

Computational and non-computational aspects of language in Japanese grammatical specific language impairment: A case study

Tomohiko Ito (Tokyo Gakugei University), Shinji Fukuda (Health Sciences University of Hokkaido), Suzy E. Fukuda (Aoyama Gakuin University), Kiyoshi Otomo (Tokyo Gakugei University), Hiroshi Fujino (Tokyo Gakugei University) & Yuko Yamaguchi (Hachioji-Daiyon Elementary School)

Specific language impairment (SLI) has been said to be a heterogeneous disorder of language acquisition in children who do not have any other apparent cognitive, social, or neurological deficits that can account for their impairment. Van der Lely and Stollwerck (1996) have identified a subgroup of SLI subjects who have a primary grammatical impairment. They refer to this subtype of SLI as grammatical specific language impairment (G-SLI).

There have been few studies on the linguistic characteristics of Japanese-speaking G-SLI (Fukuda & Fukuda 1999, 2001; Fukuda *et al.* 2007). The purpose of this study was to present the developmental changes in the performance of a Japanese G-SLI child between the ages of 9 and 14 with case-marking, demonstrative pronouns and lexical development, as well as with tense and passives.

The participant was a Japanese girl who was diagnosed as having G-SLI according to the criteria of Tallal *et al.* (1991): (1) WISC-R performance IQ of 85 or better; (2) normal hearing acuity; (3) no motor handicaps or oral structural impairments; (4) not autistic (as defined by DSM III-R, 1985); (5) no history of recurrent Otitis Media; (6) no known neurological disorders; (7) no prominent socio-emotional problems; in addition to characteristic grammatical errors. A longitudinal study was conducted from the time when the child was 9 to 14 years of age. A sentence judgment task, an elicited production test, and a Japanese version of the Picture Vocabulary Test were administered once a year during this period.

The following results were obtained from this longitudinal study. Examples of errors with (1) demonstrative pronouns, (2) tense, (3) passives, and (4) case-markers in spontaneous speech were as follows (the correct answer is given in the parentheses).

- (1) Ano (kono) hito
That (This) man
- (2) Atsu-katta (i) toki, ...
hot-PAST (PRES) when
When it is hot, ...
- (3) Ga-tte sas-are-nai (sasa-nai)?
moths-TOP sting-PASS (ACT)-NEG
Moths don't sting?
- (4) Shiiru-ni (o) mada atsumete-naino
stickers-DAT (ACC) yet collect-NEG
I haven't collected stickers yet.

The participant's lexical age was three years younger than her chronological age at age of 9; however, little difference was observed at the age of 10. Furthermore, while the percent correct of demonstrative pronouns was 37.5% at age of 10, it was 100% at the age of 11 on the judgment task. In contrast, even at the age of 14, the percent correct of tense was only 25.0% on the production task when non-words were used. In addition, when she was 14 years of age, the percent correct on passives was below 70% on both the production and judgment tasks when reversed word order was used. Moreover, the percent

correct with the use of case markers on the sentence completion test was 62.5% at the age of 14. These results suggest that while the non-computational (lexical) aspects of language in G-SLI children can develop over time, the computational (syntactic) aspects do not show such a development.

Bibliography

- Fukuda, S. E. and Fukuda, S. (1999) Specific language impairment in Japanese: A linguistic investigation. *NUCB Journal of Language, Culture and Communication*, 1, 1-25.
- Fukuda, S. and Fukuda, S. E. (2001) The acquisition of complex predicates in Japanese specifically language-impaired and normally developing children. *Brain and Language*, 77, 305-320.
- Fukuda, S., Fukuda, S. E., Ito, T. and Yamaguchi, Y. (2007) Grammatical impairment of case assignment in Japanese children with specific language impairment (in Japanese) *The Japan Journal of Logopedics and Phoniatrics*, 48, 95-104.
- Tallal, R., Townsend, S., Curtiss, S. and Wulfeck, B.B. (1991) Phenotypic profiles of language-impaired children based on genetic/family history. *Brain and Language*, 41, 81-95.
- Van der Lely, H. K. J. and Stollwerck, L. (1996) A Grammatical specific language impairment in children: An autosomal dominant inheritance? *Brain and Language*, 52, 484-504.