

Developing Research-Led Comprehension Paragraphs for Reading Therapy for

People with Aphasia

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1. Project aims

- To develop **reading comprehension materials** for **speech and language therapists (SLTs)** to help individuals with **aphasia** struggling with **paragraph-level reading**

2. Introduction

Aphasia is a communication difficulty acquired post-stroke. Aphasia can affect **speaking, reading, writing and understanding**.

Many people with aphasia have **text level reading comprehension difficulties** (Webster et al., 2018). This can impact **quality of life** and participation in life activities (Knollman-Porter et al., 2015).

SLTs face a clinical dilemma:

Texts should be related to **client interests**, but time and expertise are required to produce resources of **appropriate reading level** that assess **reading skill** rather than **background knowledge**.

So, the texts produced in this project will improve therapy **efficiency** with ready-made **texts, summaries** and **multiple-choice questions**.

References

- Covington, M. A. (2012). CPIDR 5.1: Computerized Propositional Idea Density Rater. Georgia, USA: Institute for Artificial Intelligence, The University of Georgia.
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- Tuinman, J. J. (1973). Determining the passage dependency of comprehension questions in 5 major tests. *Reading Research Quarterly*, 9(2), 206. <https://doi.org/10.2307/747135>
- Webster, J., Morris, J., Howard, D., & Garraffa, M. (2018). Reading for meaning: What influences paragraph understanding in aphasia? *American Journal of Speech-Language Pathology*, 27(1), 423–437. https://doi.org/10.1044/2017_ajslp-16-0213

3. Methods

Background reading about reading materials:
Two key systematic reviews were used.

Survey for Tavistock Aphasia Centre staff:

Determined **length** of texts, design of **comprehension questions, topics of interest**.

Sourced and developed texts:

Texts were sourced from **online news websites** and were modified to ensure they were **naturalistic** and **non-time specific**.

Experimental study 1 – main ideas/ summarisation:

Online questionnaire involving typical readers – participants read each text and identified **3 key points**. Study showed what **typical readers** considered **important** in each text.

Developed multiple choice comprehension questions:

Format was informed by **background reading** and **survey for Tavistock Aphasia Centre staff**.

Experimental study 2 – passage dependency:

Online questionnaire involving typical readers – participants answered questions without reading texts, then read each text and answered the questions to calculate **passage dependency**.

Finalised resources:

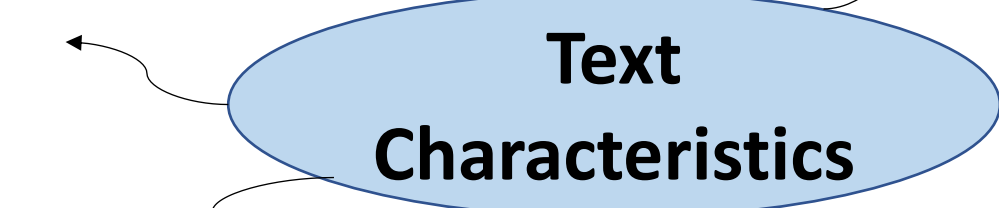
Texts made to be **'aphasia friendly'** – considering font, line spacing etc. A **sortable spreadsheet** was produced for SLTs to select texts.

4. Results and discussion

Readability:

Flesch-Kincaid grade level equivalent to ages **10 – 14 years**

Length:
100 – 200 words



Propositional density:

Values between 0.433 - 0.561 (Covington, 2012)

Topics:

- Sport
- History and culture
- Health and lifestyle
- Food and cooking
- Outdoors and nature

Experimental study 1 – Results serve as a **comparison** for summaries by people with aphasia.

Experimental study 2 - Overall passage dependency was **0.60**, indicating readers need to understand the text to answer the questions, rather than rely on **general knowledge** (Tuinman, 1973).

Typical readers could **correctly answer** the questions after reading the passages, with very few exceptions. This indicates the questions are not too difficult.

5. Conclusions and implications

- **Developed 21 texts**, with corresponding **summaries** and **questions**
- Responds to a **current challenge** – benefits **SLTs** working with people with aphasia and supports **student education** at the Tavistock Aphasia Centre
- Texts were **systematically** developed, considering complexity and topics of interest

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