



Language Development: Tips for Families



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“The Linguistic Genius
of Babies”

Dr. Patricia Kuhl

2010



The University of Washington's Institute for Learning and Brain Science



What science is now telling us about how the brain learns language--

New imaging tools are able to peer inside children's brains to untangle language development.



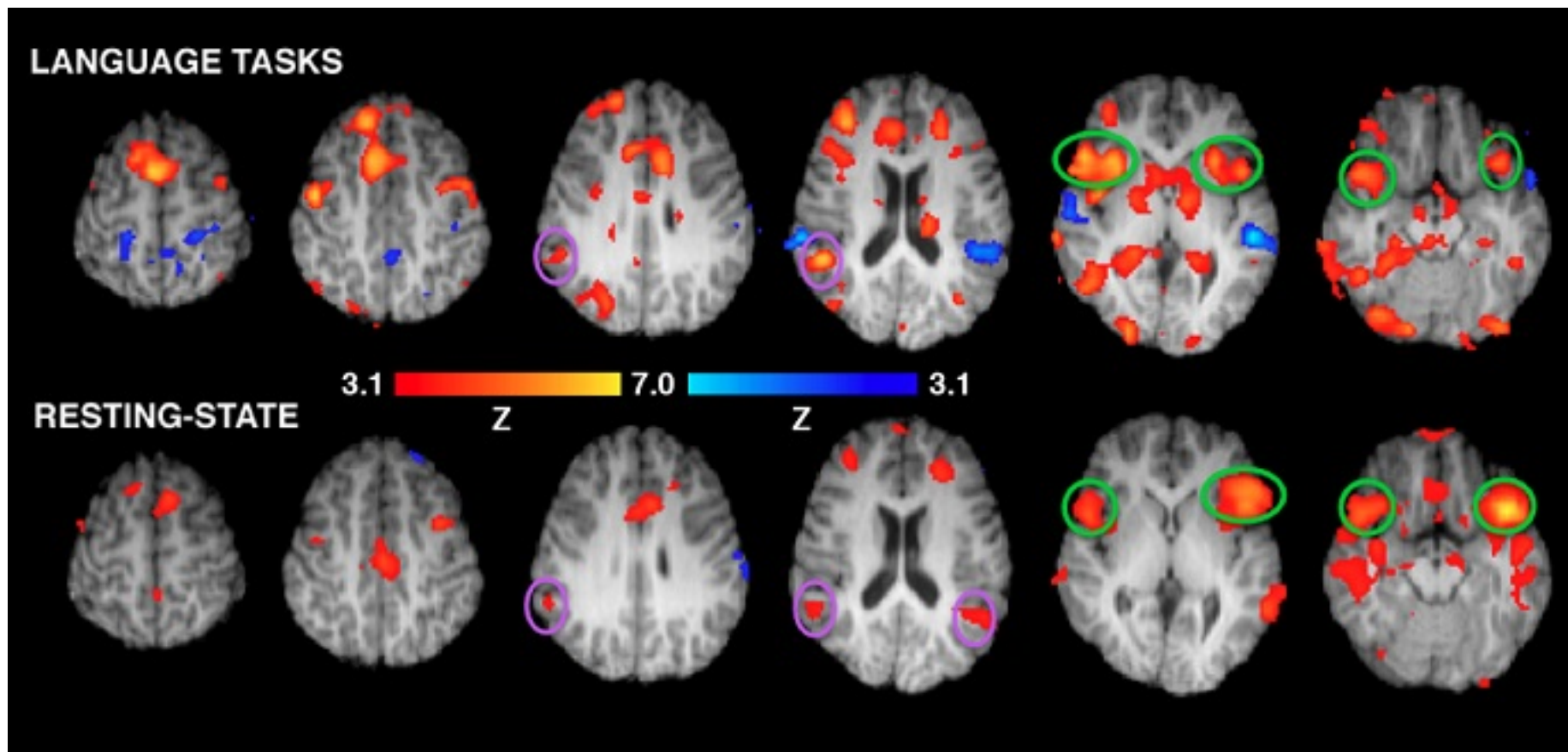
The MEG (magnetoencephalography) machine

The University of Washington was first in the world to record brain activity in awake infants in 2006; the brain-imaging center is focused on children's brains.

6 month-old Emma



Example of a MEG scan

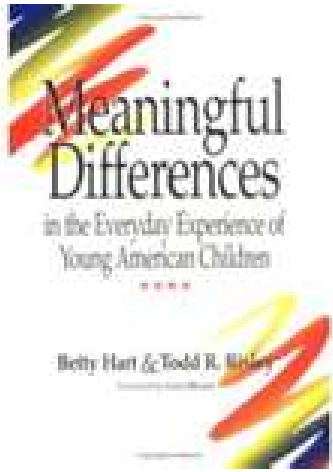




Turn

TALK

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“The Matthew Effect” of Vocabulary: The Hart and Risley Study

Hart, Betty and Risley, Todd R. (1995). *Meaningful Differences in the Everyday Experiences of Young Children*

- 42 families across the socioeconomic spectrum; the study followed the children from 9 months to 3 years old
- Once a month for one hour per session
- Transcripts from hundreds of hours of parent/child interactions were analyzed

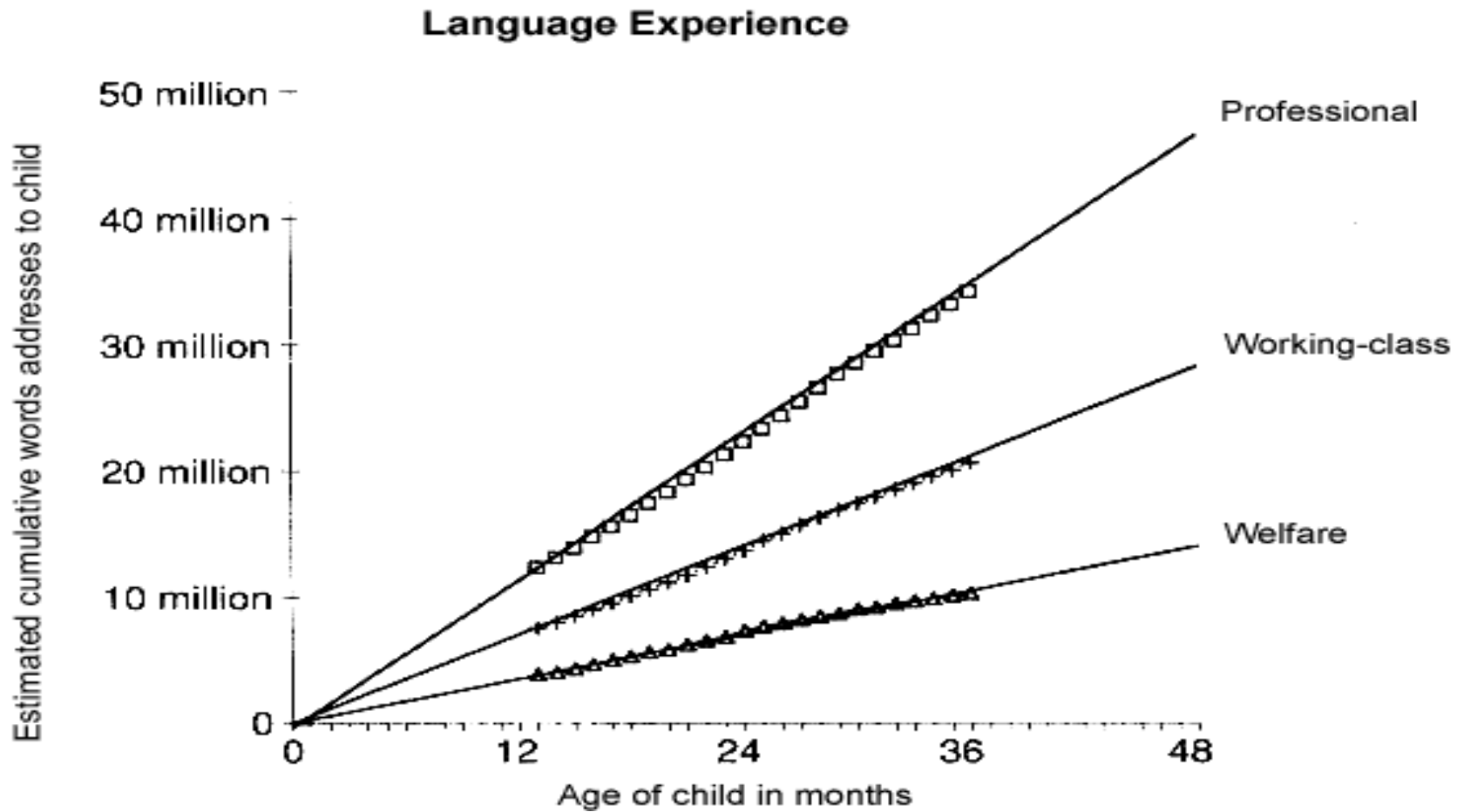
Results of Hart and Risley Study

- Children of professional parents heard 2,153 words an hour while children in poverty heard 616.



- By age 4 middle class children heard 45 million words while lower socioeconomic children heard only 13 million words.

Hart and Risley study in *Meaningful Differences*—the 30 million word gap



Children who have heard less talk have slower language processing speeds.

Dr. Anne Fernald, Stanford:

“A split second delay in grasping the meaning of a familiar word made it much more difficult for a toddler to figure out the next one. A simple hundred millisecond advantage buys you the opportunity to learn.” —June 11, 2010

Results of Hart and Risley Study (cont'd)

- Highest SES parents responded to their children about 250 times/hour vs. lowest SES parents responded fewer than 50 times/hour
- Parents in wealthier homes had extended conversations on many topics and encouraged their children to use their imagination. Their speech contained many encouraging phrases.

You were determined to figure that out!

You did it all on your own.

Look how tall your tower is!

You worked really hard on that puzzle.

Growth Mindset vs. Fixed Mindset

Carol Dweck's *Mindset: The Psychology of Success*

Affirmations teach children a way to conquer obstacles without giving up—a sense of grit. They reinforce determination to work hard and relentlessly overcome challenges.

“I can get better if I try harder.”

Parent praise should focus on process vs. person—praise for working hard, determination

Words are food for the brain.

Dana Suskind, M.D. *Thirty Million Words: Building a Child's Brain*

A child “whose brain is starved of adequate language will survive but will have enormous difficulty learning and will never reach his or her full intellectual capacity.”

“Social nutrition [talk] is essential to achieving optimum brain development.”



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Marshmallow Test of Self-regulation— Professor Walter Mischel, Stanford 1960



- Children with delayed language have a higher incidence of problems related to self-regulation.
- “Hearing sounds sets a path to self-regulation and executive function because it helps the brain to form a network for processing things sequentially which is a precursor for planning and executing reactions.” —D. Suskind, M.D.
- Parent: Put your toys away! vs. What should we do with the toys now that we’re finished playing with them?

Suggestions and prompts elicit a child’s input or choice and supports a child’s autonomy.

Hart and Risley Study (cont'd)

- Parents in poorer homes made shorter comments such as “Stop that,” “Get down.” These parents also gave less positive reinforcement.

4 year-old children in lower socioeconomic homes heard 104,000 affirmations and 228,000 prohibitions

WHEREAS

4 year-old children in higher socioeconomic homes heard 664,000 affirmations vs. 104,000 prohibitions

Hart and Risley Study (cont'd)

In the Hart and Risley study (1995),
the amount of parental speech was even **more**
important
than education or socioeconomic status to
predict a child's language abilities and IQ.



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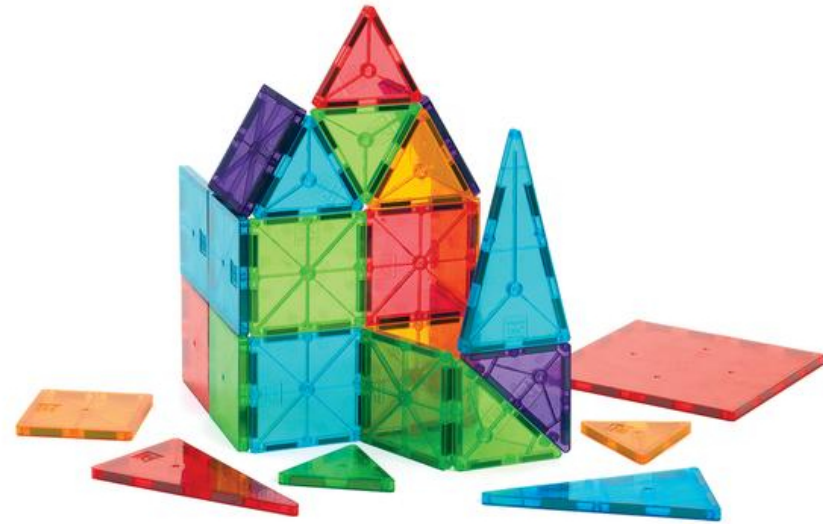
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Dana Suskind, M.D.

“Parent language influences our ability to reach our potentials in math, spatial reasoning, literacy, our ability to regulate our behavior, our reaction to stress, and our perseverance.”

Dana Suskind, M.D.

Children who hear more spatial words are more likely to speak more spatial words. Children who hear and use more spatial words perform much better on spatial tests.



Caution: Gender Bias in Math Talk

One study revealed that daughters received half the overall math talk than boys.

There is a tendency to get sons more involved in math activities than daughters.

The future of a child's brain—to a great extent—is in the amount and type of communication of the caregivers.





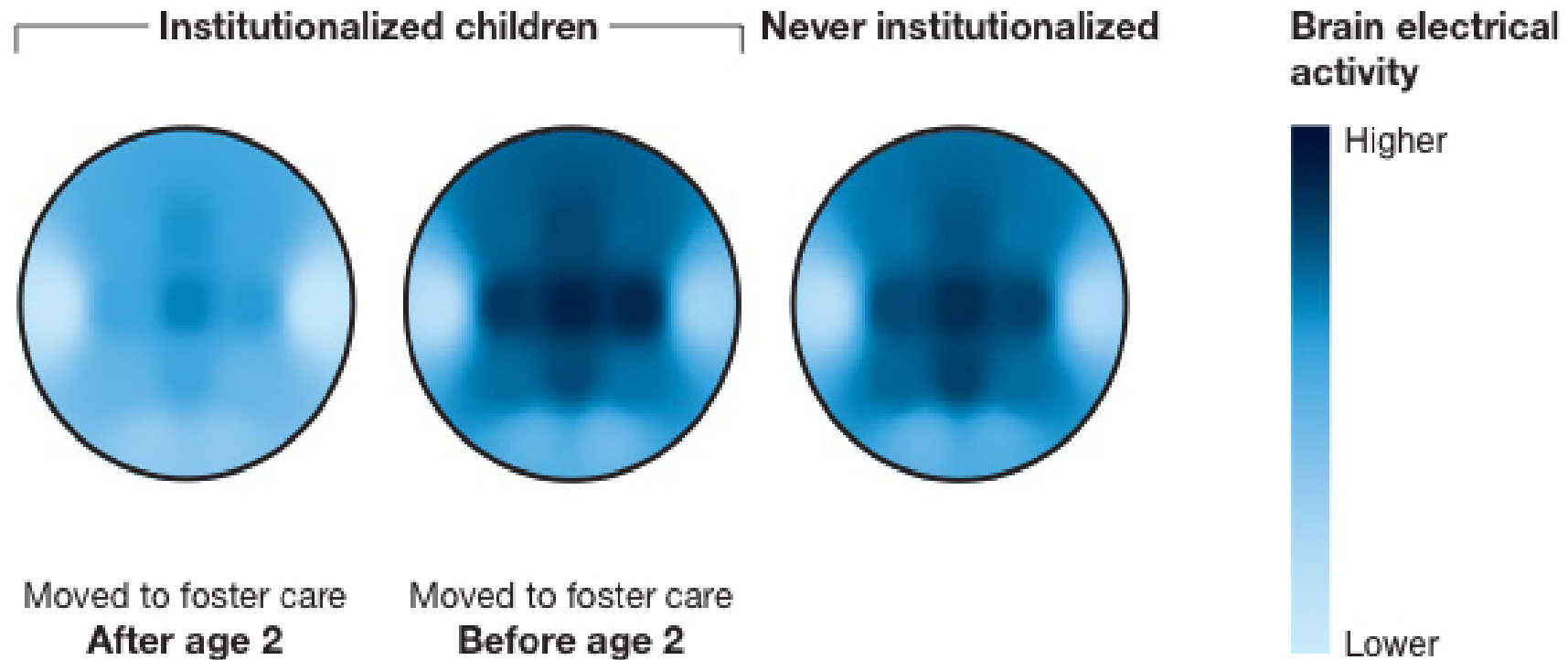
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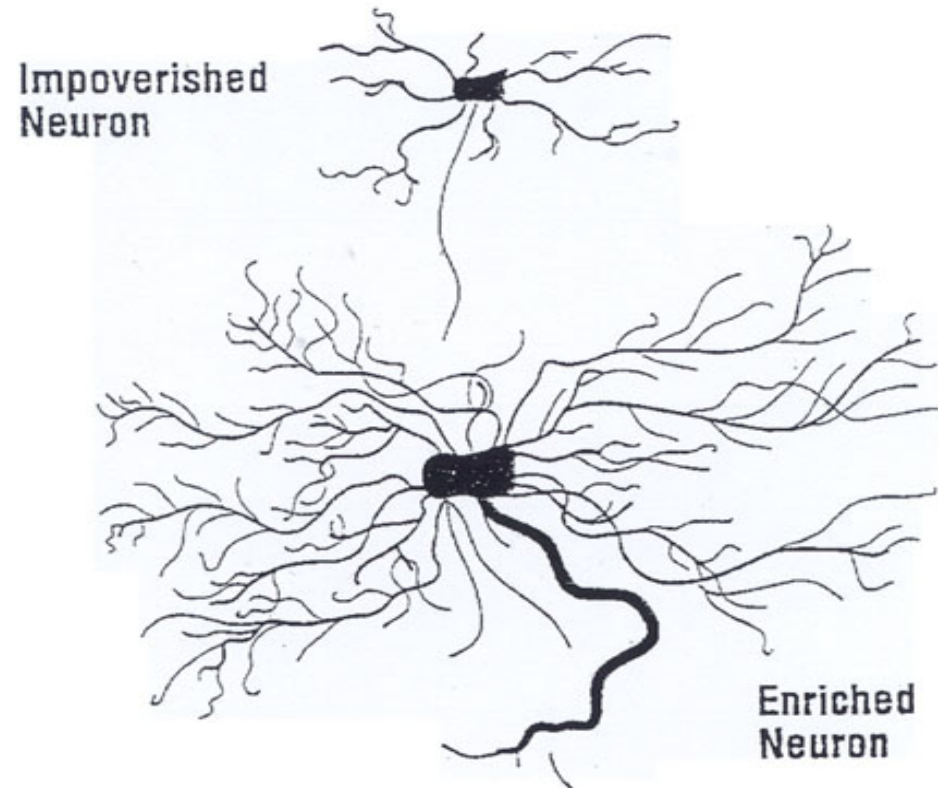
Experiences and Interactions are Critical for Language Development

(image from *National Geographic*, "The First Year" January, 2015)



Importance of Language Experiences/ Enrichment Before Age 3

Enrichment Changes the Structure of the Brain



Ways to Foster Language Development

1) INTERACT WITH YOUR CHILDREN

- Talk and sing to children from infancy (2014 Position Paper, American Academy of Pediatrics).
- “The word gap leads to an achievement gap that can have lifelong consequences” (Too Small to Fail early childhood initiative).

Interact Positively with Few Directives

- If you give lots of commands, you're showing that the purpose of language is for communicating one's wishes to others
- If you ask lots of questions, you're showing that the purpose of language is the acquisition of new knowledge
- Directives actually inhibit language growth

Take advantage of time together



Spending time together fosters language development



Mealtimes conversation boosts vocabulary development (Catherine Snow/Diane Beals, 2006).



- Meals are a way to connect and form relationships through sharing of stories, development of conversational skills.
- All bets are off if the TV is on during meals!



A trip to the grocery can foster language development



Many opportunities to engage in language in the fresh produce department





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2) READ TO YOUR CHILDREN

- Read to children from infancy (2014 Position Paper, American Academy of Pediatrics).
- The American Academy of Pediatrics (62,000 pediatricians) backs reading aloud from infancy to narrow the word gap.
- Read to young children 15-20 minutes/day (AAP, 2014).



- Too Small to Fail, pediatricians, Scholastic, and Reach Out and Read are partnering to provide children's books to pediatric patients from low-income families. Participating pediatricians talk to families about the importance of literacy during office visits.
- Greg Worrell, president of Scholastic Classroom and Community Group—"In all too many families, especially low-income families, there is not a single children's book in the home."



Traditional Story Time and Dialogic Reading/ Book Sharing

Rather than the child quietly listening while the parent is reading, the child interacts with the story, asking questions, talking about what they see, think, and feel. The parent should pay attention to what the child is focused on in the story.



3) INTERACT FACE-TO-FACE



Children learn language within a social setting--“face to face, interacting with other people. Social experience is a portal to linguistic, cognitive, and emotional development” (Dr. Patricia Kuhl, University of Washington).



- “A baby’s interactions with others engages the social brain. Learning language is not simply a technical skill that can be learned by listening to a recording or watching a show on a screen. Instead, it is a special gift that is handed down from one generation to the next” (Dr. Patricia Kuhl, University of Washington, 2013).



- Children learn language **ONLY** from people, not from screens.
- Brain imaging validates that language delivered by TV, audio book, Internet, or smartphone does **NOT** result in language development of young children--no connecting of neurons (Dr. Patricia Kuhl, University of Washington).





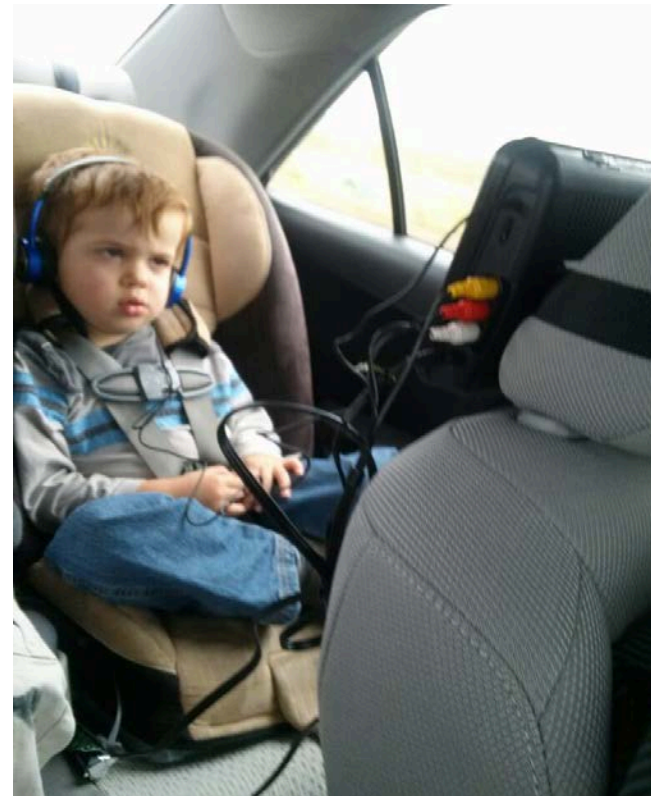
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4) MONITOR USAGE OF DIGITAL DEVICES

The American Academy of Pediatrics recommends that parents keep TV and other electronic media away from children **younger than age 2**.



Turn It Off

Digital devices/TVs/screens do not tune in to a child.

Digital devices cannot initiate a conversation.

Digital devices do not take turns or extend a conversation.



Who uses more screen time?



Minority children watch 50 percent more TV than their white peers, and they use computers for up to one and a half hours each day.

- White children spend eight hours and 36 minutes a day looking at a screen, and black and Latino children spend 13 hours (Kaiser Family Foundation)
- 2015 Pew report: African-American teenagers are more likely to own a smartphone than any other group of teenagers in America

Missing Out on Language Development



5) PROVIDE SENSITIVE CAREGIVING



- Children who received more attention and nurturing (cuddling, rocking, holding) at home tended to have higher IQs (*National Geographic*—“The First Year”).
- Researchers found a strong link between nurturing at infancy through age 4 and the size of the hippocampus (part of brain associated with memory and retention of information).
- Language development is promoted when children are spoken to in an affectionate voice, with accompanying hugs, kisses, and praise.

- The development of cerebral circuits depends on positive interaction between mother and infant from birth to age 2.
- Children are especially vulnerable to persistent negative influences during this period of life.



6) ENCOURAGE NATIVE LANGUAGE IN THE HOME

At 6 months monolingual babies can discriminate between phonetic sounds of different languages while by 10-12 months these babies were no longer detecting sounds in the second language (Univ. of Washington).

- Back-and-forth authentic conversations solidify native language as well as second language learning.



- Bilingual children develop double vocabularies, develop multitasking skills, the “executive function of the brain” located in the frontal cortex; more cognitively flexible (University of Toronto).
- Young children who learn two languages, even at the same time, gain better knowledge of language structure as a whole.



7) The Three Ts: Tune In, Talk More, Take Turns

Dana Suskind and The Thirty Million Word Initiative at the University of Chicago—developed for birth to 3 year olds and their parents

Tune In: Notice what the child is focused on and follow his/her lead; get on the child's same physical level

Talk More: Narrate what you are doing in front of the child; talk about things you've done together; extend the language by adding words

Take Turns: have a conversational exchange; this is the most valuable in developing a child's brain; wait for the child to respond

If you aren't aware you make a
difference in your child's future, then
why would you do anything
differently?

All the pediatricians, all the health care workers, all the teachers in the world knowing the importance of language in a child's first three years means nothing if the parents don't know. Without them, the necessary growth will simply not occur.

Dana Suskind, M.D.

Resources

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Baby’s Brain Begins Now: Conception to Age 3 Urban Child Institute www.urbanchildinstitute.org/why-0-3/baby-and-brain

Child Development Fact Sheet: Stages of Brain Development www.ag.ndsu.edu/pubs

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Dr. Patricia Kuhl’s TED talk “The Linguistic Genius of Babies” at ted.com

Questions



Comments



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Go to: brunswickcps.org

Click on Title I (list of Power Points)

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