The gift of gab

Experiments reveal just how motivated toddlers are to join the conversation

By Jennifer McNulty

Professor Nameera Akhtar entices research subject Natasha Mullins to play with a distracting pop-up toy.

For new parents, a child's first words evoke joy, pride, and often more than a little relief. Those utterances herald the beginning of a new era of communication between infant and adult, as words take the place of crying and tantrums.

To hasten that developmental leap, many parents attempt to "teach" their children. Eager mothers and fathers point to everyday objects, enunciating carefully and offering up words as if they were the keys to the kingdom: "Ball!" "Book!" "Dog!"

And infants love it. At about 18 months, their vocabularies take off, and by two years, they are "word-learning machines," says Nameera Akhtar, a professor of psychology at UCSC and a pioneer in the study of language acquisition in young children.

But the process isn't as parent-driven as mommies and daddies might think. In a series of clever experiments conducted over the past decade, Akhtar has established that young toddlers are much more keyed in to their environment than researchers ever suspected. It turns out that they are so eager to join the conversation that they approach their "work" with the focus of codebreakers, picking up signals and learning all the time, even without instruction.

"We think we're responsible for what children learn, but they are very motivated to communicate," says Akhtar. "Even when we're not talking to them, they're trying to figure out what's going on."

Akhtar and grad student Katherine Herold intentionally ignore Natasha, whose focus soon moves from the pop-up toy to Akhtar and Herold.

Akhtar conducts her research in a developmental psychology lab outfitted to resemble a family room, with a couch, a toddler-sized table and chairs, and colorful posters on the walls. Only the 3-by-4-foot mirror that conceals a one-way window confirms what insiders know: It is here that Akhtar's clever experiments have revealed the powerful language-learning abilities of young children.

In one of Akhtar's most revealing studies, 24-month-old visitors were welcomed to the lab, given a fun pop-up toy to play with, and then basically ignored by Akhtar and graduate student Carmen Martinez-Sussmann. The two women went through a scripted exchange about four unfamiliar objects, one of which they referred to as a "toma"— a made-up word that was at the heart of the experiment. The children readily learned the novel word after merely overhearing it while engaged with the toy.

"Even at 24 months, children are keen observers of third-party interactions, and they're taking in a lot more speech than what is directed to them," says Akhtar. The study also yielded an unexpected insight into toddler comprehension: The youngsters looked up systematically when they heard a new word and were clearly responding to new information. It was the kind of breakthrough that makes researchers giddy, confirming a hunch and taking the work to a new level. "We really haven't been giving children enough credit," Akhtar says with a shy smile that belies her determination to set the record straight.

Akhtar's work shows that children play an active role in their own development, and it establishes that the process begins much earlier than researchers thought. As a graduate student, Akhtar began working with 24-month-olds. She has since studied 18-month-olds and is now gearing up to assess 14-month-olds—a prospect she concedes with good humor will be logistically even more challenging. But, like her subjects, she is a tireless learner, and she is already piloting studies to establish developmental milestones such as the age at which children begin to teach others. She can't wait to study the differences in how toddlers learn from strangers compared to family members.

In one new study, Akhtar and graduate student Katherine Herold will see if youngsters imitate the actions of people they're not directly involved with, like they pick up new words. "Some researchers don't believe children at 14 months can learn from an interaction that doesn't involve them," says Akhtar. "But I want to see if children at that age can identify with the other person. Can they acquire an action through observation alone, or do they need to be interacting with someone to learn from them at this young age?" Akhtar expects to see differences among 14-, 18-, and 24-month-olds.

PHOTOS BY JIM MACKENZIE

Graduate student Carmen Martinez-Sussmann (right) observes and videotapes the experimental session through a one-way window. Natasha's father, Nick, looks on.

Akhtar's research is not only contributing to our fundamental understanding of child cognitive and social development, it may indirectly benefit autistic children, as well. Half of all autistic children never develop language skills in part because they lack the strong desire to connect with others that motivates most children to learn to communicate. Akhtar's work may shed light on strategies that would help these youngsters.

Far from Akhtar's lab, in many cultures around the world, adults do not teach infants language directly. Yet the absence of focused, one-on-one parent-child instruction doesn't appear to hamper their development.

"Our understanding of language learning is missing a great deal if we focus only on speech addressed directly to the child," says Akhtar.

Which isn't to say all those well-meaning parents should back off. It may not be necessary in terms of a child's intellectual development for mommy or daddy to label the cat, the boat, and the shoe, but it's fun, and that's good. "Both babies and parents enjoy spending that time together, which is wonderful," says Akhtar. "But it may be more about pleasure than instruction. Children really are the engines of their own development."