Title   The role of mental imagery elaborations in listening comprehension:
          Application of forensic arts and cognitive interviews
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FINAL REPORT

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The role of mental imagery elaborations in listening comprehension: Application of forensic arts and cognitive interviews

By

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Date: 01-Dec-2019
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Part II

EXECUTIVE SUMMARY

Purpose / Research Question
To investigate visual mental imageries generated during listening comprehension

Background
Despite the connection between comprehension and mental imagery elaborations (Kintsch, 1998), comprehension models have generally overlooked this aspect of comprehension. In the present proposal, I investigated comprehension and mental imagery elaborations by applying forensic arts and cognitive interviews. Forensic arts have been applied in anthropology to reconstruct the body and facial structure of animals' skeletons retrieved in archaeological digs and comprise scene sketching, facial composite drawing, and image modification.

    The study comprised two primary stages; first, listening comprehension ability of the participants was measured using a suitable test alongside psychometric analysis. Second, the participants listened to a number of carefully selected texts, after/during which they were required to describe the mental imagery generated in their mind while listening. Artists then drew the imagery based on the verbal recall data, which were analysed for different factors including clarity, vividness, color, etc.

Participants
Thirty participants with English as their first language were selected based on their listening ability (low, mid, and high).

Research Methodology / Design

1. A standardized English listening test consisting of eight printed pages was administered to the participants.
2. Three listening stimuli were chosen from 41 descriptive listening excerpts comprising 33 to 129 words. Word imageability from the Medical Research Council Psycholinguistic Database was used as a controlling variable in the selection of the excerpts. The three descriptive excerpts had high (460.962), mid (379.053), and low (322.381) imageability values and comprised 88, 60, and 56 words, falling within the short-discourse lengths.
3. A fundamental step in this study was to create and validate a "standardized code sheet" to aid consistent counting and measuring. The visual mental imagery analysis tool (ViMIAT) is a code sheet formulated and designed based on an extensive survey of the VMI as well as art and design literature.
4. Mental imageries were measured using ViMIAT. And listening scores were used as covariates in laten class cluster analysis.

Findings / Results

1. First, through the operationalization of ViMIAT, nine major dimensions of VMI were discovered comprising clarity, completeness of figures, details, shape crowdedness, shape-added features, texture, space, time and motion, and flamboyance.
2. Second, the study found that the variation across the identified dimensions differentiated high-performing, mid-performing, and low-performing VMI imaginers and that high-performing VMI imaginers also possessed high listening ability.

3. Third, in some cases, the VMI generated included both visual imageries and visual representations of written words.
4. Fourth, while we were able to capture a wide range of VMIs through using ViMIAT, one of the participants was not able to visualize any imageries.

Conclusion
The VMIs developed in discourse comprehension do possess similarities at a global level. However, because imagery is often mixed with personal experiences, history, and the emotional connotations that comprehenders associate with objects or persons, the end product of listening or reading has significantly different features across individuals.

Keywords
Aphantasia, forensic arts, latent class analysis, listening comprehension, visual mental imagery