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Cluttering

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Introduction

Experiencing difficulty understanding another speaker occurs for many reasons. Among the most common are problems hearing the person, either because the speaker does not talk loudly enough or there is excessive environmental noise, or both; problems comprehending an unfamiliar accent or dialect; or problems arising from misarticulations (mispronunciations) of numerous speech sounds. Sometimes, however, the difficulty arises from speech that sounds fast, but also has other characteristics that compound the problems of processing what is being said. This may well be cluttering.

Definition

"Cluttering is a fluency disorder wherein segments of conversation in the speaker's native language typically are perceived as too fast overall, too irregular, or both. The segments of rapid and/or irregular speech rate must further be accompanied by one or more of the following: (a) excessive "normal" disfluencies; (b) excessive collapsing or deletion of syllables; and/or (c) abnormal pauses, syllable stress, or speech rhythm" (St. Louis and Schulte, in press). This is one of several definitions that have been advanced recently for cluttering. Whereas there is no unanimous agreement on what should and should not be included in a definition, this one strives for the "lowest common denominator" symptoms, all related to speaking (Scaler Scott and St. Louis, 2009). The abnormal speaking rate and the three rate-related symptoms can be further described as follows. First, speaking rate in syllables per unit time may not necessarily exceed those of normal speakers although speech will sound "fast." This may be due, for example, to irregular, "jerky," or "spurty" segments or due to the fact that the listener has difficulty decoding—and thus "keeping up"—with the message, as when the speaker drops off sounds and syllables in multisyllabic words. Disfluencies (or breaks in the flow of speech) associated with cluttering are those that are typically observed in normal speakers, i.e., revisions, interjections, and hesitations, although they may occur more frequently in the speech of clutterers. Also and importantly, cluttering disfluencies are not those typically observed in stuttering, i.e., part word repetitions, syllable prolongations, or stoppages (blocks). Collapsing syllables includes—but is not limited to—excessive shortening, "telescoping," or "over-coarticulating" syllables, especially in multisyllabic words or short phrases. The word, "colorful" might sound like "cufful" or the question, "Did you eat" may sound like "Jeet?" The sentence, "The silence of the chess game

was deafening" might sound like "Du sense a du chess game uz daffy." People who clutter often speak quite normally for short periods of time, especially when being recorded. Also, cluttering must be differentiated from reading problems. The definition assumes that cluttering must occur in naturalistic conversation. Finally, cluttered speech need not occur more often than uncluttered/fluent speech; a few clear but isolated examples are sufficient for diagnosis. Of course, these symptoms are observed occasionally in all speakers, especially young children, but they occur more consistently and more frequently in clutterers. Moreover, listeners do not get the impression that something is wrong in noncluttering, normal speakers, even when they occasionally manifest these symptoms.

Coexisting Disorders

A lowest common denominator definition is proposed here because "pure" cluttering as described above has been observed as the only problem a clutterer has, without other coexisting symptoms (St. Louis, Myers, Bakker, and Raphael, 2007). Yet, even though "pure" clutterers exist, with estimates as low as 5% of the entire population with this disorder (Daly, 1996), the most problematic issue in diagnosis relates to the fact that most clutterers have coexisting problems (St. Louis et al., 2007; St. Louis & Schulte, in press).

Historically, recognition of cluttering as a distinct speech disorder emerged from clinical and research work with the most common fluency disorder of stuttering (St. Louis and Schulte, in press). Many clutterers also stutter, though not all of them do. Nevertheless, since cluttering is far less well known than stuttering, and since the term "cluttering" typically refers to being "messy or disorganized," even people who only clutter often believe that they "stutter" (St. Louis et al., 2007).

Another problem that frequently coexists with cluttering is language organization. Clutterers' descriptions and narratives are intermittently disjointed, disorganized, and accompanied by excessive restarts and revisions. Also, many who clutter do not attend to listener cues of misunderstanding (e.g., a furrowed brow or puzzled look). Indeed, the literature suggests that clutterers typically are unaware of the fact that they cannot easily be understood (e.g., St. Louis & Myers, 1997; Weiss, 1964). Compromised awareness of their cluttering symptoms and/or deficient ability to self-monitor speech has therefore been considered to be important deficits in this population. Recent self-reports from a few clutterers who, through speech therapy or other means, had become better acquainted with their problem have stated that, prior to this understanding, they believed they were communicating normally (Scaler Scott and St. Louis, in press).

Stuttering and language problems are among the most common speech and language problems that can coexist with cluttering, but incorrectly produced speech sounds can occur as well. As noted above, the most likely misarticulations relate to the collapsed words wherein either unstressed syllables are deleted entirely or other important sounds are omitted. Less likely, but also seen with some frequency, are people who clutter and also have consistent sound-specific misarticulations, (e.g., w/r as in "wed" for "red").

Non-speech/language problems that frequently coexist with cluttering include attention/deficit-hyperactivity disorders (ADHD) and learning disabilities. Less frequent coexisting disorders

include auditory processing disorders, handwriting problems, Tourette's syndrome, Asperger's disorder (which is part of the autism spectrum disorders), apraxia, and other "executive function" disorders (e.g., difficulties in planning, sequencing, and hierarchically organizing behavior) (St. Louis et al., 2007).

Cluttering from a Public Health Perspective

Prevalence and Incidence

Public health planning and monitoring requires accurate epidemiological data. Such data are only beginning to be reported for cluttering. The likelihood of cluttering occurring with and without stuttering was reported by several early writers. Pure cluttering has been estimated to comprise 5-17% of all fluency disorders whereas cluttering coexisting with stuttering has been estimated to include 30% to 67% of fluency disorders (Daly, 1996. Langova and Moravek, 1964; Weiss, 1967). This estimate for cluttering is different from a recent convenience survey of adults from four countries who were given definitions of cluttering and stuttering. Respondents reported an average of 1.1 persons they knew who had a fluency disorder. Those identified with cluttering averaged 33%, those with stuttering 60%, and those with both 7% (St. Louis, Filatova, Coskun, Topbas, Ozdemir, Georgieva, McCaffrey, and George, in press).

With respect to the prevalence and incidence of cluttering in the general population, one early study reported 1.8% prevalence of cluttering among schoolchildren (Becker and Grundmann, 1970). From a large self-report study of twins in Denmark, 12.2% had a lifetime incidence of cluttering compared to 5.7% for stuttering (Fibiger, Von Bornemann, Fagnani, and Skytthe, 2009). The definition for cluttering in the Danish study was less restrictive than that used for other studies, i.e., a positive response to the question, "Do you speak too fast or did you do so, stumbling over the words and omitting syllables (cluttering)," possibly explaining the much higher lifetime incidence rate. Self-report data were available for three of the four countries reported by St. Louis et al. (in press), and they ranged from 1.2 to 8.9% for cluttering, 0-5.6% for stuttering, and 0-2.2% for cluttering and stuttering.

Sex Ratio

Again, definitive epidemiological data are unavailable for cluttering with respect to differences among males versus females. For stuttering, it is well accepted that three to four times as many males are affected as females among adults (Bloodstein and Ratner, 2008). St. Louis et al. (in press) reported 4.5:1, males:females, for cluttering. This was so even though for three of eight total comparisons, i.e., sex ratio comparisons for children and for adults in four countries, the number of female clutterers exceeded the number of males. Corresponding ratios were 3.8:1 for stuttering, and 3:1 for cluttering-stuttering. Fibiger et al. (2009) found 1.2:1 for cluttering and 2.5.1 for stuttering.

Onset

There have been no empirical studies of when cluttering begins and how it develops over time. Anecdotally, it has been reported that cluttering is typically not diagnosed until early elementary school years, i.e., about 7 or 8 years (Diedrich, 1984). If this is true, one reason may be that the ability to speak rapidly (or too rapidly) may not develop until after language is quite well

developed (van Zaalen, 2010). Bakker speculated that yet-to-be-understood factors of the interaction of the environment and personality may be responsible for central nervous system problems that cause cluttering (see next section) not emerging during preschool years as is the case with stuttering (Myers, St. Louis, Bakker, Raphael, Wiig, Katz, Daly, & Kent, 2002). Another reason is that it may be the academic demands of a school environment that is responsible for cluttering to emerge as a noticeable problem in children.

Cause

The cause of cluttering is unknown, although, like stuttering, there are numerous theories. Several recent authorities, however, suggest that cluttering is caused by atypical brain structure or function as it relates to speech rate control, speech-language planning and execution, and other fluency-related behavior (e.g., Alm, 2010; St. Louis et al., 2007; van Zaalen, 2009). A suspected physiological cause is buttressed by emerging evidence that cluttering has a significant genetic component, though possibly lower compared to stuttering. Among twin pairs, Fibiger et al. (2009) reported heritability estimates to be 0.53 and 0.57 for male and female clutterers, respectively, compared to 0.78 and 0.79, respectively, for those who stuttered and 0.71 and 0.87, respectively, for those with a history of "childhood speech disorders."

Summary

If cluttering is to be addressed adequately from a public health perspective, careful epidemiological research is needed to clarify the nature and scope of the problem. Recent communications from people who clutter have suggested that it is a greater problem than previously suspected (Scaler Scott and St. Louis, in press; St. Louis et al., in press). This may be due in part to the fact that some people who clutter do not think they have a problem and thus do not seek professional help.

Cluttering from a Clinical Management Perspective

Cluttering is most appropriately managed by speech-language pathologists (SLPs) or logopedists who are adequately trained and possess the requisite credentials appropriate for one's country (e.g., certified by the American Speech-Language-Hearing Association if the SLP is from the United States). Whereas many SLPs are not well trained in cluttering, and have reported uncertainty regarding its clinical management (Georgieva, 2001; St. Louis and Hinzman, 1986; St. Louis and Rustin, 1992), those who have an interest or specialization in fluency disorders can manage cluttering effectively.

Evaluation

Typical evaluations of suspected or confirmed clutterers often are more complex than evaluations of stutterers, possibly requiring 2-4 hours to complete. It is important to record the client's speech in a wide variety of speech tasks, such as imitation, oral reading, and conversation. Conversational samples should occur for substantial periods of time in order to capture any cluttering when the client relaxes, since these are the times cluttering is most salient. Also, since coexisting disorders are common, clinicians should evaluate clients' language, articulation, awareness of speech difficulties, ability to self-monitor, oral speech mechanism structure and function, and hearing acuity. If significant problems are observed or suspected in such areas as hyperactivity, attention, academic skills, listening or comprehension, motor

coordination, or psychological adjustment, then additional referrals for testing by appropriate professionals should be made (St. Louis & Myers, 1997; St. Louis et al, 2007).

Following are some of the instruments that have been developed to assist in the evaluation of cluttering:

- *Cluttering Severity Index* (*CSI*) (Bakker and Myers, 2010): a software program, under development, to measure time cluttered, to make perceptual ratings of cluttered speech, and other dimensions. This includes the earlier *Cluttering Assessment Program* (*CLASP*) (Bakker, 2009).
- *Self Assessment of Speech Index* (*SASI*) (St. Louis and Atkins, 2005): A short scale of a person's awareness of his/her own speech and voice.
- *St. Louis Inventory of Life Perspectives and Speech/Language Difficulty* (*SL ILP-S/L*) (St. Louis, 2005): A short scale of self-perceived difficulty, handicap, severity, and related problems as a result of a speech or language difficulty.
- *Predictive Cluttering Inventory* (*PCI*) (Daly, 2006): A detailed scale filled out by a clinician regarding a wide variety of cluttering symptoms and associated problems.
- *The SPA Test (*Dutch: *Screening Pittege Articulatie)* (van Zaalen, Wijnen, and Dejonckere, 2009): Measures articulation accuracy, coarticulation, flow, sequencing, and rate when asked to produce repetitions of complex multisyllabic words at a fast rate.

Therapy

Speech therapy for cluttering typically involves various combinations of the following goals: reducing the speaking rate; enhancing or improving the ability to self-monitor speech; practicing speech characterized careful enunciation of all the words and syllables; constructing sentences that are carefully organized, appropriately arranged, and important to the communication; learning to recognize and respond appropriately to listener cues of misunderstanding. (Bennett, 2006; Daly, 1996; Daly and Burnett, 1999; Myers, in press; Myers and Bradley, 1992; Myers and St. Louis, 2007; Scaler Scott, Tetnowski, Roussel, Flaitz, 2010; Scaler Scott, Ward, and St. Louis, in press; St. Louis and Myers, 1995, 1997; Ward, 2006; Weiss, 1964). Sometimes, when these strategies are ineffective in reducing excessive disfluency or when the client both clutters and stutters, additional strategies are undertaken that are designed to specifically reduce the disfluencies. The setting for therapy typically involves a one-on-one interaction wherein strategies are tailor-made by the SLP for each cluttering client. Most SLPs keep numeric data to document increases in some behaviors (e.g., coherent sentences) and decreases in others (e.g., number of utterances judged to be "fast"). Therapy interactions to change the speech pattern are often conducted through informal conversations where a client, for example, might be asked to produce a multisyllabic word, such as "multiplication" in three ways: (a) in the usual cluttered way, (b) in a slower and somewhat less collapsed fashion, and (c) in a normal-sounding way with appropriate syllable inclusion and syllable stress. Sometimes, therapy involves technology, such as with the use of a device that plays the speaker's speech to his ears with a fraction of a second delay (known as "delayed auditory feedback"). Typically, individuals speak more slowly and deliberately using delayed auditory feedback, and, if the clutterer can learn to do so, the resulting speech is often more intelligible (Myers and St. Louis, 2007). Therapy outcome data are still lacking, but some reports have suggested that clutterers can be effectively treated (Craig, 1996, 2010; Langevin and Boberg, 1996; St. Louis, Myers, Cassidy, Michael, Penrod, Litton, Olivera, and Brodsky, 1996).

Increasingly, self-help initiatives involving electronic communication (Scaler Scott and St. Louis, in press) have revealed that a surprising number of clutterers experience anxiety and fear of speaking. The reader may assume that clutterers can monitor their speech, but we suggest that monitoring and awareness responsible for anxiety or fear may generally relate to failing in communication but not the sort of specific self-monitoring that focuses on physical aspects of speech. It is probably akin to being aware that there is a problem with negative consequences, but not being able to observe the details that are responsible for the problem. In any case, group therapy settings (often in conjunction with group experiences for stutterers) have been used to deal with some of the emotional problems caused by a history of cluttering.

Cluttering from a Rehabilitation Counselor's Perspective

Cluttering is not a well-known speech disorder. Moreover, the name, "cluttering" is most often interpreted as being "messy" or "disorganized." Somewhat surprisingly, however, recent evidence indicates that people on the street can identify cluttering and differentiate it from stuttering much more than previously assumed (St. Louis et al., in press). This finding must eventually be reconciled with previous surveys of speech-language pathologists and special education teachers indicating that these professionals are frequently unacquainted with—or only superficially trained in—cluttering (Georgieva, 2001; St. Louis and Hinzman, 1996, St. Louis and Rustin, 1992). We are unaware of any data pertaining to rehabilitation counselors' professional knowledge and experience with cluttering, so we assume that most are totally unaware of the disorder.

Additionally, very limited data are available that estimate the degree of vocational or educational handicap that cluttering imposes on a person. An increasing number of anecdotal reports, many from online self help forums for cluttering, suggest that cluttering can and does have significant negative impacts on employability, job success, and even educational achievement (Scaler Scott and St. Louis, in press). Clearly additional research is needed in this area.

In spite of the foregoing, rehabilitation counselors may be asked to consult on cluttering problems, most likely as a result of clients' difficulties being understood or expressing themselves effectively in education and/or employment settings. If so, the counselor should refer a suspected cluttering problem to a qualified speech-language pathologist. The counselor should also be aware that therapy which might be undertaken would have as a goal to habilitate instead of rehabilitate the person who clutters.

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