Stuttering and Fluency Disorders of Preschool Children: Article Summary

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**Purpose of the Study**

Jessica Bauman’s et al. article supported by the National Institutes on Deafness and Other Communication disorders juxtaposes previous findings and the present study on the issues of stuttering and language disorders in the youngest cohorts between the ages of twenty four months and fifty nine months (Bauman et al, 2012).

The purpose of the study is based on the identification of the differences in skills of using language effectively and abilities to present grammatically correct information in children who stutter (CWS) and children who do not stutter (CWNS). The theoretical framework of the study relates to the fluency disorders issues of CWS and assumes that they are prone to make errors during past-tense verb production owing to their presumable reliance on the mental lexicon of organized words rather than on mental grammar rules of composition of the lexical forms.

**Significance of the Research**

The authors of the study relied on the findings of the previous investigations of the fluency disorders on verbs structuring and sketched out that CWS used fewer verbs and produced more syntactic verb-agreement violations than CWNS. Furthermore, considering previous experimental works that specifically targeted verbs, CWS were assumed to regularize the tense forms of verbs in accordance with their declarative memory circuits, which specialize on the associative memorization and learning of non-compositional lexical forms. In this respect, the authors hypothesized that the respective groups of children tend to over-regularize less often than CWNS due to the supposed basal ganglia abnormalities, which alert morph-syntactic use of grammatical rules in the non-conscious learning and expressions of motor and cognitive skills. Furthermore, the authors assumed the tendency of verbs’ over-regularization in CWS, supposing that children who stutter had unvaried vocabulary of regular and irregular verbs, felt the inclination toward double marking of these verbs, or
misapprehended them as the lexical forms of non-verbal parts of speech during past tense verb production.

In order to understand CWS’s skills in the past tense verb production, the research design was based on the dual-system model. This model asserts that individuals tend to retrieve irregular past-tense verbs “as frozen word presentation” from their lexical memory while creating regular past-tense verbs by adding the respective endings to the root forms of the words (Bauman et al, 2012, p. 315). In this respect, the declarative-procedural model was used to identify the different neural pathways in lexicon/grammar distinction, which helps conduct the linguistics operations associated with lexical retrieval and morph-syntactic operations.

The sampling techniques included video and audio records of the conversations, which were obtained in the quiet locations, and further transcribed according to CHAT or SALT protocols. The sample size included 62 participants, who were paired by gender and age matching with the deviance within three months. Therefore, the data collection procedures included research analysis of 21 male and 10 female pairs of children and involved data sharing analysis from previous investigations in the field of fluency disorders. The biases of the sampling procedures included stuttering as the only language or speech issue relevant within all subjects, who were on average 41 months old while children with diagnoses of concomitant language impairment were excluded from the tests and post hoc analysis.

The statistical techniques of each transcribed speech were summed in accordance with irregular past-tense errors, which occurred during context conversation. Each recorded verb was used only once for analysis with the exception of the verbs, which had two different iterations. The data analysis procedures were complicated by the complexity of the differentiation of the applied morphological rules in the examples of the comparison of such
verbs as “eated and ate,” and shifted temporal context in such verb as “bake” (Bauman et al, 2012, p. 318).

The results of the study showed that CWS used 331 verbs less than CWNS and were 4.9 (%) more frequent to use irregular past-tense forms than 3.6 (%) of CWNS. Furthermore, only 31.5 (%) of the 19 incorrectly formed verbs by CWS were double-marked while 6.25 of the 16 incorrectly verbs by CWNS. In this respect, the findings of the study opposed the hypothesis that CWS over-regularized or double-marked the past-tense verbs more frequent than CWNS. Furthermore, these findings justified that knowledge creation activity in both groups prevailed over the lexical associative memorization during the verb production of an irregular past tense form. Regardless of the limitations of the hand-scored method used for the research design and data collection, the findings proved that declarative and procedural memory were functional among CWS, but were not properly applied during the reception and production of the linguistic operations. Considering the possibilities of the study’s replication, the authors suggested the further direction of research based on the sentence-completion tasks, verb-naming tasks and incorporation of speaking analysis in such languages as German or Romance.

**Personal Review**

The present research helped identify that stuttering children did not solely rely on the rote memorization of the lexical forms and were prone to use their motor and cognitive skills during verb production of the past tense forms. Considering that CWS’s declarative memory of the lexical retrieval was investigated to be more developed that the procedural memory of the computing grammar sequences, the latter could be improved with enhanced mental dictionary based on the processed systems of grammatical rules. The study was chosen for analysis since it supports the perspective of the traditional dual-mechanism theories, which study the interconnection between the declarative and procedural memory systems and identify how retardation of one of these systems impedes the other.
References