

VOLUME-1, ISSUE-11

New research methods of cross-linguistics

Negmatova Marjona Islom qizi

Student of Jizzakh branch of

National university, 203-20 group

Supervisor: Abduraxmanova Z.Y

Annotation

This article explains This paper offers new insights into aspects of reading behavior that are shared and those that vary systematically across languages through an investigation of eye-tracking data from languages recorded during text reading. We begin with reporting a bibliometric analysis of eye-tracking studies showing that the current empirical base is insufficient for cross-linguistic comparisons..

Keywords: Reading, Eye tracking, Cross-linguistic research, Language

Аннотация

В этой статье объясняется. В этой статье предлагается новое понимание аспектов поведения при чтении, которые являются общими и систематически различаются в зависимости от языка, посредством исследования данных отслеживания глаз на языках, записанных во время чтения текста. Мы начнем с сообщения о библиометрическом анализе исследований с использованием айтрекинга, показывающих, что нынешняя эмпирическая база недостаточна для межлингвистических сравнений.

Ключевые слова: Чтение, Отслеживание взгляда · Межлингвистические исследования, Язык

Any field of research in human cognition must account for natural variability in physiological, psychological, and behavioral traits and states of individuals. A few fields, however, also need to account for the profound and inherent variability in the very object of cognitive processing. A prime example of such a field is the study of language. A generalizable account of how language is learned, produced, comprehended, or represented in the brain or mind also needs to grapple with the world's astounding diversity of languages. In the case of reading, this diversity is further compounded by the variability of orthographies, i.e., solutions developed for representing speech in print. Thus, one of the central goals of reading research is to find what universal and specific aspects exist across the written languages of the world, and subsequently, to study how these aspects influence reading development and processes. This goal brings forward extensive demands on the quantity and quality of empirical evidence and, importantly, its cross-linguistic coverage, which is not always guaranteed in an Anglo-centric scientific literature on language. It is uncontroversial that

the availability of high-quality, comparable behavioral data from diverse languages and writing systems is both a driving engine and a prerequisite of meaningful and generalizable theories of reading. The history of reading research shows that the field has been propelled greatly by data that came from cross-linguistic multi-lab coordinated efforts. Consider, for instance, the Ziegler and Goswami's influential psycholinguistic grain size theory—a proposal that languages with inconsistent orthographies are more difficult to learn and are preferentially learned via bigger orthographic chunks than relatively consistent transparent languages. This proposal draws on several multilingual studies, including in particular a joint investigation of real word and non-word reading in 13 European alphabetic languages. Most research producing either cross-linguistic data or comparable single-language data so far has employed tasks revolving around single word recognition. Yet proficient natural reading is the reading of continuous texts to achieve comprehension, i.e., building a mental representation of the text content in one's memory and integrating it with one's prior knowledge through inferential processing. This set of highly coordinated cognitive operations necessarily includes, but also goes far beyond, identification of individual words in the text in terms of complexity and breadth of demands on the visuo-oculomotor, perceptual, and information-processing systems in the reader. For such higherlevel language processing, such cross-linguistic data is a lot less evident and barely available. In line with the goal of studying natural real-time behavior during reading for comprehension, in this study, we focus on silent reading of running texts, using eye tracking as the experimental paradigm. Eye tracking is the registration of eye movements as they unfold in real time, and its output is a demonstrably reliable and ecologically valid record of reading behavior. A rich literature shows that eye-movement control is an integral part of information processing that takes place during reading and thus, it is reflective both of the cognitive processes of comprehension and the multiple components that underlie those processes. One of the important advantages of eye tracking is that it enables a finegrained real-time account of both the temporal (when) and spatial (where) aspects of text reading. The when of eye movement control determines how long to fixate on a word with the eye gaze, allowing for viewing and uptake of visual and linguistic information, and when to break the fixation and initiate a saccadic movement to another location. The where aspect relates to decisions of which word to select as a target for the next and which to skip, and what amplitude of a saccadic oculomotor movement to generate to attain this target. Given vast differences in the surface characteristics of (written) languages of the world, one can expect readers of different languages to systematically vary in both the temporal and spatial dimensions of their reading.

behavior. An examination of such systematic patterns requires a resource of comparable eye-tracking reading data across languages. Out of thousands of experimental studies using eye tracking (see below), very few addressed this need for crosslinguistic comparison. One of these seminal exceptions is an eye-tracking study by Liversedge et al. which examined the eye movements of native speakers reading closely matched written passages in three languages (Chinese, English, and Finnish) representing widely different language families and writing systems. Other studies provided corpora with comparable cross-linguistic eye-tracking data in two languages. Such studies include the Dundee corpus of texts read in English and French (Pynte & Kennedy, 2006); the GECO corpus of eye movements collected from English and Dutch participants reading the same book in the original and translated version; and the Whitford and Titone's (2012) study of English-French bilinguals read passages in both languages. Moreover, whereas all of the above studies aimed to specifically compare reading in a small number of target languages, our goal here was, for the first time, to generate a database of reading behavior across a much larger number of languages. These analyses offer new insights into aspects of behavior that are shared and those that vary systematically across languages.

The inspiration for this paper is that empirical science both drives and is driven by accessibility to high-quality and large-scale data. The open science movement in the cognitive sciences adopted this notion, leading to a constantly growing number of collaborative multi-lab studies aimed at providing theories with such data. However, in addition to typical requirements from multi-lab investigations, a collaborative study of reading must also additionally reflect the striking diversity of languages (which vary in their phonology, morphology, and syntax), including written languages (which embody a range of solutions as to how to reflect speech in print). This is essential because theories of reading that claim any degree of cross-linguistic coverage must be tested using comparable data from multiple languages. Such data should be obtained using comparable designs across languages, in format, content, task, and data collection methods. The present paper provides the field of reading with such necessary data. We specifically focus on eye-tracking methodology to study reading, which is arguably the most ecologically valid and temporally sensitive record of reading behavior, and indeed eye movements are part and parcel of reading itself. We start by examining whether the need for cross-linguistic data has already been satisfied in studies of eye movements during reading by using a bibliometric analysis of relevant publications over the last two decades to estimate the field's cross-linguistic coverage. The analysis reported in Part I revealed clear biases towards a handful of languages: with the exception of

Chinese, well-represented languages tend to be alphabetic and Roman script-based, and European (mostly Indo-European, with an expected further bias towards English). Moreover, the number of studies that conducted a coordinated examination of more than one language is very small, and no study has covered more than three languages.

References and websites:

1. Abduraxmanova, Z., & Mamurova, M. (2021). THEORETICAL APPROACH TO SPEECH DISFLUENCIES IN SIMULTANEOUS INTERPRETATION. In МОЛОДОЙ ИССЛЕДОВАТЕЛЬ: ВЫЗОВЫ И ПЕРСПЕКТИВЫ (pp. 43-45).

2. Абдурахманова, З. (2022). Analysis of pauses and interruptions as elements of linguistic production in simultaneous interpretation. Современные инновационные исследования актуальные проблемы и развитие тенденции: решения и перспективы, 1(1), 533-535.

3. <https://www.scribd.com/document/105302990/Stylistics>

4. <https://pure.hud.ac.uk/en/publications/drama-stylistic-aspects#:~:text=The%20stylistics%20of%20drama%20is,and%20interpretation%20of%20play%2Dtexts.>

5. <https://link.springer.com/article/10.3758/s13428-021-01772-6>