When faces have no name

Genetic condition has people struggling to recognize others

By Carey Goldberg, Globe Staff | June 14, 2006

New findings from researchers at Harvard and elsewhere suggest that a surprising number of people are face-blind, so bad at recognizing faces that they routinely snub acquaintances and have trouble following movie plots. In extreme cases, they may greet siblings as strangers and struggle to discern which child is theirs at school pick-up time.

The syndrome, known medically as prosopagnosia, was long thought to be a rare neurological curiosity that resulted from brain damage.

Research has begun to suggest that most face-blindness stems from genes, rather than brain injury, and that it is far more widespread than previously suspected, with up to 2 percent of the population affected to some degree.

A report by German researchers Thomas and Martina Grütter is expected to be published in a prominent American genetics journal within weeks. Harvard researchers announced May 31 that, by using different methods, they had come up with a similar number, though the data has not yet been published.

``It's a possible stealth condition,'' said Ken Nakayama, a Harvard psychology professor who led the research. ``There is no test for this when you're going to school.''

Born prosopagnosics, whose brains are usually normal in other respects, often suspect that something is wrong, but cannot put a finger on it. The condition also goes undetected because born prosopagnosics have never seen faces any other way, so to them, it seems normal, Nakayama said.

But sometimes, the problem "slaps prosopagnosics in the face, and they realize something's really wrong here," said Bradley Duchaine, a former Harvard researcher now at University College London. "I hear parents who go to the day-care center, and for some reason their kid has changed clothes while there, and the parents have no clue who their child is, while the people working there think, "What is wrong with this parent?'"

Face-blind people can see faces perfectly well -- the eyes, nose, and mouth -- but seem to have trouble processing what they see and placing it into memory to be recalled again. In its rare, extreme form, prosopagnosics describe looking into the mirror and being unable to recognize themselves.

More often, they have trouble recognizing acquaintances and coworkers, social handicaps that can hurt their careers and their private lives. They tend to cope using a variety of ways to tell people apart, based on the sound of a voice, the style of clothing, or their walk. Or they "adapt by being smiling and friendly to everybody," said Richard Russell, another Harvard researcher.

Researchers say public attention to prosopagnosia (pronounced pro-so-pahng-NO-sia, and often shortened to "proso") may help people who have it, simply by making their lack of recognition more understandable to others.

Prosopagnosics are already debating whether schoolchildren should someday be tested for face-recognition problems.

"This is about as many children as have dyslexia," Thomas Grüter said. "And these children are not really handicapped in any extensive way, but still they might become outsiders, and this is something that could be avoided easily, just by telling kindergarten or primary school teachers what to do and how to help them."

There is no known cure for the condition, but researchers are experimenting with training that could, at the least, help those with face-blindness better recognize relatives, friends, bosses, and other key people in their lives.

One Cambridge prosopagnosic, who asked not to be identified because she works in public relations and fears that her career could be damaged if her problem were known, said she has learned never to say, "Nice to meet you," but rather, "Nice to see you." Still, it can be embarrassing and comical to her friends when, for example, she fails to recognize a man she has dated.

In the Harvard research, the 2-percent figure is just a "best guess" at this point, Nakayama said, but it emerged when Harvard colleagues gave some 1,600 volunteers a variety of psychological tests, among them the "Cambridge Face Memory Test," which Nakayama had been working on for years and published last fall.

(It is not publicly available because researchers do not want potential subjects to become familiar with it. Duchaine offered a link for readers who want to quiz themselves: www.icn.ucl.ac.uk/facetests/)
Thomas and Martina Grüter, the German researchers, became interested in prosopagnosia when, after watching a television documentary on the subject, Martina realized that Thomas's quirks -- needing her to identify people for him at parties, for example -- amounted to face-blindness. His father had it, too.

They hunted down more families and Martina wrote her thesis on the genetics of face-blindness, which seems simple: it appears to involve a single, dominant gene, so a child can inherit prosopagnosia even if only one parent has it.

The Grüters tried to figure out how common the condition really was. They handed out questionnaires to some 800 Münster high school and medical students, asking about experiences that might suggest prosopagnosia, and interviewed students who seemed likely candidates.

From among 800, they confirmed that 17 had a significant level of face-blindness, to the point that it caused problems in their daily lives.

The Grüters' paper, written with Ingo Kennerknecht, was accepted last month by the American Journal of Medical Genetics and is scheduled to be published online in the next three weeks, Thomas Grüter said.

The Grüters are now interested in finding ways to screen children for prosopagnosia and then to help those who are identified without publicly identifying them.

What goes wrong in the brains of face-blind people is largely a mystery, said Dr. Marlene Behrmann, a brain scientist at Carnegie Mellon University.

The phenomenon plays into a major debate in neuroscience, she said, whether the brain is made up of a bunch of separate little modules that each perform a different function or whether all parts of the brain are potentially capable of performing any function. "The truth will be somewhere in the middle, which is why it's a vigorous debate," she said.

If face-blind people have problems only with faces, that would tend to support the view of the brain as made up of task-specific modules, she said. But if, as some research suggests, the problem turns out to involve not only faces but also any objects that look alike, then it supports the idea that the brain uses more general visual processes.

Meanwhile, prosopagnosics such as Glenn, a Brookline cashier, say their lives are complicated both by their face-blindness and by the fact that nobody has heard of their condition.

"It would be really swell for me to be able to walk on the street in Harvard Square and say to somebody, 'You know, I have prosopagnosia,' and for them to say, 'Oh, yeah, I know exactly what that is,' but I can't do that right now," said Glenn, who asked that his last name not be used for fear that someone might victimize him, knowing he could never identify them.

Glenn said he recognizes people by their trappings and context. He explains his problem to some people, asking them to realize that he may not recognize them when he meets them again.

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