

## ON THE DEFINITION OF CLUTTERING:

### PRESENT FORMULATIONS AND NEW DIRECTIONS

d.ward@reading.ac.uk

## Introduction

- **Part 1:** Some earlier definitions: Deso Weiss starts the ball rolling...
- **Part 2:** Where are we now? (and how exactly did we get here...?)
- **Part 3:** Where do we go from here? reconceptualising cluttering

## Part 1: Early definitions of cluttering

## Weiss's Definition of cluttering

- "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 hereditary disposition. Cluttering is the verbal manifestation of Central Language Imbalance, which affects all channels of communication (e.g. reading, writing, rhythm and musicality) and behavior in general"
- (Weiss, 1964, p 1).

## Weiss: some contradictions?

### Speech

- "...a speech disorder"

### Executive functioning?

- "...a disorder of the thought processes preparatory to speech"

### Language?

- "verbal manifestation of Central **Language** Imbalance, which affects all channels of communication (e.g. reading, writing, rhythm and musicality) and behavior in general"

## 'Further developments on a theme by Weiss...'

Wohl (1970) Festinant speech is the key issue

St Louis (1992, p 49) .... "A speech language disorder"

- Chief characteristics: "(1) abnormal fluency which is not stuttering and (2) a rapid or irregular speech rate"
- (Daly, 1992, p. 207)
- "...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 formulating language almost always is."

## Where is the evidence for all this?

- Often little more than speculation or clinical impression

## Daly & Cantrell (2006)

	Agreement between 60 expert reviewers	%age agreement
1	Telescopes /condenses words (e.g., omits sounds)	93.3
2	Lack of effective self monitoring skills	90.0
3	Lack of pauses between words; run on sentences	83.3
4	Lack of awareness	83.3
5	Imprecise articulation (distorts sounds)	82
6	Irregular speech rate; speaks in spurts	82
7	Interjections, revisions, filler words	80
8	Compulsive talker, verbose, circumlocutions	80
9	Language disorganized; confused wording	78.3
10	Seems to verbalize before adequate thought formulation	75.0

## Part 2:

### Where are we now? (And how exactly did we get here...?)

## Current definitions: WHO, 2015

- F98.6 A rapid rate of speech with breakdown in fluency, but no repetitions or hesitations, of a severity to give rise to diminished speech intelligibility. Speech is erratic and dysrhythmic, with rapid jerky spurts that usually involve faulty phrasing patterns.
- (World Health Organisation, ICD-10 2e-Volume 1, 2015b p442.)

## Cluttering and related disorders

- Stuttering (30-80%) Ward 2006
- ADHD/ADD (67-100% St Louis & Schulte, 2011)
- Developmental dyspraxia (percentage not known)
- Specific language Impairment (percentage not known)
- Autism Spectrum Disorder (27% Scaler Scott et al, 2014)
- Dyslexia (percentage not known)
- Learning disabled (percentage not known)
- Auditory processing (20-86% St Louis & Schulte,2011)

## Lowest common denominator

- Cluttering is a fluency disorder wherein segments of conversation<sup>a</sup> in the speaker's native language<sup>b</sup> typically are perceived as too fast overall<sup>b</sup>, too irregular<sup>d</sup>, 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<sup>e</sup>; (b) excessive collapsing<sup>f</sup> or deletion of syllables; and/or (c) abnormal pauses, syllable stress, or speech rhythm.

## Lowest common denominator

- <sup>a</sup> 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.
- <sup>b</sup> This may also apply to the speaker's mastered and habitual non-native language, especially in multilingual living environments.
- <sup>c</sup> This may be true even though syllable rates may not exceed those of normal speakers.
- <sup>d</sup> Synonyms for irregular rate include "jerky," or "spurdy."
- <sup>e</sup> These disfluencies are often observed in smaller numbers in normal speakers and are typically not observed in stuttering.
- <sup>f</sup> Collapsing includes, but is not limited to, excessive shortening, "telescoping," or "over-coarticulating" various syllables, especially in multisyllabic words
- (St Louis & Schulte, 2011)

## LCD - summary

- 1. Rate anomaly: too fast / too jerky
- + one (or more) of...
- a) Excessive coarticulation
- b) Abnormal pausing
- c) Excessive normal (non-stuttering) dysfluencies

## LCD - summary

- LCD model re-asserts rate as the prime factor in cluttering.
- ...occurs primarily in conversational speech
- ...can occur intermittently – even in isolated "short spurts"
- ...recognizes that cluttered speech often normalizes during assessment

## LCD – pre-suppositions

- St Louis & Schulte (2011 p234).
- Cluttering would not ordinarily be suspected: "as soon as a speaker demonstrates a few articulation errors, syntactic errors or semantic anomalies."
- "...or seems to revise sentences more than usual (within a normal rate)"
- Some **will** recognise these symptoms as consistent with cluttering
- (Not that they would necessarily be correct...)

## Problems with the LCD

- All 15 participants examined by KS 'cluttered' according to their clinicians.
- But cluttering defined, how?
  - St Louis et al (2007) constrained definition
- Element of circularity:
  - define cluttering more broadly and more people will meet that definition
- Even so...

## LCD - possible concomitants

- 5/15 showed semantic errors
  - (phonological errors were not recorded)
- 6/15 showed 'excessive' normal nonfluencies
- 15 out of 15 had irregularities on an ADHD questionnaire
  - 3/15 showed irregularities on the Mottier-Smith test
- 14/15 had writing difficulties
  - (yet not a diagnostic feature)
- 0/15 had unusual pausing
  - (yet it remained a diagnostic feature on the LCD)

## Over constraint – a language component?

LCD places language outside the definition but:

a speaker with: a) Perceptually overly rapid rate + b) excessive normal non fluencies potentially meets LCD criteria

Excessive normal non fluencies could equally be consistent with a language explanation

Van Zaalen & Reichel (2015)

Cluttering occurs when a speaker is unable to appropriately match speech rate to the varying linguistic demands

## Over constraint?

This also begs the question as to WHY this is the case?

In addition to language - Executive functioning? Self regulation?

Potential danger: a constrained definition can encourage constrained thinking

LCD definition still dominant

## Under constraint?

- What constitutes:
- Typically perceived 'as too fast overall'
- 'too irregular'
- 'excessive normal disfluencies'

## LCD - definition vs description

- Ultimately the LCD offers a perspective as to what cluttering looks like, not what it **IS**.
- Same problem with stuttering definitions but the very nature of SLDs mean they are not 'normal' (NSLDs), and thus easier to recognise and categorise as different to NSLDs.
- SLDs are recognised by the speaker as such.

## Cluttering Spectrum Behaviour

- The term cluttering spectrum behaviour... ...can be defined as a speech/language output that is disrupted in a manner consistent with cluttering, but where there is a) insufficient severity, b) insufficient breadth of difficulties, or c) both, to warrant a diagnosis of cluttering.

• (Ward, 2011a, p.258)

## Cluttering Spectrum Behaviour

- ...allows for the acknowledgment of cluttering elements within a single or multiple speech & language diagnosis, without making the assumption '...that all the cluttering signs are linked causally and exclusively to the disorder of cluttering.'

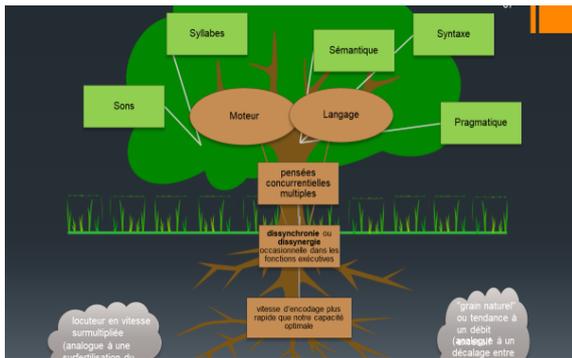
• (Ward, 2006, p. 151)

# Part 3: Where do we go from here? Reconceptualising cluttering

## TPA-CC model

- To fully conceptualize the nature of cluttering we need to
  - 1) find the words to describe its multifaceted and multivarying symptoms,
  - 2) use audio clips:
    - Cluttering is a perceptual phenomenon: to know it is to listen to it given its perceptual nature and multidimensionality),
  - 3) listen to what consumers tell us from the inside out.
- At this point, it is more fruitful to have a meaningful conceptual framework.

## TPA-CC model: ICA / Myers



## (re point 3: A PWS perspective (Myers))

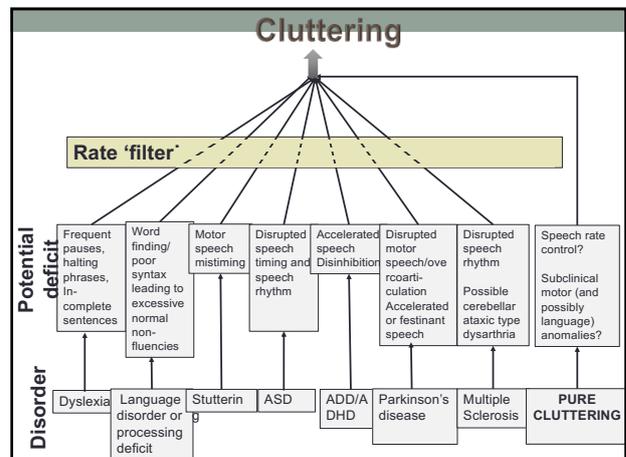
A lightning flash on my brain. I'll go through times where my brain just kind of freezes up with a few different thoughts. They aren't fully flushed out thoughts, but kind of like a few thoughts hit me all at once, kind of like my brain is getting fried (lightning) by a few different thoughts. This lasts for a second or two, and I don't think there is an outward evidence besides me pausing briefly, I'm talking and trying to decide between expressing two different thoughts that I feel are of equal importance, and I'm having a hard time prioritizing. The outward evidence is increased disfluencies. (Joseph Dewey, founder of online cluttering self help group on yahoo and co-chair of Consumer Issues of ICA)

Executive functions: sequencing, deciding what is more vs. less important, organization of thoughts to be encoded



## Question

- What is it that results in cluttering in one person but not in another?



## Example



- Consistent with LCD (St Louis & Schulte, 2011)?
  - rate is at the core of the issue
  - But how does this
- Consistent with Myers' tree model?
  - potentially multidimensional – implicating multiple systems
- Consistent with Van Zaalen and Reichel (2015)?
  - Cluttering is language based but related to the ability to match language capability to the communicative demands of the speech act.
- So - how does this explain cluttering in PD?

## Models, models and more models!

- **Essentially, all models are wrong, but some are useful. (Box, 1976)**

## Summing up...

- Until recently, much of what is 'known' about cluttering has been driven by speculation and clinical observation
- For the moment it is regarded as a rate-based fluency disorder, isolating motoric variables and the St Louis and Schulte (2011) definition stands as the one to be followed
- Rigorous scientific evidence as to the underpinnings of cluttering is beginning to emerge, and definitions may change as further evidence emerges

## Summing up...

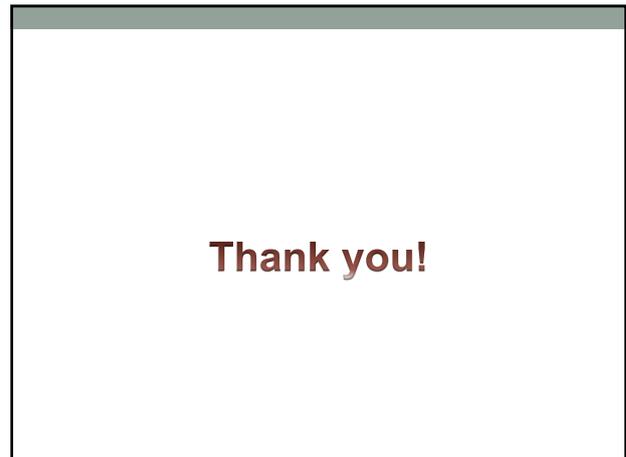
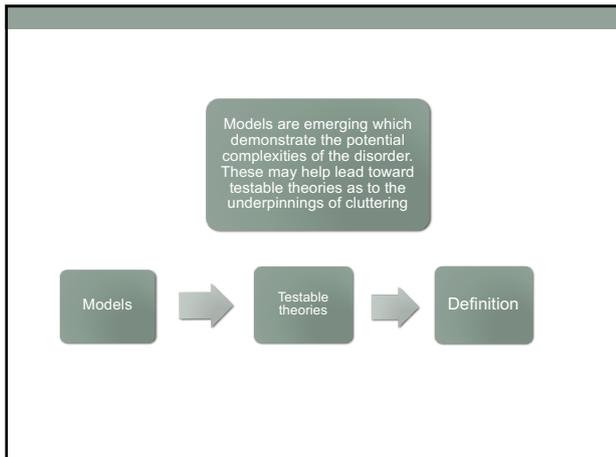
Ultimately, we can pin the label of 'cluttering' (and similarly, any definition of cluttering) on whatever set of symptoms we like, but to truly understand it and develop a definition that serves a more useful therapeutic purpose we need to be able to explain its origin(s) within a theory that makes sense of any potential unifying factors.

## The answers?

- 1) We don't have them
- 2) We need to recognise we don't have them, but at the same time we need to...
- 3) progress the arguments; to develop the dialogue and the debate that enables us to move forward

(Key need: cluttering: a stand alone disorder or the behavioural consequences of a collection of symptoms whose source lies elsewhere?)

We need big data studies in order to do this.



## References

- Box, G. (1976) "Science and statistics", *Journal of the American Statistical Association* 71:791-799.
- Daly, D.A. (1992) 'Helping the clutterer: therapy considerations', in F.L Myers and K.O.St Louis (eds) *Cluttering: A clinical perspective*, Kibworth, Great Britain: Far Communications.
- Daly, D. and Cantrell, R.P. (2006) Cluttering identified as diagnostically significant by 60 fluency experts. Paper presented at the 6<sup>th</sup> IFA World congress, Dublin, Ireland.
- Scaler Scott, K., Tetnowski, J.A., Flaitz, J.R., and Yaruss, J.S.(2014) Preliminary study of disfluency in school-age children with autism. *International Journal of Language and Communication Disorders*. 49, 75-89.
- Scaler Scott, K., Veneziale, A., Bossler, R., Irr, A., Guritzen, E., Gorski, D., Croasdale, S., Peachey, A., & Giacumbo, K. (2017, Nov.). Cluttering and volume of information: C-unit analysis (A follow-up). A poster presented at the annual convention of the American Speech Language Hearing Association, Los Angeles, CA.
- St. Louis, K.O. (1992) 'On Defining cluttering', in F.L. Myers and K.O. St. Louis (eds) *'Cluttering: A clinical perspective'*, Kibworth, Great Britain: Far Communications.
- St Louis, K.O. and Schulte, K. (2011) Defining cluttering: the lowest common denominator. In D. Ward and K. Scaler Scott (Eds.) *Cluttering: a handbook of research, intervention and education* (pp 233-254) Psychology Press: East Sussex.

## References

- van Zaalén, Y. and Reichel, I.K. (2015). *Cluttering: current views on its nature, diagnosis and treatment*. Universe: Indiana, USA.
- Ward, D. (2006) *Stuttering and cluttering: Frameworks for understanding and intervention* (1<sup>st</sup> edition). Psychology Press: East Sussex.
- Ward, D. (2011a) Scope and constraint in the diagnosis of cluttering: combining two perspectives,. In D. Ward and K. Scaler Scott (Eds.) *Cluttering: a handbook of research, intervention and education* (pp 254-262). Psychology Press: East Sussex.
- Ward, D. (2011b) Motor speech control and cluttering. In D. Ward and K. Scaler Scott (Eds.) *Cluttering: a handbook of research, intervention and education* (pp 34-44). Psychology Press: East Sussex.
- Ward, D. (2017) *Stuttering and cluttering: Frameworks for understanding and intervention* (2nd edition). Psychology Press: East Sussex.
- Weiss, D. (1964) *Cluttering*, Englewood Cliffs, NJ: Prentice-Hall.
- Wohl, M.T. (1970) The treatment of nonfluent utterances: A behavioural approach. *British Journal of Disorders of Communication*, 5, 66-76