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The Age of Autism: Something Wicked -- 2

By Dan Olmsted
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The idea of a "chemical connection" in many cases of autism arose during the 1970s and 1980s, then gave way to gene-based theories. But the time has come to revive it.

The last column highlighted a study by Thomas Felicetti, now executive director of Beechwood Rehabilitation Services in Langhorne, Pa. As Felicetti described it in the journal *Milieu Therapy* in 1981, he compared the occupations of 20 parents of autistic children, 20 parents of retarded children and 20 parents of "normal" children who were friends and neighbors of those attending the Avalon School in Massachusetts where he taught at the time.

"The results did, in fact, suggest a chemical connection," he wrote. "Eight of the 37 known parents of the autistic children had sustained occupational exposure to chemicals prior to conception. Five were chemists and three worked in related fields. The exposed parents represent 21 percent of the autistic group. This compared to 2.7 percent of the retardation controls and 10 percent of the normal controls. The data, subjected to statistical analysis, demonstrated a chemical connection.

"The results of this study point in the direction of chemical exposure as an etiological factor in the birth of autistic children."

What makes Felicetti's study, though small, even more compelling is that it was designed to test earlier work by Dr. Mary Coleman.

In the 1976 book "The Autistic Syndromes," Coleman described her study of 78 autistic children in which she noticed "an unusual exposure of parents to chemicals in the preconception period." Out of 78 autistic kids, 20 were from families with chemical exposure; four were from families where both parents had such exposures -- seven out of eight of those parents as chemists. Still, Coleman worried that because the parents volunteered for the survey they might have been scientifically inclined, skewing the results toward careers like chemistry.

Felicetti effectively confirmed the validity of her finding by selecting the participating parents himself.

Coleman's study has an interesting origin: It was suggested by Bernard Rimland, the pioneering figure whose 1964 book, "Infantile Autism," established that parental behavior was not a cause of autism. In 1974, Coleman recounts, Rimland "and other members of the National Society for Autistic Children approached the Children's Brain Research Clinic of Washington, D.C., to discuss the possibility of the Clinic studying their autistic children at the time of that annual meeting to be held in June."

Those children were the ones on whom the research was based. And a chemical connection was a key finding: "In the preconception history questionnaire filled out by both the father and the mother, there were two areas of marked difference between the parents of the autistic children and parents of the controls," Coleman wrote. "One of these areas was exposure to chemicals."

Coleman wrote that "since the incidence of individuals exposed to chemicals in all related occupations in the United States is 1,059,000 in 91,000,000 or 1.1. percent of the population ... to find that 25 percent of any sample has had chemical exposure is quite startling.

"We feel it can not be dismissed because of the theoretical possibility that chemical toxins could affect genetic material prior to conception. Attempts to identify a particular chemical toxin to which many parents were consistently exposed in our sample failed; the parents recalled exposure to a great multitude and variety of chemical agents with no one chemical or classification of chemicals singled out in the data. Clearly, this is an area where more prospective research is needed."

(The other difference Coleman found in parents of autistic children was "the presence of hypothyroidism in the preconception history.")

And there's more. In the 2002 book "Impact of Hazardous Chemicals on Public Health, Policy, and Service," the authors review those studies and cite another -- an unpublished manuscript by Marcus and Broman: "They found a higher incidence of occupations involving exposure to chemicals among the parents of children with autism."

And this column has reported on a possible chemical link in the very earliest cases of autism described in the literature -- the 11 children in the landmark 1943 paper, "Autistic Disturbances of Affective Contact," by Johns Hopkins University child psychiatrist Leo Kanner.

One of the fathers was a plant pathologist; another was a forestry professor at a southern university; and the very first case, Donald T., grew up in Mississippi surrounded by land that was being replanted as a national forest in the early 1930s. A link suggested by Mark Blaxill of the advocacy group SafeMinds: possible exposure to commercial agriculture chemicals, in particular ethyl-mercury-based fungicides that came on the market around 1930.

And two other parents among those first 11 families had relevant careers -- one was a mining engineer and one was ... a chemist.

All this suggests that, at least in many cases, autism might be fundamentally an environmental illness -- something coming from the outside-in to damage susceptible children. As Shakespeare put it, "Something wicked this way comes."

Felicetti told me he was struck by this consistently large percentage of children whose parents had an identifiable "chemical connection." The question becomes: If we can identify this large a link simply by looking at glaringly evident parents' professions, what is the real percentage of autism cases triggered by toxins including less obvious sources -- most, perhaps?

Yet the issue has been neglected in the rush to hunt down an "autism gene" that so far has yielded little to nothing.

The idea that the age of autism arose and worsened along with harmful exposures is an idea whose time has come -- about 75 years ago.



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