

TIME

FROM THE MAGAZINE

Sunday, Jan. 08, 2006

Want a Brainier Baby?

Loading up on tapes, games and videos may not be a smart move. There are better ways to nurture a young mind

By PAMELA PAUL

Thomas Bausman, 2, and his brother Jake, 10 months, are typical American babies. Every day, Thomas settles down to watch two hours of television, while Jake sits in front of the set for an hour, the national average for their respective ages. Their favorite thing to watch, by far? Baby Einstein. Anita Bausman could not be more pleased with her children's preference. Jake, she reports, learned colors, numbers and his love of robots from the popular videos, which are filled with puppets, animals and moving objects, often set to classical music. "It's not just turning on Nickelodeon," Bausman says. "It's educational and beneficial. I know he's happy watching, and I can pop in and point out something onscreen, then go deal with the laundry."

Bausman's attitude is typical of U.S. parents. In a 2004 Kaiser Family Foundation study, more than half of the parents surveyed said that educational videos and toys are "very important to children's intellectual development." Efforts to get kids on the Ivy League track now begin at infancy, and in the past few years, the so-called edutainment market for babies and toddlers has exploded. According to Vicky Rideout, vice president of the Kaiser foundation, in 2003 there were 140 videos or DVDs for kids age 2 and younger for sale on Amazon. Today, there are 750.

Many of those products bear enticing messages on their packages: "stimulate baby's cognitive development" or "increase baby's brain capacity." But according to a new study, "A Teacher in the Living Room?," by the Kaiser Family Foundation, the companies do essentially no research to back up their claims. Nor can they cite research by others that relates specifically to their products. "We're not neurolinguistic scientists," admits Marcia Grimsley, a senior producer for Brainy Baby, purveyor of such DVDs as Right Brain and Left Brain, which claim to develop the creative and logical components of a baby's mind. "We went out and researched other people's work— scientists, neurologists, psychologists— and applied that knowledge to our products so they could be fun and beneficial to parents and children."

The unspoken assumption behind most of those products is that stimulation is good and that more stimulation is even better. But that's not necessarily so, says Meredith Small, an anthropologist at Cornell University and author of *Our Babies, Ourselves: How Biology and Culture Shape the Way We Parent*. In fact, she says, "there's a growing thought that maybe Americans are overstimulating their babies, or stimulating them in the wrong ways."

There's a basic misunderstanding that stems from studies of children and laboratory animals that were starved of attention and stimulation, says Pat Levitt, director of the Vanderbilt Kennedy Center for Research on Human Development. "Everyone heard about the orphans in Romania who were deprived of stimulation as babies, then had learning and emotional problems later," says Levitt. But just because a normal environment is better than a deprived one, that doesn't necessarily mean that a hyperenriched

environment is better still. As Levitt puts it: "There is no evidence that says you can drive the baby's system to ever greater heights."

In fact, there is evidence to the contrary. According to Dimitri Christakis, codirector of the Child Health Institute at the University of Washington, "The more TV babies watch, the more likely they are to have attentional problems later in life." Christakis cites a long-term study that tracked children from age 1 through age 7. It found that for each additional hour of daily TV viewing before age 3, a child's chances of later developing problems paying attention increased 10%.

Christakis explains that the human mind—especially the mind of a baby—is driven by what Ivan Pavlov (of the famous dog) called the orienting reflex. When a baby is confronted with a novel sight or sound, he or she can't help focusing on it. By rapidly changing colors, sounds and motions, videos for children effectively force a baby's brain to stay at attention. If his or her gaze wanders, the action quickly rivets it back to the screen.

"Parents say, 'My child can't stop looking at it! She loves it!'" Christakis says. "Well, true, she can't stop looking at it, but that doesn't mean she loves it." Not only might Baby not be enjoying the program, Christakis says, "but based on the research I've done, there's reason to believe these products have deleterious effects on the developing mind." Christakis is not alone in this thinking. The American Academy of Pediatrics recommends no TV viewing of any kind before age 2.

CDs and DVDs designed to teach a baby Spanish or Chinese are also problematic. Patricia Kuhl, who studies language acquisition at the University of Washington, conducted an experiment comparing the effects of Chinese audio recordings for children and a Chinese-speaking human. She had a native Mandarin speaker play with a group of babies while speaking Chinese for 12 sessions of 25 minutes each over a four-week period. Later she tested the babies and was able to demonstrate that they recognized Mandarin sounds. But when she repeated the experiment with three control groups—one set of babies that saw the Chinese speaker play with babies on video, another that listened to an audio recording of the Chinese woman playing and a third that had no exposure to the Chinese speaker—none seem to perceive Mandarin sounds. Apparently, the presence of a living, breathing human was essential.

There's a lesson there for any parent who wants to encourage early learning. Most experts agree that what matters most is not what toy the baby plays with but the ways in which you interact with your child. "There's no question that the experiences a child has in its first year are crucial for cognitive, emotional and physical development," says Lise Eliot, a neuroscientist at Chicago Medical School and author of *What's Going On in There? How the Brain and Mind Develop in the First Five Years of Life*. "But the good news is none of this costs any money. Babies prefer humans over anything inanimate."

One key difference between human interaction and even the most sophisticated educational toy is that interpersonal exchanges engage all the senses—sight, sound, smell, taste and, very important, touch. "People tend to forget that children are very tactile and their most sensitive part is their mouth," says David Perlmutter, a neurologist and author of the forthcoming book, *Raise a Smarter Child by Kindergarten*. "Babies need to mouth things and to smell, to have rich sensory experiences."

This is borne out by a new study of 96 babies conducted by Andrew Meltzoff and Rechele Brooks at the University of Washington. Meltzoff and Brooks knew that long before babies learn to talk, they form emotional connections with parents and caregivers by looking into their eyes. But there's a big cognitive leap between looking at someone's eyes and following that person's gaze to see what he or she is looking at. By tracking at what age babies learn to follow an adult's gaze, Meltzoff and Brooks have been able to

establish an early indicator of language ability. It turns out that the earlier a baby follows the gaze of an adult (generally between 9 months and 11 months), the more advanced his or her language skills are at age 2.

"Babies read their mother's faces," explains Meltzoff, co-author of *The Scientist in the Crib: What Early Learning Tells Us About the Mind*. "Being able to read other people and their intentions and to know what they're thinking about is key to language development."

Babies can also read signs. Psychologists Linda Acredolo and Susan Goodwyn, co-founders of the Baby Signs Institute, conducted a long-term study with 140 families funded by the National Institutes of Health to see whether teaching sign language to babies before they can talk helps or impedes language development. The results were surprising. Babies taught to sign at 11 months tested 11 months ahead of other babies in terms of vocabulary and linguistic ability by age 3. At age 8, signing babies scored higher on IQ tests than the control group. While many psychologists agree that teaching sign language probably does babies no harm, others have questioned the methodology of the research that shows signing's benefits. Moreover, the research that's been done has focused on signing as taught by trained parents. Today there are a slew of new videos and DVDs purporting to teach babies to sign, and no one has studied their effectiveness.

Of course, parents don't have to learn sign language to be active participants in their babies' development. For the past 20 years, New York University developmental psychologist Catherine Tamis-LeMonda has been observing babies as they interact with parents in "naturalistic" environments— at home, running errands, going about their everyday lives— to see how adult involvement affects language acquisition. Through longitudinal studies, she's documented that the more parents respond to babies' cries, expressions and articulations, the earlier the children will talk and the more advanced their language skills will be at age 5. Parents who respond to babies' cues— reacting to grimaces and giggles, mimicking their sounds, extrapolating from "bababa" to "bottle," labeling things they touch— help their children acquire language. This responsiveness, however, should not be forced. "If you're not enjoying yourself while playing with that baby, it's not going to do any good," Tamis-LeMonda cautions.

That's because babies are remarkably attuned to emotions. The best— and easiest— gift a parent can give his or her child is relaxed time when the parent is focused on the baby and follows the baby's lead. If the baby grabs at waxed paper, the adult can repeat the word paper and show him or her how it makes noise or how it can be crumpled. "The infant brain craves novel stimulation, but that can be found in ordinary nonstructured, nonmarketed things around the house," says Ross Thompson, a psychologist at University of California at Davis and one of the founders of the National Scientific Council on the Developing Child, a research organization of scientists and experts on early-childhood development.

Babies need to learn how to master new situations, but they also learn through repetition and thrive on predictability. "Having rituals, like bedtime and mealtime routines, brings order to babies' lives, which helps them organize their thinking," explains Tamis-LeMonda. Being able to anticipate future events as well as remember and create memories of past patterns fosters cognitive development. "Babies are very good at tracking statistical information in their environment," says Laura Schulz, a professor of brain and cognitive sciences at M.I.T. "They're incredibly sensitive to human action and to intentional acts in the world. They watch what people are doing to learn causal connections." Babies will grab the same object over and over, replicating experiences, testing them out, conducting their own experiments. If I smile, will Mommy smile back? Providing babies with consistent actions and reactions helps them make sense of their world and the people in it.

"When a 9-month-old raises his arms to be picked up by Daddy, that demonstrates an incredibly complex chain of learning," says Claire Lerner, director of parent education at Zero to Three, a national nonprofit

focused on early-childhood development. "First the child has to have an emotional connection to his father. Then he has to form an idea: I want to be picked up. Then he has to know to raise his arms. In that tiny vignette, you can see how complicated a baby's development is."

And how simple it is to reinforce that learning. Just pick up the baby, and start cuddling.

Do These Toys Work?

BABY'S FIRST STEPS ITALIAN Parents and caretakers, not CDs, are best for teaching languages

BABY EINSTEIN These programs grab attention but don't create geniuses

BIG FROG They may be cute, but don't expect interactive stuffed animals to teach a baby numbers, colors or shapes. A teddy bear without batteries is just as good for cuddling and imaginative play

PICTURE CARDS Flash cards may help students cram for the SAT, but experts agree that the cards are inappropriate for babies younger than 2

YOUR BABY CAN READ Cognitive scientists say that babies forced to watch a DVD daily are memorizing responses, not reading

BRAINY BABY Doctors recommend no TV or videos before age 2

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