

# Biomedical/Education Update:

## A silver lining: problem behaviors can be strong reinforcers

Parents frustrated by their autistic children's rocking, hand-flapping and echolalia can take heart: according to a report by Marjorie Charlop and colleagues, aberrant behaviors such as these can be put to use as powerful reinforcers.

Charlop et al. conducted three studies:

—In study 1, children either a) received a food reward for working, b) were allowed to participate in their favorite stereotypic behavior (such as hand-flapping or thumb-sucking), or c) received mixed rewards (either food or stereotypy).

—Study 2 was similar except that delayed echolalia, rather than stereotyped behavior, was compared to food reinforcers and to mixed reinforcement (either food or echolalia).

—In study 3, perseverative behavior (for instance, handling plastic farm animals or talking repetitively about a subject such as cactus) was compared to food and stereotypic behavior.

"In general," Charlop and colleagues say, "task performance was highest when brief opportunities to engage in aberrant behavior were provided as reinforcers." All three behaviors the researchers studied (stereotypy, echolalia, and perseveration) proved to be more effective reinforcers than food. In addition, they note, the children's aberrant behaviors did not increase at home or in other classroom situations, and they "did not engage in excessive stereotypic response or resist when a preferred object was taken away after five seconds of access."

Charlop et al. say that rather than attempting to eliminate undesirable behaviors totally—a very difficult task—educators might want to identify the reinforcing properties of certain behaviors and "use them to advantage . . . as reinforcers to teach new, adaptive responses."

"Using aberrant behaviors as reinforcers for autistic children," Marjorie H. Charlop, Patricia F. Kurtz, and Fran Greenberg Casey; *Journal of Applied Behavior Analysis*, Vol. 23, No. 2, Summer 1990, pp. 163-181. Address: Marjorie H. Charlop, Psychology Department, Claremont McKenna College, Claremont, CA 91711.

## Delayed visual maturation & autism

Three boys with an unusual constellation of symptoms have been reported by English researchers Robert Goodman and Lesley Ashby. Abnormalities seen in the children included:

- apparent blindness in infancy, followed by spontaneous development of visual responsiveness.
- severe autism in two cases, and autistic-like symptoms in the third.

- general developmental delay, and poor muscle tone and/or clumsiness.

It is interesting, Goodman and Ashby say, that two of the three children have made outstanding progress and now appear much less autistic than when first seen. "If our preliminary findings are confirmed by longer follow-up of larger numbers of cases," they say, "a history of delayed visual maturation will join the short list of additional disabilities that confer a better prognosis on autistic children—other instances being clumsiness . . . and Tourette syndrome."

The researchers speculate that both delayed visual maturation and good-prognosis autism may be caused by widespread, patchy delays in brain maturation affecting brain systems involved in visual perception, motor skills, communication, and social awareness.

"Delayed visual maturation and autism," Robert Goodman and Lesley Ashby; *Developmental Medicine*, 32, 9, Sept. 1990 pp. 814-818. Address: Robert Goodman, Dept. of Child and Adolescent Psychiatry, Institute of Psychiatry, De Crespigny Park, London SE5 8AF.

## Vitamin E for TD?

Vitamin E may be an effective treatment for tardive dyskinesia—chronic involuntary muscle movements often caused by prolonged use of neuroleptic drugs—according to a report in the *American Journal of Psychiatry*.

In a double-blind, crossover study, A. M. Elkashef and colleagues administered vitamin E or a placebo to eight schizophrenic patients with drug-induced tardive dyskinesia. (The patients had shown symptoms of TD for an average of 3.8 years.) Five of eight patients showed improvements of 30% or more on the Abnormal Involuntary Movement Scale during vitamin E treatment.

Reviewing the research in the *Townsend Letter for Doctors*, Alan Gaby comments that the study offers encouraging evidence that "tardive dyskinesia is at least partially reversible."

He adds that vitamin E might be useful as a preventive measure in individuals who are taking neuroleptic drugs but have not yet developed symptoms of tardive dyskinesia.

*Editor's Note: A 1989 report by David Hawkins found that only .05% of 61,000 patients given neuroleptic drugs developed TD if also given high dosages of vitamins B3, B6, C, and E (Journal of Orthomolecular Medicine, Vol. 4, 1989, pp. 35-36).*

"Vitamin E in the treatment of tardive dyskinesia," A.M. Elkashef, P.E. Ruskin, N. Bacher, and D. Barron; *American Journal of Psychiatry*, No. 147, pp. 505-506, 1990.

—and—

"Literature review and commentary," Alan R. Gaby, *Townsend Letter for Doctors*, January 1991.

## Sensory therapy & SIB

Is sensory integration therapy an effective treatment for self-injurious behavior (SIB)? Not necessarily, according to a report by Susan Ann Mason and Brian Iwata.

Iwata and Mason selected three retarded individuals whose behavior indicated that they injured themselves for different reasons: to get attention, to obtain sensory feedback, or to escape from demands. They then studied the effects of sensory integration therapy on the SIB of the three subjects.

Surprisingly, they say, the individual whose SIB appeared to provide sensory feedback—the subject expected to respond best to the sensory input provided by the therapy—actually increased her self-injury. The SIB of the attention-desiring individual was influenced by the amount of attention provided during sensory integration therapy, but not by the therapy itself. The third individual's level of SIB was the same during the therapy as during low-demand activities outside of the therapy.

When Mason and Iwata switched from sensory integration therapy to behavior modification techniques, they say, the self-injury of all three individuals dropped.

The researchers say that future studies on this form of therapy should control for "coincidental effects" of sensory integration, such as increased attention or reduced demands. They note, however, that one study by Dura et al. did control for attention factors, and still found positive effects of sensory integration. Their own results, they say, "raise important questions about the effectiveness of sensory integrative therapy as a specific treatment" for self-injury.

"Artificial effects of sensory-integrative therapy on self-injurious behavior," Susan Ann Mason and Brian A. Iwata; *Journal of Applied Behavior Analysis*, Vol. 23, No. 3 (Fall 1990), pp. 361-370. Address: Susan Ann Mason, Department of Special Education, Benjamin Building, Univ. of Maryland, College Park, MD 20742.

## A birthday clue?

An unusually high number of autistic children have March birthdays, according to a survey of 100 autistic children and control groups by Swedish researcher Christopher Gillberg. While hesitating to draw conclusions from this finding, Gillberg notes that two earlier studies found a high incidence of March birthdays in autistic populations (see ARRI 1/4). This could indicate, Gillberg says, that seasonal viral infections play a role in the development of autism. A connection between schizophrenia and birthdays in the early months of the year, he says, has already been documented.

"Do children with autism have March birthdays?," Christopher Gillberg; *Acta Psychiatr Scand*, 82, pp. 152-156, 1990. Address: Christopher Gillberg, University of Goteborg, Child Neuropsychiatry Center, Anndalskliniken, S-413 45 Goteborg, Sweden.