Available online at www.sciencedirect.com

ScienceDirect

Procedia - Social and Behavioral Sciences 193 (2015) 239 – 245

Procedia Social and Behavioral Sciences

10th Oxford Dysfluency Conference, ODC 2014, 17 - 20 July, 2014, Oxford, United Kingdom

Dysfluency in Autism Spectrum Disorders

Kathleen Scaler Scott[a]*

[a]*Misericordia University, 301 Lake Street, Dallas, PA 18612, USA*

Abstract

This paper will present the latest information regarding what is known and unknown about the presence, possible causes, and potential effective treatments of fluency disorders in Autism Spectrum Disorders (ASDs). Advanced review of cognitive features of ASDs which may play a role in contributing to dysfluencies in this population will be discussed. Examples of practical application of existing information to evaluation and treatment will be presented.

Peer-review under responsibility of the Scientific Committee of ODC 2014.

*Keywords:*autism; dysfluency; stuttering; cluttering

1. Introduction

Autism spectrum disorder is a developmental disorder with primary deficits in the areas of social interaction and repetitive behaviors. In order to be diagnosed with autism, these deficits must be observed in childhood in multiple environments and have a negative impact upon daily functioning. Social deficits specifically must include difficulties with interpretation of social interactions, nonverbal behavior, and reciprocal relationships. An additional mandatorycriteria for the diagnosis of autism is that of restrictive and/or repetitive behaviors, including restrictive interests or fixations, over or under reaction to sensory stimuli within the environment, inflexibility in behavior, and/or repetitive movements. Once a diagnosis of autism is given, a level is assigned, where Level 1 indicates support is required, Level 2 substantial support and Level 3 very substantial support. Part of levels of support

* Corresponding author. Tel.: 00+1+ 570-674-1437; fax: 00+1+908-782-4984.
*E-mail address:*kscott@misericordia.edu

Peer-review under responsibility of the Scientific Committee of ODC 2014.
doi:10.1016/j.sbspro.2015.03.266

involves level of cognitive abilities, with those with intellectual disability typically falling into the "Level 3" range, and those with average IQ falling into the "Level 1" range (American Psychiatric Association, 2013).

1.1. Patterns of dysfluency observed in autism

Given the nature of social deficits observed in autism, speech-language therapists (SLTs) will often be involved at the least for treatment of pragmatic deficits. Depending upon the level of severity, many individuals may require support in other areas of language and communication. In addition to language deficits, other speech issues have been observed, including difficulties with articulation, voice and fluency.

There has been a gradually growing body of literature documenting fluency issues in autism. The earliest documentation noted repetition of larger chunks of information, such as phrases (Dobbinson, Perkins, & Boucher, 1998; Simmons & Baltaxe, 1975). Over time, documentation narrowed in focus and indicated observations of dysfluencies that could be termed more stuttering and non-stuttering like (Ambrose &Yairi, 1999; Yairi & Ambrose, 1992). Forms of dysfluency currently identified in autism include stuttering, cluttering, excessive non-stuttering like dysfluencies, and atypical dysfluencies, such as word final dysfluencies (WFD). The stuttering-like, non-stuttering like and atypical dysfluencies have been identified in ages ranging from preschool through adulthood, while the cluttering behaviors have been identified in school-age children (see Scaler Scott, Tetnowski, Flaitz, Yaruss, 2014 for review). Awareness of the dysfluencies has been on a continuum ranging from no awareness to negative feelings and cognitive misperceptions by those with both SLDs (Scaler Scott et al., 2014) and WFDs (Scaler Scott et al., 2013).

1.2. Cognitive features of autism related to fluency

There are several theories regarding what the core deficit is that can account for manifestation of all symptoms of autism and the variance of symptoms at different levels of autism. Among these theories are those that support impairments in central coherence or gestalt processing (Frith,1989), theory of mind (Baron-Cohen, 1995), information processing (Minshew & Williams, 2008) and executive functioning deficits (Ozonoff, Pennington, & Rogers, 1991). No one theory has to date been conclusively found to explain all aspects of features of autism in different contexts and in different levels of impairment for different people. However, components of each theory are agreed upon as deficit areas in autism, even if these areas of deficit do not explain the entire disorder.

Examining specific cognitive features of autism may help further explain the manifestation of dysfluencies within this population. Executive functioning skills are the skills one uses to carry out a task from the planning stages through successful completion. It includes skills such as planning, organizing, prioritizing, self-monitoring, and problem solving (Barkley, 1997). Working memory has often been thought to be one of the executive functioning deficit areas in autism (Ozonoff, et al., 1991). Working memory involves the skill of holding information in your mind to work with it in some way, such as holding numbers in one's mind while solving a complex math problem. Working memory is important to fluent conversation. Non-stuttering like dysfluency such as interjections can result when one loses one's train of thought in conversation, forgetting where one is going (Clark & Fox-Tree, 2002). In those for whom this occurs frequently, conversational speech is likely to be highly disfluent, including features of non-stuttering like dysfluencies (NSLDs) such as interjections and revisions. Several researchers have noted excessive NSLDs in autism (Lake et al., 2011; Scaler Scott et al., 2014; Stirling, Barrington, & Douglas, 2007).Whether deficits in working memory play a role in the presentation of excessive NSLDs has yet to be investigated.Excessive NSLDs are also a feature of cluttering (St. Louis and Schulte, 2011), which has been noted in autism (Scaler Scott et al., 2014).

In examining the existing literature on working memory in autism, we find conflicting results. Williams, Goldstein, Carpenter, & Minshew (2005) compared performance on an N-back letter task in a sample of children and adolescents and a sample of adults to two control samples. An N-back letter task requires a participant to recognize previous test stimuli that was presented "N" positions back (Kirchner, 1958). For example, for a 2-back letter task, a participant must respond when the same letter is presented that was presented 2 letters prior. This type