LANGUAGE COMPONENTS OF CLUTTERING – A THEORETICAL OVERVIEW

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Abstract. This study examined the views of fluency disorders specialists regarding cluttering. Bulgarian university lecturers (professionals specializing fluency disorders) completed a questionnaire that addressed their opinion concerning the nature of cluttering disorder. Based on their answers and a search of the research literature, a theoretical overview regarding cluttering is presented, including the perceived role of language in this fluency disorder.

Using a brief, 5-item questionnaire developed by Georgieva, 10 Bulgarian fluency-disorder specialists (with an average of 24 years of clinical experience) reported their professional opinion on cluttering concerning its definition and salient clinical characteristics. A subsequent search and analysis of the evidence-based literature on cluttering indicated that language is a very important part of cluttering.

Half of the questionnaire respondents associated cluttering with a language component. All the interviewed logopedists reported dominance of the fluency component and also noted the importance of the motor aspect of the disorder.

The fluency specialists demonstrated an understanding of the different communication characteristics of cluttering. Two-thirds of them believe that the language presence within cluttering is dominant.

Keywords: cluttering; fluency disorders; clinical symptoms; language disturbance

Introduction

Cluttering is a multidimensional fluency disorder. Its multifaceted nature has been recognized since 1964 when Weiss published his classic work on cluttering. After the first international conference held in 2007 in Bulgaria, cluttering has achieved renewed clinical and research attention by the international communication disorders community. Because its appearance in a "pure" form is quite rare, cluttering has presented diagnostic challenges. Accordingly, speech-language pathologists are often reluctant to treat it. One of complicating factors is the common presence of co-occurring speech and language disorders (Ward, 2006: 140).

Cluttering is poorly understood fluency disorder that has not attracted significant scientific interest in Bulgaria. Ten Bulgarian fluency disorders specialists

were asked to complete a short questionnaire on cluttering (see the appendix). Each are university lecturers involved in students training in a logopedics program and had successfully defended a PhD dissertation on stuttering. Of these lecturers, one is a European certified fluency specialist. Eight of the lecturers have clinical experience with fluency disorders in children and two professionals work primarily with adults. Georgieva maintains that, since 1964, there have been 16 publications on cluttering produced with the participation of Bulgarian authors: 10 of them in English, 1 in Portuguese, and 5 in Bulgarian. Four of these are chapters of books (2 in Bulgarian and 2 in English) and 12 are journal articles (3 in Bulgarian and 9 in English, including two published in *Journal of Fluency Disorders* (Georgieva & Miliev, 1996) and *International Journal of Speech-Language Pathology* (St. Louis et al., 2010). Georgieva participated in 82% of the cluttering publications as first author or coauthor. The topics have included cluttering awareness (10 publications) and assessment and treatment of cluttering (6 publications). Additionally, there have been 5 presentations on cluttering delivered by Bulgarians at meetings of the International Association of Logopedics and Phoniatrics (IALP), the International Fluency Association (IFA), and at various international cluttering conferences.

Method

Using a quickly administered, 5-item questionnaire developed by Georgieva, 10 Bulgarian fluency-disorder specialists (with an average of 24 years of experience) indicated their professional opinion on cluttering, concerning its definition, clinical characteristics, and treatment. A subsequent search and analysis of the evidence-based literature on cluttering suggested that language may play an important role in this fluency disorder. This view was also held by the Bulgarian specialists surveyed. A theoretical overview based on a review of 35 international articles published in peer-reviewed journals and of an additional 16 Bulgarian-language publications.

Results and discussion regarding cluttering definitions

There is no agreed-upon definition of cluttering in the evidence-based literature. Ninety percent of the Bulgarian specialists noted that cluttering is a fluency disorder, with 60% indicated that there is a language component as well. What is the opinion of the world-recognized specialists working in the area of cluttering?

Weiss (1964: 1) clinical symptoms classic definition:

Cluttering is a speech disorder characterized by the clutterer's unawareness of the disorder, by a short attention span, by disturbances in perception, articulation and formulation of speech and often by excessive speed of delivery. It is a disorder of the thought processes preparatory to speech and based on a he-

reditary disposition. Cluttering is a verbal manifestation of **Central Language Imbalance**, which affects all channels of communication (e.g. reading, writing, rhythm and musicality) and behavior in general.

Daly and Burnett (1999) accepted Weiss view and developed their linguistic disfluency model of cluttering. Both authors conceptualize cluttering as a multidimensional disorder with five important dimensions: cognition, *language*, pragmatics, speech and motor.

Myers and St. Louis (1992: 49) working definition address attention on: "Cluttering is a speech-*language disorder*, and its chief characteristics are (1) abnormal fluency which is not stuttering and (2) a rapid and/or irregular speech rate."

Daly (1992, p. 107) describes cluttering as a disorder of speech and *language processing* resulting in rapid, dysrhythmic, sporadic, unorganized and frequently unintelligible speech. Accelerated speech is not always present, but an impairment in formulation language almost always is.

Ward (2006, p. 151) articulated that cluttering is "genuine and distinct speech/*language disorder*, which does seem to be the general consensus (e.g., Freund, 1952; Daly & Burnett, 1999; Myers & St. Louis, 1992; St. Louis, Hinzman, & Hull, 1985; Van Riper, 1992)".

Cluttering working definition by St. Louis, Myers, Bakker, and Raphael (2007: 299-300):

"Cluttering is a fluency disorder, characterized by a rate that is perceived to be abnormally rapid, irregular, or both for the speaker (although measured syllable rates may not exceed normal limits). These rate abnormalities further are manifest in one or more of the following symptoms: (a) an excessive number of dysfluences, the majority of which are not typical of people who stutter; (b) the frequent placement of pauses and use of prosodic patterns that do not conform to syntactic and semantic constraints; and (c) inappropriate (usually excessive) degrees of coarticulation among sounds, especially in multisyllabic words".

It seems logical that all authors claim that cluttering is a fluency disorder related to, but substantially different from, stuttering. As British researcher Ward (2006: 152) claims: "At present, there is no data that supports a single definition of the disorder." The possible explanation is that cluttering is likely to comprise one or more of the following key elements: (i) fast speech rate; (ii) reduced intelligibility; (iii) language planning disturbances; and (iv) disfluent speech.

The opinion of the Bulgarian specialists is similar (i.e., more than one answer on question 3: *The essential, obligatory symptoms of cluttering,* see Table №1): 90% of them reported fast speech rate in cluttering cases; 80% put accent on reduced intelligibility; language (planning) disturbances are mentioned by 60% and 90% give preference on disfluent speech. From this point of view, it is not controversial that cluttering overlaps with language disorders, Attention Deficit/Hyperactivity Disorders (ADHD), articulation disorders, and learning

difficulties (such as reading and writing problems). Regarding question 6 (*Cluttering co-existing disorders are…*), 60% of the Bulgarian respondents believe that there is overlap between language and fluency disorders.

Results and discussion on clinical characteristics of cluttering

Table №1. Essential symptoms of cluttering (question 3) reported by the USA and UK clinicians and Bulgarian specialists (percent of total respondents) (St. Louis & Rustin, 1992: 27, and present study)

Essential symptoms of cluttering	The USA	UK	Bulgaria
Fast speech rate/dysfluent speech	89	89	90
Unawareness of the problem	57.8	82.3	60
Irregular speech rate	59.7	76.9	50
Word and phrase repetitions	47.4/41.6	32.3/28.5	50
Poor syntax/incomplete sentences (language planning disturbances)	25.3	30	60
Speech and Language delay	20.1	13.1	50
Learning disabilities	20.1	13.1	30
Reduced intelligibility			80
Misarticulations	26	29.2	30
Motor coordination problems 20	21.4	23.1	20
Disorganized thinking	59.7	38.5	40
Other (please, clarify) Handwriting difficulties	11		20

Table №2 shows the results from the present questionnaire on question 5 (*Type of therapy you are applying*) and results from similar studies in the USA and UK regarding cluttering therapy techniques.

Table №2. Results regarding therapy techniques (question 5) for cluttering employed by clinicians from the USA and UK and by experts in Bulgaria, in percent (St. Louis & Rustin, 1992: 32, and present study)

Type of therapy	Bulgaria child	USA child	UK child	UK adults
Language	50	25.7	19.2	6.0
Rate	33.3	22.6	25.4	30.2
Articulation	0	24.4	14.6	7.4
Stuttering	16.6	12.6	10.3	14.8
Voice	0	0.8	1.5	2.7
Other	0	10.6	2.3	4.0

The primacy of language was highlighted 12 years before in Weiss's classic book on cluttering. An early study by Freund (1952) suggested that cluttering was a "dysphasia-like disability" due to a lack of integration within the central nervous system. Luchsinger (1963) likened cluttering to childhood dysphasia. Czech authors Langova and Moravek (1966) also reported language formulation problems in persons who clutter (PWC). More recently, Филатова (2005) postulated that cluttering is often found in children with delayed speech and language development.

Toward the end of the 20th century, the coexistence of language difficulties with fluency disorders were discussed primarily by British and American authors, including Dalton and Hardcastle (1989), Wall and Myers (1984), St. Louis and his colleagues (1985, 1991), Daly (1986), and Myers (1992). The Scandinavian researcher Preus (1996) also maintained that there is a general language deficit in cluttering. He stated in his article Cluttering upgraded "A series of different disorders has been identified, e.g., psycholinguistic disorders, minimal brain dysfunction (MBD), language learning disorders (LLD), attention deficit disorders (ADD), and central auditory processing disorders (CAPD)" (Preus, 1996: 350).

Cases of cluttering in the absence of any language difficulties are rare (Daly, 1996; Ward, 2004; Филатова, 2005). It is common for the fluency disorder in PWC to present more as a language problem than a motoric one. Disfluencies and language components are considered the attributes of cluttering (St. Louis, Myers, Faragasso, Townsend, & Gallaher, 2004).

In the present study, the Bulgarian specialists reported their professional opinion regarding the cluttering causes – see Table №3.

Table №3. Most likely causes of cluttering identified by clinicians in the USA and UK and by experts in Bulgaria. Data represent the percent of total respondents (St. Louis & Rustin, 1992: 30, and present study)

Causes of cluttering	The USA	UK	Bulgaria
Genetic			10
Definite physiological (organic differences)	41.5	51.5	20
Organic predisposition affected by experience	46.3	58.5	50
Learned disorder	14.3	4.2	
Psychologically based	19.1	20.8	10
No opinion	17.0	15.4	
All others (including language origin)	7.5	3.1	10

Persons who clutter (PWC) are often described as late-developing talkers (Daly, 1996: 163-164). The authors observed many different types of language difficulties like word retrieval problems, word order difficulties, sentence simplification, and use of fragmentary phrases. Improper verb conjugation, incor-

rect sequencing of prepositions and inappropriate reference by pronoun are affected grammar and syntax areas in PWC.

The linguistic model of cluttering, developed by Daly and Bernett (1999), outlines the five communicative dimensions of cluttering: (i) cognition, (ii) language, (iii) pragmatics, (iv) speech, and (v) motor (Bennett, 2006). According to Bennett, receptive and expressive language deficits are often described in PWC. The so-called expressive-verbal deficit is related with thought organization; poor sequence of ideas; poor storytelling; poor language formulation; revisions and repetitions; improper linguistic structure; syllabic or verbal transpositions; improper pronoun use; dysomia; word-finding difficulty; and excessive use of filler words. Run-on sentences; omissions and transpositions of letters, syllables and words; and sentence fragments are typical for expressive-written language deficits in CWS (Bennett, 2006: 486 – 487).

Daly and Cantrell (2006) asked 60 world experts on cluttering worldwide to respond to a specific questionnaire they developed about the disorder. Significant agreement was found on three topics: (i) imprecise articulation, (ii) irregular speech rate, and (iii) word-finding difficulties ($p = < 0.05$).

Language problems are often, but not always present in PWC. According to most international specialists, language could be treated as a subcomponent of cluttering and is considered significant. Language may be affected on different levels. One of the best detailed conceptual descriptions of cluttering language components is presented on Table №4.

In recent years, Ward and Scaler Scott (2011: 8) discussed the linguistic aspects of cluttering and mentioned problems with linguistic processing, as also reported by Myers (1992) and Van Zaalen, Ward, Nederveen, Grolman, Wijnen, and DeJonckere (2009). Ward and Scaler Scott (2011) concluded that cluttering tends to be characterized by word-finding difficulties, planning of sentences and phrases problems, and errors in syntactic elements. They also emphasized Weiss's (1964) position that, in cluttering, could be observed: (i) repetitions of syllables, words, or phrases, (ii) incorrect word order, (iii) unfinished sentences, (iv) retrieval of words (including names, prepositions, and pronouns), (v) omitted function words, and (vi) incorrect verb conjugation.

Based on the findings, Howel and Dworzynski (2005), Prior (1996), and Richels and Conture (2009) described language problems in PWC or children with learning difficulties (Ward & Scaler Scott, 2011: 102 – 103). Ward (2006) reported that PWC may experience problems at all three levels of language production: conceptualization, formulation, and articulation. Different authors have described and analyzed language problems in fluency disorders (St. Louis et al., 2007; Van Zaalen, Wijnen, & Dejonckere, 2009a). Language production problems are mentioned by German authors Sick (2004) and Ward (2006). Several authors like Daly and Cantrell (2006) and Louis and his colleagues

Table №4. Brief description of levels of language components
in cluttering (Ward, 2006: 145)

Grammar and syntax level	Lexical level	Pragmatic level
Excessive amount of phrase repetitions and revisions	Problems with lexical access	May experience more generalized difficulties with expressive language, particularly in organizing linguistic information for discourse and topic maintenance (Teigland, 1996)
Problems with verb conjugation and incorrect pronoun and preposition usage	Frequent and overuse of fillers and interjections	Problematic summarizing and correctly sequencing information
Simplified sentence, incorrect words	Substitution of a semantically related items (semantic paraphasia)	
Function words may be prone to deletion	Maze behavior ("dead-ends", Loban, (1976). Speech may become subject to pause, hesitation and revisions	
Incomplete sentences (St, Louis, Hinzman, & Hull, 1985)		

(2007) confirmed that PWC experience problems in organizing discourse information. In a later study on story-telling structure in cluttering, Van Zaalen and his coinvestigators (2009b) showed that PWC did not experience story-organization problems in reproducing a story from memory. They hypothesized that problematic language automation is the basis of cluttering. The language production of children with learning difficulties is also disturbed, but that is due to problems in the conceptualizer and formulator stages. "The language planning disturbances in PWC were considered to arise due to insufficient time to complete the editing phase of sentence structuring" (Ward and Scaler Scott, 2011: 104). Regarding the lexical selection in PWC, Ward (2006) and Van Zaalen and Winkelman (2009) confirmed that PWC experience problems in sentence structuring only when the rate of speech is fast.

Myers and Bakker's (2014) study of experts' saliency ratings of speech-language dimensions associated with cluttering reported 10.45% salience of the dimension language disorganization (rank 6). The first rank with 12.95% salience was speech intelligibility. It is relatively low salience values of the language component and according to the 38 world experts both authors surveyed such characteristics as language disorganization is relatively less important in term of cluttering severity (Myers & Bakker, 2014: 39).

Garnett and St. Louis's previous research on cluttering verbal time estimation has suggested that although there is agreement that cluttering is a fluency disorder, persons with this disorder may also show different symptoms, including language and conversation disturbance (Garnett and St. Louis, 2014: 197).

To summarize, the literature suggests that in general PWC may show a variety of symptoms, and between them the language components are always presented. This fact explained why half of the Bulgarian specialists aware of the importance of language disturbance in the short questionnaire.

Conclusion

This article represents a compilation of cluttering language components gathered after a review of the specialized literature on this fluency disorder and summarizes what is known in the evidence-based literature about the clinical language components of cluttering. At present, there is sufficient information on the language components in cluttering, but there continue to be research limitations in Bulgaria. A relatively small number of Bulgarian publications on this topic exists and Bulgarian speech-language pathologists' understanding of cluttering as a fluency disorder is largely neglected in clinical practice. For them, there is substantial confusion about the nature and treatment of cluttering.

As may be seen from Georgieva, there is limited research in the area and the present state of knowledge about cluttering. There is reason to expect that clinicians will be able to identify the main components that accompany or contribute to cluttering to facilitate an accurate diagnosis and the selection of an effective treatment. The language components of cluttering represent a potentially fruitful area of investigation that may enhance both knowledge and practice.

Appendix

Brief questionnaire: general information regarding the cluttering disorder
1. What type of communication disorder is cluttering:
– Fluency
– Language
– Motor
– Rate and rhythm
– Learning
– Articulation
Other (please, clarify)
2. What is/are the main reason/s for cluttering?
– Genetic

– Physiological (organic origin)
– Organic predisposition affected by experience
– Learned disorder
– Psychologically based
– No opinion.

3. Please, mark the essential, obligatory symptoms of cluttering:
– Fast speech rate
– Unawareness of the problem
– Irregular speech rate
– Disorganized thinking
– Word and phrase repetitions
– Poor syntax/incomplete sentences
– Speech and Language delay
– Learning disabilities
– Reduced attention span
– Misarticulations
– Motor coordination problems
– Other (please, clarify).

4. Was your university training adequate?

5. Type of therapy you are applying:
– Rate control
– Articulation
– Language
– Voice elements
– Stuttering
– Other (please, clarify).

6. Cluttering co-existing disorders are:
– Stuttering
– Language disorders
– Misarticulations
– ADHD
– Learning difficulties
– Others – please, clarify.

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ЕЗИКОВИ КОМПОНЕНТИ НА ГОВОРЕНЕТО СЪС ЗАПЪВАНЕ – ТЕОРЕТИЧЕН ПРЕГЛЕД

Резюме. Настоящото изследване представя виждането на 10 български експерти по отношение на многоаспектно и комплексно плавностно нарушение като запъването. За целите на изследването е използвана кратка анкета, която представя основно дефиницията, етиологията, клиничните симптоми (сред които и езиковия компонент) и терапията на плавностното нарушение. Последващо електронно търсене и теоретичен сравнителен анализ на 35 публикувани научно базирани статии по проблема в база данни Web of Science посочва, че в световните и българските източници езиковите симптоми са описвани като неизменна част от профила на нарушението. Анкетираните специалисти експерти показват познаване на различните комуникативни характеристики на запъването. Две трети от тях смятат, че езиковото представяне в рамките на запъването е доминантно.

Ключови думи: запъване; нарушения на плавността на речта; клинични симптоми; езиково нарушение

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