CORNERSTONE
MINNESOTA STATE UNIVERSITY MANKATO

Journal of Undergraduate Research at Minnesota State University, Mankato

Volume 6 Article 19

2006

The Use of Paralinguistics in Spontaneous Speech of Children with Williams Syndrome and Typically Development Children

Kelly Ritter
Minnesota State University, Mankato

Evan Panitzke
Minnesota State University, Mankato

Emily Kruse
Minnesota State University, Mankato

THE USE OF PARALINGUISTICS IN SPONTANEOUS SPEECH OF CHILDREN WITH WILLIAMS SYNDROME AND TYPICALLY DEVELOPING CHILDREN

Kelly Ritter (Speech, Hearing, and Rehabilitation Services)
Evan Panitzke (Speech, Hearing, and Rehabilitation Services)
Emily Kruse (Speech, Hearing, and Rehabilitation Services)
Patricia Hargrove, Faculty Mentor (Speech, Hearing, and Rehabilitation Services)

This project investigated selected aspects of paralinguistics in spontaneous speech of speakers with Williams syndrome. Speakers with Williams syndrome "are noted for their well developed vocabulary, relatively complex and syntactically correct sentences, and their ability to spin a good tale. In contrast, their reasoning usually remains at a pre-operational or preschool level, and they typically have difficulty grasping cause-effect relations" (Semel & Rosner, 2003, p. 5).

This research focused on an area of communication called paralinguistics which involved the use of nonspeech sounds for communication. Specifically, we looked at the frequency of laughing and sound effects produced during conversation. Ten participants, five with Williams syndrome and five typically developing peers, individually talked with a graduate clinician on a topic of their interest. The conversations were analyzed for the frequency of laughing and sound effects and the proportion of laughing and sound effects (e.g., # of occurrences of laughter/# of sentences).

The results will be discussed in light of the commonly held impression that speakers with Williams syndrome are involved, engaged, and charming.

The Use of Paralinguistics in Spontaneous Speech of Adolescents with Williams Syndrome and Typically Developing Adolescents

INTRODUCTION

Williams syndrome (WS) can be defined as "a genetic disorder occurring in an estimated 1 in 20,000 to 50,000 births and involving a highly unusual set of characteristics including distinctive facial and physical features, a unique cognitive profile, a singular mix of personality attributes and an intriguing pattern of neurobiological findings" (Rosner & Semel, 2003, p. 2). Persons with WS are typically described as having a very active and social personality. The purpose of this study was to determine whether certain paralinguistic behaviors (vocalizations produced that are not characterized as speech) were produced more frequently in the speech of individuals with WS compared to typically developing peers. Two paralinguistic skills were chosen as the variables: sound effects (vocalizations such as a truck or train noise) and laughter.

METHODS

Participants

This study examined 5 audiotapes of typically developing (TD) adolescents and 5 audiotapes of adolescents with WS. The participants were between the ages of ten and seventeen. They were matched for age (plus/minus six months) and gender.

Procedures

Spontaneous language samples were elicited and recorded by a graduate student using an interview-style format. During Fall semester 2005, students in the course Child Language Disorders Lab began to examine and transcribe the tapes needed for this research project. The students listened for sound effects and laughter within the conversations and made note of the number of times these paralinguistic (sound effects and laughter) measures were produced. Percent of occurrence was derived by determining the number of each variable and dividing it by the total number of utterances produced by each participant.

Reliability

The tapes were evaluated twice by groups within the class as well as each presenter and the mentor for this research project. Disagreements were resolved by consensus.

RESULTS

The total number of sound effects and laughter were tallied for the TD adolescents and the adolescents with WS. For this study, three individual sets of data were analyzed: sound effects, laughter and composite paralinguistics (the combination of sound effects and laughter). This composite paralinguistic score was added in order to determine whether communicative partners linked the two paralinguistic features (sound effects and laughter), resulting in their perception of persons with WS having a more social personality.

Table 1: Mean percentage of occurrences

	Participants with WS (%)	Typically developing participants (%)
Laughter	11.1	6.2
Sound Effects	8.9	0
Composite Paralinguistics	23.2	6.2

As can be seen in Table 1, the adolescents with WS produced a mean proportion of 8.9 sound effects and the TD adolescents produced a mean of zero. The Mann-Whitney U test revealed that the difference between these 2 groups was significant ($p = .05$).

The mean proportion of laughter for the participants with WS was 11.1 and for the TD peers the mean proportion was 6.2 (see Table 1). The Mann-Whitney U test indicated that this difference was not significant.

For the composite paralinguistic proportion (combining sound effects and laughter) the adolescents with WS produced a mean proportion of 23.2 and their TD peers' mean proportion was 6.2. The Mann-Whitney U test revealed that the difference between these two groups was significant ($p = .05$).

IMPRESSIONS/IMPLICATIONS

The results of this study indicate that adolescent speakers with WS consistently use sound effects at a higher rate than their TD peers. These findings can be interpreted in several ways. When examining the positive characteristics exhibited by these individuals, it was noted that a more frequent use of sound effects and the composite paralinguistic measure might account for the perception that adolescents with WS seem to be more extroverted in comparison to their TD peers. On the other hand, the data could also be associated with a negative interpretation: increased use of sound effects and composite paralinguistics could result in the perception of 'oddness' or 'difference'. That is, because of their increased use of sound effects, TD peers could find speakers with WS strange and may label them as social outcasts.

These possible interpretations are beyond the scope of this study. Further research would have to link the rate of production of these paralinguistic features with perception of others before we can determine if this is a positive or negative aspect of communication for speakers with WS.

CONCLUSION

Based on the data collected from this study, it was concluded that the participants with WS exhibited composite paralinguistics and sound effects more often than their TD age-matched peers. However, the rate of laughter did not differ significantly for the TD and WS participants.

REFERENCES

Semel, E., & Rosner, S.R. (2003). *Understanding Williams syndrome: Behavioral patterns and interventions.* New Jersey: Lawrence Erlbaum Associates.

Authors' biographies:

Evan Panitzke recently graduated from MSU, Mankato with a Bachelor of Arts in Spanish and a Bachelor of Science in Communication disorders. Her areas of interest include bilingual therapies and fluency disorders. She will be attending the MSU Communication Disorders graduate program in the fall of 2006.

Emily M. Kruse is a recent graduate of MSU, Mankato receiving a Bachelor of Science degree in Communication Disorders with minors in Family Consumer Science Family and Child Development and Linguistics. Her areas of interests include voice disorders and neurological communication disorders. She will be attending the MSU Communication Disorders program in the fall of 2006.

Kelly Ritter recently graduated from MSU, Mankato with a Bachelor of Science degree in Communication disorders. Her areas of interest include autism, and child language disorders. She will be attending the MSU Communication Disorders graduate program in the Fall of 2006.

Faculty mentor's biography:

Patricia M. Hargrove, Ph.D., CCC-SLP is a Professor and Director of the Graduate Programs in the Department of Speech, Hearing, and Rehabilitation Services at Minnesota State University, Mankato. Her areas of interest include child language, prosody, and evidence-based practice.