

Autism Research Review

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Real "Rain Men": the mystery of the savant

by Alison Blake

The very popular film "Rain Man," starring Dustin Hoffman as an autistic man with extraordinary skills, has focused attention on the mystery of the savant: the autistic or retarded person who has difficulty coping with everyday life, but who has isolated areas of brilliance or even genius.

How can a mentally disabled person multiply three-digit numbers with lightning speed, paint beautiful landscapes, or play the piano like a master? Despite years of research conducted with savants, the mystery remains unsolved. Some of the unanswered questions, says Darold Treffert in the *American Journal of Psychiatry*, are:

—Why is calendar calculating such a common skill among savants?

—Why does the combination of retardation, blindness, and musical genius occur with such frequency?

—Why is the savant syndrome more common in autism than in any other disability?

—"Prodigious" savants rare—

Autistic individuals often surprise parents and professionals with islands of skills; many, for instance, can assemble complex puzzles, sing with perfect pitch, or memorize maps or train schedules. Treffert refers to such people, whose abilities seem out of place with their generally low level of functioning, as "talented savants."

As many as one in 10 autistic people may have savant abilities, according to a large-scale study by Bernard Rimland, who found that such abilities occur more often among classically autistic people than among those who are autistic-like. Savant skills appear much more frequently in autistic than retarded people, and more than half

of all autistic savants have two or more savant abilities.

But the "prodigious" savant, the person whose abilities would be incredible in a non-handicapped person, is rare; there may be only a few hundred in the entire world. Their abilities, which often appear early in childhood, are astounding. Some of the most interesting savants researchers have encountered are:

—A musical savant who hummed complex arias at the age of six months;

—A young child who could take apart clocks, radios, TVs, and vacuum cleaners, and put them back together perfectly;

—Richard Wawro, who is developmentally disabled and legally blind, but whose paintings (done with artist's crayons) have been featured in shows around the world;

—Alonzo Clemmons, a severely retarded

artist whose clay and bronze sculptures of animals sell for thousands of dollars apiece;

—Twin "calculator" savants who exchange 20-digit prime numbers;

—Leslie Lemke, a blind and retarded man, who can memorize and play complex piano compositions after one hearing, and—although he has only limited speech—can perfectly mimic such performers as Liberace and Jimmy Durante; and,

—A "calendar calculator" who could calculate dates over a 6,000-year range, failing only on dates prior to 1582, when the Gregorian Calendar replaced the Julian Calendar.

Some savants lose their remarkable skills as they acquire normal abilities such as speech and social awareness. For instance, "Nadia," the subject of a famous book by

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Physical exercise: a simple Rx for behavior problems?

The "surprisingly prevalent practice" of excluding aggressive or hyperactive autistic and retarded people from exercise programs recently came under fire from James McGimsey and Judith Favell, who—along with other researchers—report that far from exacerbating inappropriate behaviors, vigorous exercise can greatly reduce the aggression, hyperactivity, and/or "stimming" of autistic and retarded individuals.

McGimsey and Favell recently reported the results of a study showing that two daily periods of jogging and strenuous activities significantly reduced the aggression and hyperactivity of eight of ten mentally retarded subjects. "Restricting [such individuals'] opportunities to expend physical energy may actually maintain their problem behavior," they say.

In a similar study by Clarice Sue Combs, five retarded subjects participated in daily one-hour fitness sessions including stretching, muscular endurance, and cardiovascular activities. Combs found that exercise caused "a dramatic decrease of [inappropriate] behaviors," as well as rapid improvements in physical fitness. She concludes that regular, structured physical activity can reduce or eliminate the need for

medication or physical restraint in some cases.

"Individualized physical fitness activities therefore should be given a high priority when . . . [planning] programs for individuals who display maladapted behavior and low levels of fitness," she says.

In a study by Jan Bachman and David Sluyter, two retarded adults participated in 45-minute aerobic dance sessions on alternate weekdays. Both students showed decreases in swearing, nonsensical talk, repetitive "stims," and off-task behaviors. Before sessions, and on no-exercise days, inappropriate behaviors remained at baseline levels.

Bachman and Sluyter note that aerobic exercise does not require a high staff-to-client ratio or extensive staff training, and that it is "a constructive behavior which may be a great benefit to the developmentally disabled individuals who may lead a sedentary lifestyle."

Two earlier studies with autistic children also showed that physical exercise can reduce self-stimulatory behavior:

—Lynn Kern et al. worked with seven autistic children with "exceptionally high

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