

Social Perception in Williams Syndrome Project

Boston University School of Medicine

*Helen Tager-Flusberg, Daniela Plesa Skwerer, Shiri Pearlman-Avniot,
Casey Schofield, & Alyssa Verbalis*

Spring 2004



Project update

Hello again from Boston University! First off, we would like to once again thank all of the families who have participated in our current project. We have truly had a wonderful response for this second wave of our testing. At this point we have seen 31 participants (and families) and we hope to see more in the upcoming spring months. Our activities for this wave consisted of a number of tasks investigating the way that adolescents and adults with Williams syndrome interpret sarcasm, how they process faces compared to objects and their abilities to recognize emotional intonation in mumbled (incomprehensible) speech. Additionally, for those participants who were able to come to our laboratory at Boston University we examined psychophysiological responses to actors' and actresses' facial expression of emotion versus emotionally neutral nature scenes.

Currently we are working on the analysis of all of this work, as well as collecting data from 'control' groups to serve as a comparison to our participants with Williams syndrome. In fact, this past winter we had a very busy couple of months in which we worked with a large group of adolescents and adults with learning and intellectual disabilities at the Riverview School in Cape Cod, Massachusetts. This was a wonderful experience for all of us involved in the project, as we were given the opportunity to work with many enthusiastic and cooperative teachers, administrators, and students. Our work with these students will provide us with an interesting comparison group for all of our activities. Again, we would like to thank all of the families once more for so graciously giving their time and support to our project.

Preliminary research findings

Preliminary results from some of our activities involving prosody (or intonation of voice) indicate that our participants with Williams syndrome may have some sparing of sensitivity to intonation in comparison to a matched group of participants with learning or intellectual disabilities. In one of our tasks participants were asked to listen to sentences in which the content information was filtered out, thus sounding like mumbled speech, but the affective information was retained (i.e., the emotional tone of voice of the speaker was either happy, sad or neutral). On this task the participants with Williams syndrome were significantly more accurate than their matched controls with learning disabilities and performed nearly as well as the typically developing control group. However, in tasks in which both intonation and the sentence content information were available but contradicted each other (e.g. "when Mike visits his grandmother she's smiling" spoken in a sad tone of voice), they had difficulties in identifying either the emotional tone of voice or the emotional content of the sentence.

In a task intending to examine sensitivity to word stress participants were required to choose one of two pictures matching the meaning of the same word-pair pronounced in two different ways (e.g., HOT dog vs. hot DOG; a frankfurter and a warm canine respectively). Results indicated that the participants with Williams syndrome performed similarly to leaning disabled participants when asked to make these judgments based on lexical (word stress), rather than emotional prosody. Both groups were significantly less accurate than typically developing participants. Taken together, these results suggest that people with Williams syndrome may show sensitivity to *emotional* prosody, though this can be overshadowed when they need to selectively focus attention on a single aspect of communication (either the voice or the content).

Preliminary research findings cont'd

We followed up some of this work on interpreting content and intonation with an activity investigating the comprehension of sarcasm. This task included twelve audio-presented stories which ended with either a sarcastic or a sincere sounding utterance spoken by one of the characters (e.g., "Thanks for all your help!"). In half of the stories one character helps another, while in the other half, one character upsets or bothers the other. Participants are asked to judge whether the last speaker really meant what she said in each story. In this activity the participants with Williams syndrome showed a similar pattern of performance in sarcasm comprehension as a group of matched learning disabled participants: both groups demonstrated sensitivity to sarcastic intonation to a greater degree than relying on context. Thus in cases where the content/facts of the story and the intonation of the speaker were in disagreement, the participants with Williams syndrome often ignored the story facts, basing their responses only on the tone of voice, especially if this was sarcastic. These findings suggest that, although sensitive to the tone of voice, people with Williams syndrome may have difficulty integrating information from different sources (content *and* prosody), which may hinder their comprehension of sarcasm.

In addition to the work that we have discussed here we have a number of other projects underway. We are all looking forward to presenting much of this work at the national Williams Syndrome Conference in Grand Rapids, MI this July. We hope to see many of you there!

Future Plans

In the upcoming months and years we are excited to begin developing new tasks, including a number of tasks in which we will work with young children with Williams syndrome. We hope to meet many more families through our new project – if you are interested or know a family who may be interested and who has a child between ages 2 and 10 please contact us and we would be happy to include you in our upcoming project.

In addition, we have recently collaborated with a research team at Massachusetts General Hospital – a group of researchers investigating visual cognition in adolescents and adults with Williams syndrome. This is a very exciting project, and would involve a trip to Boston for neuroimaging (fMRI). Compensation for participation is \$150. If you are interested in participating in this project, or if you would like more information, please contact Casey at 617/414.1309.

We are happy to keep you informed of the new activities and data analysis in which we have been involved! Please be sure to contact us with any address changes or updates.

As always, thank you for your support!

Our research is made possible by the enthusiastic involvement of each and every family of our participants. We are very grateful to all of you, whose dedication to our work and the understanding of social perception in Williams syndrome we could not do without. Thank you again for your commitment to this project, and to our shared goal of understanding and improving the lives of people with Williams syndrome.

Contact information:

Helen Tager-Flusberg, Ph.D.,
Director & Principal Investigator

Daniela Plesa Skwerer, Ph.D.,
Project Coordinator

Casey Schofield & Alyssa
Verbalis, Research Assistants

Mailing Address:
Williams Syndrome Project
Boston University School of
Medicine
715 Albany Street, L-814
Boston, MA 02118-2526

Phone - main: 617/414-1300
Casey: 617/414-1309

E-mail: wmsproj@bu.edu

Fax: 617/414-1301

