A collection of cluttered items including a chessboard, medals, a compass, and glasses.

# Therapy for those who clutter


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A collection of various objects including medals, a compass, and a pair of glasses, arranged on a light-colored surface. The objects include a red ribbon with a circular medallion, a blue ribbon with a circular medallion, two silver star-shaped medals with circular centers, a pair of gold-rimmed glasses, a silver compass, and a blue and white checkered board with several small round pieces.

# What is cluttering?

Definition;  
examples;  
signs/symptoms

<http://associations.missouristate.edu/ICA>

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A cluttered desk is a sign of a cluttered mind. Or a weak arm.





# Lay definition of cluttering

“Cluttering is a speech problem in which a person’s speech is either too fast, too jerky, or both. Most people who clutter seem to run their words or sentences together, and they often have many more fillers, hesitations, revisions, or other breaks in their speech than normal speakers do. Their speech sounds ‘cluttered’ as though they do not have a clear idea of what they want to say, and they are often not aware that they have a speech problem.”

St. Louis, Reichel, Scaler-Scott, Van Borsel, Ward, Leahy, Sonsterud, Adams, van Zaalen, Ademola & Arulogon (2009)



## Diagnostic definition of cluttering

“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 & Schulte, in press)



## Lay definition of stuttering

“Stuttering is a speech problem in which a speaker typically repeats or prolongs (draws out) parts of words, or gets stuck or blocked on words. Sometimes stuttering consists of strategies that try to reduce or avoid repeating, prolonging, or blocking. Stuttering is often associated with psychological stress or unpleasant feelings. Finally, the person who stutters often experiences a loss of voluntary control in saying certain words (St. Louis et al., 2009).”




## Peer-reviewed research on cluttering

- ◆ **Clinical recommendations** (Daly, 1986; Georgieva, 2000; St. Louis, Hinzman & Hull, 1985; St. Louis & Hinzman, 1986; St. Louis & Myers, 2005; St. Louis et al., 1996; 1997; 2003; 2004; 2007; Vinther, 2000).
- ◆ **Reviews and summaries** (Bakker, 1996; Daly, 1993; Myers, 1996; Theys, van Wieringen & De Nil, 2008; Van Borsel & Tetnowski, 2007; Yairi, 2007)
- ◆ *A Journal of Fluency Disorders* issue devoted to cluttering in 1996
- ◆ The International Cluttering Association's research/academic committee (2008-2009)






# Cluttering summarized

- ◆ It is a fluency disorder and a rate disorder; Example provided by Kissagizlis (2008) 
- ◆ Medical term is “tachyphemia”
  - “tachy” = “rapid”
  - “phemia” = “speech”
- ◆ Diagnosed since the 1700’s; Weiss (1964)
- ◆ Excessive x 4
  - speech/language disfluencies,
  - speech rate,
  - arrhythmia/irregularity, and
  - co-articulation/syllabification

<http://associations.missouristate.edu/ICA/>





# Disorders co-occurring with cluttering: Distinct “comorbid” disorders *vs.* overlapping diagnostic signs/symptoms?

## **Speech/lang. disorders:**


- ◆ Articulation (2/3); even apraxia
- ◆ Stuttering (14 - 32% of stutterers show “cluttering” symptoms)
- ◆ Language disorders?

## **Syndromes:**

- ◆ Down Syndrome (80%)
- ◆ Asperger’s Syndrome (2 cases; Scaler Scott & Ward, 2008)

## **Behavioral disorders:**


- ◆ Attention-Deficit Hyperactivity Disorder
- ◆ Learning disabilities
- ◆ Comorbidity of ADHD + LD is found in about 3.5% of 6- to 11-yr-old children (Center for Disease Control, 2002).



# Signs of a (subtle) language disorder co-occurring with possible diagnosis of cluttering:


- ◆ Fewer self-corrections
- ◆ Fewer complete utterances
- ◆ More revisions or “mazes” (Loban, 1976) (semantics/syntax),
- ◆ Difficulty taking listeners’ perspectives into account (pragmatics) (Teigland, 1996).





Perhaps people who clutter are less invested in therapy, due to lack of self-awareness, or for other reasons.


- ◆ People who clutter do not tend to be self-referring
- ◆ Our obligation to show and tell them about potential therapy benefits



# Assessment of cluttering and co-occurring disorders

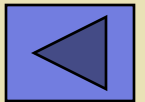
- ◆ Case history/interview questions
- ◆ Criterion-referenced measures  
(many of them for cluttering assessment)
- ◆ Standardized measures (more for the concomitant disorders, inc. DDK)





# Case history / interview Q's:

- ◆ St. Louis & Myers' (1995) suggestions
- ◆ Rate, fluency, clarity/intelligibility, language and thought, and *self-awareness*
- ◆ Differential diagnosis questions, e.g.:
  - Cluttering (“slow down” cues help fluency) vs. stuttering (not the case; fluency worsens).
  - Case of Bill: My attempts to diagnose Cluttering alone vs. “Cluttering-plus” Stuttering
- ◆ Medication(s)? Dosage? Effects? (Brady, 1993)



## Case of Bill:

*A 22-year old who graduated from the University of Wisconsin-Eau Claire and currently works as a photographer. He was treated our UWEC clinic as a school-aged client for an articulation disorder. In his sophomore year at UWEC, Bill was diagnosed with Attention Deficit Disorder, and prescribed 40 mg of Ritalin daily. He no longer takes this medication, stating that because he is no longer in school, he feels he does not need it. Bill was referred twice to the UWEC clinic by friends who were speech-language pathology graduate students.*






## Case Hx/ interview areas:

- ◆ Onset and associated events; History of changes
- ◆ Reason for referral; Diagnosis by whom?
- ◆ **Awareness of the fluency problem**
- ◆ Past advice and/or treatment and effectiveness
- ◆ Family history of disorders (use the lay definitions of cluttering and stuttering)
- ◆ Birth and medical problems; Developmental landmarks (motor, language, social)
- ◆ School history; Social interaction and emotional adjustment; Behaviors (impulsivity, distractibility, limited attention span)



# What's on your clipboard?

- ◆ Daly (2006) *Predictive Cluttering Inventory*. Free download from <http://associations.missouristate.edu/ICA/> and [supplemental info about its use](#).
  - Allows you to document as you sample dialog, monolog, and phone calls of spontaneous, connected speech.
- ◆ Quick assessment tools for measuring disfluencies per 100 words; we use a grid based off of Conture (2001):
  - Between-word disfluencies: “Phrase repetitions, Revisions; Interjections; Other” [common in cluttering]
  - Within-word disfluencies: “Whole-word repetitions, Sound-syllable repetitions, Audible prolongations, Blocks” [less common in cluttering]



**What else is on your clipboard that you hand to the older client?**

**Self-appraisal, criterion-referenced measures:**


- ◆ *Self-Awareness of Speech Index* (St. Louis & Atkins, 2005),
- ◆ *St. Louis Inventory of Life Perspectives and Speech/Language Difficulty* (St. Louis, 2005)
- ◆ *Perceptions of Speech Communication* (Daly & Burnett, 1999) (same as Woolf's 1967 *Perceptions of Stuttering Inventory* with the word "stuttering" replaced with "speech/speech difficulty")






# What's in your clinic room?

- ◆ Computer, with mic, headphones, speaker, and installed with:
  - Audacity (v 1.2)
  - DAF/FAF Assistant (v.1.1)
  - Cluttering Assessment Program (v. 2.02; Bakker, 2005)
- ◆ Low-tech options: recorder-playback device (Loquitor™) (example of Bill); stopwatch, calculator



# What will you do with recorded speech samples?


- ◆ Count disfluencies per 100 words and determine proportion of between-word types vs. within-word types per total disfluencies.
- ◆ Use as play-back to determine client's self-awareness and/or assessment of problems in speaking (trial therapy).
- ◆ Determine relative fluency response to a “speak slower and more carefully” instruction.



# What structured tasks will you ask of your client?


- ◆ Ask for rote speech: “Count, days of the week.”
- ◆ Imitate multisyllabic words and sentences, phonemically loaded (e.g., *Source for Apraxia*)
- ◆ Imitate a sentence with appropriate pausing.
- ◆ Read and answer questions about the reading (Who, What, When, Why/what if).
- ◆ Diadochokinesis: “Say /pʌpʌpʌ/ as many times as you can as fast as you can.” (Use Audacity or stopwatch).
  - /pʌtʌ/ “patty” for young children
  - /pʌtʌkʌ/ “pattycake” for young children





# What *other* structured tasks *might* you ask of client?

- ◆ Oral peripheral examination (e.g., St. Louis & Ruscello, 2000)
- ◆ Motoric tasks, for example:
  - Thumb & finger circle from *Quick Neurological Screening Test* (Mutti, Sterling, & Spalding, 1978)
  - handwriting
- ◆ Audiological evaluation (pure-tone; tympanometry; screening for auditory processing, e.g., Richard & Ferre, 2006)
- ◆ Battery of tests assessing the suspected concomitant disorder(s) (e.g., standardized language measures)



# Therapy guidelines for cluttering

- ◆ Approaches: “pure cluttering”
- ◆ Approaches: “cluttering-plus”
- ◆ Goals and objectives
- ◆ Techniques



# Approaches: “pure cluttering”

- ◆ Increase awareness and self-monitoring skills:
  - Teach “pause to formulate” strategies
  - Replace mazing behavior with pauses using tape-playback and catch-me games for kids
  - Pre- and post-measures of interjections, cut-off words, etc.
- ◆ Slow and regulate rate and improve intelligibility using Delayed Auditory Feedback (DAF) 80 ms+ with fade-out and generalization. See [www.artefactsoft.com](http://www.artefactsoft.com) for *DAF/FAF Assistant*<sup>TM</sup>
- ◆ Improve narrative and linguistic skills
  - Teach story grammar
  - Narrative organization: Identify good and bad





# Approaches “cluttering-plus”

- ◆ Concomitant disorder treatment plan for Impairment1 & 2 (Logan & LaSalle, 2003):
  - Concurrent (both/all impairments)
  - Cyclic (activity, time, or criterion)
  - Sequential (until Impairment1 or 2 is resolved)



# Examples of goals and objectives

**Goal area: To improve fluency skills:** C will reduce baseline average of 12 disfluencies (range: 8-16) per 100 words in spontaneous speech.

- ◆ C will identify 80% of disfluencies upon recorded playback.
- ◆ C will pause for 0.5 – 1 sec, at identified phrase and clause boundaries with 80% accuracy during reading, DAF-assisted.
- ◆ Etc.



# Examples of goals and objectives

**Goal area: To improve intelligibility:** C will improve baseline intelligibility to an unfamiliar listener in an unfamiliar context from an average of 70% (range: 60-80%) to 90-95%.

- ◆ C will articulate all syllables in multisyllabic words with appropriate syllabic stress with 80% accuracy in imitation, using visual feedback, at the word/phrase/sentence/monolog/dialog level.
- ◆ C will self-correct based on listener feedback that conveys non-comprehension on 4 out of 5 occasions. Etc.





# Techniques

- ◆ Use motivating contexts and a contract!
- ◆ Use visual and kinesthetic feedback whenever possible
- ◆ Auditory feedback is worth trying, but not often effective, unless paired with other forms
- ◆ Increase speed and accuracy of word retrieval. Play Taboo (Jr.)<sup>TM</sup>; Catchphrase (Jr.)<sup>TM</sup>
- ◆ Change speed of playback; allow client to manipulate and lead the recording and playback device
- ◆ Consider pragmatics and generalize formal tasks (“giving a speech”) to informal tasks (“talking 1:1”): Return to [Kissagizlis \(2008\)](#)

# References

- ◆ Bakker, K. and Myers, F. (November, 2008). A comprehensive measure of cluttering severity. Paper presented at the Annual Convention of the American Speech-Language Hearing Association, Chicago, Il.
- ◆ Beltrame, J.M., Alves, T.V.R., Tamanaha, A.C., Arcuri, C. Perissinoto, J., and Schiefer, A.M. (August, 2009). The pause in disfluency and Asperger's Syndrome: Preliminary study. Poster presented at the 6<sup>th</sup> World Congress on Fluency Disorders, Rio De Janeiro, Brazil.
- ◆ Daly, D. (1993). Cluttering: the Orphan of Speech-Language Pathology, *American Journal of Speech-Language Pathology*, 2(2), pp. 6-8).
- ◆ Daly, D. (1986). The Clutterer. In K. St. Louis (Ed) *The Atypical Stutterer: Principles and Practice of Rehabilitation*. New York: Academic Press. (pp 155-192)
- ◆ Daly, D. (1996). *The source for stuttering and cluttering*. East Moline, IL: LinguSystems.
- ◆ Daly, D. and Burnett, M. (1996) Cluttering: Assessment, Treatment planning, and case study illustration. *Journal of Fluency Disorders*, 21, 239-244.

# References

- ◆ Georgieva, D. (2000). Professional awareness of cluttering: A comparative study II. *Journal of Fluency Disorders*, 25 (3), p.184-184.
- ◆ Hartinger, M. and Mooshammer, C. (2008). Articulatory variability in cluttering. *Folia Phoniatica et Logopaedica*, 60 (2) 64-72.
- ◆ Langevin, M. and Boberg, E. (1996) Results of intensive stuttering therapy with adults who clutter and stutter. *Journal of Fluency Disorders*, 21, 315-328.
- ◆ LaSalle, L. & Wolk, L. (August, 2009). Stuttering, cluttering, and phonological complexity: Case studies. Paper presented at the 6<sup>th</sup> World Congress on Fluency Disorders, Rio De Janeiro, Brazil.
- ◆ Logan, K. & LaSalle, L. (2003). Helping children with concomitant communication disorders. *Seminars in Speech and Language*, 24, 13-20.
- ◆ Luchsinger, R., & Arnlid, G.E. (1965). Cluttering: Tachyphemia. In *Voice-Speech-Language (Clinical Communicology: Its Physiology and Pathology)*. Belmont, CA: Wadsworth Publishing Company, pp. 598-618.





# References

- ◆ Molt, L. (1996). An examination of various aspects of auditory processing in clutterers. *Journal of Fluency Disorders*, 21, 215-226.
- ◆ Myers, F. (1996). Annotations of research and clinical perspectives on cluttering since 1964. *Journal of Fluency Disorders*, 21, 187-200.
- ◆ Myers, F. L., & St. Louis, K. O., (Eds.) (1992). *Cluttering: A Clinical Perspective*. Leicester: FAR Communications. Reissued: San Diego, CA: Singular, 1996.
- ◆ Myers, F. (1996) Cluttering: A matter of perspective. *Journal of Fluency Disorders*, 21, 175-186.
- ◆ Preus, A. (1996) Cluttering upgraded. *Journal of Fluency Disorders*, 21, 349-358.
- ◆ Scaler Scott, K. & Ward. D. (November, 2008). Treatment of Cluttered Speech in Asperger's Disorder: Focus on Self-Regulation. Paper presented at the Annual Convention of the American Speech-Language Hearing Association, Chicago, Il.



# References

- ◆ St. Louis, K. and Hinzman, A. (1986) Studies of cluttering: Perceptions of cluttering by speech-language pathologists and educators. *Journal of Fluency Disorders*, 11, 131-149.
- ◆ St. Louis, K., Hinzman, A., and Hull, F. (1985). Studies of cluttering: Disfluency and language measures in young possible clutterers and stutterers. *Journal of Fluency Disorders* 10, 151-172
- ◆ St. Louis, K. & Myers, F. (1995). Clinical management of cluttering. *Language, Speech, and Hearing Services in the Schools*, 26, 187-194.
- ◆ St. Louis, K., Myers, F., Cassidy, L., Michael, A., Penrod, S., Litton, B., Olivera, J., and Brodsky, E. (1996). Efficacy of delayed auditory feedback for treating cluttering: Two case studies. *Journal of Fluency Disorders*, 21, 305-314.
- ◆ St. Louis, K., & Myers, F. (2007). *Cluttering*. The Stuttering Foundation. DVD No. 9700.
- ◆ St. Louis, K., Raphael, L., Myers, F., & Bakker, K. (2007). Understanding and treating cluttering. In E. Conture & R. Curlee (Eds). *Stuttering and related disorders of fluency (3/e)*. NY, NY: Thieme, pp. 297-325.



# References

- ◆ St. Louis, K. O., Raphael, L. J., Myers, F. L., & Bakker, K. (2003, Nov. 18). Cluttering updated. *The ASHA Leader*, pp. 4-5, 20-22.
- ◆ St. Louis, K. O., Myers F. L., Faragasso K., Townsend, P. S., & Gallaher, A. J. (2004). Perceptual aspects of cluttered speech. *Journal of Fluency Disorders*, 29, 213-235.
- ◆ St. Louis, K. O. (August, 2009) Global perspectives on cluttering: Research, assessment and treatment. Paper presented at the 6<sup>th</sup> World Congress on Fluency Disorders, Rio De Janeiro, Brazil.
- ◆ Steen, F., von Bornemann, H.J., Corrado, F., and Axel, S. (August, 2009). Genetic epidemiological relations between stuttering, cluttering, and specific language impairment. Paper presented at the 6<sup>th</sup> World Congress on Fluency Disorders, Rio De Janeiro, Brazil.
- ◆ Reichel, I., Scaler-Scott, K., Van Borsel, J., Ward, D., Leahy, M., Sonsterud, H., Adams, C., St. Louis, K., van Zaalen, Y., Ademola, A.A.G., Arulogun, O. (August, 2009). ICA seminar: Global perspectives on cluttering: Research, assessment, and treatment. Presentation at the 6<sup>th</sup> World Congress on Fluency Disorders, Rio De Janeiro, Brazil.





# References

- ◆ Teigland, Anne (1996) A study of pragmatic skills of clutterers and normal speakers. *Journal of Fluency Disorders*, 21, 201-214.
- ◆ Theys, C., van Wieringen, A., and De Nil, L.F. (2008). A clinician survey of speech and non-speech characteristics of neurogenic stuttering. *Journal of Fluency Disorders*, 33 (1), p.1-23.
- ◆ Van Borsel, J. & Tetnowski, J. (2007). Fluency disorders in genetic syndromes. *Journal of Fluency Disorders*, 32 (4), p.279-296.
- ◆ Van Borsel, J. (2008). Cluttering in Down Syndrome. *Folia Phoniatica et Logopaedica*, 60 (6), p. 312-317.
- ◆ Vinther, K. (2000). Cluttering: Development aid methods modified for interdisciplinary diagnostic purposes. *Journal of Fluency Disorders*, 25 (3), p.261-261.
- ◆ Weiss, D. (1964) *Cluttering*. Englewood Cliffs, NJ. Prentice-Hall, Inc.
- ◆ Yairi, E. (2007). Subtyping stuttering I: A review. *Journal of Fluency Disorders*, 32 (3), p.165-196