

Assessing Cluttering: Exploring the Complexities of Diagnosis and Differential Diagnosis

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Disclosures

- Financial disclosure: The presenter receives royalties for books which will be mentioned in today's seminar
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- Non-financial disclosures: None

What do you think?

- Is cluttering a fluency disorder?
- Is cluttering a language disorder?
- Is cluttering a speech disorder?
- Is cluttering a syndrome?
- Are those who clutter aware of their communication disorder?

Cluttering: The history of the mystery

In a nutshell

- Cluttering began as a “Central Language Imbalance” (Weiss, 1964) and was also referred to as a “syndrome”
- The definition of cluttering
 - Began as a broad definition
 - Narrowed over time
 - Became broad again
 - Then lost credibility in the U.S.
 - The narrowing and resurgence of the acceptance of cluttering as a disorder began in the 1990s

**Defining and diagnosing cluttering:
Straightforward methods based on
what we know now**

Current Definition



*Cluttering is a fluency disorder wherein segments of conversation¹ in the speaker's native language² typically are perceived as too fast overall³, too irregular⁴, 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" disfluencies⁵; (b) excessive collapsing⁶ or deletion of syllables; and/or (c) abnormal pauses, syllable stress, or speech rhythm.*

St. Louis and Schulte (2011)

Current Definition



¹ *Cluttering must occur in naturalistic conversation, but it need not occur even a majority of the time. Clear but isolated examples that exceed those observed in normal speakers are sufficient for a diagnosis.*

² *This may also apply to the speaker's mastered and habitual non-native language, especially in multilingual living environments.*

³ *This may be true even though syllable rates may not exceed those of normal speakers.*

Current Definition



⁴ *Synonyms for irregular rate include "jerky," or "spurty."*

⁵ *These disfluencies are often observed in smaller numbers in normal speakers and are typically not observed in stuttering.*

⁶ *Collapsing includes, but is not limited to, excessive shortening, "telescoping," or "over-coarticulating" various syllables, especially in multisyllabic words.*



Rapid Rate

Theory of Cluttering

- Bakker, Myers, Raphael, St. Louis (2011)
 - The speaker is not necessarily speaking at a rate that is faster than normal. It COULD be faster than normal, but is not necessarily. The rate is faster than their system can handle, resulting in breakdowns in fluency or intelligibility.

**Excessive “normal”
disfluencies**



Nonstuttering-Like Disfluencies

Repetitions of:

Multisyllable whole words

"open-open"

Phrases

"I want—I want"

Revisions

"I like unicorns, no, I mean
dragons"

Interjections/Fillers

"um, uh, er, well,
like, so"

**Excessive
over-coarticulation**

Abnormal pauses




Some examples

- Busting Cluttering Myths
 - About awareness
 - Van Zaalen Y, Wijnen F, Dejonckere P. (2011)
 - About affective and cognitive components





Some examples

- Cluttering only
 - Increased rate, decreased efficiency (JD)
 - Increased revisions 
- Over-coarticulation (PK)
- https://www.mnsu.edu/comdis/ica1/papers/kissagizli_sc.html



Is it cluttering, stuttering, or a little of both?

- Moments of tension
 - Clinical examples
- Results of perceptual studies to date

Other considerations in cluttering

What else does the research say?

- Cluttering does co-occur with stuttering (see Ward, 2006, for review)
- Pure cluttering is rare, but occurs (Ward, 2006, 2017)
- Cluttering has been found in other diagnoses which may include speech/language difficulties, such as learning disabilities (van Zaalen, Wijnen, & Dejonckere, 2011) Down syndrome (van Borsel, 2011), Autism Spectrum Disorders (Scaler Scott, 2011; Scaler Scott, Tetnowski, Flaitz, & Yaruss, 2013), Fragile X Syndrome (Bangert et al., in press)

Atypical disfluency

Word Final Disfluencies (WFDs)

- Repetitions with or without a pause in between
 - Turn out the light-t-t so I can go to sleep
 - Turn out the light-ight so I can go to sleep
 - Turn out the light (ight) so I can go to sleep
- Prolongations
 - Thissssss is a scary movie

Mid word insertions

- I am going to pla--n--ay outside now

Within-word breaks, insertions

- "op—en"

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Atypical disfluency

- Commonly found in clients with other diagnoses, particularly those with Autism Spectrum Disorder, ADHD
- Seems to be a growing consensus that regardless of diagnosis (or lack thereof), the kids with these disfluencies also have other (sometimes subtle) pragmatic language symptoms

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Assessment & Differential Diagnosis

Principles for evaluating fluency disorders in clients with concomitant diagnoses

- Look for all fluency disorders in all populations; research is still emerging
- Determine fluency disorder separate from concomitant disorder (when possible)
- Examine fluency disorder and consider role any **concomitant diagnoses** may play

What tools should we use?

- Stuttering Severity Instrument (Riley, 2009)
- Rating Scales (affective/cognitive)
 - What's True for You? (Chmela/Reardon-Reeves)
 - Behavior Assessment Battery (Brutten & Vanryckeghem)
 - Kiddy CAT (Vanryckeghem & Brutten)
 - OASES (Yaruss, Quesal, Coleman)
 - Interview
- Articulation tests
- Contrast your client's speech in:
 - Reading
 - Rote tasks (fast and slow)
 - Spontaneous speech (Scaler Scott, 2019)
 - Conversation
 - Monologue (include "charged" topics)
 - Expository discourse

How do I get to the bottom of this?

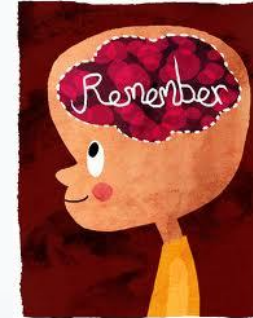
- Getting a sample and doing a fluency analysis is key
 - Approximately 500 words (or syllables) or 5-minute sample in conversation, monologue
 - Word for word transcription and fluency coding



How do I get to the bottom of this?



- Determine what percentage of words are represented by:
 - NSLDs (nonstutter-like disfluencies)
 - SLDs (stutter-like disfluencies)
 - WFDs (word final disfluencies)
 - Atypical pauses (for cluttering)
 - Over-coarticulation (for cluttering)



Stuttering-Like Disfluencies (SLDs)

Repetitions of:

Single-Syllable whole words (with tension)

"l-l-l"

Sounds or syllables (part-word repetition)

"d-d-uck"

"Spi-spiderman"

Prolongations

"sssometimes"

Blocks/Tense Pauses

"st---uck"

Examples

- **Non-Stuttering-Like Disfluency:**
 - Clayton was burning **the-the** midnight oil
 - Equations and numbers*/were at (**Rev**)/trying to invade his house
- **Stuttering-Like Disfluency:**
 - **Clay-Clayton** still **ha-had** fifteen pages to review
- **Word Final Disfluency:**
 - Hoping and praying-**ing** to hear
- **Atypical Pause:**
 - He could no longer keep his eyes open so he*/hit the sack
- **Overcoarticulation:**
 - That night Clayton dreamed of numbers and equations

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Differential Diagnosis: Covert Stuttering



- I will hide my stuttering
 - Varying degrees of avoidance
- Requires work on
 - Desensitization
 - Affective and cognitive components of stuttering

Overlap between cluttering and stuttering

- *Cluttering is a fluency disorder wherein segments of conversation¹ in the speaker's native language² typically are perceived as too fast overall³, too irregular⁴, 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" disfluencies⁵; (b) excessive collapsing⁶ or deletion of syllables; and/or (c) abnormal pauses, syllable stress, or speech rhythm.*
- Differential dx of rate:
 - Palilalia?
 - Avoidance or escape behaviors?
 - Remember that if a client does speed up to avoid a moment of stuttering, and cluttering-like symptoms such as over-coarticulation are triggered, then cluttering is a part of this client's fluency profile. Avoidance behaviors do not cause cluttering

More overlap between cluttering and stuttering

- *Cluttering is a fluency disorder wherein segments of conversation¹ in the speaker's native language² typically are perceived as too fast overall³, too irregular⁴, 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" disfluencies⁵**; (b) excessive collapsing⁶ or deletion of syllables; and/or (c) abnormal pauses, syllable stress, or speech rhythm.*
- Differential dx of NSLDs: Keep being a detective
 - Covert stuttering?
 - Language issues?
 - Bilingual/Multilingual/English Language Learner?

Scoping out escape/avoidance behaviors

- If you are unsure about a word avoidance, feign ignorance and ask again
- Reading passages help pinpoint avoidance
- Set up a game, etc. where suspected words, sounds must be said as part of the rules
- Put your client in a difficult situation when able (phone calls with specific words)

Differential diagnosis: Info to Consider

- Excessive non-stuttering like disfluencies
- Tips for teasing out language disorder
 - What does change of rate do?
 - How well can you follow the content/message of their discourse?



Overlap between cluttering and stuttering

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- Differential dx of over-coarticulation:
 - Dysarthria?
 - Articulation/phonological disorder?
 - Cul-de-sac resonance (structural)

Excessive over-coarticulation

Consider

- Does decreasing rate make it better?
- Are sounds at a decreased rate all articulated correctly?



Other things to note in differential diagnosis

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- Differential dx of speech rhythm:
 - This is not the prosodic patterns noted in other disorders such as autism
- There is nothing in here about atypical disfluencies, which can co-occur with cluttering, but are not part of the diagnostic criteria for cluttering!

Differential Diagnosis

- Excessive atypical pauses
 - Consider
 - Does decreasing rate make it better?
 - Does student seem to have fewer pauses than the average speaker? To run on without taking a breath?
 - Differential diagnosis: consider covert stuttering “tricks”

What features distinguish cluttering from stuttering?

- Rapid rate resulting in breakdown of intelligibility
- Over-coarticulation
- **Excessive** normal disfluencies
- When rate is adjusted, symptoms often disappear (not always the case for stuttering)

Are there affective and cognitive components of cluttering?

- Scaler Scott K, St. Louis KO. Consumer issues: self-help for people with cluttering. In: Ward D, Scaler Scott K, eds. *Cluttering: Research, Intervention and Education*. East Sussex, UK: Psychology Press; 2011.
- Dewey J. My experiences with cluttering. Paper presented at: International Stuttering Online Conference; October 22, 2005; Mankato, MN. <https://www.mnsu.edu/comdis/isad8/papers/dewey8.html>. Accessed May 2, 2020.

Are there affective and cognitive components of cluttering?

- Exum T., Absalon C., Smith B., & Reichel I.K. (2010). People with cluttering and stuttering have room for success. International Cluttering On-line Conference. Retrieved from: <http://www.mnsu.edu/comdis/ica1/papers/exumc.html>
- Giuffre, L., Scaler Scott, K., Tellis, G. & Tellis, C. (2021, Nov.). The impact of cluttering on the lives of adults, children, and family members. A poster presented at the annual convention of the American Speech Language Hearing Association, Washington, D.C.
- Gommoll, C. (2010). Advocating for my child: Building the right team. International Cluttering On-line Conference. Retrieved from: <http://www.mnsu.edu/comdis/ica1/papers/gommollc.html>
- Kissagizlis, P. (2010). An interview with Peter Kissagizlis: Cluttering and me. International Cluttering On-line Conference. Retrieved from: <http://www.mnsu.edu/comdis/ica1/papers/kissagizlisc.html>
- Kuster, J. (2010). A cluttering yahoo group. International Cluttering On-line Conference. Retrieved from: <http://www.mnsu.edu/comdis/ica1/papers/dewey2c.html>

Are there affective and cognitive components of cluttering?

- Kvenseth, H. (2010, April). Cluttering, Helene's personal experience. Proceedings of the First World Conference on Cluttering. Katarino, Bulgaria.
<http://associations.missouristate.edu/ICA>, pp. 50-53.
- Nolan, Sister Carol Mary. (2010). Cluttering Speech: A Facebook social network for persons who clutter. International Cluttering On-line Conference. Retrieved from: <http://www.mnsu.edu/comdis/ica1/papers/nolanc.html>
- Odegard, M. C., Klokk, S., Hoff, K., & Melle, A. H. (2021, Jan.). Quality of life and past school experiences of adults who clutter. A poster presented at the 12th Oxford Disfluency Conference. (virtual)
- Wilhelm, R. (2020). *Too fast for words: How discovering that I don't stutter but clutter changed my life*. Nijmegen, The Netherlands: Big Time Publishers.

OASEC: Background and Procedures

The OASES is self-report measure for evaluating the **adverse impact** of stuttering on the lives of people who stutter.

- Based on an adaptation of the World Health Organization's *International Classification of Functioning, Disability, and Health* (ICF; WHO, 2001; Yaruss & Quesal, 2004).
- Strong psychometric properties, including reliability and validity consistent with patient-reported outcome (PRO) measures.
- Response Forms currently available for 3 age groups:
 - **School-age children (ages 7-12)** – 60 items
 - **Teens (ages 13-17)** – 80 items
 - **Adults (ages 18 and above)** – 100 items
- Translated to several languages and used in clinical and research applications around the world.

OASEC: Background and Procedures

OASES Response Forms consist of 4 sections:

- **Section I (General Information)** assesses the speaker's knowledge, overall perceptions, and attitudes about stuttering.
- **Section II (Reactions)** assesses the speaker's affective, behavioral, and cognitive reactions to stuttering.
- **Section III (Functional Communication)** assesses the difficulty a speaker has communicating at work or in social settings
- **Section IV (Quality of Life)** assesses the impact of stuttering on the speaker's ability to participate fully in life

OASEC: Background and Procedures

- In this study, items from the OASES were evaluated to determine whether they could be adapted to the experiences of people who clutter.
- Items that were judged to be not relevant to the experience of people who clutter were **removed**.
- New items were **added** to address unique aspects of cluttering that may not be common for people who stutter.



COMING SOON

Cluttering: Reporting your findings

- Outline each criterion
- Describe the behaviors that might fit into this criterion
- Draw a conclusion
- Include information about affective and cognitive components of cluttering

To sum up

- Follow the **LCD** definition of cluttering, and see if your client's symptoms match the **criteria**
- Treat co-existing issues, such as a language disorder, as co-existing
- Remember that just like stuttering, cluttering does not have to occur in all contexts to be diagnosed
- Remember that just like stuttering, affective and cognitive components are important

**Other things to
consider when
making treatment
recommendations**

Things to think about when making recommendations for treatment

- How often do these behaviors occur?
- How much do they interfere with a client's overall communication effectiveness?
- How much do they have the potential to interfere with a client's communication effectiveness?
- Is the client ready to work on this?

Understand the nuances...

- "I don't want to" because
 - I'm not yet ready to deal with this (defensive; need time and space)
 - Case example
 - I'm afraid to deal with this, but could be ready (defensive; need guidance and support)
 - Case example
 - I (truly) see no problem with this AND
 - I am not avoiding communication
 - I am comfortable participating in communication to my fullest (desired) extent
 - Need understanding, support and education of others

Subtypes in cluttering?

- Phonological or syntactic? (van Zaalen)
- Motoric or linguistic (Ward)
- Intelligibility or formulation?

- It may not matter what you title it
 - Most importantly you want to define what symptoms need to be treated
 - Over-coarticulation?
 - Excessive normal disfluencies?
 - Others?
- How can you best treat them?



Case illustrations

Case 1: over-coarticulation is predominant symptom

- 4 year-old-male
- In preschool
- Bright, no cognitive issues
- Diagnosed with and treated for phonological processes for 6 months

- Referral source: His student clinician
 - "Something still doesn't seem right"

To note

- *Differentially diagnosed phonological process disorder vs. over-coarticulation*
 - *Example*
 - *Final consonant deletion vs. over-coarticulation*

Case 2:

over-coarticulation is predominant symptom

- 17-year-old male
- Senior in High School
- Bright, no cognitive issues
- No other diagnoses except for an interdental lisp

- Referral source: His parents
- His thoughts about his cluttering: Is aware to a small degree, the rest he thinks is his parents' difficulties with hearing

To note

- *Differentially diagnosed role of lisp vs. over-coarticulation*
 - *What we found out and how we addressed it*
- *Differentially diagnosed whether stuttering was part of cluttering (rate regulation) or concomitant to cluttering*

Not all cases are the same

Case 2A

- Young Adult
- Cluttering
- Stuttering characterized by easy part word and whole word repetitions
- Occasional fleeting blocks

Case 2B

- Young adult/Autism Level 1
- Cluttering
- Stuttering characterize by tense whole word repetitions
- Blocks of up to 3 seconds with secondary behaviors of struggle and facial tension

Still wondering? Cluttering & Language

- It is highly debated that those with cluttering have language difficulties
- What symptoms do we observe clinically?
 - Mazing/language organization issues
 - Delayed word retrieval
 - Increased NSLDs

What does the research say?

- About cluttering
 - Difficulties with perception of how fast they are going
 - Garnett & St. Louis (2014)
 - Bakker & Myers (2011)
 - Bretherton-Furness & Ward (2012)
 - PWC do have trouble with language organization
 - Cluttering may be situation dependent
 - Suggested sentence jumble tasks
 - "The question of whether cluttering has a linguistic component cannot be answered on the basis of this current research. However, it adds to the database that indicates that PWC do indeed have difficulty with language organization—in certain linguistic contexts, at least."

p. 221

What does the research say?

- Scaler Scott et al. (2018)
 - Adults who clutter all scored within the average range on the Clinical Evaluation of Language Fundamentals, Third Edition (CELF-3) *Sentence Assembly* subtest.
 - Subset of adults who still scored within the average range, but took much longer to complete the test than controls and the other adults with cluttering.
 - They also exhibited more symptoms of inefficiency of communication in conversational speech and monologue.
- Ward, Connally, Pliatsikas, Bretherton-Furness, & Watkins (2015)
 - Fmri—found differences in pre-motor cortex and pre-supplementary motor areas
 - Differences in motor control across planning and execution levels
 - No differences in language areas

Case 3: Non-stuttering disfluencies predominant symptom

- **51-year-old male**
- **Installs and maintains computer software for a government agency**
- **Referral source: A job interview, then a search for “fast speech” on the internet**
- **His thoughts about his cluttering: Is aware to a large degree, very motivated to address it**

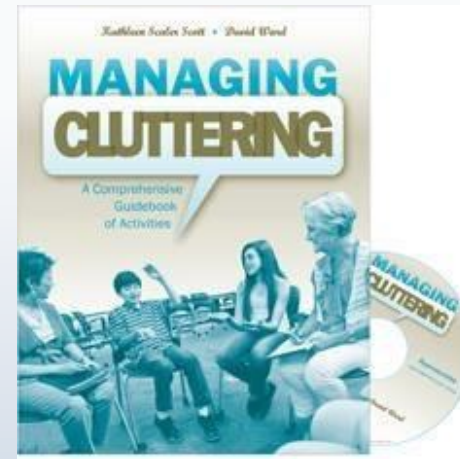
To note

- *Differentially diagnosed revisions due to language disorder vs. cluttering*
 - Diagnosis of language disorder with difficulties in processing information, language formulation, vocabulary, syntax
 - Regulation of rate therefore helps with above symptoms, but others need to be directly addressed (vocabulary, syntax)

Resources



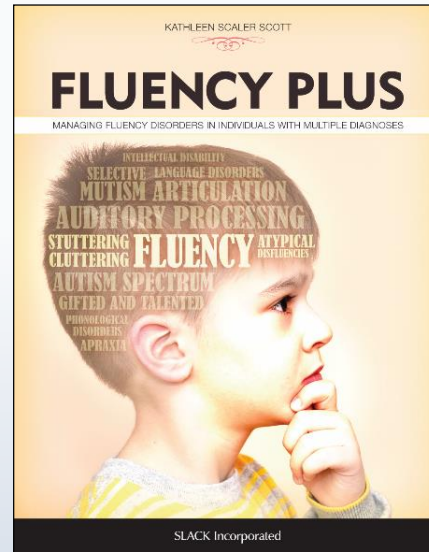
Cluttering: A Handbook of Research, Intervention, and Education
Psychology Press (Research)



Managing Cluttering
Pro-Ed (Treatment)

- Stuttering
- Cluttering
- Atypical Disfluency

- Concomitant Diagnoses
- Executive Functioning



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- Assessment
- Differential Diagnosis
- Treatment
- Treatment Activities

Thank you...
questions?

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