

# Towards Evidence-Based Typography: Experiment Design

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Typography is both a science and an art with several hundred years of history — or, if we count its ancestor, calligraphy, with several thousand years of history. A beginning typographer faces a large amount of knowledge and rules (see, for example, [1]): for example, that serified fonts improve readability of body texts, while sans serif is good for advertising and posters; we know the optimal number of words per line and the lines per page, etc. Some of these rules are aesthetic ones, while some are purported to reflect the neurophysiology of reading. With respect to the latter ones, we can ask, how do we know what we know?

The situation here may resemble the history of medical science (and art!). Centuries of practical medicine resulted in a vast number of rules and methods of cure. Some of them we now know to be reasonable, like the use of diuretics for lowering blood pressure. Some, like purging, have much narrower applicability than was assumed in the past. Some rules turned out to be ineffective or even harmful, like the unrestrained use of bloodletting. The modern evidence based medicine tries to use a more scientific approach to these rules, putting empirical knowledge in a more formal framework [2].

In this talk we discuss the applicability of evidence based approach to typography. While it is difficult to measure the beauty of the book page, we can measure the readability and the understandability of the text and their dependence on the fonts, type area dimensions and other typographic parameters. This area has been actively developing in the last decade. The modern studies question the widespread notions of the classical typography like the use of serified fonts [3–5], the mix of minuscule and majuscule letters in body texts [6, 7], text layout [8,9] and other factors [10–12]. This research was stimulated by the challenges presented by new tech-

nologies [4, 13–16], the use of type in messages and signage [17–21] and special situations like texts for low vision readers [5, 7, 22], drug information leaflets and other medical data [23–25].

An overwhelming majority of published studies deals with English texts, while there are some works on Arabic [26], Chinese [27, 28], Japanese [15, 29] and Korean [30] typography. There was no comparable research on Cyrillic scripts and text perception by Russian readers.

Our group works on a large scale study of the neurophysiology of reading for Russian subjects. We plan to collect a database of readability and understandability as dependent on typographic parameters for Cyrillic texts. In this talk we provide the literature review and discuss the setup of the experiments.

This is a preliminary report of what is envisioned to be an ongoing project. At this stage we need the input of the practitioners of typography and would be grateful for advice and suggestions.

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