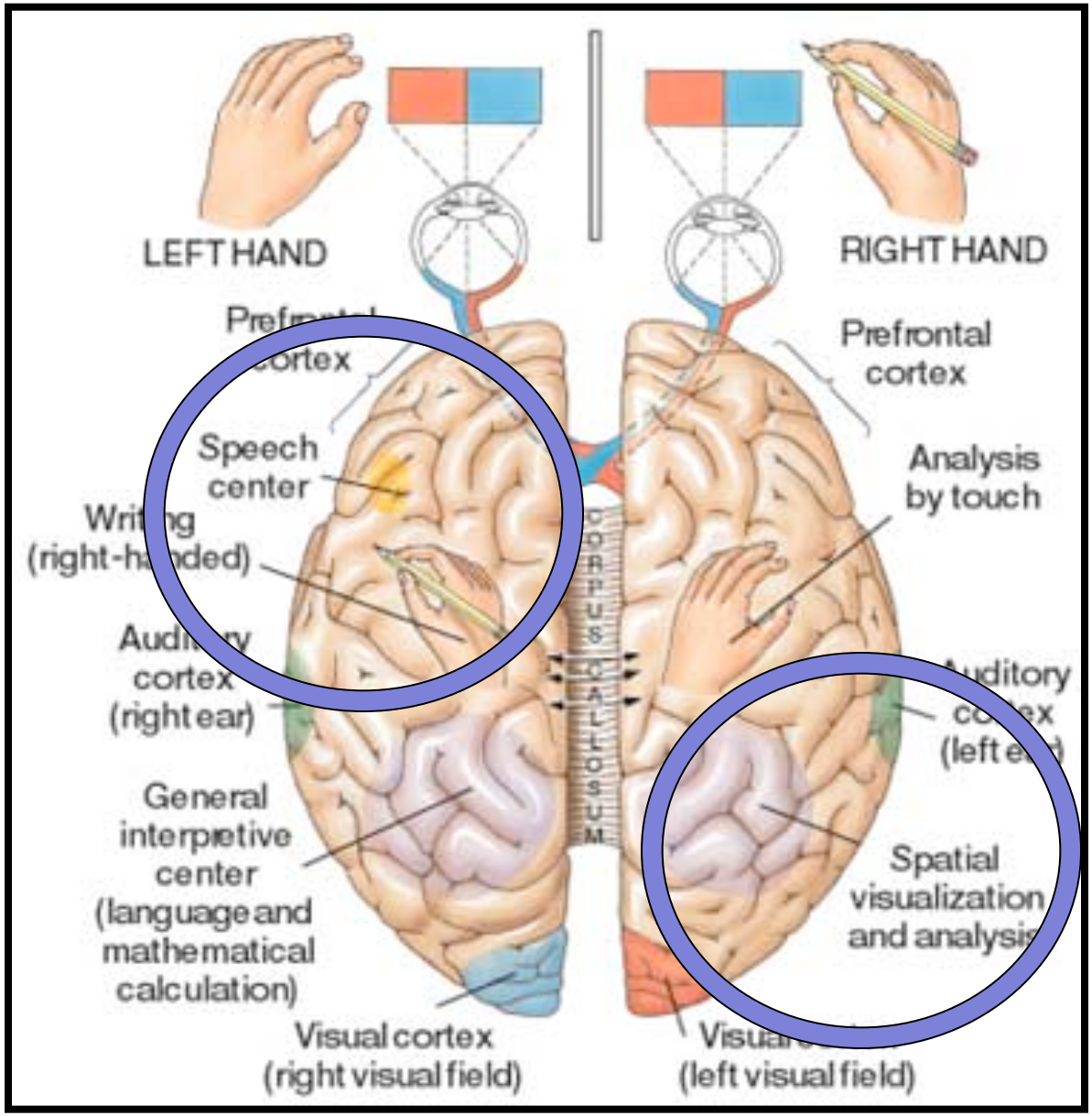
Language “learning”- Language acquisition

Innate abilities

Maximizing inputs, interactions, and the maturing brain



- Birth-5 years the child's brain is "molding" itself. Pruning neurons not used and cultivating those that are.
- Language acquisition begins at birth.
- Children have the innate ability to ACQUIRE ANY language (and multiple languages)


LEFT HAND
RIGHT HAND
Prefrontal cortex
Speech center
Writing (right-handed)
Auditory cortex (right ear)
General interpretive center (language and mathematical calculation)
Visual cortex (right visual field)
Prefrontal cortex
Analysis by touch
Auditory cortex (left ear)
Spatial visualization and analysis
Visual cortex (left visual field)

Age in Months	Neural Development	Language Development
0-2	Brain stem fully developed. Rapid neural-synapse development reinforced by repeated stimulation.	Cries Throaty sounds to coos, vowel-like sounds
3-5	Synapse development in the cerebrum and in the parietal and occipital lobes allows for better vision and eye-hand coordination.	Babbling- sound play. Experiments with ranges of tones and volume. Becomes more vocal when hearing others talk Makes some consonant sounds Uses a variety of hand gestures and movements (hand babbling) that is thought to be non-linguistic (Pettitio & Marentette, 1991).
6-8	Neural pathways have formed sound template for native language(s). Begins to hear syllables then distinct word boundaries.	Learns to make new sounds by change shape of mouth. Echolalia- word like sounds emerge. Babbling resembles conversation-like tone. Gestures are universal for deaf & hearing babies Phonetic and syllabic properties in manual and vocal babbling. Babbling becomes linguistic for signing babies (Pettito et.al., 2004)

ASL Brochure (ASDC); Christie, Enz, & Vukelich, 2007

Age in Months	Neural Development	Language Development
9-12	Hippocampus becomes fully functional. Ability to determine and remember cause /effect. Ability to retain words increases.	May respond to name. Begins to use gestures. Learns meaning of words by hearing them in context. May begin to use words. One word represents whole ideas. Understands simple signs. First signs 's' and '5' handshape. Approximation of signs/words used by adults. Mostly nouns.
13-18	Synapses in prefrontal lobe expand rapidly. Child now able to plan and think logically.	Uses gestures. Large receptive vocabulary. Follows simple requests. Points to body parts. Enjoys being read to – likes to hear or label objects, story character.

ASL Brochure (ASDC); Christie, Enz, & Vukelich, 2007

Age in Months	Neural Development	Language Development
19-24	Full cortex consumes twice as much energy as adult. Synapses' density almost twice that of adult. Synapses not stimulated will wither– a process called neural pruning.	Language explosion. Child may learn 7-12 new words a day. Linguists call this "fast-mapping." Begins to use sentences. Enjoys songs, finger plays, storybooks.
12-24 months	Recognizes frequently finger spelled words. Understands basic meanings of facial expressions. Combines 2 signs. Hand shape repertoire: A, B, C, O, I Names objects without need to point. Attempts at fingerspelling.	
24-36 months	Understands & carries out more complex commands and requests Shows interest in "how" & "why". Attention span of 20 minutes. Uses directional verbs—"Give me". Expresses possessives—"My shoe". Uses action and object forms such as "drink water". Uses pronouns "me" "she/he", "it".	

ASL Brochure (ASDC); Christie, Enz, & Vukelich, 2007

Language and executive control

- Theory of mind- "understanding others"
  - Intentionality in action of others

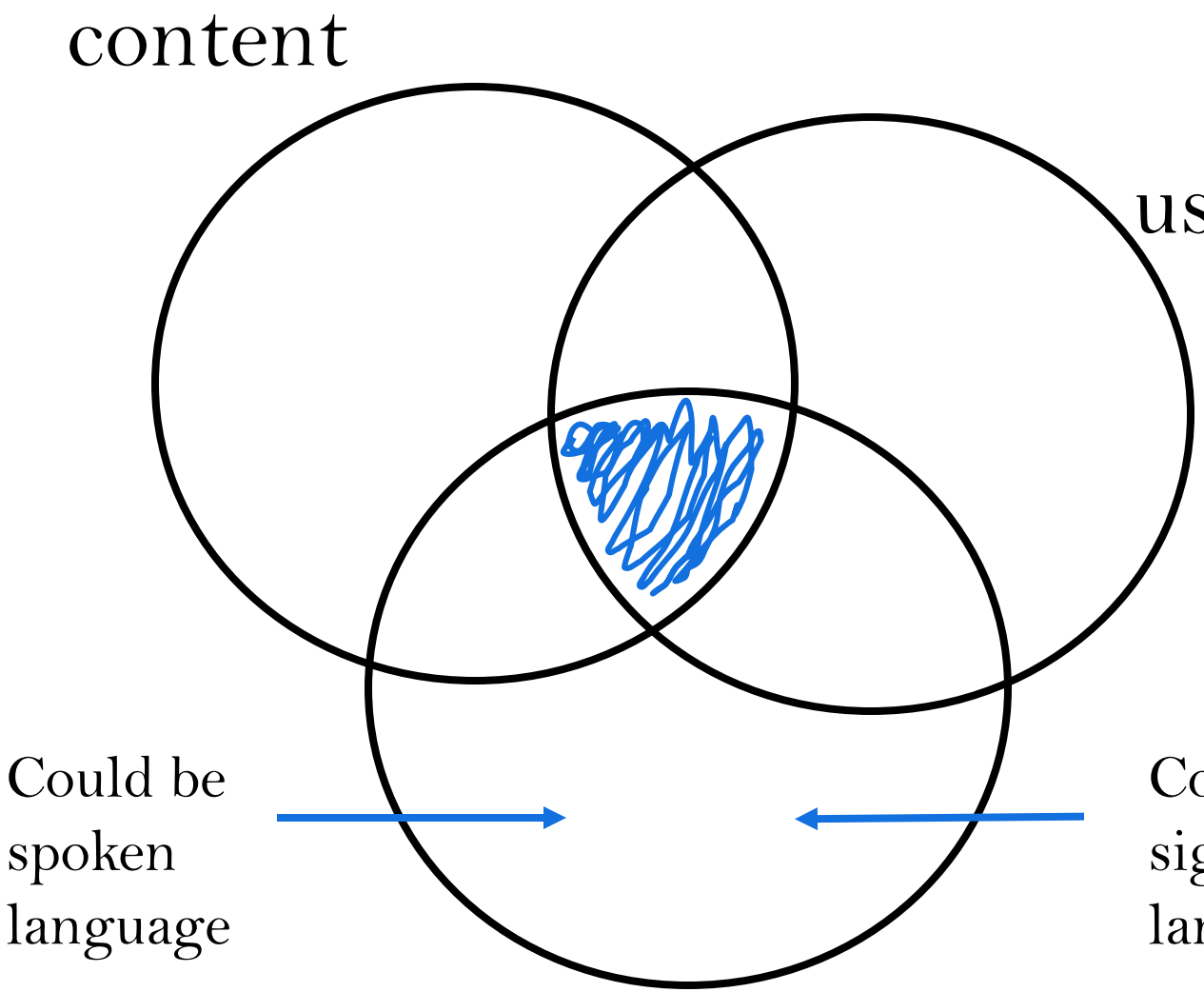
Critical Thinking Skills

When FORM is important

- Important that a complete and natural language be provided for the child to optimize typical language acquisition.

- Spoken Language (spoken English)
- American Sign Language

Bloom & Lahey, 1978



Could be spoken language

Could be signed language

…could be both….

American Sign Language (ASL)

- Visual-spatial language
- Unique syntax and grammar—not signing English.
- One sign can be used for many English words.
- There are many ways to sign one English phrase.

Spoken Language

- Auditory-oral language
- Requires listening and speaking
  - Child learns to notice sound and attach meaning
- Our written system (print) is based on spoken English

Educational Programs

- Oral
- Cued Speech
- Total Communication
- Bilingual

Auditory- Oral Classrooms

- Maximize listening and speaking skills for spoken English, through the use of technology.
- Can include speechreading and natural gestures.

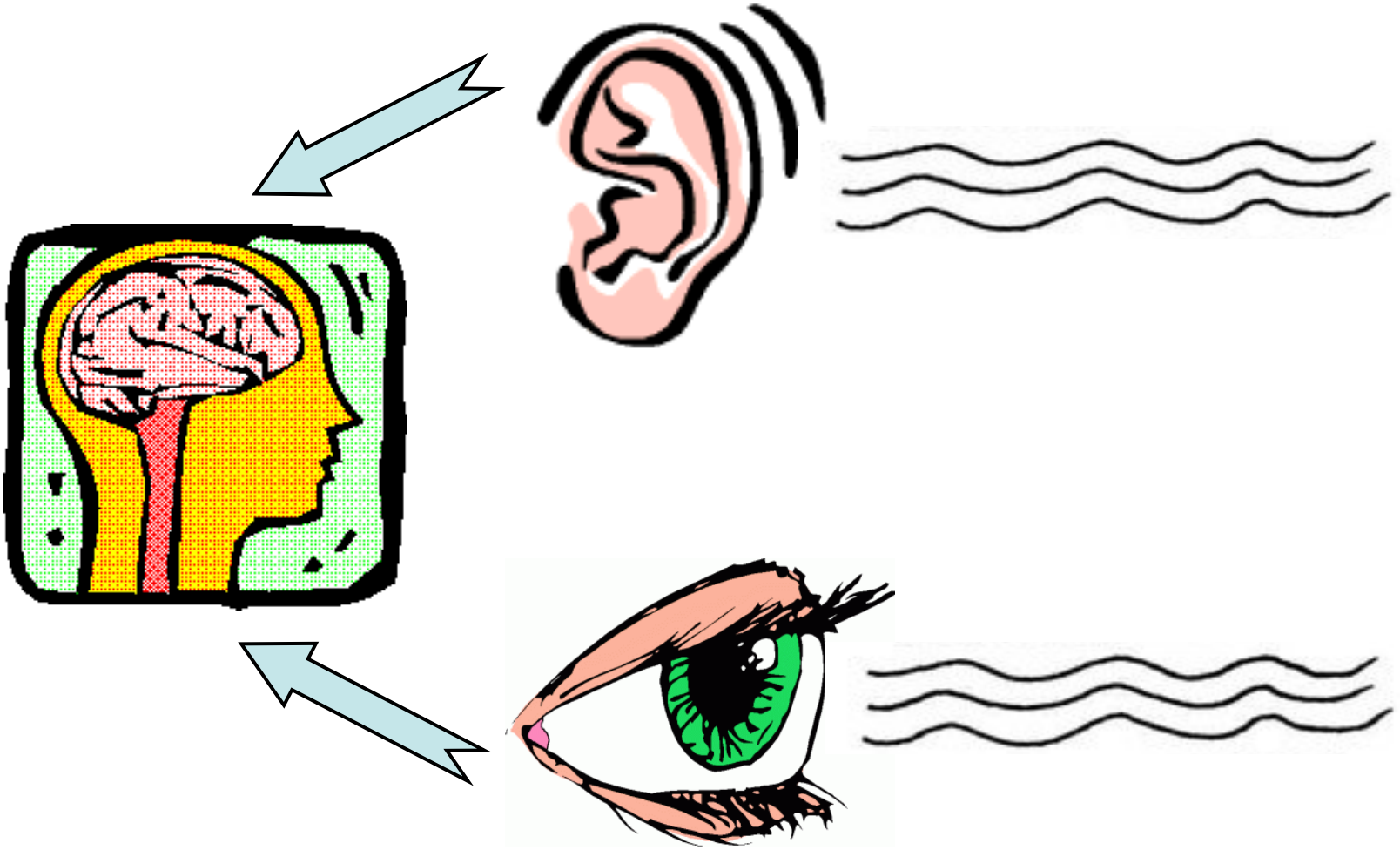
Cued Speech

- Uses hand and lip cues for every speech sound.
- Represents spoken English.
- Aids in differentiating sounds that look the same on the lips.
- Provides complete and direct access to spoken English

Total Communication

- Implemented as a combination of speech and signs
- Should use all modalities to provide language information to the child as needed
  - Sight, hearing, touch

Do the EAR and the EYE receive information in the same way?



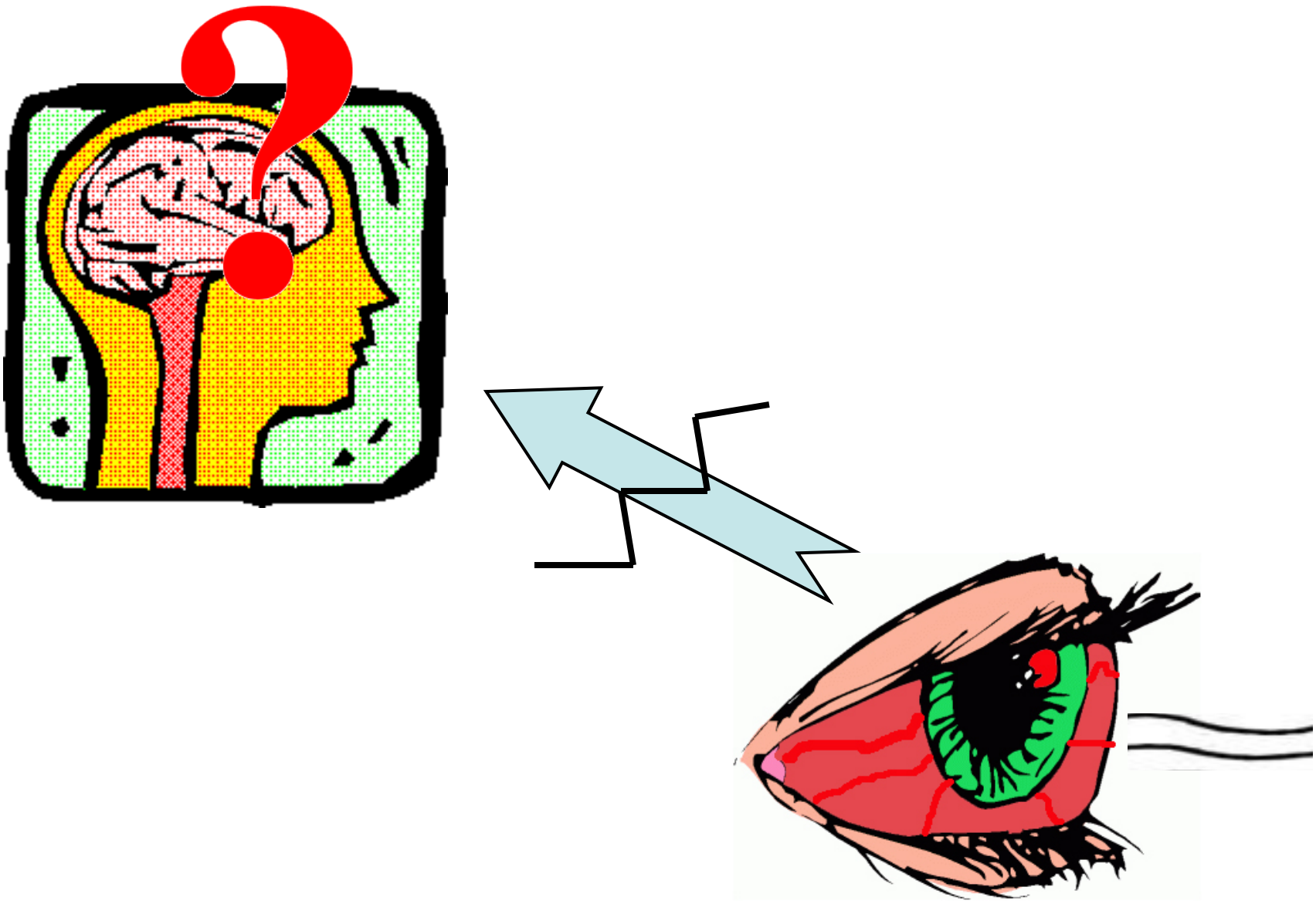
Schneiderman, 2010

.....talking.....

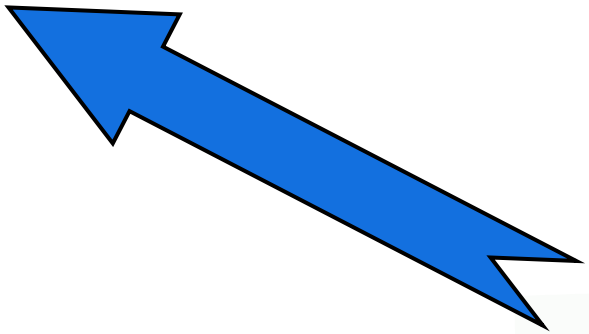
.....signing word by word in English order.....

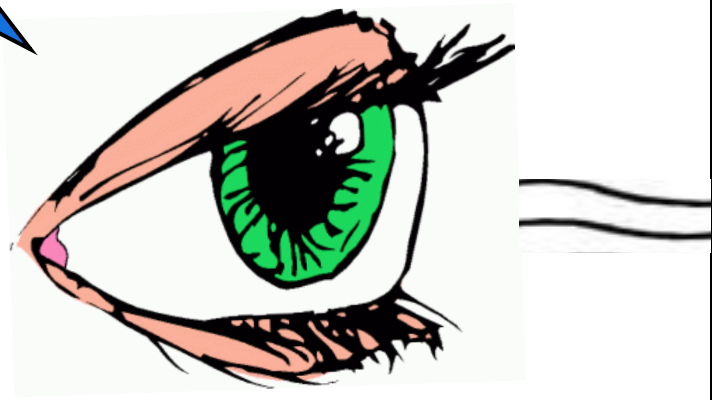
....teacher sits on floor reading to students.

Schneiderman, 2010



Schneiderman, 2010



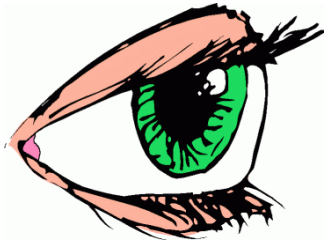


The route to comprehension should be BARRIER – free

Schneiderman, 2010

LINEAR vs CONCURRENT organization of information

linear = word + word + word + word + word



concurrent = many possible ways

We will look at an illustration.

Schneiderman, 2010

Website: ASLized

Concepts naturally conveyed in ASL that when conveyed in English lose meaning.

Oldest, middle, youngest (sisters)

The verb “to give”

ASLIZED!

.....talking.....

.....signing word by word in English order....

Child without a strong 1st language

.....talking.....

.....signing word by word in English order.....

Serves a role to facilitate communication between people who "speak" different languages

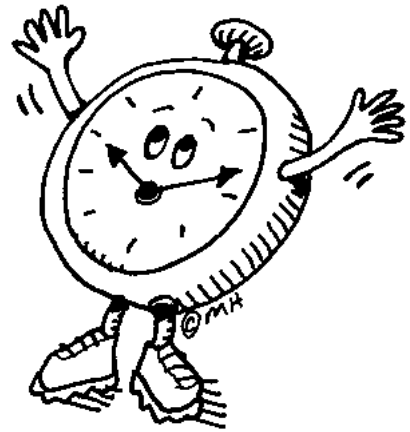
Adults with both English and ASL fluency

Schneiderman, 2010

Bilingual ASL/English Programs

- Uses ASL to teach content areas.
- Theoretical use of first language to teach second language (English).
- Realistically, children are becoming simultaneously bilingual: learning ASL and print English at the same time. Some are also exposed to and learn spoken English.
- NOT the same as “total communication”

WHEN do Deaf and Hard of Hearing children achieve age-expected language?



In some oral environments through optimal speech and auditory training, if they have access.

When families are devoted to learning ASL and use it consistently with and around their children.

and

When families and professionals are committed to working together to making language access easier for the child.

Early Intervention Research

- Children who are deaf/hard of hearing with mild to severe hearing levels developed intelligible speech

  regardless of "communication mode"

- Children are linguistically more competent in two modalities, visual and auditory

Spencer & Marschark, 2003; Yoshinaga-Itano, 2003

We know…

- Acquisition of a complete language ENABLES and facilitates acquisition and development of another language.

  Mayberry, 2009

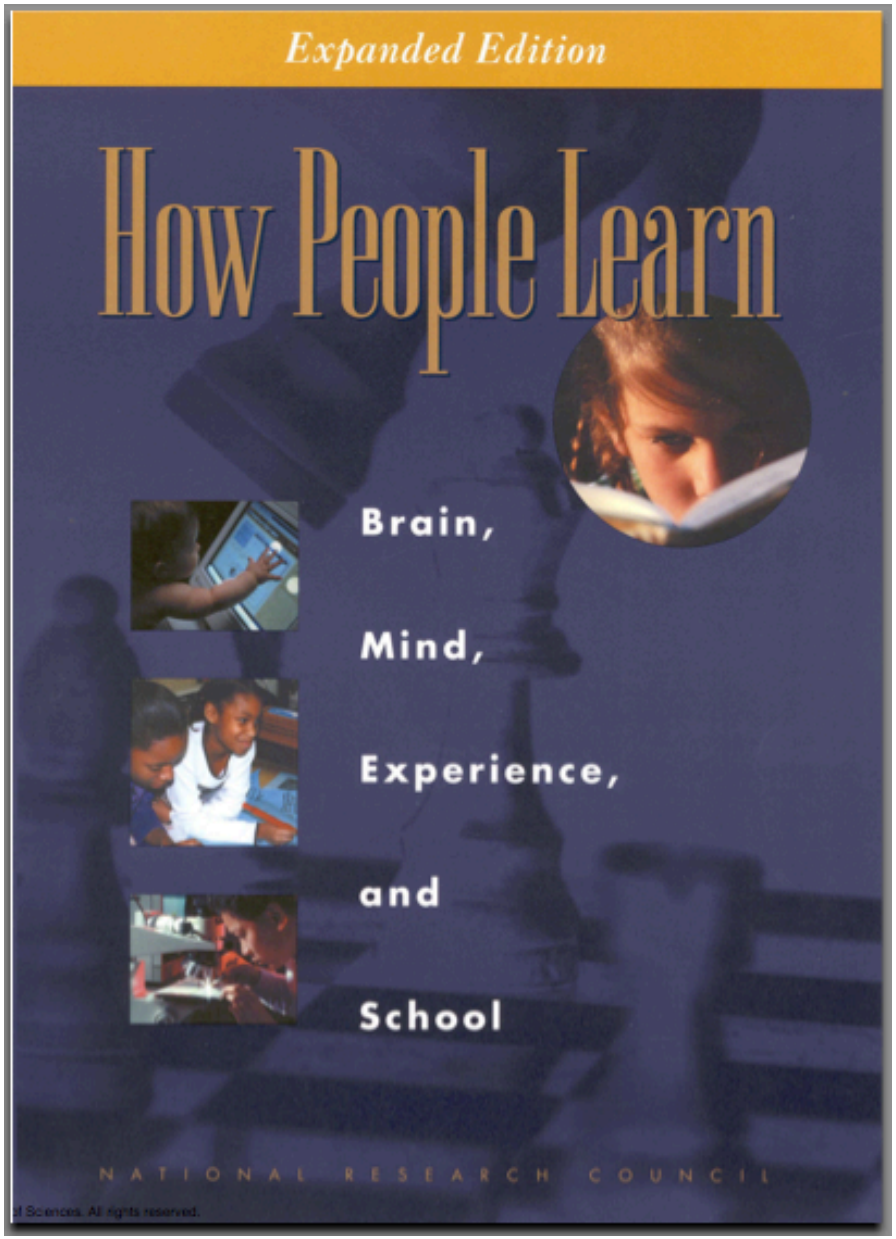
- Children CAN successfully acquire more than one language at a time.

Choices are sacrifices.
You give up something for something
you want more.

An exploration in SEMANTICS

The content of language.

- How I say what I say, and is that what I really mean?
- How you understand what I'm saying, and did I understand you accurately?



www.centeroninstruction.org

Brain development is often timed to take advantage of particular experiences, such that information from the environment helps to organize the brain. The development of language in humans is an example of a natural process that is guided by a timetable with certain limiting conditions.

Like the development of the visual system, parallel processes occur in **human language development for the capacity to perceive phonemes, the "atoms" of speech**.

A phoneme is defined as the smallest meaningful unit of speech sound. Human beings discriminate the "b" sound from the "p" sound largely by perceiving the time of onset of the voice relative to the time the lips part; there is a boundary the separates "b" from "p" that helps to distinguish "bet" from "pet."

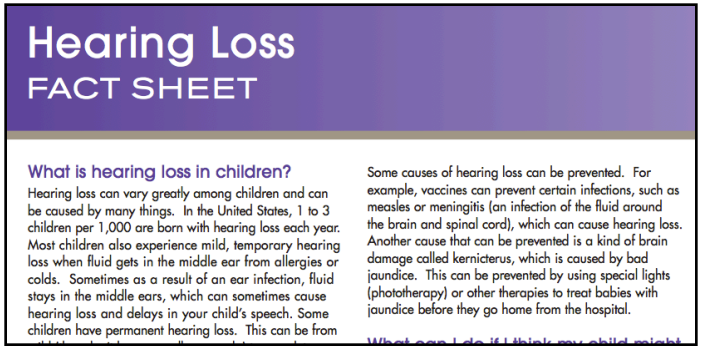
Boundaries of this sort exist among closely related phonemes, and in adults these boundaries reflect language experience. Very young children discriminate many more phonemic boundaries than adults, but they **lose** their discriminatory powers **when certain boundaries are not supported by experiences with spoken language** (Kuhl, 1993).

Detailed knowledge of the brain processes that underlie language has emerged in recent years. For example, there appear to be separate brain areas that specialize in subtasks such as **hearing words** (spoken language of others), seeing words (reading), speaking words (speech), and generating words (thinking with language).

Whether these patterns of brain organization for **oral**, written, and **listening** skills require separate exercises to promote the component skills of language and literacy remains to be determined.

If these closely related skills have somewhat independent brain representation, then coordinated practice of skills may be a better way to **encourage learners to move seamlessly among speaking, writing, and listening.**

Thinking about language through different eyes



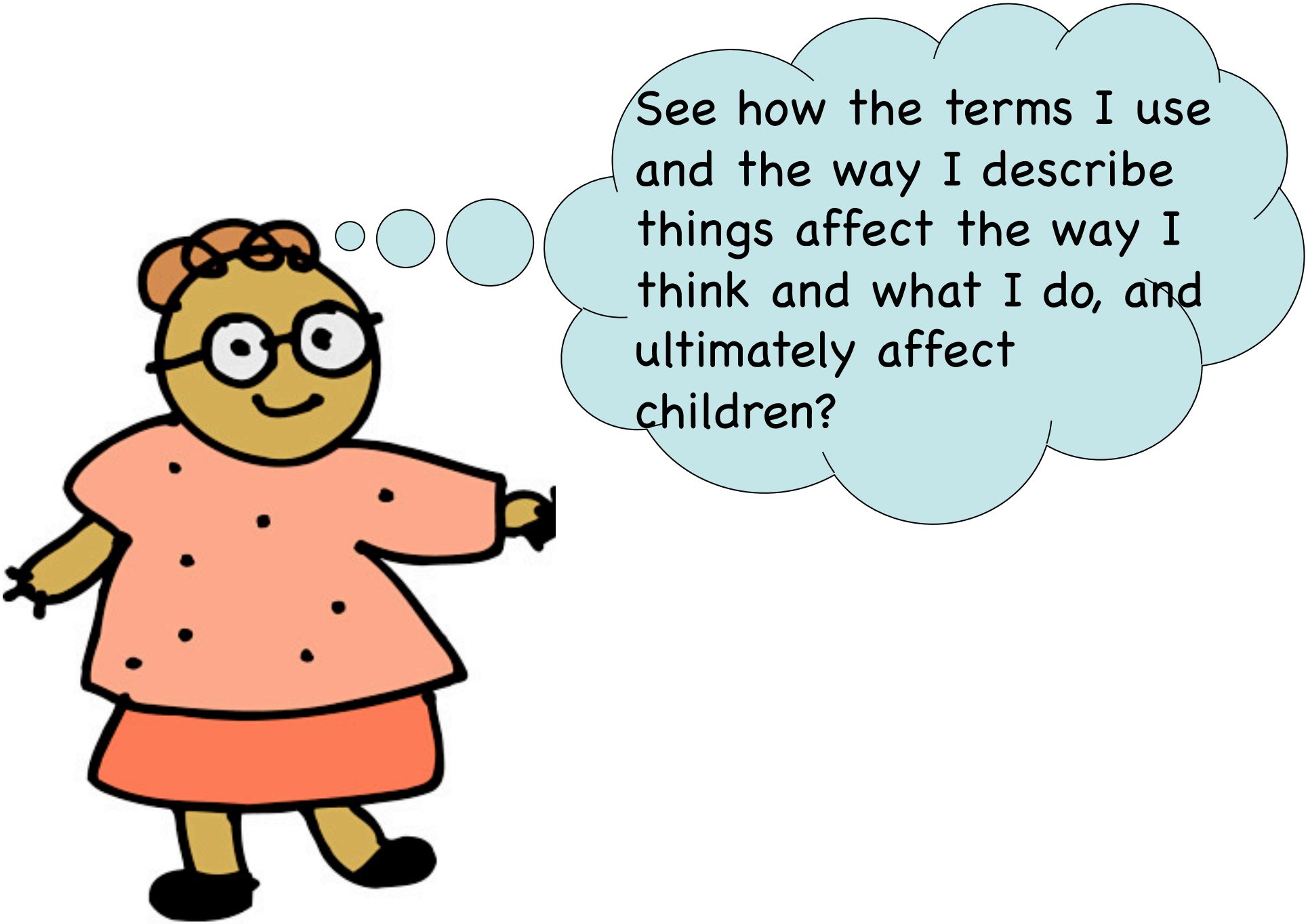
Hearing Loss
FACT SHEET

What is hearing loss in children?

Hearing loss can vary greatly among children and can be caused by many things. In the United States, 1 to 3 children per 1,000 are born with hearing loss each year. Most children also experience mild, temporary hearing loss when fluid gets in the middle ear from allergies or colds. Sometimes as a result of an ear infection, fluid stays in the middle ears, which can sometimes cause hearing loss and delays in your child's speech. Some children have permanent hearing loss. This can be from

Some causes of hearing loss can be prevented. For example, vaccines can prevent certain infections, such as measles or meningitis (an infection of the fluid around the brain and spinal cord), which can cause hearing loss. Another cause that can be prevented is a kind of brain damage called kernicterus, which is caused by bad jaundice. This can be prevented by using special lights (phototherapy) or other therapies to treat babies with jaundice before they go home from the hospital.

http://www.cdc.gov/ncbddd/hearingloss/freematerials.html


See how the terms I use and the way I describe things affect the way I think and what I do, and ultimately affect children?

Changes in Perspective

Hearing- Normal

- Hearing is better
- Language= spoken language/ speech
- Speech= success
- signing= failure
- Assistive technology= hearing technology
- Communication options

Deaf/HH- Normal

- Deaf/HH is diverse
- Language = speech/signs/ reading/writing
- Language and thinking= success
- Limited language= failure
- Assistive technology = hearing and visual technologies
- Sign language + other languages or other communication modes.

Sass-Lehrer, Mitchiner, Benedict, 2010

Changes in Perspective in Language and Literacy Practices

Traditional View

- Focus on dominant language
- Transition from home language
- Literacy at school
- Language teaching
- Language and cognition

New Perspectives

- Support development of multiple languages
- Maintain home language, child's mother tongue
- Family literacy practices
- Language acquired in meaningful contexts
- Language, cognition, and social interactions

Sass-Lehrer, Mitchiner, Benedict, 2010

Why ideals are better than philosophies-

and when a balance isn't fair.

Are you ready to "be" the change?

If we build it, will they come?

- ASL and spoken English are valued equally.
- Students are given multiple and varied opportunities
  - to develop spoken English skills in "auditory-oral" environments
  - to acquire depth of language through ASL

If we build it, will they come?

- Teachers are fluent in English and ASL.
  - Deaf/hard of hearing teachers are valued for their capacity to understand what it means to be deaf or hard of hearing.
  - Deaf teachers have CONCEPTUAL awareness of spoken English and optimal command of written English
  - Hearing teachers are fluent in ASL

If we build it, will they come?

- Parents are empowered and participate fully in their child's education.
- Parents are provided with workshops and education.
- Parents are provided with opportunities to learn and practice ASL and have deaf mentors.
- Program administrators facilitate a strengths-based system.

If we build it, will they come?

EARLY INTERVENTION

- 2 teachers with fluency in both languages
- Access to knowledgeable pediatric audiologists
- Visually and acoustically optimal center-based programs
- Kids/families with various hearing levels and needs
- Specific curriculum that guides family education
- Teachers with expertise in DHH and other disability areas.

When balance isn't *fair*

- just or appropriate in the circumstance
- Some people need more of one thing at some times and more of another thing at other times.

Fair isn't always equal

We need to have a different conversation.

What can you do?

Consider the way you think about the language needs of DHH children.

Consider the way you TALK about DHH children and how the words you use impact others.

Encourage optimism

Facilitate connections

Talk about and encourage EVERYTHING

What can you do?

Empower parents to meet ALL KINDS of deaf and hard of hearing people.

Empower parents to meet parents raising ALL KINDS of deaf and hard of hearing children.

Facilitate well-rounded education.

Consider SYSTEMS improvement.

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