

Behavior mod techniques reduce sleep problems

Two new reports suggest that simple behavior modification techniques can often reduce or eliminate developmentally delayed children's sleeping problems.

In one study, English researcher David Bramble investigated the efficacy of a simple technique in treating the sleep problems of 15 children, ages 3 to 12, with severe mental retardation. Bramble instructed the children's parents to:

1. set a regular bedtime and waking time.
2. establish a routine designed to help children relax prior to the assigned bedtime.
3. set a restful mood near bedtime.
4. rapidly put the child in bed, withdraw from the bedroom at the assigned bedtime, and ignore any protests or tantrums.
5. return the child firmly to bed, with minimal contact, if the child leaves the bedroom.
6. reward the child in the morning if the child had stayed in bed all night.

Bramble says positive changes were commonly seen within a few nights of the first treatment session. By the end of the two-week intervention, he reports, nighttime wakings had been reduced by 59%, and "all of the parents reported that their children settled more rapidly and without the degree of distress which had characterized their presenting problems." At the 18-month follow-up, he adds, "all but three of the 15 children no longer had any sleep-related problems."

Bramble says behavioral approaches compare favorably with the use of sedative drugs, noting that sedatives can cause daytime sedation, movement disorders, and sometimes agitation, and "provide no predictable long-term solutions."

Treating multiple sleep problems

Cathleen Piazza and colleagues are focusing on methods of treating children with multiple sleep problems—for instance, those who fall asleep late *and* wake during the night. The researchers compared two different approaches:

—a *bedtime scheduling procedure*, used with seven subjects, in which children were put to bed and awakened at regular times, and not allowed to sleep at other times.

—an approach called *faded bedtime with response cost* (FBRC), also used with seven subjects. In this approach, researchers first determined the child's usual bedtime. The child's designated bedtime was set for half an hour *after* this time, and the child was not allowed to fall asleep before the designated time. Children also were awakened at a set time in the morning.

If a child did not fall asleep within 15 minutes of bedtime, the researchers removed the child from bed and kept the child awake for one hour. During this hour, the child was allowed to play or watch TV. While this might seem rewarding, the researchers say, it actually teaches the child to fall asleep quickly

"since failure to do so will result in having to remain awake for an additional hour when fatigue is already present." At the end of the hour-long play period, the child was returned to bed. This procedure was repeated as often as necessary during the night.

Bedtimes were gradually changed, depending on the children's responses to the technique. If the child fell asleep within 15 minutes, the next night's bedtime was moved to half an hour earlier; otherwise, it was made half an hour later.

Comparing the two approaches, the researchers found that "the FBRC was superior to the bedtime scheduling procedure in reducing the number of hours of disturbed sleep (i.e., night waking, early waking, and delay to sleep onset)." Bedtime scheduling reduced the mean hours of disturbed sleep from approximately one-and-a-half hours to

slightly more than one hour, while the FBRC reduced the mean hours of disturbed sleep to slightly more than half an hour.

"Rapid-acting treatment for a common sleep problem," David Bramble; *Developmental Medicine and Child Neurology*, Vol. 39, 1997, pp. 543-547. Address: David Bramble, Dept. of Child and Adol. Psychiatry, Faculty of Medicine, Nottingham University, E. Floor, S. Block, Queen's Medical Centre, Clifton Blvd., Nottingham NG7 2UH, UK.

—and—

"Treatment of multiple sleep problems in children with developmental disabilities: faded bedtime with response cost versus bedtime scheduling," Cathleen Piazza, Wayne Fisher, and Michelle Sherer; *Developmental Medicine and Child Neurology*, Vol. 39, 1997, pp. 414-418. Address: Cathleen Piazza, Kennedy Krieger Institute, Neurobehavioral Unit, 707 N. Broadway, Baltimore, MD 21205.

Autism and 'engineering genes'

Is there a link between "engineering genes" and autism? Possibly, according to a new study by Simon Baron-Cohen et al.

Baron-Cohen et al. note that autistic children have trouble understanding other people's internal emotional states (a skill they call "folk psychology"), but have normal or even superior ability to understand how physical objects work (a skill they call "folk physics"). Because genetics play a strong role in autism, the researchers theorized that parents of autistic children might often show the same pattern, although to a milder degree.

Thus, they say, "one would expect parents of children with autism to pursue occupations in which a talent for folk physics is essential, whilst a talent for folk psychology is not. Engineering is the paradigm case of such an occupation... because it primarily involves a good understanding of objects rather than people."

Baron-Cohen et al. surveyed more than 900 parents of autistic children, asking about the parents' professions. Similar information was collected from parents of children with Tourette syndrome, parents of children with Down syndrome, parents of language delayed children, and parents of non-disabled children. The researchers also collected information about grandparents' occupations for children in the autism and Tourette groups.

Baron-Cohen et al. report that "results strongly supported the prediction," in that "fathers of children with autism or Asperger syndrome were found more than twice as often in engineering, compared with fathers in the control groups." They add that differences were not due to social class, because

no differences of such magnitude were seen for other professions.

"Among the fathers of children with autism," the researchers say, "the ratio of those working in engineering to those working in social fields was 6:1, whereas in the [Down syndrome and Tourette syndrome] control groups this ratio was less than 3:1."

The researchers also found that autistic children were significantly more likely than children with Tourette syndrome to have grandfathers who were engineers. Mothers and grandmothers of autistic children, however, were no more likely to be engineers than mothers and grandmothers in the control groups.

Baron-Cohen et al. say that their results "might... help explain why a condition like autism persists in the gene pool: the very same genes that lead an individual to have a child with autism can lead to superior functioning in the domain of folk physics."

Editor's note: My 1964 book *Infantile Autism* presented the theory that the genes involved in causing autism may be beneficial if inherited from one parent, while detrimental if inherited from both. The genes in question enhance one's ability to focus attention—to concentrate. And English researcher Robin Clarke speculated, in 1992 (see ARRI 7/1), that autism may result from an excess of normally beneficial "quality control" genes that suppress newer genes in the evolutionary process.—BR

"Is there a link between engineering and autism?," Simon Baron-Cohen, Sally Wheelwright, Carol Stott, Patrick Bolton, and Ian Goodyer; *Autism*, Vol. 1, No. 1, 1997, pp. 101-109. Address: Simon Baron-Cohen, Depts. of Experimental Psychology and Psychiatry, University of Cambridge, Downing Street, Cambridge CB2 3EB, UK.