ON THE DEFINITION OF CLUTTERING: PRESENT FORMULATIONS AND NEW DIRECTIONS

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)

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

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% Scler 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 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.
### Lowest common denominator

- a) 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.
- b) This may also apply to the speaker’s mastered and habitual non-native language, especially in multilingual living environments.
- c) This may be true even though syllable rates may not exceed those of normal speakers.
- d) Synonyms for irregular rate include “jerky,” or “spurty.”
- e) These disfluencies are often observed in smaller numbers in normal speakers and are typically not observed in stuttering.
- f) 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 - pre-suppositions


- 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 recognize these symptoms as consistent with cluttering
- (Not that they would necessarily be correct…)

### 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)

### 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…
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 (lightening) 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 Denny, Neurological speech disorders. Speech and language pathologist's guide to practice, and control of Childhood apraxia of speech)

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

Cluttering

Rate ‘filter’

Potential Disruptor

Disorders

Dyslexia
Language disorder or processing deficit
Stuttering
ASD
ADD/ADHD
Parkinson’s disease
Multiple Sclerosis
PURE CLUTTERING
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.
Models are emerging which demonstrate the potential complexities of the disorder. These may help lead toward testable theories as to the underpinnings of cluttering.

References