Workshops

Silvia Hansen-Schirra, Silke Gutermuth
Johannes Gutenberg University Mainz

Eyetracking for Easy-to-read

Easy-to-read is a language variety, which helps people with intellectual disabilities to understand texts in many different settings (e.g. administrative-juristic or medical texts). Existing sets of rules suggest how language can be formulated in order to improve readability and comprehensibility (e.g. Inclusion Europe; Bredel/Maaß 2016 for German). However, some of these rules are in conflict with one another, for instance reducing morphological complexity may increase phrasal complexity. Moreover, we do not know whether reduced textual complexity effectively leads to reduced processing and inference costs. This research gap can only be tested on the basis of empirical data.

In order to empirically investigate perception and comprehension of easy-to-read texts, several methods come into play (Hansen-Schirra/Gutermuth 2019, 2015): Eyetracking, for instance helps testing the readability of easy-to-read (Hansen-Schirra/Gutermuth 2018). Ratings and comprehensibility tests shed light on how well readers comprehend easy-to-read texts, whereas recall tasks show how much information can be memorized. Applying a mixed method approach, the efficiency of easy-to-read texts can be tested with respect to different target groups.

The workshop focuses on testing the readability of easy-to-read compared to plain or standard language by recording and quantifying eye movements, such as fixations (areas the eye stops on), saccades (jumps between fixations), and regressions (jumps back to previous text). Based on the eye-mind hypothesis (Just/Carpenter 1980), we correlate the eyetracking metrics with processing effort. This enables us to evaluate existing rules for easy-to-read and formulate suggestions for optimizations.

Program

The workshop includes three different parts:

1. Theoretical session: Introduction to Eyetracking (1 hour)

We will give an introduction into the underlying theory and technology of eyetracking. We will explain eyetracking metrics, the visualization of results (e.g. heatmaps, gaze plots) and analysis methods based on Areas of Interest (AOIs). We will discuss the do's and dont's concerning stimulus development and the competing demands of ecological validity and experimental control.

2. Practical session: Hands-on (2 hours)

Here, we will work with our eyetracker SMI RED 250 and design a real experiment, calibrate our own participants, collect data, define AOIs and calculate results for first fixation durations, total reading times etc. We will compare different text variants (easy-to-read vs. plain vs. standard language) and test text-image integration for easy-to-read texts. We will show how other methods, e.g. questionnaires or retrospective interviews can be integrated into the experimental setup.

3. Research session: Eyetracking research with Easy-to-read (0,5 hour)

In this session, we will present first eyetracking results on the readability and comprehensibility of easy-to-read German concerning which rules work well and which ones have to be refined on the basis of the empirical data. Finally, we will discuss the limitations of the eyetracking method.

References

Bredel, U.; Maaß, C. (2016). Leichte Sprache. Theoretische Grundlagen und Orientierung für die Praxis. Berlin: Duden.

Hansen-Schirra, S.; Gutermuth, S. (2019): Empirische Überprüfung von Verständlichkeit. In: C. Maaß, I. Rink (Hg.) Handbuch Barrierefreie Kommunikation. Berlin: Frank & Timme, 163-182.

Hansen-Schirra, S.; Gutermuth, S. (2018): Modellierung und Messung Einfacher und Leichter Sprache. In: S. Jekat, M. Kappus, K. Schubert (Hg.), Barrieren abbauen, Sprache gestalten. Winterthur: ZHAW, 7-23.

Hansen-Schirra, S.; Maksymski, K.; Gutermuth S. (Hg.) (2015). Translation and Comprehensibility. Band 72. Berlin: Frank & Timme.

Inclusion Europe: https://www.inclusion-europe.eu/easy-to-read/

Just, M.A.; Carpenter, P. (1980). A theory of reading: From eye fixations to Comprehension. In: Psychological Review, 874, 329-354.