# Biomedical/Educational Update:

## Specific requests reduce behavior problems

Because language is difficult for many autistic children, functional communication training often focuses on the simplest possible responses (e.g., "I want toy" rather than "I want train/ball/blocks.") A new study, however, suggests that teaching more exact responses can reduce behavior problems.

Sung Woo Kahng and colleagues taught a seven-year-old autistic and mentally retarded boy to use picture cards to ask for desired items, using two conditions. In one, the boy randomly received one of six well-liked items in response to the phrase, "I want treats." In the other, he received one of the items if he specifically requested it (e.g., "I want chips," or "I want Nintendo."). In each case, problem behaviors were ignored. Both conditions were compared to a condition in which toys were presented when problem behavior occurred.

When the boy received a randomly selected item in response to the phrase "I want treats," his problem behavior decreased, but only temporarily. When he learned to use specific requests for each of the items, however, he used his new communication skills frequently and reductions in his problem behaviors were lasting.

The researchers say their findings are limited by their study's single-subject design, but suggest that teaching more complex responses may reduce problem behaviors and increase autistic individuals' use of functional communication.

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"Comparison of single and multiple functional communication training responses for the treatment of problem behavior," Sung Woo Kahng, Daniel J. Hendrickson, and Chau P. Vu, *Journal of Applied Behavior Analysis*, Vol. 33, No. 3, Fall 2000, pp. 321-324. Address: SungWoo Kahng, Neurobehavioral Unit, Kennedy Krieger Institute, 707 N. Broadway, Baltimore, MD 21205, Kahng@kennedykrieger.org.

## Is Asperger syndrome a disability?

British researcher Simon Baron-Cohen has advanced the controversial argument that Asperger syndrome or high-functioning autism should be considered as a "difference" rather than as a "disability."

Baron-Cohen says, "In a world where individuals are all expected to be social, people with Asperger syndrome/high-functioning autism are seen as disabled." But, he notes, in the fields of math, computing, cataloging, music, linguistics, craft, engineering, or science, an autistic individual's eye for detail is an asset rather than a liability. While acknowledging that autistic individuals with mental retardation or significant language impairment are disabled, and that even individuals with high-functioning autism experience significant problems in coping with everyday life, Baron-Cohen suggests that high-functioning autism "might be better characterized as a *different* cognitive style," which causes difficulty largely because modern society requires extensive social interaction.

Baron-Cohen further advances the intriguing idea that high-functioning autism may be increasing in part because, as society becomes dependent on technology, genetic selection begins to increasingly favor individuals with the exact, object-oriented patterns of thinking seen in autistic individuals. Noting that such a shift would first be noted in communities where many people are involved in technological work, he says, "One recent survey of scientists in Cambridge University showing increased familiality of autism spectrum conditions is a first such clue that such effects may be operating."

In earlier work (see ARRI 11/4), Baron-Cohen found that fathers and grandfathers of children with autism or Asperger syndrome were more than twice as likely as parents of control subjects to work in engineering fields. A newer survey of students at Cambridge, he says, reveals that students majoring in scientific fields have six times as many autistic individuals in their families as do humanities majors, but shows no similar increase in other conditions such as Down syndrome, manic depression, or schizophrenia. This suggests, he believes, that autism genes can confer a significant advantage in fields where an understanding of how objects work is more critical than an understanding of other people.

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"Is Asperger syndrome/high-functioning autism necessarily a disability?" Simon Baron-Cohen, *Development and Psychopathology*, Vol. 12, 2000, pp. 489-500. Address: Simon Baron-Cohen, Departments of Experimental Psychology and Psychiatry, University of Cambridge, Downing Street, Cambridge CB2 3EB, U.K.

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## Computer instruction receives high marks

Can autistic children learn language skills better from a computer than from a human teacher? According to preliminary research, the answer may be "yes."

In 1999 (see ARRI 13/3), Vera Bernard-Opitz and colleagues reported that nonverbal autistic children vocalized more when they received computer feedback than they did during live instruction. A new study by Monique Moore and Sandra Calvert indicates that autistic students pay more attention to computerized vocabulary instruction than to human teachers, and that this increased attention translates into better language skills.

Moore and Calvert tested 14 autistic children between the ages of 3 and 6. The children ranged from students with only some receptive verbal skills to those who could generate and use complex sentences.

Students were assigned to one of two groups: a standard behavioral program, in which a teacher taught them to label objects verbally and rewarded correct responses, or a computerized training program. The computer taught the same task in a similar manner, using the same behavioral techniques including chaining and immediate reinforcement, but also provided attention-getting features including animation and sound effects.

Computerized instruction, Moore and Calvert say, was significantly more effective than teacher-guided instruction. "Children were attentive 97 percent of the time in the computer condition and only 62 percent of the time in the teacher condition," they say; "they learned 74 percent of the targeted nouns in the computer condition and only 41 percent of the nouns in the teacher condition; and 57 percent of the children in the computer condition wanted to continue treatment compared to none of the children in the teacher condition." The researchers conclude that well-designed computer programs are a cost-effective means of providing one-on-one vocabulary instruction to autistic children.

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"Brief report: vocabulary acquisition for children with autism: teacher or computer instruction," Monique Moore and Sandra Calvert, *Journal of Autism and Developmental Disorders*, Vol. 30, No. 4, August 2000, 359-362. Address: Sandra L. Calvert, Department of Psychology, Georgetown University, 37th and O Streets, N.W., Washington, D.C. 20057, calverts@gunet.georgetown.edu.

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