

# **Intonation in Hebrew-Speaking Children with High-Functioning Autism: A Case Study**

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## **Abstract**

Atypical prosody with unusual sounding suprasegmentals has been identified as a core feature when describing the language behavior of many individuals with Autism Spectrum Disorders (ASD) (e.g. Baltaxe & Simmons 1985, 1992). It has been reported that even when other aspects of language improve, prosodic deficits tend to be persistent and show little change over time (e.g. Simmons & Baltaxe 1975). For children with High-Functioning Autism (HFA), who are generally mainstreamed into the larger community, deficits in prosody may limit their social acceptance.

Prosody in ASD is an under-researched area and has been criticized for: (a) being severely fragmented, (b) lacking normative data and contrast groups, (c) using poorly defined prosodic categories and (d) employing subjective ratings rather than objective measures (Paul et al 2005). Furthermore, there has been very little research on the prosody of Israeli Hebrew (IH) in general (e.g. Amir et al 2004, Bat-El 2005, Mixdorff & Amir 2002), and even fewer studies on the prosody of typical and atypical Hebrew-speaking children (e.g. Frank 1989, Adi-Bensaid & Bat-El 2004).

The aims of this preliminary case study were to describe, compare and contrast the prosodic features of intonation in the language of children diagnosed with HFA with children without developmental disorders (WDD). Three prominent components of prosody were examined: intonation units (IU), simple pitch accents (PA) and edge tones (ET) in spontaneous speech and reading-aloud tasks. The subjects included two children (9:11, 12:10) diagnosed with HFA and two children WDD (9:08, 12:09), matched for age, year of school and academic achievements. They were all male monolingual speakers of IH.

The data were transcribed and described using the Autosegmental-Metrical (AM) theory of intonation (Pierrehumbert 1980, Beckman and Pierrehumbert 1986, Pierrehumbert and Hirschberg 1990) with the computerized PRAAT system. The results were analyzed and explained according to: (1) the definition that language is a symbolic tool whose structure is shaped both by its communication function and by

the characteristics of its users (Tobin 1990, 1993, 1994) and (2) the principle that language represents a compromise in the struggle to achieve maximum communication through minimal effort (Diver 1979, 1995; Davis 1987, Tobin, 1997).

The children with HFA produced more IU and more PA compared with the WDD children. However, the HFA children acquired a limited repertoire of prosodic-edge-tone patterns within the norm of the language. These patterns were repeatedly used both in spontaneous speech and in the reading tasks. In contrast, the WDD control group used a greater number of prosodic patterns showing a larger degree of variation for the same speech and language tasks.

This case study (Green 2005) has become the basis for further ongoing research on prosodic features in the language and speech of both IH speakers in general and HFA children in particular and will hopefully contribute to our understanding of the unusual and odd-sounding prosody that many individuals with autism present.

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