

**THE IMPACT OF THE OTTOMAN SCRIPT AND THE ALPHABET
REFORM ON SPATIOTEMPORAL CONCEPTUALIZATION**

by
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ABSTRACT

THE IMPACT OF THE OTTOMAN SCRIPT AND THE ALPHABET REFORM ON SPATIOTEMPORAL CONCEPTUALIZATION

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This study tries to corroborate that the 1928 Alphabet Revolution, a shift in writing direction, affected the cognition of the intellectuals and readers of that period, particularly their temporal and spatial conception. As the first example of the emerging field of cognitive history in the context of Ottoman and Turkish studies, this endeavor hypothesizes that the script change can transform individuals' conceptualization of time. It combines the experimental naturalist method with the interpretive historical approach to corroborate historical and contemporary hypotheses, namely the spatiotemporal conception of those past intellectuals and the contemporary biscriptual conception. The experimental method investigates whether being biscriptual—reading one language through different writing systems, particularly with different writing directions—can reshape individuals' mental timelines. The archival method—reading *Çocuk Dünyası* comic strips—is used to understand early Republican intellectual and reader spatiotemporal conception. Turkish speakers performed spatial-temporal congruity tasks with the stimuli consisting of temporal expressions depicted in the Latin alphabet for only Latin alphabet readers and in the Ottoman alphabet for Latin-Ottoman biscriptual readers. Biscriptuals were challenged less while completing incongruent tasks, and monoscriptuals were challenged much more. The intellectuals involved in *Çocuk Dünyası* depicted the comic strip narrative sequences in a leftward spatiotemporal way in both 1914 and 1926 due to the script effect despite Westernized adoption and translations in this journal.

ÖZET

OSMANLI ALFABESİ VE ALFABE REFORMUNUN MEKAN-ZAMAN KAVRAYIŞI ÜZERİNDEKİ ETKİSİ

ONUR CAN ÖZ

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Anahtar Kelimeler: Dilsel Görelilik Hipotezi, Yazı Sistemi Göreliliği Hipotezi,
Alfabe Reformu, Bilişsel Tarih, Osmanlı ve Türk Çalışmaları

Bu çalışma, 1928 alfabe devriminin, yani yazı yönünde bir değişimin dönemin aydınlarını ve okuyucularını özellikle mekan-zamansal anlamda etkilemiş olduğunu doğrulamaya çalışıyor. Bilişsel tarih alanının Osmanlı ve Türkiye çalışmalarındaki ilk örneği olan bu çalışma, alfabenin değişmesi bireylerin zaman algısının değişmesine sebep olabilir minvalindeki hipotezi için çaba vermektedir. Bu çalışma deneysel naturalist metot ile yorumlayıcı tarihsel yaklaşımı birleştirerek tarihsel ve günümüz hipotezlerini, yani geçmiş aydınların mekan-zamansal anlayışı ile çağdaş iki-yazılı kavrayışı doğrulamaya çalışıyor. Deneysel metot, iki alfabe kullanmanın ve özellikle de bir dili farklı yazı yönleriyle iki farklı yazı sistemi üzerinden okumanın kişinin zihinsel zaman çizelgelerini değiştirip değiştiremeyeceğini araştırıyor. Arşiv yöntemi ise Çocuk Dünyası dergisiyle erken dönem cumhuriyet aydınları ve okuyucularının mekan-zamansal kavrayışını anlamak için kullanılıyor. Türkçe konuşan katılımcılar, yalnızca Latin alfabesi okuyucuları için Latin alfabesiyle, Latin-Osmanlı iki-yazılı okuyucuları içinse Osmanlı alfabesiyle de betimlenen zamansal ifadelerden oluşan uyarılara tepki vererek zaman-mekânsal uyum görevlerine katıldılar. İki-yazı okuyabilenlerin uyumsuz görevleri tamamlarken daha az zorlandığı ama tek-yazı okuyabilenlerin çok daha fazla zorlandığı gözlemlendi. Çocuk Dünyası, bu dergideki Batılılaşmış benimsemelere ve çevirilere rağmen, 1914 ve 1926 yıllarında çizgi roman anlatı dizilerini yazı sisteminin etkisiyle sola yönelmiş mekan-zamansal bir biçimde tasvir etmişlerdir.

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Writing a thesis, especially an unorthodox and socially unconventional one, means a huge sacrifice from yourself to express your ideas so that they can be understood and accepted. I felt exhausted throughout each period of my last year. This feeling could not be handled without an intense enthusiasm for “COGTOMAN.” It was the most significant source that made me feel strong while creating this thesis. I just wanted to express the short story of this journey. This thesis was never only about collecting data, developing theories, conducting interviews, reading digital archives, analyzing data, and narrating. Still, it was about defending an approach of thinking that has not yet fully happened within the boundaries of any discipline. It was about believing that biculturality, cognition, and history, though usually separated, could speak the unheard claim. Moreover, doing so, without a roadmap, required sacrifice.

There were nights when the uncertainty, in addition to the uncertainty of all adjacent scholars, froze me from writing a proposal, and days when it whispered the conformity of easier routes to create translations of Ottoman archives and conclude them in a thesis format. However, like Louise, she experienced nonlinear time in the movie *Arrival*, which expresses how language structure shapes our way of thinking and our perception of time; each struggle was connected to a future, *den perfekten Moment* (the perfect moment)—a recursive loop of doubt and insight, of fear and hope. The COGTOMAN, as a word, was a lodestar that told me, “Keep going; they might not understand now, but they will understand you or had already understood.”

I would also like to thank my family, including the Öz and Şahin families. I want to thank my wife İrem, who convinced me that there are beautiful things beyond academia, such as unconditional emotional support, feeling in the presence and peace, and being treated as Onur Can without any conditional identity. I want

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To my wife

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1. INTRODUCTION

The invention of writing transformed the cultural juncture of human history. This invention happened approximately five thousand years ago, which is a relatively short-term considering that non-literate human civilization encapsulated 99.9% of its existence.¹ Today, this innovation, signifying only 0.1% of human history, has been capturing the constitutive part of our everyday lives. It presents in various forms, such as e-mails or news headlines in the morning, restaurant menus or cereal boxes at lunch, and social media posts or text messages in the evenings, even without intellectual endeavors.² Reading, a more integrated part of our lives than we often anticipate, can change our cognitive process.³ The history of writing is a process encompassing the endeavor to escape meaning. Writing pursues the process from ideography to logography, from logography to phonography, and finally, syllabic rebus happens.⁴ Ideography demonstrates only the concept's meaning, such as showing the "sun" as depicting a circle. On the other hand, logography includes symbolic representations, such as a sign that no longer closely resembles the "sun" it represents. Eventually, similar phonemes and signs acquire distinctive meanings, avoiding the essential meaning. For example, the sound "eye" could have the meaning of "eye" and "me," as the starting point of the abstraction. At the end, phonography is a process in which only meaningless sounds are assigned to symbols, marking the point where writing becomes completely detached from meaning. We could observe this evolution through modern language alphabets such as the Arabic and the Latin alphabet. For instance, the explicitly written ones for the abjad are consonants in the writing system. Moreover, the same letter could be written to represent different sounds in this writing system; the letter "/waw/" could stand for

1. Jared Diamond, *Guns, Germs, and Steel: The Fates of Human Societies* (New York: W.W. Norton & Company, 1999).

2. Benjamin C. Fortna, *Learning to Read in the Late Ottoman Empire and the Early Turkish Republic* (New York: Palgrave Macmillan, 2011), 1.

3. Pae, H. K. *Script Effects as the Hidden Drive of the Human Mind, Cognition, and Culture* Springer, 2020.

4. Steven Roger Fischer, *Yazının Tarihi*, çev. Handan Konar (İstanbul: Türkiye İş Bankası Kültür Yayınları, 2022), 310.

“v,” “u,” or “o.” On the other hand, the Latin alphabet, which is an entirely phonetic system, has strong phoneme-letter correspondence. Conclusively, we could suggest that the abjad writing system carries various logographic tendencies. The absence of vowels leads to an estimate of the correct reading according to the context and experience. From a cognitive perspective, this writing system requires identifying visual memory and orthographic patterns. We could suggest that this writing system could not complete the journey to escape from meaning. Dissociation of writing from meaning represents a transition of symbols’ conceptual representation to phonetic representation. This expression does not demonstrate any evolutionary progression but rather expresses structural transformation. Therefore, the distinctiveness of the abjad writing system reflects a different epistemological approach rather than a deficiency. Cognitively speaking, the abjad system relies on more visual memory and pattern recognition, while the Latin script requires phonological decoding processes. Conclusively, the form we read—through a phonological or a logographical writing system—affects literacy and shapes our cognition’s architecture.

1.1 The Mind in the “Mouth”: Linguistic Relativity Hypothesis

The linguistic relativity hypothesis suggests that language influences humans’ world-view. In the late 19th century, thinkers such as Wilhelm von Humboldt and Johann Gottfried Herder could be considered the foundational figures of the hypothesis, though they implicitly suggested that language expresses a nation’s spirit.⁵ The story started in those years, and the idea of language affecting our minds developed to a certain extent in a 1928 meeting of the Linguistic Society of America. Benjamin Lee Whorf (1940) argued that speakers of different languages perceive the world differently.⁶ All studies, such as color perception, were specified to determine whether color is classified differently due to spoken language. However, this approach exceeded the logic of linguists, extended through linguistic determinism, thought and language are structurally parallel. In the early 1990s, linguistic relativity was regarded with skepticism; however, it rose from its ashes by proposing different types of linguistic relativity hypotheses in recent years.

The first premise for the next generation of this endeavor is that thought and language differ structurally. The parallel structure of thought and language cannot be

5. E. F. Konrad Koerner, “The Sapir–Whorf Hypothesis: A Preliminary History and a Bibliographical Essay,” *Journal of Linguistic Anthropology* 2, no. 2 (1992): 173–198.

6. Benjamin Lee Whorf, “Science and Linguistics,” *Technology Review* 42, no. 6 (April 1940): 207–219.

correct since “if people thought entirely in words, words expressing new concepts could never be coined because there would be no way of imagining their meanings.”⁷ New approaches suggest “a loose relationship between language and thought, and a relatively tight relationship between thought and the world,” rather than arguing a tight relationship between language and thought while giving the relationship between world and thought less tight.⁸ To express the new approaches, Phillip Wolff and Kevin J. Holmes classify the studies about the linguistic relativity hypothesis as thinking for speaking, language as a meddler, language as an augments, language as a spotlight, and language as an inducer. These approaches show how and when the language affects the thought. For instance, the “Thinking for speaking” classification suggests that speakers shape their thoughts according to their attention patterns, which are affected by their native language patterns. In Papafragou’s study, English speakers focused more on how motion was performed, while Greek speakers paid more attention to the path (e.g., the direction or endpoint). This reflects their language’s syntactic preferences. In contrast, the “Thinking with language” approach suggests that Russian speakers, who have distinct words for light and dark blue, outperform English speakers in color discrimination tasks—yet this advantage disappears under verbal interference, indicating that the effect depends on online language processing.

The “Language as augments” approach perceives language as a moderator that affects and augments the cognitive capacity. In other words, language is a tool that expands the mental capacity of the speakers. Daily, you can create abstract and linguistic rules while figuring out a puzzle, such as treating the left foot with odd numbers, and estimate whether to utilize the left foot for the door entrance. In this case, the abstract rule increases your capacity to solve problems. Finally, the “Language as inducer” approach argues that your long-term language use can shape long-term cognitive tendencies. For example, in German, the term for “bridge” is feminine, whereas in Spanish the term for “bridge” is masculine—such a difference may cause the German speakers to call bridges “beautiful” or “elegant”, but the Spanish speakers would call them “strong” or “sturdy”. Such impacts stay even without conscious use of the language, which suggests that prolonged exposure to particular structures of languages leaves long-term imprints on the brain. Taken together, these theories propose that the impact of language on thought is not only immediate but also structural, long-term, and multilayered.⁹

The historical evolution of writing systems, from ideography to phonographic al-

7. Phillip Wolff and Kevin J. Holmes, “Linguistic Relativity,” *Wiley Interdisciplinary Reviews: Cognitive Science* 2, no. 3 (2011): 253–265

8. Wolff and Holmes 2011, “Linguistic Relativity,” 253.

9. Wolff and Holmes 2011, “Linguistic Relativity,” 261.

phabets, reflects the various cognitive processes associated with reading. Each one demonstrates distinct epistemological paths, shaping cognition in unique ways. For instance, abjad systems connect visual memory and contextual inference, while Latin alphabets emphasize phonological decoding. These various cognitive demands demonstrate that our scripts represent not solely our language but our memory, perception, and habitual learning. Therefore, the Script Relativity Hypothesis is a natural extension of the linguistic relativity hypothesis.

1.2 The Mind on the “Sahife”: Script Relativity and Cognitive History

The script relativity hypothesis suggests that different writing systems can change our cognition, similar to how the linguistic relativity hypothesis claims language influences thought. Building on Whorfian ideas, H. K. Pae (2020) extended this concept to the spectrum of writing systems as our interviewee considers while reflecting on bilingual and biscriptual experiences, comparing their reading fluency in Cyrillic and Greek alphabets to their limited comprehension, distinguishing script recognition from language understanding (see Appendix A).¹⁰ The script relativity hypothesis considers scripts’ distinctive characteristics, such as writing directions, graphic complexity, psycholinguistic grain size, etc.¹¹ According to this hypothesis, these independent variables could affect dependent variables, such as memory, attention, perception, processing speed, and time conceptualization. While there is extensive research on bilingualism and its effects on cognition, the psychology literature lacks studies on biscriptuality—the ability to read or write in the same language through different writing systems. This study plans to expand the research on scripts’ impacts on cognition. While there is a massive investigation on bilingualism, the cognitive effects of biscriptualism remain underexplored. It is valuable that searching for these script effects on different dependent variables, such as time conceptualization, memory, metacognition, or metalinguistic awareness, and spatial cognition, independently from language effects, can provide new insights into language and cognition debates since it can isolate the impacts of language. The Ottoman Turkish, as a laboratory case, presents a unique opportunity to isolate the effects of the script from those of language. Investigating biscriptality with different writing systems through different languages could open new debates; moreover, exploring biscriptualism by focusing on one language through different writing systems could concretely illuminate why biscriptality should be the focus of bilingual

10. Anonymous. Interview by Onur Can Öz, Istanbul, June 1, 2024. Unpublished transcript.

11. Pae, *Script Effects*, 20.

studies.

The script relativity hypothesis serves as the baseline for the experimental part of this study. Additionally, the hierarchical mental metaphors theory, proposing a conceptual connection between space and time in the physical world, supports concretizing the abstract concept of time.¹² This theory is strongly associated with embodied cognition, which suggests that when people try to understand abstract terms such as time, understanding, and emotions, they utilize embodied metaphors such as physical spaces, grasping with the hand, and heat.¹³ This theory has been supported by much empirical research.¹⁴¹⁵¹⁶ For instance, English speakers associate time with rightward spatialization, while Arabic speakers associate time with leftward spatialization. Tversky et al. demonstrated this controversy with a temporal diagram task. In this task, English speakers were inclined to arrange “breakfast,” “lunch,” and “dinner” from left to right, whereas Arabic speakers arranged these time expressions in reverse order.¹⁷ The debatable question is whether these differentiations occur due to writing directions or culture-specific considerations. In other words, it is unknown whether orthographic direction is a causal factor or an effect of cultural variations. To address this debatable question, Casasanto and Bottini (2014) investigated whether reading expressions in a reversed, mirror-image format can transform the conceptualization of time.

Casasanto and Bottini’s experiment included Dutch speakers familiar with rightward reading. Participants performed a space-time congruity task, pressing the left button for past-related phrases and the right button for future-related phrases. They were asked to react to time expressions written in either standard Dutch or mirror-reversed Dutch. The aim was to see if the writing direction—rightward in standard Dutch versus reversed in mirror reading—could affect their mental timeline. The findings showed that even five minutes of exposure to mirror reading affected the Dutch speakers’ time conceptualization. Those who engaged in mirror reading began associating the past with the right side and the future with the left side, opposite

12. Daniel Casasanto, “The Hierarchical Structure of Mental Metaphors,” in *Metaphor: Embodied Cognition and Discourse*, ed. Beate Hampe (Cambridge: Cambridge University Press, 2017), 46–61.

13. M. Lachmair, P. Gerjets, M. Fischer, and O. Bock, “How Body Orientation Affects Concepts of Space, Time and Valence: Functional Relevance of Integrating Sensorimotor Experiences during Word Processing,” *PLoS One*, no. 11 (2016): e0165795.

14. L. Boroditsky, “Metaphoric Structuring: Understanding Time through Spatial Metaphors,” *Cognition* 75, (2000): 1–28.

15. D. Casasanto and L. Boroditsky, “Time in the Mind: Using Space to Think about Time,” *Cognition* 106, (2008): 579–593.

16. U. W. Weger and J. Pratt, “Time Flies Like an Arrow: Space–Time Compatibility Effects Suggest the Use of a Mental Timeline,” *Psychonomic Bulletin & Review* 15, (2008): 426–430.

17. B. Tversky, S. Kugelmass, and A. Winter, “Cross-Cultural and Developmental Trends in Graphic Productions,” *Cognitive Psychology* 23, (1991): 515–557.

to the usual rightward timeline in Dutch reading. The results demonstrated that writing direction can be a causal factor in shaping individuals’ mental timelines.

The experimental component of the present study investigated whether being biscriptual, particularly with scripts with different writing directions, can determine individuals’ mental timelines. Native Turkish speakers performed diverse space-time congruity tasks, with temporal expressions in either the Ottoman script, which has a leftward writing direction, or Latin script, which has a rightward writing direction. The participants read each line of the phrase in Turkish, expecting their eyes to move from the screen’s left side to the right side. Thus, moving rightward or leftward into a spatial area is associated with navigating earlier or later. The present study replicated Casasanto and Bottini’s experiment, but it differs in scope as it investigates the long-term effects of biscriptualism on temporal conceptualization. Moreover, the present research transcends the limitation of investigating the immediate effects of different writing directions. Therefore, it becomes more applicable to populations with similar reading habits. Moreover, the present study transcends the limitation of the immediate effects of different writing directions. Therefore, it becomes more applicable to populations with similar reading habits, enhancing its external validity. The study aims to provide empirical evidence that different writing systems can shape mental timelines—supporting the script relativity hypothesis.

The current study aims to address several gaps in cognitive psychology literature. Research on time conceptualization frequently concentrates on linguistic factors.¹⁸ While the question of how languages construct time has been explored more regularly, the effects of script and writing direction on time conceptualization still need to be explored. As might be expected, extensive research exists on bilingualism and its impacts on cognition, often using similar scripts or ignoring the script effect. However, more research is needed on individuals who use multiple scripts. Additionally, this study addresses the currently flourishing debate on the hegemony of Anglocentrism and Western centrism in linguistic and cognitive sciences.¹⁹ “Overgeneralizing observations from English speakers’ behaviors” to the entire human population can lead to misapplications and irrevocable distortions in psycho-linguistic literature.²⁰ By addressing these gaps, the experimental part of the current study examines the cognitive effects of biscriptualism, contributes to the script relativity hypothesis literature, and provides more diverse perspectives by focusing on the non-English-

18. L. Boroditsky, “How Languages Construct Time,” in *Space, Time, and Number in the Brain: Searching for the Foundations of Mathematical Thought*, ed. S. Dehaene and E. Brannon (Elsevier Academic Press, 2011), 333–341.

19. C. Levisen, “Biases We Live By: Anglocentrism in Linguistics and Cognitive Sciences,” *Language Sciences* 76, (2019): Article 101173.

20. D. E. Blasi, J. Henrich, E. Adamou, D. Kemmerer, and A. Majid, “Over-Reliance on English Hinders Cognitive Science,” *Trends in Cognitive Sciences* 26, no. 12 (2022): 1153–1170.

speaking population.

This interdisciplinary study also aims to fill a gap in historiography. The predominant view in Ottoman and Turkish studies approaches the 1928 Alphabet Revolution as a political and cultural transformation. In his seminal work *The Turkish Language Reform: A Catastrophic Success*, Geoffrey Lewis states that the revolution was a nation-building project and discusses its consequences.²¹ According to this narrative, the shift from the Ottoman to the Latin alphabet established a national identity. Based on political and cultural perspectives, this narrative has remained consistent throughout the following literature on the 1928 Alphabet Revolution. Recently suggested studies examined the alphabet revolution within the context of media technologies and the modernized information age in the early Republican period.²² Nevertheless, this cognitive shift—the alphabet revolution—cannot be considered in a political and cultural transformation vacuum, ignoring its cognitive aspects. Consequently, the alphabet revolution should be understood contextually, historically, and cognitively. This historical phenomenon can be evaluated as an appropriate concept for the emerging field of *cognitive history*.

Cognitive history could be explained as the study of how humans in history used their cognitive abilities in order to understand the world around them and to orient themselves in it, but also how the world outside their bodies affected their way of thinking. . . . the human minds' interaction with the environment in time and space. It especially discusses certain cognitive abilities in interaction with the environment, which can be studied in historical sources, namely: evolution, language, rationality, spatiality, and materiality.²³

1.3 Research Question and the Aims of Research

It will aim to investigate the cognitive and sociolinguistic impacts of biscriptualism—reading one language through different writing systems, differing from bисcript-

21. Geoffrey Lewis, *The Turkish Language Reform: A Catastrophic Success*, (Oxford: Oxford University Press, 1999).

22. Ulug Kuzuoglu, “Telegraphy, Typography, and the Alphabet: The Origins of Alphabet Revolutions in the Russo-Ottoman Space,” *International Journal of Middle East Studies* 52, no. 3 (2020): 413–431.

23. David Dunér and Christina Ahlberger, “Preface: What is Cognitive History?” in *Cognitive History: Mind, Space, and Time*, ed. David Dunér and Christina Ahlberger (Berlin: De Gruyter, 2019), vii–viii.

tuality. The difference between "two wheels" and "bicycle" etymologically mirrors the distinction between "biscriptuality," referring to the mere presence of two scripts, and "biscriptualism," which emphasizes the systematic integration and cognitive interplay of those scripts. This study will focus on shifts in orthographic variables such as writing direction, psycholinguistic grain size, and the script itself due to the transition from Ottoman script to the Latin alphabet. As an example of the emerging field of cognitive history, this research integrates digital humanities tools and hypothesizes that script change can transform individuals' cognitive skills. By examining the Ottoman and Latin biscriptual individuals through cognitive experiments, this study reveals how script changes influence cognitive frameworks such as spatiotemporal conceptualization. While there is a massive investigation on bilingualism, the cognitive effects of biscriptualism remain underexplored. I believe that searching for these script effects on different dependent variables, such as time conceptualization, memory, metacognition, and spatial cognition, independently from language effects, can provide new insights into language and cognition debates since it can isolate the impacts of language. The Ottoman Turkish case presents a unique opportunity to isolate the effects of the script from those of language. In this case, the Ottoman (Arabic-based) and Latin alphabets are different writing systems for one language, Turkish.

1.3.1 Rationale and Significance

The Ottoman Turkish, as a laboratory case, presents a unique opportunity to isolate the effects of the script from those of language. Investigating biscriptality with different writing systems through different languages could open new debates; moreover, exploring biscriptualism by focusing on one language through different writing systems could concretely illuminate why biscriptality should be the focus of bilingual studies. H.K. Pae (2020) suggests that readers of varying writing systems may have different cognitive abilities. While research on language and cognition often focuses on rare biscriptuality, the mental effects of biscriptualism remain underexplored. This study will contribute significantly to the script relativity hypothesis in psycholinguistic literature; the focus on non-English-speaking populations also challenges the Anglocentric biases in psycholinguistic studies. Consequently, it will provide a more diverse and accurate explanation of human cognition in the context of language and its possible global-scaled impact. To historicize, it utilizes archival sources such as comic strips, particularly those in *Çocuk Dünyası*, a children's journal that stands out as the sole publication of its kind tracing its continuity through the late Ottoman period (1913-1914) and the early Republican period (1926-1927)

offering a comparative lens. It will analyze local intellectuals' and readers' cognitive experiences adapting to a new orthographic system in children's journalism. The archival analysis will ensure that findings are historically situated and interpreted within their original socio-cultural contexts.

The experiment utilizes the hierarchical mental metaphor theory, proposing a conceptual connection between space and time in the physical world. English speakers arrange timelines from left to right; in contrast, Arabic speakers arrange temporal depictions from right to left. The Ottoman script has a leftward writing direction, whereas the Latin alphabet has a rightward orthographic direction. Participants will complete tasks by pressing buttons in response to temporal phrases like "a day before" or "a day later." The experiment will measure the reaction times of the Latin alphabet and Ottoman script readers to reveal whether the writing direction influences their mental representation of time. The experimental study expects biculturals (Latin and Ottoman readers) to demonstrate more cognitive flexibility and different time conceptualization patterns than monoscriptual Latin alphabet readers, since they have been exposed to various writing directions. This difference highlights the impact of the writing direction of scripts on spatiotemporal conceptualization.

Consequently, it will provide a more diverse and accurate explanation of human cognition in the context of language, a novel perspective on a historical phenomenon, and methodological rigor through historical-archival and psychological methods. It will leverage digital humanities tools within the framework of the emerging field of cognitive history. Its interdisciplinary perspective, encompassing history, psychology, and DH, establishes a precedent for cognitive history.

1.3.1.1 Hypotheses

This research hypothesizes that writing direction influences individuals' spatiotemporal cognition. In particular, in the experimental study, Ottoman script readers show a leftward mental timeline, while Latin script readers show a rightward mental timeline (H1). Further, bicultural individuals who can read in Ottoman and Latin scripts show greater cognitive flexibility and shorter reaction time delays in incongruent tasks spatiotemporally, compared to monoscriptual individuals' reaction time delays (H2). The reason is that they have learned to think in both leftward and rightward ways, leading to more flexible time concepts.

The research also looks into historical materials to corroborate these hypotheses. It is expected that the way *Çocuk Dünyası* comic strips have been drawn aligns with the reading direction of the period. In other words, these strips were drawn

according to the existing spatiotemporal expectancies of readers affected by the ongoing writing system (H3). Moreover, script transparency could affect how well one learns to read such that the Latin alphabet’s phonological decoding supports individualized reading, while the Ottoman script encourages top-down, collective (needing guidance) learning strategies (H4). The pre-1928 comic strips in *Çocuk Dünyası* show a right-to-left flow, aligning with a cognitively embedded leftward spatiotemporal conception consistent with Ottoman script (H5).

1.4 Overview of the Sources

This study utilized experimental data, archival materials, and digital tools. The primary historical sources encompass *Çocuk Dünyası*, a children’s journal published during the late Ottoman period (1913–1914) and the early Republican period (1926–1927). A children’s journal was inevitable since the research question necessitated the narrative depicted by the only drawings. There were several options to study this question; however, *Çocuk Dünyası* was the only one published for three crucial and different periods: the late Ottoman, the early republican period, and the republican period after the alphabet reform. Observing comic strips and narrative illustrations is essential to determine whether dominant script usage reflects the frequency of visual directionality for each period, since each period represents the peak of the native script, the period about to change, and the aftermath of the change. These comics are analyzed according to their narrative sequencing, writing direction, and spatial metaphors of time, and this analysis is digitized and operationalized using digital humanities tools.

On the psycholinguistic part, experimental data were collected through the PsychoPy program, which preliminarily utilizes Python. The reaction times data were collected through automatic Excel Files, which were then reorganized according to miscalculation reorientations. Moreover, demographic forms are filled out and compiled by digitizing them in an Excel file.

In addition to primary sources, the study is grounded in literature from disciplines such as psycholinguistics, Ottoman studies, and digital humanities. The theoretical and methodological literature includes H. K. Pae’s script relativity and Benjamin Fortna’s late Ottoman education and literacy. Conclusively, this dual approach will enable an analysis grounded empirically, situated historically.

1.5 Overview of Chapters

Chapter 2 explores the concept of alphabet change in general by creating a historical narrative with samples of comparisons from other cases. This chapter intends to show which side of the alphabet reform is neglected and question whether, if we find the cognitive effects of the reform in mental processes, we can also locate the success of the reform within the intellectual paradigm. This chapter reviewed the most different and similar cases to seek the reason for the success of the alphabet change. Eventually, it will be specialized in the case of Turkey. Another question connected to Chapter 2 is how sociolinguistic factors [influence of key intellectual figures] could shape the success or failure of the alphabet reforms.

Benjamin C. Fortna depicts reading models in the late Ottoman and early Republican periods within the interpretation of modernization, individualism, and nation-state formation. Chapter 3 reevaluates Fortna’s historical analysis through a psycholinguistic perspective. It suggests that script transparency mediates the association between reading models in children’s magazines and modernization and individualism processes. The script structure with cognitive affordances could explain how representations of reading models, aspirational ones, became realizable through script transformation.

Chapter 4 reveals a measurement of the impact of biscriptualism on spatiotemporal conceptualization for the thesis’ experimental component. The experiment utilizes the hierarchical mental metaphor theory, proposing a conceptual connection between space and time in the physical world. The results of the pilot data indicate that biscriptual participants responded faster in incongruent conditions. The pilot data findings support that exposure to different writing directions could affect individuals’ spatiotemporal conceptualization. These results show the applicability of the script relativity hypothesis, a newly suggested term by this thesis, biscriptualism, but also create a foundation for connecting cognitive experimentation with the archival analysis. Thus, this chapter builds a bridge between cognitive psychology and historical and cultural cognition, establishing a precedent for cognitive history.

Chapter 5 reveals patterns in spatiotemporal conceptualization related to writing direction by exploring comic strips from the children’s magazine *Çocuk Dünyası*. The comparison of issues of *Çocuk Dünyası* published during the late Ottoman (1913–1914) and early Republican (1926–1927) periods assists the thesis to answer whether intellectuals’ conceptualizations of time aligned more with the Ottoman script’s right-to-left orientation or with Westernized left-to-right orientation. Even though there was a strong Western influence on the magazine’s content, we can

observe that the spatiotemporal direction remained right-to-left. The “language as an inducer” became an issue in this chapter since cognitive habits of intellectuals or readers persisted until the 1928 Alphabet Reform. The chapter concludes that script direction, rather than the origin of content, predicts spatiotemporal layouts with the combination of qualitative interpretation and quantitative coding of comic sequences. Each chapter of this thesis constructs a linear trajectory to understand the Alphabet Reform of 1928 as a cumulative cognitive transformation, avoiding political constraints.

2. MACROHISTORY, THE REFORM WE THOUGHT WE KNEW

During an expert interview, the historian emphasized that the term 'Alphabet Revolution' (Harf İnkılabı) is a later construct and not used during Atatürk's era, advocating instead for the term 'alphabet reform'. Therefore, this thesis will try to utilize "alphabet reform" when the historiographical connotation resembles it (see Appendix F). The phenomenon of alphabet reform, a critical intersection in the writing history of states, embodies not only the transformations in intellectual endeavors but also profound changes in national identity, cultural integration, and continuity. These alphabet changes, as examined by İlker Aytürk on the alphabet revolution, reveal an interplay between political dynamics and cultural aspects. İlker Aytürk establishes a comprehensive comparative study to understand why the transition to the Roman alphabet succeeded in Turkey but failed in the case of Hebrew in Mandatory Palestine.¹ He scrutinizes the technical-infrastructure and political-cultural factors for the failure or success of Romanization in the cases of Turkey and Hebrew. Aytürk's comprehensive study reveals that transition success revolves around the technical-infrastructure and political-cultural factors, like the phonetic suitability of the new alphabet and political-cultural conjecture, including the type of regime, respectively. In Turkey, there was a desire to break with the past, distancing the state from the Ottoman past. Therefore, this success aligned with the broader goals of modernization and Westernization. In the Turkish instance, the alphabet revolution was facilitated by plenty of micro factors: low initial literacy rates and a historical precedent for writing system changes, which enabled the nation to adopt a new alphabet. Contrasting with the Hebrew case, Turkey's relatively lesser cultural and religious attachment to the existing alphabet significantly augmented this transformation. On the other hand, there was a high literacy in Hebrew when we looked at the technical-infrastructure factors. The political atmosphere was democratic, with a hesitation for a script change due to religious and national attachment to the Hebrew script. Conclusively, İlker Aytürk reveals that

1. İlker Aytürk, "Script Charisma in Hebrew and Turkish: A Comparative Framework for Explaining Success and Failure of Romanization," *Journal of World History* 21, no. 1 (2010): 97–130.

combining these factors augmented the success of the alphabet change in Turkey, whereas it led to the failure of attempts in the Hebrew case.

The historiography of the alphabet change investigates the reasons for the alphabet change. This reason can explain what expectations the reformers had by changing the writing systems. In İlker Aytürk's explanations, several factors that affected the success of alphabet reforms are associated with the technical-infrastructure factors. In a similar line, Ulug Kuzuoglu examines the origins and development of alphabet reforms in the Russo-Ottoman space by focusing on the technical mechanisms.² He conducts a comparative analysis approach by observing the developments in the Ottoman Empire and the Russian Empire. He argues that the communication systems developed in the 19th century were vital in augmenting the alphabet revolutions, alphabet change in Turkey, and Latinization in Soviet Russia. He hypothesizes that the impact of these technologies on the writing procedure led to the discussions of the Arabic alphabet. Due to its high graphic complexity, the Arabic alphabet was unsuitable for telegraph usage. The introduction of the telegraph and typography resulted in the reformation of separate letters by simplifying the writing system.³ These debates occurred in both the Ottoman and Russian Empires. Russia was also discussing the necessity of Latinization. Therefore, this techno-political causation corroborates the common Russo-Ottoman space. Kuzuoglu concludes that "the history of alphabet reforms was, in short, the product of a changing mode of knowledge production that challenged existing orders of language and writing."⁴ Thus, techno-political factors are very important to consider in the success of the alphabet changes. While giving this conclusion, he did not ignore the contribution of key figures, literacy rates, and educational practices within these spaces.

Another comparative study on the alphabet revolutions was conducted in Vietnam and Taiwan.⁵ While Vietnam successfully changed the Han script to the Latinized Chu Quoc Ngu alphabet, Taiwan maintained the Han script. Malarney (2012) questions which factors led to the success of Latin adoption in Vietnam but a partial failure in Taiwan. We utilized partial as an adjective since Taiwan has a limited use of Roman characters for church activities.⁶ Firstly, they differ in the demand for literacy. There was a demand for literacy in Vietnam, whereas there was a strong

2. Ulug Kuzuoglu, "Telegraphy, Typography, and the Alphabet: The Origins of Alphabet Revolutions in the Russo-Ottoman Space," *International Journal of Middle East Studies* 52, no. 3 (2020): 413–31.

3. Ulug Kuzuoglu, "Telegraphy, Typography, and the Alphabet," 414.

4. Ulug Kuzuoglu, "Telegraphy, Typography, and the Alphabet," 431.

5. Shaun Kingsley Malarney, "Literacy for the Masses: The Conduct and Consequences of the Literacy Campaign in Revolutionary Vietnam," *Literacy for Dialogue in Multilingual Societies* 83, (2012).

6. Malarney, "Literacy for the Masses," 16.

connection with Chinese scholarship and heritage in Taiwan. Taiwan was closely related to China in the political spectrum, whereas Vietnam searched for a separate national identity against Chinese influence. These two cases resemble the historical Han character usage and missionary activities in promoting Romanized scripts. Nevertheless, the Vietnamese case differs in its need for a nationalist movement and anti-colonial sentiment. On the other hand, Taiwan continued to use the Han script due to China's political and cultural dominance. Even though the article comprehensively compares these two cases, there is a need for a more elaborate comparative analysis that considers the different or similar cases in terms of political and cultural context.

The paper "New Alphabets, Old Rules: Latinization, Legacy, and Liberation in Central Asia" examines the outcomes of Latinization processes in Central Asia. This paper focuses on the cases of Turkmenistan, Uzbekistan, and Kazakhstan. These examples were used to understand how Latinization processes became a tool for legitimizing the authoritarian regime. The interesting point is that authors claim that "this is done through the creation of a 'new,' nationally appropriate Latin alphabet, as opposed to using the one already created when Turkey Latinized in the 1930s."⁷ Forming the most distinctive national alphabet highlights these countries' desire for autonomy and originality. According to the authors, these states have tried to create distance between Russia and Turkey. Alphabet reforms are considered an indicator of a break from Soviet legacies. These reform attempts have been primarily supported due to the advantages of the Latinized script to learn English. Nevertheless, the success rate of these reforms differs in Turkmenistan, Uzbekistan, and Kazakhstan. The Turkmenistan case was successful in the spectrum of implementation, at least. However, this change in 1993 led to a reduced literacy level. It is essential to consider this situation when questioning whether the literacy rate could be a good indicator of success in the reform. Uzbekistan, on the one hand, was partially successful. Soviet governance practices limited this change. Therefore, this attempt could not contribute to the break from the past. Lastly, due to the practical challenges, Kazakhstan has become the most unsuccessful case since the population has intense exposure to the Russian Language. Conclusively, the authors suggest that the mutual factor for these alphabet reforms was being "orchestrated by the authoritarian leadership." This situation highlights that the reasons and factors for alphabet reforms are evolving through different periods since the contemporary factor for script change may become authoritarian regimes. It should be noted that the comparative studies on alphabet reforms should consider the outcomes within

7. Sofya du Boulay and Huw du Boulay, "New Alphabets, Old Rules: Latinization, Legacy, and Liberation in Central Asia," *Problems of Post-Communism* 68, no. 2 (2020): 135.

the political context of the periods.

In the Uzbek case, a study about the prospective outcomes of the newly handled reform. The article concentrates on the possible positive outcomes of the alphabet change, such as enhancing literacy rates, augmenting education, and expanding the economy. Nevertheless, it mentions concerns about the extinction of cultural heritage.⁸ This possible negative outcome is still discussed in Turkey, even after a hundred years. Another study focuses on the possible outcomes of the alphabet changes that occurred in contemporary times.⁹ Bekzhanova et al. try to get an answer to the question of what the implications of the Latinization process in the Kazakh alphabet for education in Kazakhstan are. The article is concerned about educational practices since this change could impact the learning resources; therefore, there could be disruptions during this transition. Moreover, it may alienate non-Kazakh speakers, thus it could enhance social polarization. Finally, it provides a possibility that this transition could lead to injustices for individuals who have challenges with adoption. Conclusively, the Kazakh alphabet revolution (2017) has struggled with education in this transition and has also shown the adverse outcomes of this transition.

The literature review demonstrates that Turkey was the one sample for the alphabet revolution frequently utilized for comparative studies on this issue. For instance, Lummus (2021) had a dissertation titled "One Nation, Two Languages: Latinization and Language Reform in Turkey and Azerbaijan, 1905-1938." The author examines the processes of Latinization in Turkey and Soviet Azerbaijan in the early 20th century. The study explores the nationalistic networks that augmented the alphabet reform by observing the Soviet and Kemalist states. The aim was modernization and nation-building for both cases. The intellectual and nationalist networks within the Ottoman and Soviet Azerbaijan were vital in language reform. The Baku Turcological Conference of 1926 influenced the Turkish language reform. These two cases had similarities in their methods and purposes. Their methods were to draw on Turcological and nationalist literature, according to Lummus. Their target was modernization and creating secular national identities through perceiving Latinization as essential to these purposes. Lummus emphasizes that the states' endeavors, such as educational institutions, media, and cultural policies, facilitated the Latinization processes.¹⁰ This claim resembles the claim of İlker Aytürk's work, as

8. A. M. Bahodirovna et al., "Charting the Path: Assessing Uzbek Language Alphabet Reforms and Their Sociolinguistic Impact," *Comparative Linguistics, Translation, and Literary Studies* 1, no. 2 (2024): 87–94.

9. Z. Bekzhanova and T. M. Makoelle, "Latinization of the Kazakh Alphabet: Implications for Education, Inclusion, and Social Cohesion in Kazakhstan," *Sage Open* 12, no. 4 (2022).

10. Wesley Lummus, *One Nation, Two Languages: Latinization and Language Reform in Turkey and Azerbaijan, 1905–1938*, (Master's thesis, University of Minnesota, 2021), retrieved from the

we mentioned above. Both articles by Lummus and Aytürk claim that one of the factors that affected the success of the Latinization process was the need for national identity in the case of Turkey. The case of Turkey is fascinating in the literature on alphabet revolutions since it was affected by different alphabet revolutions, such as Albania.

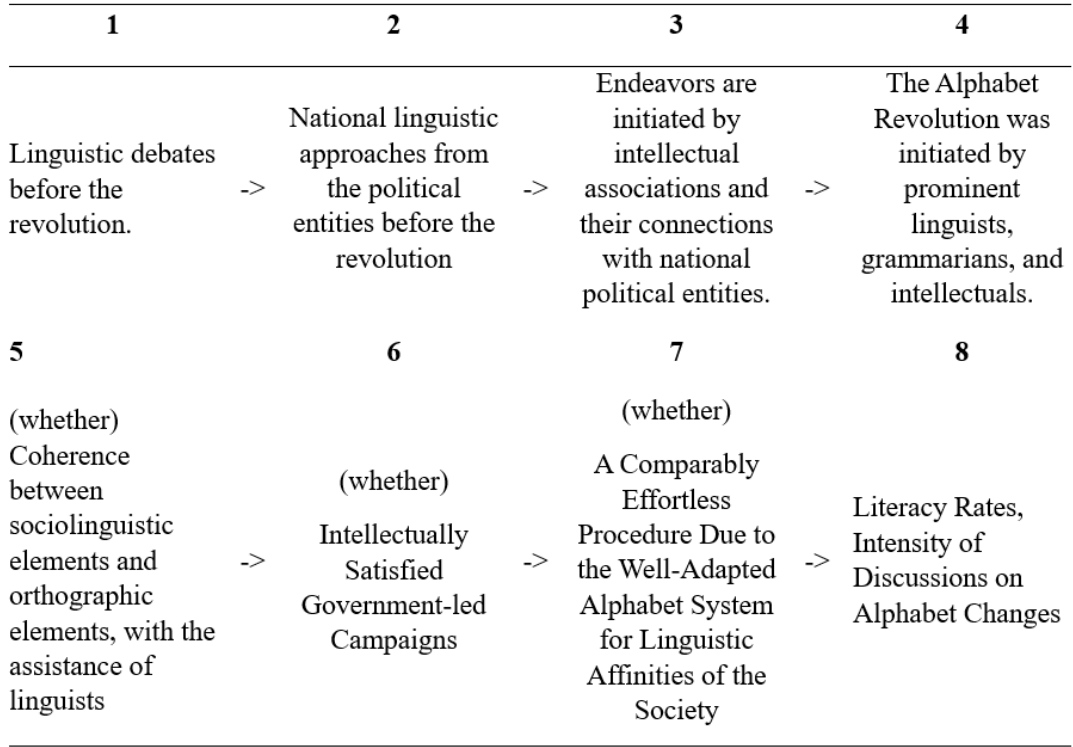
In 1909, Albania changed its multi-scriptual stance, having different alphabets such as Latin, Greek, Ottoman, Arabic, and Cyrillic, into the Latin alphabet. The paper by Frances Trix explores Shemseddin Sami's attempts to create a new alphabet called "The Stamboul Alphabet."¹¹ The Stamboul alphabet, which was inspired by the city of Istanbul, was adopted in 1879. This was a symbol of Albanian national identity. Frances Trix questions how this endeavor may impact the script reform in the early republican era in Turkey. This alphabet was essential for the Albanian national identity since it differentiates their position from the religious and regional spheres. According to the author, it was to avoid religious connotations and imperialistic identities. As İlker Aytürk mentioned in his article, phonological fit is one of the main factors facilitating the adoption process. In the Albanian case, the reformers mixed the Latin, Greek, and Cyrillic characters for phonological fit. This article also mentions the availability of printing technology as a practical factor before Uluğ Kuzuoğlu (2020) mentioned in his article. Trix (1999) concludes that the rise of nationalist movements and the need for modernization influenced the success of the Stambul Alphabet. The most attractive point was the role of an intellectual in this alphabet reform, Shemseddin Sami. This point is essential since most articles in this literature review have ignored influential figures such as linguists and intellectuals.

Even though the existing literature, including comparative studies on alphabet changes, has enormously contributed to understanding the factors that influence alphabet change outcomes, there is a gap in evaluating the relative importance of political-infrastructural versus sociolinguistic factors. The political-infrastructural factors are types of regimes, historical precedent, cultural attachment to writing systems, existing literacy rates, technological advancements, communication systems, modernization goals, etc. On the other hand, socio-linguistic factors are cultural and religious attachment to the existing script, educational practices, linguistic suitability, influence of key intellectual figures, bilingualism within the population, etc. Previous research highlighted either the technical-infrastructural aspects, such as communication technologies, or the political-cultural dimensions, such as regime type. However, there is a limited expression of the socio-linguistic factors. How

University Digital Conservancy.

11. Frances Trix, "The Stamboul Alphabet of Shemseddin Sami Bey: Precursor to Turkish Script Reform," *International Journal of Middle East Studies* 31, no. 2 (1999): 255–72.

Figure 2.1 Process tracing flowchart showing the stages of the Alphabet Reform.



could sociolinguistic factors [influence of key intellectual figures] shape the success or failure of the alphabet reforms?

As we have suggested, sociolinguistic factors [influence of key intellectual figures] suppress the technical-infrastructural aspects, such as communication technologies, or the political-cultural dimensions, such as regime type, in the search for the reason for success. As we can observe through the sample of Albania and Şemseddin Sami, we can suggest that sociolinguistic factors are much more vital than the political and technical aspects. The process tracing below shows how sociolinguistic factors matter in the question of the reasons for the success of the alphabet change.

Tracing all endeavors for alphabet change begins with pre-revolutionary linguistic debates. These initial discussions led to the intellectual associations often associated with national movements. At the end, we can argue that the alphabet change in each successful context was led by linguists, at the same time, grammarians, and intellectuals. The most critical determinants of the success of these reforms (literacy rates and the societal intensity of discussions surrounding script changes) are the alignments between sociolinguistic structures and orthographic changes. These alignments were determined and facilitated by linguistic experts. Moreover, the implementation was eased with the assistance of experts embracing the aim of how

well the new alphabet aligned with the phonological characteristics of the native language. In this matter, the Alphabet Reform in Turkey encompasses its “Şemseddin Sami,” coming from Resmo on the island of Crete.

Ahmet Cevat Emre was born in 1876 in Resmo on the island of Crete. In 1897, Abdulhamid II exiled him to Tripoli due to his engagements with the Committee of Union and Progress members. After eleven years, his exile ended thanks to the proclamation of the Second Constitutional Era. Firstly, he worked as a journalist, then he taught at Darulfunun. Due to his criticisms of Enver Pasha, he went to Baku to trade and then to Moscow to collaborate with Mustafa Suphi. He returned to Turkey following the proclamation of the Republic. He worked in trade. Later, he resumed writing and penned the article series *The Language Revolution We Need* (Muhtaç Olduğumuz Lisan Inkılabı). The expert in the interview highlighted that discussions about adopting the Latin alphabet had already been widespread in the Ottoman press during the Second Constitutional Era, long before the official reform in 1928. Therefore, his previous endeavors are understandable. Moreover, periodicals such as *Hürriyet-i Fikriye* and authors like Celal Nuri İleri had persistently promoted the Latin alphabet, indicating a long-standing intellectual movement before republican discussions (see Appendix F).¹² Meanwhile, Cevat Emre began publishing the journal *Muhit*. Upon Atatürk’s appointment, he joined the Language Commission and wrote the first official grammar publication in Latin script, *Report on Grammar*. He served as a deputy for Çanakkale from 1930 to 1938. During this time, he also performed many duties within the Turkish Language Association (TDK).¹³ At the end, we knew that the founder of the republican era presented Cevat Emre as the revolution’s leader. Gazi Mustafa Kemal Atatürk: “It was Cevat who did this [alphabet reform]: we bought his book, we sat alone with the Prime Minister [İnönü] for seven hours, read and talked; then I got the Prime Minister’s consent.”¹⁴ Conclusively, the literature on alphabet reforms across diverse historical and geopolitical contexts reveals that political or technical infrastructures cannot solely explain the success of such transitions. Instead, as this chapter argues, sociolinguistic factors—particularly the role of influential intellectuals like Ahmet Cevat Emre, and expectedly, the consequences of this reform should be associated with linguistic and intellectual parameters.

12. Anonymous, interview by Öz" June 1, 2024.

13. Ahmet Cevat Emre, *Atatürk’ün İnkılap Hedefi ve Tarih Tezi*, İstanbul: Telemak Dijital, 2023, p. 24.

14. Ahmet Cevat Emre, , *İki Neslin Tarihi*, İstanbul: Telemak Dijital, 2023.

3. SCRIPT AS AN INDUCER, FROM SCRIPT TO INDIVIDUALISM

In his book “Learning to Read in the Late Ottoman Empire and the Early Turkish Republic,” Benjamin C. Fortna narrates the modelling of reading by connecting these models to concepts of modernity and individualism. The conceptualization may attract the historiography, realizing how distinctive it is to depict reading through its physicality. In historiography, reading has been considered a skill. However, Fortna implements its spatial and physical dimensions. This physicality could be diversified as postures of reading, reading environment, or interaction with the book.¹ The postures of reading depicted within the school texts have been transformed from the traditional floor-seated to desk ones. Reading is an activity performed within a structured and disciplined environment.

Children’s magazines in the early Turkish Republic depict reading as more individual than communal, in contrast to a collective type of reading. On the other hand, the magazine *Haftalık Resimli Gazete* demonstrates children reading books for pleasure in a comfortable environment.² In another form, Fortna presents a different model driven by “Yeni Yol,” with students picking up a book and reading themselves. Eventually, the chapter associates the individualized reading models with a global context, such as global movements of self-reliance, exemplified by Samuel Smiles’ *Self Help*. *Self Help* (1859), as a Victorian-era work promoting individual initiative, is an example driven by Fortna to establish a global context for self-reliance.³ According to this chapter, this individualized reading model was integral to modern nation-state formation. Therefore, reading individually without monitoring or double-checking processing is a relatively comfortable and silent individual activity that fundamentally represents an atomized and individualized modern person. This, possibly seen as duality, individualization, and collective nation-building, is

1. Benjamin C. Fortna, *Learning to Read in the Late Ottoman Empire and the Early Turkish Republic*, (New York: Palgrave Macmillan, 2011), 67.

2. Fortna, *Learning to Read*, 68.

3. Ibid.

fundamental for Fortna's emphasis on representations of reading practices in the late Ottoman and early Republican era. Conclusively, reading model representations for children shows reading as an individual self-improvement activity and a collective instrument for consolidating a modern nation-state.

The individualized and silent reading experience depicted in late Ottoman and early Republican children's magazines was conceived as part of the cultural transformation through nation-state formation. This transformation was not only institutional but also symbolic, where reading practices indicated modern citizenship. Fortna centralizes the analysis of these depictions within global and cultural contexts by claiming that these representations result from individualized modern citizen envisagement. By "individualized modern citizen," this text refers to a subject who adopts ideals of the state through individual reading rather than collective activity. As can be understood, these representations were not reflections of realities but desired schemas regarding modern citizenship. For instance, depicting children reading a preferred book in an armchair indicates an aspirational model rather than evidenced behavior. I suggest that remarkably silent and individual representations could be further re-investigated through the psycho-linguistic lens. This lens could explore the cognitive affordances of different writing systems and insightfully explain how script effects could lead to various mental processing and autonomy.

Fortna's historical and cultural approach, particularly his interpretation of reading models, could be more explanatory if a moderator assisted the interpretation. The moderator refers to a third variable that reinforces the association between two variables within the process tracing. This variable could help us understand how a seemingly abstract association between reading models and individualism might become more explanatory and operationalized. His narrative associates the representation of reading models with individualism and modern nation-state formation. For instance, the transformation from traditional and communal reading settings of mektep to alone reading in magazines aligns with the concept of the new model as an atomized citizen. Whether these representations within children's magazines or textbooks are envisaged or pedagogical realities should be discussed to flourish in this association. Were these representations only aspirations, or did they represent actual pedagogical practice? According to Fortna, these representations were the aspirations of editors or creators for prospective citizens. These aspirations were for globalized individuality and nationally framed identity. These representations were also pedagogical interventions since these depictions could affect children's minds. From a psycholinguist's point of view, repeated exposure to this depiction could shape children's schema related to when, how, and where to read. The critical question is whether a writing system based on predictive processing, such as Ottoman

Turkish, could enable this envisagement of individuality, or an idealized reading or reading acquisition model could be imagined and depicted with this writing system? In this context, script is not only a technical issue but a cognitive moderator constraining what kind of reading can be envisaged.

In the Ottoman Turkish alphabet, written in an abjad Arabic system, texts mostly encompass consonants, and learners have endeavored to understand the meaning through the context or existing vocabulary in their minds. The identical letter sequence could have distinctive meanings in this writing system, for instance, the word “/kel/” (written with the consonants kaf and lam) could be understood as “gel (come),” “kel (bald),” or “gül (rose)” with multiple interpretations depending on context. This ambiguity shows how Ottoman Turkish relies on Top-down learning processing. This process is about how the brain encodes new information. In the Top-down process, the learner fills in the remaining information by utilizing the existing information based on the context of the newly given information. For instance, to understand the word “/kl/” as “gül (rose),” it is vital to have the remaining information, the context of the text, or guidance. This reading is representative of the Top-down processing for learning new information. This ambiguity highlights the predictive nature of this writing system. Moreover, readers ought to distinguish between cursive letters if their forms have not changed according to their positions, e.g., /alm/ – ilm (science), /rca/ – reca (hope), /A/ (the letter “ayn”). As you can predict, the letter /A/ (the letter “ayn”) changed according to its position. Consequently, we can suggest that this writing system has lower orthographic transparency, i.e., the ease with which letters match phonemes.

On the other hand, phoneme-grapheme correspondence is highly observable in the Latin alphabet. This correspondence facilitates readers in decoding unfamiliar words without understanding the context, prior knowledge, or guidance. Technically, each phoneme is represented by a distinct letter. The readers or learners extract the meaning through letters, syllables, words, and definitions. It is self-decodable since its letters are disjoint and structurally stable. As we can conceive, learning the Latin alphabet is contrary mainly to the Top-down process, which is called the bottom-up process. In the Bottom-up process, the sensory input is encoded by building up from smaller pieces, and eventually, understanding the whole context. For instance, to understand the word “e l m a,” as “elma” (apple), it is not vital to have the remaining information, the context of the text, or guidance, since the learner could reach the meaning by combining the letters, including consonants and vowels. Thus, we can suggest that the Latin alphabet has profound orthographic transparency. This orthographic transparency facilitates individual learning and undermines the necessity for guidance for learning to read. In contrast, the Ottoman

alphabet demands predictive and interpretive strategies that are more suitable in a collective or guided environment, for instance, the expert in the interview stated that despite being fluent in reading Ottoman Turkish newspapers, they struggled with official bureaucratic scripts due to stylistic and calligraphic variations, suggesting the limitations of alphabetic familiarity alone (see Appendix F). On the other hand, the Latin alphabet actualized the applicability of the abovementioned individualized representations rather than remaining as envisaged with the Ottoman alphabet, since the Latin alphabet offered the cognitive affordance for an endeavor to be deciphered individually, rather than a necessity for external guidance and collective endeavors as the Ottoman alphabet cognitively affords. Therefore, the Latin alphabet enables children to learn how to read independently, silently, comfortably, and with fewer errors. In this context, Fortna's analysis of representations such as a child with individual, silent, and comfortable reading could be interpreted as ideological symbols of individualism, nation-state formation, and self-reliance as a new phenomenon for the beginning of the 20th century. At the same time, it implies that these representations could also be conceived as educational performances cognitively dependent on certain conditions. Therefore, script change is not only an ideological, political, or pedagogical side, but also a cognitive side that shapes which reading models are cognitively affordable.

Almost all literature on late Ottoman history has considered the alphabet reform by analyzing modernization and national identity. Nevertheless, this reform should be analyzed through the acceptance that it was a cognitive revolution rather than a sole apparent transformation of the script. This psycholinguistic approach assists us in acquiring a multilayered understanding of reading models depicted in the children's journals. Even though these depictions were accommodated in literature as restricted realities, envisagement, these represented reading models became cognitively affordable and applicable throughout the change of script from Ottoman script to the Latin alphabet. This psycholinguistic view should not be restricted to a contribution to late Ottoman and early Republican history through only reading models and envisagement, but also the realities, or more importantly, both.

4. MINDS IN MOTION, EXPERIMENT THAT FLIPPED TIME

This chapter presents an empirical study that explores whether and how writing direction influences spatiotemporal conceptualization. Considering the Script Relativity Hypothesis and the Mental Metaphor Theory, the aim of this experimental study is to explore whether bicultural individuals—those who can read both Latin and Ottoman scripts—shows higher cognitive flexibility when locating temporal expressions that are congruent or incongruent (matching between task and temporal expressions) with the reading direction of the alphabet. The 1928 Alphabet Reform showed a radical change from the right-to-left Ottoman script to the left-to-right Latin script. This experiment aims to reveal its potential cognitive consequences, while most discussions emphasize its sociopolitical and educational results. It tests whether individuals embracing different scripts have different mental timelines and whether these scripts influence their speed and accuracy when categorizing temporal expressions.

The task demanded the distinction between past and future-oriented temporal phrases displayed by participants in the Latin or Ottoman script. Their reaction times were recorded and analyzed for the comparison of the cognitive load in congruent (e.g. when they press the button left, when they see spatiotemporally left temporal expressions in terms of Latin group) versus incongruent task conditions (e.g. when they press the button left, when they see spatiotemporally right temporal expressions in terms of Latin group task conditions.) This experiment is crucial not only for a psycholinguistic investigation but also as a connection between experimental cognitive science and the broader historical context of alphabet reforms in Turkey, while also contributing to the interdisciplinary field of cognitive history.

The results of this study give the thesis empirical evidence to support the theoretical framework in the previous chapters. Furthermore, the results will be a prologue to the visual analysis of comic strips. They will help us link the micro-level data obtained in the laboratory with macro-level patterns, such as layouts in comic strips from the late Ottoman and early Republican periods.

4.1 Experiment

In the first experiment, participants were divided into two distinct groups. The first group consisted of monoscriptual individuals who could read Turkish with the Latin alphabet. The second group consisted of biscriptual individuals who could read Turkish with Ottoman and Latin alphabets. These participants saw past-related expressions (e.g., *bir gün önce* [English: “a day before”]) and future-related expressions (e.g., *bir gün sonra* [English: “a day later”]) written in the Latin alphabet for monoscriptuals and the Ottoman alphabet for biscriptuals (see Appendix A). The hypothesis is that if Latin alphabet readers create mental timelines according to a rightward direction, they are more prone to be challenged with the incongruent condition—pressing the right button for past-related expressions and the left for future-related expressions—compared to Ottoman alphabet readers. This is because biscriptuals have already been exposed to a leftward writing direction. Half the monoscriptuals pressed the right button for future-related expressions and the left for past-related expressions—congruent condition. The other half pressed the right button for past-related expressions and the left for future-related expressions—incongruent condition. An identical procedure was applied to the biscriptuals: they performed the first two phases by reacting to expressions written in the Ottoman alphabet (e.g., */s/waw/kre/ /ay/ /br/* [English: “a month later; Latinized version: “*bir ay sonra*”]). Subsequently, they reacted to expressions written in the Latin alphabet as Latin alphabet readers did.

In this experiment, participants were divided into two main groups: those who could read only the Latin alphabet, called monoscriptuals, and those who could read both the Latin and Ottoman alphabets (biscriptuals). Each group was later divided into two subgroups based on congruent and incongruent conditions.

1. Latin Alphabet Readers (Monoscriptuals):

The exposure for the monoscriptuals is the group of temporal expressions, written in Turkish in the Latin alphabet. Each participant terminated two task phases: In the congruent condition, they pressed the left button (Q) for past-related expressions and the right button (P) for future-related expressions. This direction aligns with the left-to-right nature of the Latin script. Therefore, reaction times were expected to be lower when we compared them to incongruent reaction times.

In the incongruent condition, the setting was reversed: they pressed the right button (Q) for past-related expressions and the left button (P) for future-related expressions. This intentionally created setup has a friction with the left-to-right nature

Figure 4.1 Experiment procedure

Participant Groups	Subgroups	Exposure Type of the Temporal Expression		First Phase		Second Phase	Continued with the First Two Phases (Latin Alphabet) for Biscrptuals
Only Latin Alphabet Readers	Congruent Task First	Latin Alphabet	→	The left button (Q) for past expressions, the right button (P) for future expressions	→	The right button (P) is for past expressions, and the left button (Q) is for future expressions.	
	Incongruent Task First	Latin Alphabet	→	The right button (P) is for past expressions, and the left button (Q) is for future expressions.	→	The left button (Q) for past expressions, the right button (P) for future expressions	
Biscrptuals (Ottoman and Latin Alphabet Readers)	Congruent Task First	Ottoman Alphabet	→	The left button (Q) for past expressions, the right button (P) for future expressions	→	The right button (P) is for past expressions, and the left button (Q) is for future expressions.	✓
	Incongruent Task First	Ottoman Alphabet	→	The right button (P) is for past expressions, and the left button (Q) is for future expressions.	→	The left button (Q) for past expressions, the right button (P) for future expressions	✓

of the Latin script to disrupt their natural reading-direction-based mental timeline and was expected to induce greater cognitive load. Therefore, reaction times were expected to be higher when compared to congruent reaction times. Half of this group started with the congruent task and then moved on to the incongruent task, while the other half did the reverse.

2. Ottoman and Latin Alphabet Readers (Biscriptuals):

The exposure for the Biscriptuals is the group of temporal expressions, written in Turkish in the Ottoman script. Biscriptual participants, who were familiar with Ottoman and Latin scripts, initially performed both phases of the experiment. In the congruent condition, they pressed the left button (Q) for past-related expressions and the right button (P) for future-related expressions. This direction does not align with the Ottoman script's right-to-left nature.

In the incongruent condition, the setting was reversed: they pressed the right button (Q) for past-related expressions and the left button (P) for future-related expressions. This intentionally created setup has a friction with the left-to-right nature of the Latin script to disrupt their usual (meticulously selected word rather than natural since they have also engaged with another script) reading-direction-based mental timeline and was expected to induce lesser cognitive load compared to incongruent Latin ones. Therefore, the difference between the reaction times of biscriptuals when doing the congruent task and the incongruent task was expected to be less when compared to the difference between the reaction times of monoscriptuals when doing the congruent task and the incongruent task.

After completing both phases in Ottoman script, biscriptual participants repeated the same tasks with expressions written in the Latin alphabet. This enables us to compare script exposure on spatiotemporal cognitive flexibility within the same individuals. This experimental task systematically explores the impacts of writing direction on temporal and spatial cognition. It was meticulously created to isolate the impacts of writing direction on spatiotemporal conceptualization processing.

4.2 Method

4.2.1 Participants

The experiment involved 25 participants (12 Males, 13 Females, $M_{\text{age}} = 22.4$, all of whom were native Turkish speakers from Sabancı University.¹ Participants were asked whether they were bilingual (see the Demographic Form in the Appendix). This group included twelve biscriptuals; three initially experimented incongruently. The remaining nine biscriptuals and eight monoscriptuals were assigned to the congruent task. The monoscriptual group consisted of 13 participants, five of whom were assigned to the incongruent task and eight to the congruent task.

4.2.2 Materials and Stimuli

The list of temporal expressions (word combinations) utilized by Casasanto and Bottini (2014) was translated into Turkish. These word combinations include indefinite articles, temporal intervals, and adverbials, respectively (e.g., “Bir ay sonra” [English: “one month later”]). The task comprises twenty-four different temporal expressions, half referring to the past and half to the future (see Appendix 1). Participants encountered these twenty-four phrases three times each in a randomized manner. The temporal phrases were presented in the center of a 15.6-inch laptop screen (Monster Computers, Istanbul, Türkiye) in 36-point Open Sans font.

4.2.3 Procedure

The experiment was conducted using the PsychoPy software program. Each participant was given instructions on the computer screen and then practiced the task. The experiment was divided into two phases, each consisting of 72 trials. In each trial, a fixation cross appeared in the center of the screen, and participants responded to the time expressions according to the instructions. Participants used their index fingers to press the buttons. The first phase involved congruent tasks, while the second phase involved incongruent tasks, with the order counterbalanced across participants. The experiment lasted approximately 15 minutes. For a detailed description of the experiment, refer to Figure 4.1.

1. The total number of participants were 31, however, some participants were excluded since there were left-handed individuals and participants with partial dyslexia.

Figure 4.2 Difference in reaction times for congruent and incongruent conditions

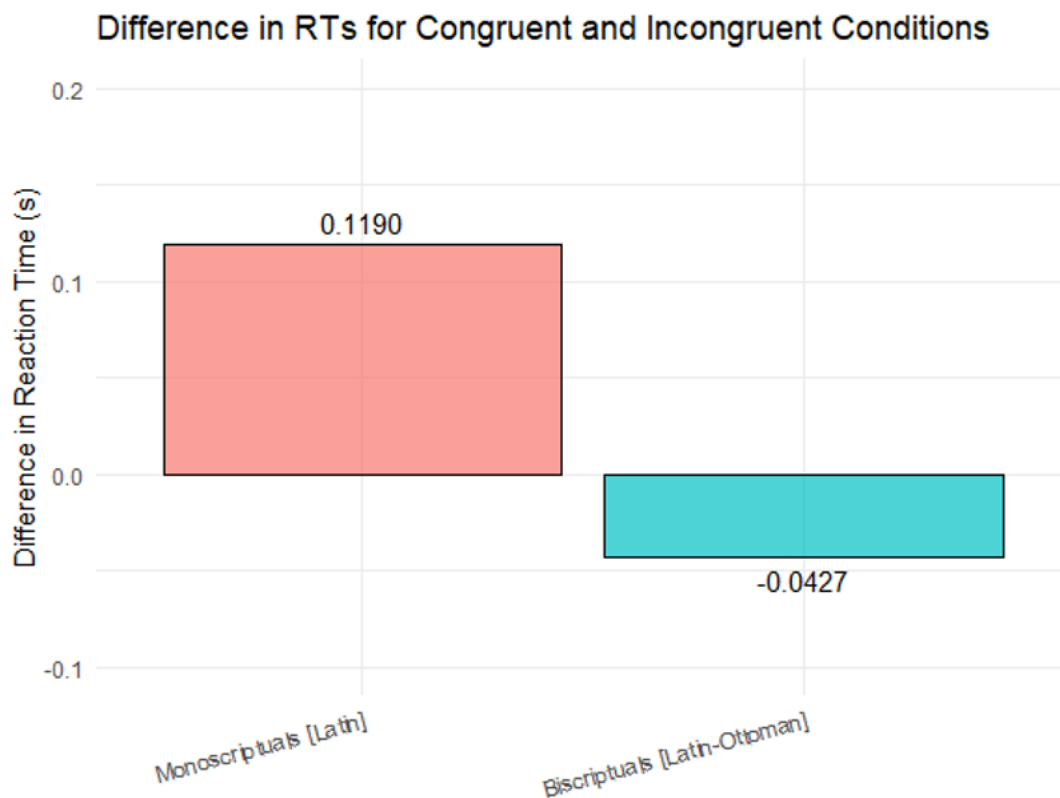
Participant Groups	Congruent Task	Incongruent Task	Difference in Reaction Times for Congruent and Incongruent Conditions
Latin	0.6689	0.7874	0.1190
Latin-Ottoman	0.6707	0.6279	-0.0427
Difference in Reaction Times for monoscriptuals and biscriptuals	0.002	-0.1595	

4.3 Results and Discussion

The reaction times of participants were recorded automatically using the PsychoPy program. RTs were analyzed considering deviant values, resulting in the removal of 2.5% of the data. There were 72 different reaction times for each task and each participant. RTs greater than +3 Z scores or less than -3 Z scores from the average were excluded. Based on the limited participant data, we found that monoscriptuals show higher reaction times for incongruent tasks ($\mu = 0.7874$ seconds) than for congruent tasks ($\mu = 0.6689$ seconds). This suggests that they experience more difficulty processing incongruent tasks. These results show evidence for mental metaphor theory since otherwise it should be almost identical. In contrast, biscriptuals show lower reaction times for incongruent tasks ($\mu = 0.6279$ seconds) than for congruent tasks ($\mu = 0.6707$ seconds). This result supports the Script Relativity Hypothesis since biscriptual enables them to shift different spatiotemporal tasks more flexibly compared to the Latin group. It suggests that Latin-Ottoman readers have greater adaptability for incongruent tasks (mean difference in reaction times for congruent and incongruent conditions for each group = 0.1617 seconds). These results support the hypothesis that being biscriptual—having exposure to both scripts—enhances cognitive flexibility in spatiotemporal congruity tasks, particularly for the incongruent ones.

Figure 4.2 shows reaction times in the congruent and incongruent conditions. For instance, the Latin group's mean reaction times (the mean of each participant's

Figure 4.3 Difference in RTs for congruent and incongruent conditions



mean of 72 trials) was 0.6689 seconds in the congruent condition and 0.7874 seconds for the incongruent condition. They experienced difficulty in incongruent tasks, in concert with the Mental Metaphor Theory. On the other hand, the Latin-Ottoman group's mean reaction times was 0.6707s in the congruent task and 0.6279s for the incongruent task. Suggesting that participants experienced less difficulty in the incongruent task compared to Latin group's experience in the identical task, in line with the Script Relativity Hypothesis—their ability to read in each direction might have led them to conceptualize time in both directions.

The second graph in Figure 4.3 expresses the difference in reaction times for congruent and incongruent conditions for monoscriptual and bilingual individuals in a bar chart. As illustrated in this bar chart, monoscriptual participants exhibited slower reaction times in incongruent conditions (+0.1190s), whereas bilinguals responded faster in the same condition (−0.0427s). This striking contrast suggests that exposure to multiple script directions enhances cognitive flexibility in spatiotemporal tasks, supporting the Script Relativity Hypothesis.

4.4 Limitations of the Experiment

One of the essential limitations of this study is a small sample size. The results may differ from the broader population, affecting the study’s statistical power. Additionally, all participants were native Turkish speakers from Sabancı University, resulting in a homogeneous sample, which might limit the external validity of the findings. The cognitive flexibility observed might be specific to this group and may not apply to individuals from different educational backgrounds or cultural settings. Moreover, the biscriptual and monoscriptual groups may differ in confounding variables such as educational background or exposure to historical texts, which should be considered in future studies. Furthermore, there is a need for an alternative experimental setting, including brief exposure to the Ottoman script to biscriptuals, incorporating pre-test and post-test experimental designs as a second study, which could help us to understand the immediate changes in cognitive flexibility.

4.5 Conclusion of the Experiment

The findings from this experiment underscore the potential cognitive flexibility exhibited by biscriptual, Ottoman alphabet readers, particularly in performing incongruent spatiotemporal tasks. This adaptability, evidenced by their lower reaction times for incongruent tasks compared to congruent tasks, a pattern opposite to that observed in monoscriptuals, Latin alphabet readers, align with the hypothesis that exposure to reverse writing directions can also reverse spatiotemporal conceptualization in natural settings. To further investigate this phenomenon and its historical context, the Mental Metaphor Theory and Script Relativity Hypothesis will be utilized to examine the reflection of these empirical findings in comic strips published during the late Ottoman and early Republican periods. Suppose an effect can be observed in an experimental setting with only a few months of exposure. In the case of the late Ottoman and early Republican era, it is reasonable to expect this effect of Ottoman script to be even more pronounced in individuals who have experienced it throughout their lives. The interpretations and findings from the children’s journal further support this conclusion.

5. DRAWING TIME: COMICS, KIDS, AND SPATIOTEMPORAL CONCEPTUALIZATION

The two formative eras, the late Ottoman period (1913–1914) and the early Republican period (1926–1927), had a chance to have periodicals of the *Çocuk Dünyası* journal. This journal’s uniqueness lies in its publication of comic strips, which allows us to trace spatiotemporal conception independent of written language. Considering the Script Relativity Hypothesis, we will be searching for how reading habits with the Ottoman script could augment the mental timelines of editors or readers. This chapter will combine cognition, history, and empirical visual analysis in quantitative and interpretive ways. This part will assess whether changes in political ideology, such as Westernization and translated content from Europe, influenced comic strips’ layouts or whether the Ottoman script acted as a more durable cognitive factor. The spatiotemporal relocation of comic strips helps us understand them as cultural artifacts and as archival evidence of cognition, particularly regarding time and space.

5.1 Spatiotemporal Conceptualization: Comic Strips from the “Çocuk Dünyası” Children’s Journal

Comic strips are invaluable for tracing the investigation of mental metaphor theory, as these stories utilize cartoons in a narrative sequence. Each pictorial block of instances displays the chronological progression of the narrative. The direction of these sequences varies across different languages. For instance, Japanese comic strips follow a timeline from top to bottom or right to left in a columnar format. The reader starts in the upper-right corner and finishes in the lower-left corner. Historically, Japanese script was written from top to bottom; however, nowadays, it is more commonly arranged from right to left. In English, these sequences are depicted from left to right, as expected from the abovementioned theories. This observation suggests a correlation between comic strip direction and individuals’

mental timelines.¹

In the case of Ottoman Turkish, the experimental aspect of this study posits that exposure to different writing systems can alter spatiotemporal conceptualization. A habit of leftward reading can lead to a reverse mental timeline, which is predominantly rightward in contemporary Turkish. The primary research question of this study is to investigate the shift in intellectuals' and readers' minds, particularly their spatiotemporal conceptualization during the early Republican period.

We have meticulously selected a case study to corroborate our experimental findings, which involve a limited number of participants, with historical context. We should investigate comic strips published during the modern Ottoman period and the early Republican period, with a focus on journals for children. This careful case selection is crucial to eliminate alternative explanations—adhering to a cogniscent interpretivist approach. Numerous journals for children were published in the Ottoman context, starting from 1869, including fifty different child journals written in the Ottoman script.² Thus, we should select journals published in distinct periods, ensuring the robustness of our research.

In this context, “Çocuk Dünyası” is uniquely suitable for this study as it includes many comic strips compared to other children’s journals. More importantly, it was published during both the late Ottoman period (1913-1914) and the early Republican period (1926-1927), the sole example for these periods (2).³ This dual publication period provides a unique opportunity to investigate changes or patterns in spatiotemporal conceptualization across the abovementioned critical eras. The period of 1913-1914 encompassed the Balkan Wars, and “Çocuk Dünyası” included notions of encouragement, ghaza, and revenge for readers.⁴ Its cadre established a close relationship with the government and provided school subscriptions. Similar to previous child periodicals, it addressed Turkish-Muslim secondary school boys.⁵ Among the child journals published since 1869, “Çocuk Dünyası” was the first to follow a Turkist collective identity policy, rejecting Ottomanism. Analyzing the journal’s administrative cadre reveals a consistent political stance that leaned towards Westernization, reflected in the use of translated content from French, German,

1. Neil Cohn, “The Architecture of Visual Narrative Comprehension: The Interaction of Narrative Structure and Page Layout in Understanding Comics,” *Frontiers in Psychology* 5, (2014): 680.

2. Başak Özdemir, “Çocuk Dünyası Dergisinde Yer Alan Çeviri Metinlerin İndeksi ve Değerlendirilmesi”, (PhD diss., Sakarya Üniversitesi, 2008), 7.

3. Özdemir, “Çocuk Dünyası”, 17.

4. Eray Yılmaz, “Osmanlıcılıktan Türk Milliyetçiliğine Bir Çocuk Dergisi: Çocuk Dünyası (1913–1914),” *Tarih İncelemeleri Dergisi* 32, no. 1 (2017): 209–232.

5. Yılmaz, “Osmanlıcılıktan Türk Milliyetçiliğine,” 230.

Figure 5.1 The frequency of types of spatiotemporal accommodation

The frequency of Types of Spatiotemporal Accommodation

Types of Spatiotemporal Accommodation	“Çocuk Dünyası” Year: 1914 Issues: 50-79	“Çocuk Dünyası” Year: 1926 Issues: 1-30
From right-to-left	66%	63%
From left-to-right	16%	36%
Others	18%	1%

English, and Russian literature in child journals.⁶

A detailed study of “Çocuk Dünyası” demonstrates this extensive use of translations from foreign texts.⁷ Therefore, it is expected that these translated works, including the adopted comic strips in “Çocuk Dünyası,” might exhibit a Westernized conceptualization of layouts, a rightward one. In the framework of time conceptualization, the political and cultural hypothesis may suggest that the frequency of rightward spatiotemporal accommodation [Latin-westernized one] in the sequence of narratives—comic strips—would be higher than leftward accommodation [Ottoman-nativist one]. This alternative explanation is because the political Westernized conception, moderated by adoption and translations from the Western intellectuals’ world, could change the frequency of spatiotemporal types. Nevertheless, the quantitative interpretive method part of this study does not support this hypothesis, which is influenced by political conjuncture. Instead, it supports the impact of the Ottoman alphabet on spatiotemporal conceptualization.

The data were derived from the frequency of types of spatiotemporal accommodation, which could be interpreted in two alternative ways. In the first alternative explanation, we could suggest that the politically westernized attempts, such as translations and adoption from Western journals, could lead to the frequency of types of spatiotemporal accommodations remaining the same. Another alterna-

6. Ibid.

7. Özdemir, “Çocuk Dünyası,” 23.

Figure 5.2 Representation of the causal mechanism

Alternative Explanations	Independent Variables	Moderators	Dependent Variable
1-Realized between 1914 and 1926	Political-Westernized Conception	Adoption and translations from the Western intellectual world.	The frequency of types of spatiotemporal accommodations remained the same.
2-Unrealized until the 1928 Alphabet Revolution	Cognitive-Writing Direction	Being exposed to different writing directions	The frequency of types of spatiotemporal accommodations remained the same

Note. Since the dependent variable did not change according to the data from Çocuk Dünyası, we could suggest that the second alternative explanation is much more likely to be corroborated.

tive explanation suggests that since the writing direction did not change, the lesser possibility of being exposed to the Latin alphabet, different writing directions, the frequency of types of spatiotemporal accommodations remained the same. Since the dependent variable did not change according to the data from Çocuk Dünyası, we could suggest that the second alternative explanation is much more likely to be corroborated.

The interpretive-quantitative part of this study suggests that the intellectuals involved with Çocuk Dünyası in both 1914 and 1926 tended to conceptualize time from right to left despite the Westernized dominance in adoption and translation. The frequency of leftward spatiotemporal accommodation is 66% for the 1914 Çocuk Dünyası and 63% for the 1926 Çocuk Dünyası. This indicates that the frequency remained unchanged despite the rightward westernized dominance of translations from 1914 to 1926. Thus, this data supports the notion that these individuals had a leftward mental timeline two years before the Alphabet Revolution of 1928. Conversely, it counters the hypothesis that Westernization in intellectual and media endeavors, such as adoption and translations, could lead to rightward spatiotemporal accommodation. Consequently, the interpretation could be that a spatiotemporal shift necessitates a script change—specifically, a change in writing direction—even in the context of reading stories without scripts.

5.2 Different Spatiotemporal Conceptualization Types in the Comic Strips of “Çocuk Dünyası”

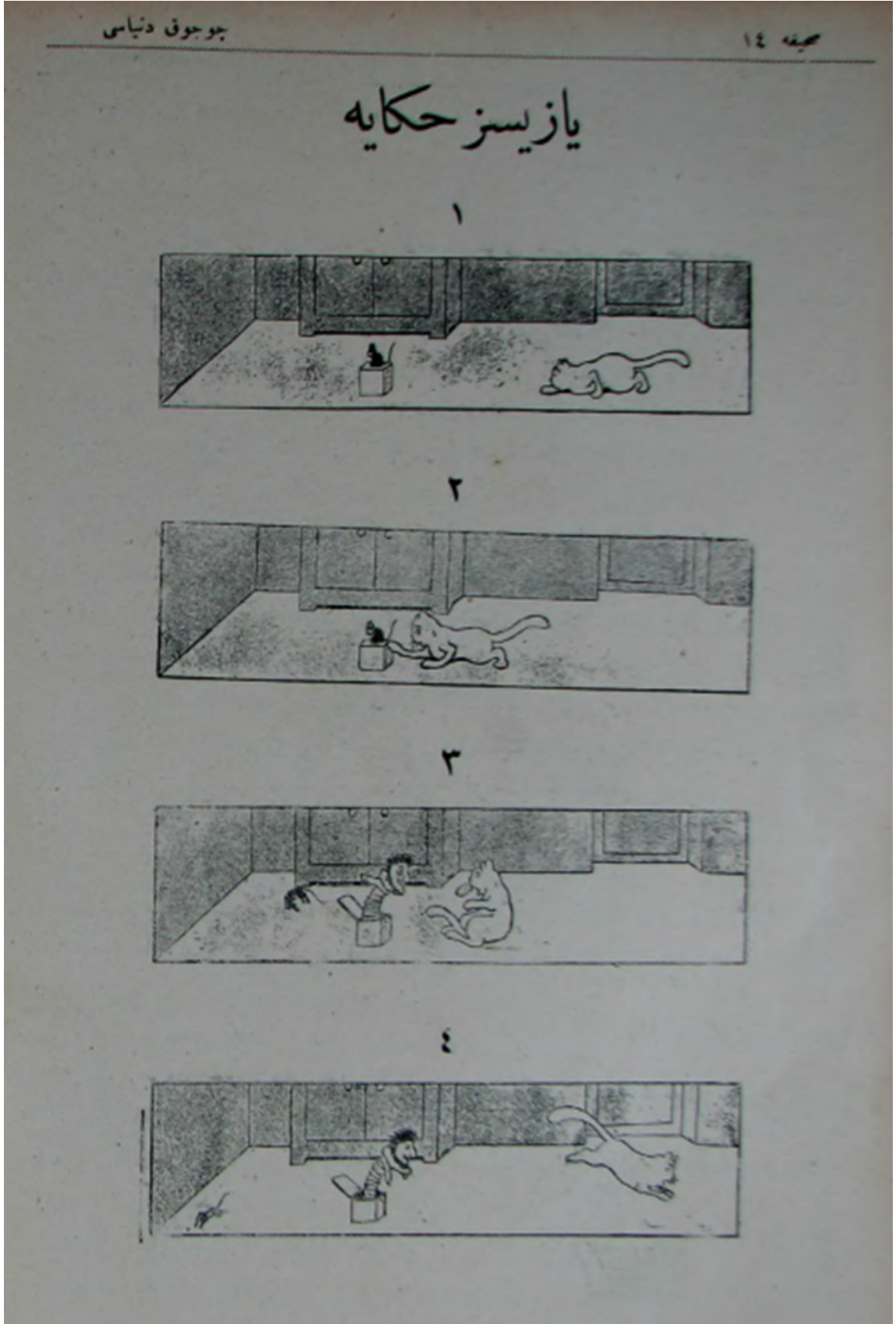
5.2.1 Top to Bottom Example

Çocuk Dünyası issued a pictorial narrative without writing in 1914, one of the “other” categories this article classified within the fifth issue (Figure 5.3). The reader can see the journal title Çocuk Dünyası in the top-left corner of this figure. The narrative’s title is “The Story without Writing.” This title refers to a series of stories depicted in each issue. In this issue, the editor felt the necessity to give numbers for each picture. The numbers are depicted vertically as “1,2,3,4” for each picture. A cat, trying to catch the mouse, was surprised when a movable toy led her to escape from the box. The sequence of the narrative was depicted as top to bottom. These top-to-bottom samples are rare when we consider the frequencies of other layouts. However, this example is important to express “the necessity to give numbers.” This necessity demonstrates the interaction between cognitive expectations and script-based spatiotemporal layouts. From the perspective of the Script Relativity Hypothesis proposed in this thesis, the prevalent presence of numbered sequencing reflects an anticipation of adversity regarding following a top-to-bottom flow, since this is an unexpected flow for Ottoman readers, having right-to-left spatiotemporal conceptualization. This explicit numbering suggests that the editor demands to reinforce narrative comprehension due to a mismatch between the layout (top-to-bottom) and the default mental timeline structured by the script’s writing direction.

In this light, this sample, along with other top-to-bottom examples, can be seen as cognitive friction, a deviation from the right-to-left or even left-to-right layouts. The numbering system is functional to compensate for the lack of automatic directionality. Therefore, this case of top-to-bottom layout consolidates one of the thesis’s core claims: writing direction not only influences but also constrains or facilitates readers’ spatial-temporal conceptualization. The numbering here depicts an archival trace of how layout, cognition, and script interact.

Conclusively, as we suggested, since the writing direction did not change, the lesser possibility of being exposed to the Latin alphabet, different writing directions, the frequency of types of spatiotemporal accommodations remained the same, even though the abundance of westernized translation and adaptations. We could see editors’ endeavor to nativize based on the cognitive expectations toward friction. This explicit numbering corroborates the second alternative explanation for the remain-

Figure 5.3 1914, Çocuk Dünyası, Issue:5



ing frequencies of right-to-left spatiotemporal layouts. Moreover, it consolidates the hypothesis that writing direction influences, constrains, or facilitates readers' spatial-temporal conceptualization.

5.2.2 From Left to Right Example

Çocuk Dünyası issued a pictorial narrative without writing in 1926, one of the “left-to-right” categories this article classified within the first issue (Figure 5.4). Again, the reader can see the journal title Çocuk Dünyası in the top-left corner of this figure, and the page number on the right. The narrative's title is “The Story without Writing (Yazısız Hikaye).” As we wrote, this title refers to a series of stories in each issue. Under the title, it is referring to “Read yourselves!” (Kendi kendinize okuyunuz). This direction tells us the individualism expected from the modern world that has been mentioned in Chapter 3. Moreover, it reveals the necessity of guidance with Ottoman script since this expression could be seen only if the document is a story without writing; otherwise, children were expected to have guidance while reading the Ottoman script.

- 1-A little girl is walking while trying to inflate a balloon.
- 2-The balloon starts to inflate slightly.
- 3-The girl stops and inflates it as much as she can while standing still.
- 4-She continues walking while inflating the balloon.
- 5-The balloon becomes overly inflated.
- 6-Suddenly, the balloon bursts, and the girl is left in shock. The explosion is illustrated with the word "PAT!" written in Ottoman Turkish letters.

At the bottom of the depiction, it tells the readers that “Write an 18-line story about this picture, then submit it to your teacher for correction. In this way, you will improve both your expression and your comprehension” (Bu resme .. 18 satırlık bir hikaye yazınız, sonra bunu hocanıza vererek tashih ettiriniz. Bu suretle hem anlatış, hem de istifade etmiş olursunuz).

Again, the editor needed to give numbers for each picture in this issue. The numbers are depicted horizontally (left-to-right) as “1,2,3,4,5,6” for each picture. This necessity demonstrates the interaction between cognitive expectations and script-based spatiotemporal layouts until it becomes a leftward narrative, as observed in the following sample. From the perspective of the Script Relativity Hypothesis proposed in this thesis, the prevalent presence of numbered sequencing reflects an anticipation of adversity regarding following a left-to-right flow, since this is also an unexpected flow for Ottoman readers, having right-to-left spatiotemporal conceptu-

Figure 5.4 1926, Çocuk Dünyası, Issue 01



alization. This explicit numbering suggests that the editor must reinforce narrative comprehension due to a mismatch between the layout (left-to-right) and the default mental timeline structured by the script's writing direction.

In this light, this rightward sample, along with other left-to-right examples, can be seen as cognitive friction, a deviation from the right-to-left. The numbering system is functional to compensate for the lack of expected spatiotemporal layouts. Therefore, this case of left-to-right layout consolidates one of the thesis's core claims: writing direction even constrains readers' spatial-temporal conceptualization. The numbering here depicts an archival trace of how spatiotemporal cognition and script interact.

5.2.3 From Right to Left Example

Çocuk Dünyası issued a pictorial narrative without writing in 1926, one of the “left-to-right” categories this article classified within the third issue (Figure 5.5). Again, the reader can see the journal title Çocuk Dünyası in the top-left corner of this figure, and the page number on the right. The narrative's title is “A Bath Taken with Eyes Closed (Gözü Kapalı Banyo).” You could glance at the transcription and translation of the story below.

- Would you jump into the circle from the chair with your eyes closed? Would you bet with me (Gözleriniz kapalı olarak iskemleden daireye atlar mısınız? Benimle bahse girer misiniz?)
- Alright then, get on the chair. Do not move for one minute. (***) haydi bakalım iskemleye binin, bir dakika kımıldamayınız.)
- Do not move at all... One, two, three—I'm going to shake it!(Asla kımıldatmayınız... Bir , iki üç sallayacağım?)
- Careful: Hand me the umbrella so it doesn't bother you. (Dikkat: Şemsiyeyi bana verin , sizi rahatsız etmesin?)
- Attention, get ready, one, two... (Dikkat, hazır ol, bir iki...)
- Three! (Üç)

In this case, the editor did not assume it was necessary to give numbers for each picture in this issue. The depictions were positioned as a right-to-left layout, and there is no indication of the sequence. Thus, we can suggest that readers were expected to understand the story's sequence easily. This expectation demonstrates that the readers' spatiotemporal conception is leftward, which resonates with the writing direction of the script, the Ottoman Turkish. Beforehand, we mentioned why this alignment between spatiotemporal layouts and script could not be about translations and adaptations, since there should have been less frequency of leftward

Figure 5.5 1926, Çocuk Dünyası, Issue: 03



layouts by the end of the 1920s. However, as we revealed, the frequency of right-to-left layouts did not change periodically, remaining at 60 percent in 1914 and 1926, compared to left-to-right top-to-bottom and other layouts.

5.2.4 Special Mixed Model

This special mixed model means that the narrative sequence starts with right-to-left until the end of the sixth picture, and the seventh depiction starts from the left side of the page. This special case is not exceptional for being the only sample in the whole list, combining leftward and rightward layouts. However, it is also special to analyze when we consider the editorial procedure. This story is probably a translation and adaptation from France since the name, or the signature, starts with Jean and continues with “d’Ansan,” or “d’Duncan”, or any French name, seen in the right bottom depiction. Therefore, this story was adopted from a Western journal in particular. In addition to these interpretations, the last three pictures could not be separated as a whole part of the bottom line since the drawings of each picture in the bottom line are interwoven or interconnected visually and physically. Most probably, the first six pictures were separated in the original children’s journal; thus, the editors of *Çocuk Dünyası* copied and pasted the ones separated according to the right-to-left layouts since they were separable and discrete compared to the inseparable ones at the bottom. We could understand that editors were relocating the ones that were discrete according to right-to-left layout, aligning with the Ottoman script, and the spatiotemporal conceptualization as suggested in this chapter as a hypothesis. On the other hand, they could not relocate the inseparable ones; therefore, they needed a numbering method. Again, the editor needed to give numbers for each picture in this issue. The numbers are depicted horizontally (right-to-left) as “1,2,3,4,5,6” for each picture and left-to-right as “7,8,9.” This necessity demonstrates the interaction between cognitive expectations and script-based spatiotemporal layouts until it becomes a sole leftward narrative, as observed in the previous sample. From the perspective of the Script Relativity Hypothesis proposed in this thesis, the prevalent presence of numbered sequencing reflects an anticipation of adversity regarding following a left-to-right flow, since this is also an unexpected flow for Ottoman readers, having right-to-left spatiotemporal conceptualization. This special case could enable this thesis to utilize the terminology of cognitive localization, which means the imported drawings and layouts were probably localized according to the cognitive expectations, particularly the spatiotemporal conceptualization of editors and readers, in a nondeliberate manner.

Figure 5.6 Çocuk Dünyası, 1926



- 1-Bobi was a very clever dog. He would always try to please his master by paying attention to everything he did. (Bobin çok zeki bir köpektir. Efendisinin her *** dikkat ederek onu *** çalışırdı)
- 2-One day, Bobi was terribly bored and kept yawning constantly. (Bir gün Bobin'in canı çok sıkılıyor, muttasıl esneyordu.)
- 3-Suddenly, he saw the pipe box. "Ah! That's the thing my master uses to drive away boredom!" he exclaimed. (Birden bire pipo kutusunu gördü. "İşte efendimin can sıkıntısını def etmek için kullandığı şey!" dedi.)
- 4-He immediately opened the box, but since he knew he was doing something wrong, he looked around nervously. (Derhal kutuyu açtı, fakat fena bir şey yaptığını bildiği için etrafına göz gezdirdi.)
- 5-After being sure that no one could see him, he examined the pipe carefully to figure out how to use it. (Kendisini görececek kimse bulunmadığına kani olduktan sonra pipoyu nasıl kullanacağını anlamak için dikkatle baktı.)
- 6-With the cleverness peculiar to all dogs, he managed to place it in his mouth. And then the most shocking thing happened: he even struck a match and lit the pipe. (Bütün köpeklere has bir zeka ile ağzına birleştirdi. Ve *** *** şey: bir de kibrit çıkıp pipoyu yaktı.)
- 7-Sitting upright on his hind legs in the living room, puffing clouds of smoke from the pipe had been quite amusing. But suddenly... (Salonda, arka ayakları üzerinde *** duran piposunun dumanlarını savurmak eğlenceli bir şeydi. Fakat birden bire...)
- 8-Everything was turned upside down. "Achoo!" he sneezed, the pipe fell to the ground and broke. (Maadası alt üst oldu. "[H]Apşu" pipo yere düştü, kırıldı.)
- 9-But the worst part—Bobi got a respectable kick from his master for this serious mischief! (Fakat en fenası Bobi efendisinden *** kabahat dolayısıyla, hatırı sayılır bir tekme yedi!)

In conclusion, this chapter corroborates that writing direction shapes spatiotemporal cognition without the impact of technical and political factors. Even though there was an increasing Westernization of the specific journal, *Çocuk Dünyası*, by the mid-1920s, the comic strips remained a consistent abundance of right-to-left layouts across two time periods, 66% in 1914 and 63% in 1926. This consistency showed that Ottoman script continued to shape the readers' mental timelines, even in the abundance of translated and adopted Western content, in which we could expect more frequency of left-to-right layouts. Furthermore, the necessity felt by editors to give numerical guidance, as a compensatory mechanism, in the non-nativist (except right-to-left) layouts demonstrates an awareness of cognitive friction. This friction means a discrepancy between layouts and expected spatiotemporal accommodation. In addition, the special case we discussed above shows the adaptation procedure; thus, we suggested the new term as cognitive localization. This term in this context refers to editors trying to localize as much of the original content as possible, according to the expected spatiotemporal conceptualization affected by the Ottoman script. These findings support the Script Relativity hypothesis and Mental Hierarchy Theory over alternative political and cultural explanations.

6. CONCLUSION AND DISCUSSION

This thesis aimed to explore the cognitive impacts of the 1928 Alphabet Reform with an innovative, interdisciplinary approach. It conjugates experimental psychology, cognitive psychology, historiography, and digital humanities, which are contributing to the emerging field of cognitive history. This study views the Alphabet Reform as a cognitive revolution rather than a political change, even though it seeks political reasons for alternative explanations.

The findings from the experimental part of this study are significant. They suggest that biscriptuals exhibit less challenge in tasks involving spatiotemporal incongruence, a finding supported by their lower reaction times for incongruent tasks than monoscriptuals. This provides evidence for the script relativity hypothesis. These experimental findings align with quantitative-interpretive data from the “Çocuk Dünyası” comic strips, which show a consistent leftward spatiotemporal conceptualization among frequencies in 1914 and 1926, even in the intense adoption and translations from Western child journals. This consistency suggests that spatiotemporal conceptualization necessitates a script change, contributing to the emerging field of cognitive history by presenting empirical evidence that the writing direction of scripts can affect cognitive processes.

This cognitive history study has significant implications for contemporary issues like migration studies. For instance, child Syrian refugees might face challenges in their educational procedures due to language and script shifts in the curriculum. Existing studies focus on their language shift and its impact on cognitive and linguistic development.¹ However, the changes in the alphabet they experience should also be considered. Therefore, understanding the impact of scripts on cognitive development is crucial to observing how alphabet changes affect their cognitive skills in their educational systems. Given the current study’s limitations, future research should include brief exposure experiments, as mentioned above. Exploring other dependent

1. Yeter et al., “Understanding cognitive and language development in refugees: Evidence from displaced Syrian children in Turkey,” *Cognitive Development*, (2024): 69.

variables impacted by biscriptuality could reveal a new dimension in psycholinguistic research. The following research will investigate the last periodicals of “Çocuk Dünyası” published in 1940 and 1943 to determine whether the alphabet revolution impacted the frequency of spatiotemporal conceptualization types.² This study predicts that the frequency of rightward spatiotemporal accommodation would significantly increase compared to 1914 and 1926 periodicals, offering new insights into the cognitive effects of script changes.

Ultimately, this study is a reconfiguration for both historiography and cognitive science, suggesting that scripts are not merely a historical artifact or a tool under the language title but a schema for thought. Thus, the Alphabet (Cognitive) Revolution should not be examined only in terms of national identity. This endeavor could provide a feasibility study to conjugate the humanities and cognitive sciences. More importantly, it could establish groundwork for prospective studies in cognitive history, biscriptualism as a newly created term, and script relativity. Conclusively, it could rewrite time by showing how the direction of a pen can redirect the direction of thought.

2. Since the digital archival did not include these periodicals, the 1940-1943 Çocuk Dünyası journals could not be examined. A search for handwritten archives should be conducted..

BIBLIOGRAPHY

Primary Sources

Archival Documents

Library and Documentation Collections of Turkey. A joint project of TUFSS and Beyazıt State

I:1–25, 30 (2 Kanunuevvel 1926 – 22 Haziran 1927).

II:1–50 (14 Mart 1329 – 1329); II:51–75 (1329–1330); 5/84 (6 Temmuz 1334 / 1918); 95–96 (25 Mayıs – 5 Haziran 1335).

Volume I, Issues 1–25, 30 (2 December 1926 – 22 June 1927)

Volume II, Issues 1–50 (14 March 1913 – late 1913)

Volume II, Issues 51–75 (1913–1914)

Issue 5/84 (6 July 1918)

Issues 95–96 (25 May – 5 June 1919)

Figure 5.3

Illustrated story without text. Issue no. 5, Çocuk Dünyası. İstanbul, 1914. From “Library and Documentation Collections of Turkey,” TUFSS & Beyazıt State Library. Accessed May 31, 2024. <http://www.tufs.ac.jp/common/fs/asw/tur/htu/list1.html>

Figure 5.4

Illustration accompanying a children’s story. Issue no. 1, Çocuk Dünyası. İstanbul, 1926. From “Library and Documentation Collections of Turkey,” TUFSS & Beyazıt State Library. Accessed May 31, 2024. <http://www.tufs.ac.jp/common/fs/asw/tur/htu/list1.html>

Figure 5.5

Comic strip with text in Latin script. Issue no. 3, Çocuk Dünyası. İstanbul, 1926. From “Library and Documentation Collections of Turkey,” TUFSS & Beyazıt State Library. Accessed May 31, 2024. <http://www.tufs.ac.jp/common/fs/asw/tur/htu/list1.html>

Figure 5.6

Visual narrative panel. Issue unknown (likely vol. I, 1926), Çocuk Dünyası. Istanbul, 1926. From “Library and Documentation Collections of Turkey,” TUFs & Beyazıt State Library. Accessed May 31, 2024. <http://www.tufs.ac.jp/common/fs/asw/tur/htu/list1.html>

Secondary Sources

- Aytürk, İlker. "Script Charisma in Hebrew and Turkish: A Comparative Framework for Explaining Success and Failure of Romanization." *Journal of World History* 21, no. 1 (2010): 97–130.
- Bahodirovna, A. M., Zubayda T., Parvina S., and Sabina J. “Charting the Path: Assessing Uzbek Language Alphabet Reforms and Their Sociolinguistic Impact.” *Comparative Linguistics, Translation, and Literary Studies* 1, no. 2 (2024): 87–94.
- Bekzhanova, Z., and T. M. Makoelle. “Latinization of the Kazakh Alphabet: Implications for Education, Inclusion, and Social Cohesion in Kazakhstan.” *Sage Open* 12, no. 4 (2022).
- Blasi, D. E., J. Henrich, E. Adamou, D. Kemmerer, and A. Majid. "Over-Reliance on English Hinders Cognitive Science." *Trends in Cognitive Sciences* 26, no. 12 (2022): 1153–1170.
- Boroditsky, L. "How Languages Construct Time." In *Space, Time, and Number in the Brain: Searching for the Foundations of Mathematical Thought*, edited by S. Dehaene and E. Brannon, 333–341. Elsevier Academic Press, 2011.
- Boroditsky, L. "Metaphoric Structuring: Understanding Time through Spatial Metaphors." *Cognition* 75, no. 1 (2000): 1–28.
- Casasanto, Daniel, and Roberto Bottini. "Can Mirror Reading Reverse the Flow of Time? Insights into the Cognitive Mechanisms Underlying the Mental Timeline." *Journal of Experimental Psychology: General* 143, no. 2 (2014): 473–483.
- Casasanto, D., and L. Boroditsky. "Time in the Mind: Using Space to Think about Time." *Cognition* 106, no.2 (2008): 579–593.
- Casasanto, Daniel. “The Hierarchical Structure of Mental Metaphors.” In *Metaphor: Embodied Cognition and Discourse*, edited by Beate Hampe, 46–61. Cambridge: Cambridge University Press, 2017.
- Cohn, Neil. “The Architecture of Visual Narrative Comprehension: The Interaction of Narrative Structure and Page Layout in Understanding Comics.” *Frontiers in Psychology* 5 (2014): Article 680.
- Diamond, Jared. *Guns, Germs, and Steel: The Fates of Human Societies*. New York: W.W. Norton & Company, 1999.
- du Boulay, Sofya, and Huw du Boulay. “New Alphabets, Old Rules: Latinization, Legacy, and Liberation in Central Asia.” *Problems of Post-Communism* 68, no. 2 (2020): 135–40. <https://doi.org/10.1080/10758216.2020.1785315>.

- Dunér, David, and Christina Ahlberger. "Preface: What is Cognitive History?" In *Cognitive History: Mind, Space, and Time*, edited by David Dunér and Christina Ahlberger, vii–viii. De Gruyter, 2019.
- Emre, Ahmet Cevat. *Atatürk'ün İnkılap Hedefi ve Tarih Tezi*. İstanbul: Telemak Dijital, 2023.
- Fischer, Steven Roger. *Yazının Tarihi*. Çev. Handan Konar. İstanbul: Türkiye İş Bankası Kültür Yayınları, 2022.
- Fortna, Benjamin C. *Learning to Read in the Late Ottoman Empire and the Early Turkish Republic*. New York: Palgrave Macmillan, 2011.
- Kuzuoglu, Ulug. "Telegraphy, Typography, and the Alphabet: The Origins of Alphabet Revolutions in the Russo-Ottoman Space." *International Journal of Middle East Studies* 52, no. 3 (2020): 413–31.
- Lachmair, M., P. Gerjets, M. Fischer, and O. Bock. "How Body Orientation Affects Concepts of Space, Time and Valence: Functional Relevance of Integrating Sensorimotor Experiences during Word Processing." *PLoS One* 11, no. 11 (2016): e0165795.
- Levisen, C. "Biases We Live By: Anglocentrism in Linguistics and Cognitive Sciences." *Language Sciences* 76 2019: Article 101173.
- Lewis, Geoffrey. *The Turkish Language Reform: A Catastrophic Success*. Oxford: Oxford University Press, 1999.
- "Library and Documentation Collections of Turkey." A Joint Project of TUFs and Beyazit State Library, Istanbul. Accessed May 31, 2024. <http://www.tufs.ac.jp/common/fs/asw/tur/htu/list1.html#%C3%87>.
- Lummus, Wesley. *One Nation, Two Languages: Latinization and Language Reform in Turkey and Azerbaijan, 1905–1938*. Master's thesis, University of Minnesota, 2021. Retrieved from the University Digital Conservancy.
- Malarney, Shaun Kingsley. "Literacy for the Masses: The Conduct and Consequences of the Literacy Campaign in Revolutionary Vietnam." *Literacy for Dialogue in Multilingual Societies* 83 2012.
- Özdemir, Başak. "Çocuk Dünyası Dergisinde Yer Alan Çeviri Metinlerin İndeksi ve Değerlendirilmesi." PhD diss., Sakarya Üniversitesi, 2008.
- Pae, H. K. *Script Effects as the Hidden Drive of the Human Mind, Cognition, and Culture*. Cham: Springer, 2020.
- Trix, Frances. "The Stamboul Alphabet of Shemseddin Sami Bey: Precursor to Turkish Script Reform." *International Journal of Middle East Studies* 31, no. 2 (1999): 255–72.
- Tversky, B., S. Kugelmass, and A. Winter. "Cross-Cultural and Developmental Trends in Graphic Productions." *Cognitive Psychology* 23, no. 4 (1991): 515–557.
- Weger, U. W., and J. Pratt. "Time Flies Like an Arrow: Space–Time Compatibility Effects Suggest the Use of a Mental Timeline." *Psychonomic Bulletin & Review* 15, no. 2 (2008): 426–430.

- Whorf, Benjamin Lee. "Science and Linguistics." *Technology Review* 42, no. 6 (April 1940): 207–219.
- Wolff, Phillip, and Kevin J. Holmes. "Linguistic Relativity." *Wiley Interdisciplinary Reviews: Cognitive Science* 2, no. 3 (2011): 253–265.
- Yeter, Özlem, Evcen, Ebru, Rabagliati, Hugh, and Özge, Duygu, "Understanding Cognitive and Language Development in Refugees: Evidence from Displaced Syrian Children in Turkey." *Cognitive Development* 69 (2024): Article 101412.
- Yılmaz, Eray. "Osmanlıcılıktan Türk Milliyetçiliğine Bir Çocuk Dergisi: Çocuk Dünyası (1913-1914)." *Tarih İncelemeleri Dergisi* 32, no. 1 (2017).

APPENDIX A

Temporal Expressions

Latin Alphabet	Ottoman Turkish Alphabet	English versions
bir saniye önce	بر ثانیہ اوکجه	A second ago
bir an önce	بر آن اوکجه	A moment ago
bir dakika önce	بر دقیقه اوکجه	A minute ago
bir saat önce	بر ساعت اوکجه	An hour ago
bir gün önce	بر کون اوکجه	A day ago
bir hafta önce	بر هفته اوکجه	A week ago
bir ay önce	بر آی اوکجه	A month ago
bir mevsim önce	بر موسم اوکجه	A season ago
bir yıl önce	بر یل اوکجه	A year ago
on yıl önce	اون یل اوکجه	Ten years ago
bir asır önce	بر عصر اوکجه	A century ago
bin yıl önce	بیگ یل اوکجه	A millennium ago
bir saniye sonra	بر ثانیہ سوگره	A second later
bir an sonra	بر آن سوگره	A moment later
bir dakika sonra	بر دقیقه سوگره	A minute later
bir saat sonra	بر ساعت سوگره	An hour later
bir gün sonra	بر کون سوگره	A day later
bir hafta sonra	بر هفته سوگره	A week later
bir ay sonra	بر آی سوگره	A month later
bir mevsim sonra	بر موسم سوگره	A season later
bir yıl sonra	بر یل سوگره	A year later
on yıl sonra	اون یل سوگره	Ten years later
bir asır sonra	بر عصر سوگره	A century later
bin yıl sonra	بیگ یل سوگره	A millennium later

APPENDIX B

Raw Data of Spatiotemporal Layouts from Çocuk Dünyası

	Journal	Number	Conceptual Direction	Title	Description
5	Çocuk Dünyası		54 Top-Bottom-Left		Kediler Satranç Oynuyorlar
6	Çocuk Dünyası		55 Top-Bottom-Left		Pabuç atmak
7	Çocuk Dünyası		56 Right-Left	Yazsız Hikaye	Kedi-Köpek oynuyor.
8	Çocuk Dünyası		57 Top-Bottom-Left		Tilki Kardeş Avrupa'da
9	Çocuk Dünyası		58 Right-Left	Yazsız Hikaye	Tavuk-Yumurta-Cıvcıv
13	Çocuk Dünyası		62 Top-Bottom-Left		Bal Kaçmak Köpek
15	Çocuk Dünyası		64 Left-Right		İzcilik
18	Çocuk Dünyası		67 Top-Bottom-Left		Hasan Ağanın Hikayeleri
26	Çocuk Dünyası		96 Right-Left		Tilki ve Çocuk
44	Çocuk Dünyası Cumhuriyet		1 Left-Right		Balon şiş patla
45	Çocuk Dünyası Cumhuriyet		2 Left-Right		Çocuk Balık Yılan
46	Çocuk Dünyası Cumhuriyet		3 Right-Left		Palyaço Şaka Kova
47	Çocuk Dünyası Cumhuriyet		4 Left-Right		Resim Tanım
48	Çocuk Dünyası Cumhuriyet		4 Top-Bottom-Left		Zengin Kız Fakir Oğlan Tarafından
49	Çocuk Dünyası Cumhuriyet		44 sağdan sola		
50	Çocuk Dünyası Cumhuriyet		52 special mixed model		
51	Çocuk Dünyası Cumhuriyet		58 soldan sağa		
52	Çocuk Dünyası Cumhuriyet		62 Top-Bottom-Left		
53	Çocuk Dünyası Cumhuriyet		66 soldan sağa		
54	Çocuk Dünyası Cumhuriyet		70 soldan sağa		
55	Çocuk Dünyası Cumhuriyet		127 Top-Bottom-Left		
56	Çocuk Dünyası Cumhuriyet		172 sağdan sola		
57	Çocuk Dünyası Cumhuriyet		176 sağdan sola		
58	Çocuk Dünyası Cumhuriyet		195 sağdan sola		
59	Çocuk Dünyası Cumhuriyet		200 sağdan sola		
60	Çocuk Dünyası Cumhuriyet		206 sağdan sola		
61	Çocuk Dünyası Cumhuriyet		209 sağdan sola		
62	Çocuk Dünyası Cumhuriyet		sağdan sola		
63	Çocuk Dünyası Cumhuriyet		210 sağdan sola		
64	Çocuk Dünyası Cumhuriyet		217 sağdan sola		

APPENDIX C

Data of Reaction Times and Demographic Descriptives

Participant ID	Accuracy Rate	Participant Groups	Condition	Reaction Time Average	Exposure Type	Number of Dwellings	Age	Sex	Language Acquisition	Proficiency	Education	Frequency	Initial
2 P003		100 Latin	Congruent	0.780970833	Modern	0	23	Female	Turkish, English	NA	17	NA	X
3 P003		95.714 Latin	Incongruent	0.743384378	Modern	0	23	Female	Turkish, English	NA	17	NA	
4 P005		100 Ottoman-Latin	Congruent	1.714117996	Ottoman	3	24	Female	Turkish, English, Persian, Arabic, R	5	18	5 X	
5 P005		100 Ottoman-Latin	Incongruent	1.300117081	Ottoman	3	24	Female	Turkish, English, Persian, Arabic, R	5	18	5	
6 P005		98.571 Ottoman-Latin	Congruent	0.676480357	Modern	0	24	Female	Turkish, English, Persian, Arabic, R	5	18	5 X	
7 P005		100 Ottoman-Latin	Incongruent	0.705247039	Modern	0	24	Female	Turkish, English, Persian, Arabic, R	5	18	5	
8 P006		95.588 Ottoman-Latin	Congruent	2.195148106	Ottoman	8	26	Female	Turkish, English, German	2	20	3 X	
9 P006		95.588 Ottoman-Latin	Incongruent	1.901360493	Ottoman	4	26	Female	Turkish, English, German	2	20	3	
10 P006		100 Ottoman-Latin	Congruent	0.792092229	Modern	3	26	Female	Turkish, English, German	2	20	3 X	
11 P006		90 Ottoman-Latin	Incongruent	0.682976494	Modern	2	26	Female	Turkish, English, German	2	20	3	
12 P007		100 Ottoman-Latin	Incongruent	1.759115802	Ottoman	8	32	Male	Turkish, English, Spanish, Persian	3	16	4 X	
13 P007		92.753 Ottoman-Latin	Congruent	1.150050058	Ottoman	3	32	Male	Turkish, English, Spanish, Persian	3	16	4	
14 P007		92.647 Ottoman-Latin	Incongruent	0.893209291	Modern	4	32	Male	Turkish, English, Spanish, Persian	3	16	4 X	
15 P007		97.222 Ottoman-Latin	Congruent	0.539826431	Modern	2	32	Male	Turkish, English, Spanish, Persian	3	16	4	
16 P008		98.550 Latin	Incongruent	0.773472699	Modern	3	32	Male	Turkish, English	NA	17	NA	X
17 P008		97.014 Latin	Congruent	0.809916816	Modern	0	32	Male	Turkish, English	NA	17	NA	
18 P009		98.591 Ottoman-Latin	Congruent	0.769417923	Ottoman	1	31	Male	Turkish, English, Arabic	3	35	1 X	
19 P009		98.611 Ottoman-Latin	Incongruent	0.505083496	Ottoman	1	31	Male	Turkish, English, Arabic	3	35	1	
20 P009		97.183 Ottoman-Latin	Congruent	0.52282011	Modern	1	31	Male	Turkish, English, Arabic	3	35	1 X	
21 P009		98.591 Ottoman-Latin	Incongruent	0.457584597	Modern	1	31	Male	Turkish, English, Arabic	3	35	1	
22 P010		94.366 Latin	Congruent	0.502938823	Modern	1	30	Female	Turkish, English	NA	14	NA	X
23 P010		95.833 Latin	Incongruent	0.392114869	Modern	0	30	Female	Turkish, English	NA	14	NA	
24 P011		100 Latin	Incongruent	6.606761267	Modern	1	31	Male	Turkish, English, Dutch	NA	15	NA	X
25 P011		98.591 Latin	Congruent	0.515013324	Modern	1	31	Male	Turkish, English, Dutch	NA	15	NA	
26 P012		97.142 Latin	Congruent	0.82258419	Modern	2	35	Male	Turkish, English	NA	23	NA	X
27 P012		100 Latin	Incongruent	0.714705077	Modern	2	35	Male	Turkish, English	NA	23	NA	
28 P012		97.142 Ottoman-Latin	Congruent	1.651763375	Ottoman	2	31	Female	Turkish, English, German, Arabic	3	35	2 X	
29 P012		98.591 Ottoman-Latin	Incongruent	0.430383385	Ottoman	3	31	Female	Turkish, English, German, Arabic	3	35	2	
30 P012		97.183 Ottoman-Latin	Incongruent	0.436368872	Modern	1	31	Female	Turkish, English, German, Arabic	3	35	2 X	
31 P013		98.611 Ottoman-Latin	Congruent	0.531280388	Modern	1	31	Female	Turkish, English, German, Arabic	3	35	2	
32 P013		98.774 Latin	Congruent	0.536596266	Modern	1	32	Female	Turkish, English	NA	16	NA	X
33 P013		97.183 Latin	Incongruent	0.454027882	Modern	1	32	Female	Turkish, English	NA	16	NA	
34 P016		98.571 Latin	Incongruent	6.876296054	Modern	2	39	Male	Turkish, English, Kurdish	NA	13	NA	X
35 P016		95.714 Latin	Congruent	0.408403536	Modern	1	39	Male	Turkish, English, Kurdish	NA	13	NA	
36 P017		97.183 Latin	Congruent	0.538309642	Modern	1	39	Male	Turkish, English	NA	15	NA	X
37 P017		97.183 Latin	Incongruent	0.352363192	Modern	1	39	Male	Turkish, English	NA	15	NA	
38 P018		98.571 Latin	Congruent	0.809900504	Modern	2	39	Male	Turkish, English	NA	13	NA	X
39 P018		100 Latin	Incongruent	0.648848096	Modern	1	39	Male	Turkish, English	NA	13	NA	

Participant ID	Accuracy Rate	Participant Groups	Condition	Reaction Time Average	Exposure Type
2 P003		100 Latin	Congruent	0.780970833	Modern
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9 P006		95.588 Ottoman-Latin	Incongruent	1.901360493	Ottoman
10 P006		100 Ottoman-Latin	Congruent	0.792092229	Modern
11 P006		90 Ottoman-Latin	Incongruent	0.682976494	Modern
12 P007		100 Ottoman-Latin	Incongruent	1.759115802	Ottoman
13 P007		92.753 Ottoman-Latin	Congruent	1.150050058	Ottoman
14 P007		92.647 Ottoman-Latin	Incongruent	0.893209291	Modern
15 P007		97.222 Ottoman-Latin	Congruent	0.539826431	Modern
16 P008		98.550 Latin	Incongruent	0.773472699	Modern
17 P008		97.014 Latin	Congruent	0.809916816	Modern
18 P009		98.591 Ottoman-Latin	Congruent	0.769417923	Ottoman
19 P009		98.611 Ottoman-Latin	Incongruent	0.505083496	Ottoman
20 P009		97.183 Ottoman-Latin	Congruent	0.52282011	Modern
21 P009		98.591 Ottoman-Latin	Incongruent	0.457584597	Modern
22 P010		94.366 Latin	Congruent	0.502938823	Modern

APPENDIX D

Informed Consent Form for Participation in an Experimental Study

Proje Yürütücüsü: Onur Can Öz
Projenin İsmi: Osmanlı Türkçesi ve Modern Türkçe Özelinde Yazı Sistemlerinin ve Alfabelerin Zaman Kavrayışına Etkisi
EK 1

BİLGİLENDİRİLMİŞ GÖNÜLLÜ OLUR FORMU

Koç Üniversitesi Psikoloji Bölümü Öğretim Üyesi Doç. Dr. Tilbe Göksun, Koç Üniversitesi Tarih ve Psikoloji bölümü lisans öğrencisi Onur Can Öz ve Koç Üniversitesi doktora öğrencisi Yiğitcan Emir Akbuğa tarafından yürütülen, Koç Üniversitesi Etik Kurulları'nın 2023.091.İRB3.035 sayılı onayı ile izin verilen, "Osmanlı Türkçesi ve Modern Türkçe Özelinde Yazı Sistemlerinin ve Alfabelerin Zaman Kavrayışına Etkisi" başlıklı araştırmaya katılımınız rica olunmaktadır.

Bu araştırmaya tamamen kendi iradenizle, herhangi bir zorlama veya mecburiyet olmadan gönüllü olarak katılımınız esastır. Lütfen aşağıdaki bilgileri okuyunuz ve katılmaya karar vermeden önce anlamadığınız herhangi bir husus varsa çekinmeden sorunuz.

ÇALIŞMANIN AMACI (Neden böyle bir araştırma yapmaya gerek duyuldu?)

Bu araştırmanın amacı aynı dilde (Türkçe) kullanılan farklı alfabelerin (Osmanlı Türkçesi ve Latin Alfabesi) zamansal kavrayış noktasındaki etkisini anlamaktır.

PROSEDÜRLER

Bu çalışmaya gönüllü katılmak istemeniz halinde yürütülecek çalışmalar şöyledir:

Sizden yazılı onamınız alındıktan sonra deneyi yürüten görevli size zaman kavramları bildiren çeşitli sözcükleri Osmanlı Alfabesi ve Latin Alfabesi ile gösterecektir. Sizden ise bu kelimeleri anladıktan sonra geçmiş veya gelecek butonları ile bildirmenizi isteyecektir.

Çalışmamızın toplam 20 dakika kadar sürmesi beklenmektedir.

OLASI RİSKLER VE RAHATSIZLIKLAR

Çalışmanın herhangi bir riski yoktur.

TOPLUMA VE/VEYA GÖNÜLLÜLERE OLASI FAYDALARI

Bu çalışma anadili Türkçe olan katılımcıların farklı alfabelerdeki zamansal kavrayışlarını ve bu farklılığın etkisini incelemeyi amaçlamaktadır.

GİZLİLİK

Bu çalışmayla bağlantılı olarak elde edilen ve sizinle özdeşleşmiş her bilgi gizli kalacak, hiçbir bilgi 3. kişilerle paylaşılmayacak ve yalnızca sizin izniniz ile ifşa edilecektir. Gizlilik, tanımlanmış bir kodlama yöntemiyle sağlanacak ve kod çözümüne erişim yalnızca çalışmanın sorumlusu araştırmacıyla sınırlı kalacaktır. Kamera ile kayıt altına alınan görüntüler dahil olmak üzere tüm veriler sınırlı erişime sahip güvenli ve şifreli bir veri tabanında tutulacaktır.

KATILIM VE AYRILMA

Bu çalışmanın içinde olmak isteyip istemediğinize tamamen kendi iradenizle ve etki altında kalmadan karar vermeniz önemlidir.

APPENDIX E

Demographic Information Form

8/1/23, 2:19 PM Ek - 3 Demografik Bilgi Formu (2).docx - Google Docs

Demografik Bilgi Formu

Yaşınız:

Cinsiyetiniz: Kadın () Erkek () Belirtmek İstemiyorum ()

Herhangi bir görme probleminiz var mı?

Var ise şu an düzeltilmiş durumda mı (Gözlük, lens vb.?)

Daha önce nörolojik bir tanı aldınız mı?

Evet ise tanı:

Hangi elinizi baskın kullanıyorsunuz?

Hangi dilleri biliyorsunuz?

Eğer okuyabiliyorsanız hangi zorlukta Osmanlı Türkçesi metinleri okuyabiliyorsunuz?

Kolay 1 2 3 4 5 Zor

Bugüne kadar toplam kaç yıl eğitim aldınız?

Eğer Osmanlı Türkçesi okumayı biliyorsanız, hangi sıklıkla Osmanlı Türkçesi metin okuyorsunuz?

Hiçbir zaman 1 2 3 4 5 Her zaman

APPENDIX F

Interview with an Expert Historian in the Field of Ottoman and Republican History

1) As soon as I started to speak, I changed my question with a warning from you: You suggested the phrase “Alphabet reform” instead of “Alphabet Revolution”. Could you tell me why?

The Alphabet revolution is part of a discourse invented to avoid explaining the revolution properly. There was no such thing as the alphabet revolution during Atatürk’s reign; it came afterward. Therefore, the Alphabet revolution is something that “sounds” funny in all the foreign languages you know.

2) A moment ago, when I said Alphabet revolution, you said it was not an alphabet revolution? Could you clarify this?

In my opinion, Turkey, and here I use Turkey as Westerners use it, I call the Ottoman Empire Turkey. I believe Turkey went through a radical revolutionary process, starting in 1908 and lasting till the second half of the 49s. This is something that we have not seen in many other revolutions. However, it is very close to the revolution we saw in France, where the French not only changed a form of state, a form of government like we did, but, for example, they took the metric system, could you imagine? For centuries, the thumb, the foot, the inch, the foot... These are universal. Do you consider that only Anglo-Saxons have them? The name of the inch in French means thumb. And so on. He abolished all that and switched to the metric system. I mean, the French Revolution did not last, but they transformed the names of the months, abolished the week, and made it a ten-day week. Do you know the “word” week? “Heft” means “7”. They made it ten days. They changed the names of the months, all of them. Because all the days all refer to Christianity, although in German and English it is a bit more secular, like the day of the sun, but in French and Italian it is the day of God, “dimanche”. Therefore, we are going to change these too. They are already changing the year. So, there is a very... There is a revolution. This revolution is not only a process of political change as understood by political scientists. In Turkey, from the dress code to the alphabet, which is your subject, isn’t it the language? How are foreign words being eliminated? As in every revolution, some things have already started before. For example, when I

told you about the hat, the alphabet, and the language, I did not mention women because women were already going to schools and universities and even working in the ministry in the second constitutional monarchy. Also, almost every issue of newspapers and magazines published in Istanbul during the second constitutional monarchy had articles about the Latin alphabet. I am trying to explain, Hüseyin Cahit Yalçın was crazy about it, and then there is something wonderful, there is a magazine called “Hürriyet-i Fikriye. In every matter, there are articles about the Latin alphabet and the Latin alphabet. As you know, there is a significant intellectual of the revolutionary team, Celal Nuri İleri, who also published this newspaper “İleri”. For example, almost every issue has an article about the Latin alphabet.

3) And where do they place their causality?

It is unreadable. Remember, let us make a general history with you. Our works written in the 12th to 13th centuries are obviously Turkish. It does not necessarily have to be poetry. There are some prose works. However, Turks had only recently converted to İslam. Not only were they new Muslims as Turks, but also the natives of Anatolia were converting to İslam as Turks. Therefore, Islam is very powerless, superficial. Of course, there are also pleasant sides to this. As they gradually get lost in Islamic culture, they make a considerable effort to make a profound contribution to Arabic and Persian and the literature they produce. In the meantime, they translated some of the concepts into Turkish very well. However, Turkish gradually became filled with Persian and Arabic vocabulary since they could not do it all. This makes the work easier. Why? Because you know Arabic like the back of your hand. That is already our problem. If we made Arabic words our own and wrote them following the sound harmony of our language, maybe there would be no problem. However, we leave the words just as they are out of respect for Arabic and Persian. For example, you say bachelor, for unmarried people, you write “bekar.” It means unemployed, “bekar” in Persian. That is why they do not give girls; they do not have any. You write “hidemat” for service. How will you teach this to children? You begin teaching Turkish in schools. The Ottoman writers do not write a verb conjugation like “I could not go”. He writes, “I could not find the opportunity to go”. “İmkan” is Arabic; it is a short word. You do not know where to put the vowels. Moreover, at the end of the 1840s, after the opening of the Ministry of Education, the ministry constantly wrote letters to governors and district governors. Find Turkish words used in our religion that we may use in the textbooks we will prepare and send them to us. This existed even during the period of Abdülhamid II. This is already the background of a scanning dictionary. Please, do not forget. The pre-modern state had no problem with public education in our country or Europe. The state does not deal with such things. Does the state provide education? Yes,

it does. To whom? It gives it to the civil servants. What are you going to tell such a small child? That is when letters are sent left and right. Find Turkish words, and we will teach them in school books. You should go, you should listen to the village, and you will find them. There are problems with the sounds of “u”, “ü”, “o”, and “ö”. In the 1860s, some said we should adopt the Latin alphabet. Moreover, there is a semicolon; let us say it was adopted, then there is no capital letter. Do you know what the Albanian alphabet is called? The Istanbul alphabet. Şemseddin Sami made it. Moreover, Romans is switching to the Latin alphabet. These days in Croatia, they are taking out Serbian words and putting in local words, right in front of your eyes, in your old lands, there is a transition to the Latin alphabet.

4) When did you begin learning the Ottoman alphabet or Ottoman Turkish, and how did that happen?

It is very funny. I never took any lessons. However, I did one thing. I went and bought an old alphabet from a bookstore. I learnt by looking at the alphabet myself. Moreover, I bought Halide Edib Adivar’s book. I was 22 at the time. I was studying history at that time. I bought “elifba” and read it with the novel.

5) What motivated you to do this?

I did it after I decided to be a historian, which was a professional obligation.

6) I did not know where to draw the line when asking people how much they know about Ottoman Turkish. When does knowing Ottoman Turkish start? Could we divide it into levels just like languages? Could we talk about C1 Ottoman Turkish?

A1 and B1 will never work on Ottoman Turkish. Why? Because let us say you have learned the alphabet very well, you have practiced some reading exercises, and now you read very well. You pick up the newspaper, and you read it fluently. You also know the Arabic and Persian words in that newspaper. However, if you put a poem in that newspaper, or a poem in Tevfik Fikret’s rubab-i şikeste, or a new item in his newspaper, or a text in the alphabet used in Ottoman official correspondence, you cannot read anything, because the style of writing is different. The fonts used are different. That is why A1-B3 stuff is nothing important. You know Ottoman very well, in terms of vocabulary, you read a newspaper, they give you a letter from the prime ministry to the governor, you are amazed. There is a famous publisher and printer, Abu Ziya Tevfik Bey, who also wrote the history of the new Ottomans. He printed excellent books and so on, but he used a new stylized “Kufic” script, which he wrote in angular script. Even for someone who knows Ottoman well both in terms of reading and vocabulary, some fonts, for example Farsi, these fonts, the inscriptions of mosques, etc., are made in Farsi. It is called farik-I talik. There are

also systems written so that no one can read them. This is why these levels are not fitted into the Ottoman language.

7) I know that you are multilingual in different languages. What do you think are the differences between learning French and learning Ottoman Turkish? Could you share your own experiences or what you observe from the outside?

I learned French at the age of 11, whereas I learned Ottoman Turkish when I WAS A UNIVERSITY student. I do not know how to compare and contrast. There is no such language as Ottoman Turkish. It is Turkish. (He made me write this: “aktyabr revalitsiyasi statsiya”) This is a metro station in Tashkent that no longer exists: October Revolution Station. It is in Turkish, but why? “-si,-si.” Do you understand what I mean? This is also Turkish. It is like that in Ottoman Turkish.

8) What makes this phrase Turkish is the mathematics of the language.

Grammar, grammar... Yes, you take foreign words, but do it with Turkish phrases.

9) There are language boys in Ottoman history, and we know that the French had great difficulty translating from Ottoman into French. What could be the reason for this?

Have you never read a translation in Turkish? They are full of mistakes. There are more mistakes in them.

10) What changed when you entered the archive?

The official script is different. The first time I saw it, I stared at it like this. I learnt it with much head scratching and with the help of those who knew.

11) Do you think this has changed your perspective? Do you feel that by learning a different alphabet, you think differently from other people?

That is a tough question to answer. First of all, there is a class in the beginning. I am the child of an educated family, which could be called Ottoman nobility. Therefore, I grew up in a house where a very rich language was spoken. Experiences, proverbs, etc. that not everyone knows. I also knew French at home. I had French books before I learnt French. When I was a kid, you know, Donald Duck. My father bought me “Tenten” in French. Then, I have a massive collection of picture books. Most of them are in French. I have English and Turkish as well. I bought picture novels of famous novels with Turkish translations, so I had a good ear. Then, I learned French at a very young age, and when I was a bit older, I learnt English. We were taught English very well in high school. Also, when you learn one or even two foreign languages when you are young, you pick them up correctly. When I tell Germans, “Unfortunately, I do not speak German,” they do not believe me because

I speak it very well and have a good accent. Why? I have an ear.

12) A psychological experiment revealed that bilingual children search for meaning and pay more attention to other sounds than monolingual children. Could this linguistic awareness also occur when reading different writing systems?

Of course, it can happen. However, you have to look at it. Sure, you think I will rip it off. IT is like this. When you associate a sound with the signs, you read them. Maybe you do not understand. For example, I know the Cyrillic alphabet because I read some books in Azerbaijan. I learnt the Cyrillic alphabet. However, I cannot read Russian using the Cyrillic alphabet. I mean, I read it, but I do not understand it. Please give me something in Russian, I can read it very well, but I do not understand. I do not know Greek, but when I went to Kavala, I read all the billboards because I knew the alphabet. Some reactionaries used to say that a whole nation became ignorant overnight. It is wrong. You take children to the neighborhood school, teach them the Arabic alphabet, and they read the Koran very well. You give them the “İkdam” newspaper, and they do not understand it. However, people like Abdurrahman Dilipak accept them as literate. In front of my eyes, a Sudanese and a Moroccan friend could not understand Arabic. When they learn a second language, their curiosity increases. His curiosity increases. Moreover, of course, he thinks he is a scientist because he knows a second language. He feels like he is ahead of the others, and the others do not know the second language he knows. It could also increase his curiosity. Learning a foreign language at a young age improves intelligence. That is certain. Secondly, because of your relationship with the language, or because your intelligence has improved? I do not know. It is easier to learn from others. You find similarities. You inevitably make a comparison, especially in languages with different syntax. Therefore, you develop it even more. In Farsi and German, the verb is at the end of the sentence. THAT IS HOW “Yoda” speaks in “Star Wars”. “DİFFUCULT what you say is.”

13) I have not been warned by other people for mispronouncing the word “alphabet” (regarding the second a sound). Could it be that your warning is due to an awareness of multilingualism?

I do not have it. This stems from my fanatical devotion to Istanbul Turkish. İstanbul Turkish is beautiful and elegant. Secondly, every language has been decided to be the most proper and good. When you go to England, Oxford, Oxford-Cambridge English is not London English. It looks like a working class. In France, the Rhine region is like Istanbul Turkish. Paris is not. Those who speak French in the best way are called Rhine French speakers. Every country has local dialects. It is normal. It is also important what language the news bulletin will be read in the evening.

Thank you for your time.

[Original Version]

1) Söze girer girmez sizlerin bir uyarısı ile sorumu değiştirdim: Alfabe Devrimi yerine Alfabe Reform'u kalıbını önerdiniz, bunun nedenini söyleyebilir misiniz?

Alfabe Devrimi, devrimi doğru dürüst anlatmamak için icat edilen söylemin bir parçası. Atatürk döneminde Harf İnkılabı diye bir laf yok, sonra çıkıyor. Yani, Harf İnkılabı, senin bildiğin bütün yabancı dillerde komik "sound" eden bir şey.

2) Biraz önce ben alfabe devrimi dediğimde siz bu alfabe devrimi değil genel bir devrim demiştiniz? Bunu açabilir misiniz?

Ben Türkiye'nin, burada Türkiye'yi Batılıların kullandığı gibi kullanıyorum. Osmanlı İmparatorluğu'na da Türkiye diyorum. Türkiye'nin çok radikal bir devrim sürecinden geçtiğine inanıyorum. Bu 1908'den başlayıp 49'ların ikinci yarısına kadar sürüyor. Bu üstelik de birçok başka devrimde görmediğimiz ama Fransa'da gördüğümüz devrime çok benzeyen bir şey, Fransızlar da sadece bizim yaptığımız gibi bir devlet biçimi, yönetim biçimi değiştirmekle kalmıyorlar, mesela metrik sistemini alıyorlar, düşünebiliyor musun? Yüzyıllardan beri baş parmak, ayak, inch, foot... Bunlar evrensel. Sen sırf Anglosaksonlarda mı var sanıyorsun? Fransızcadaki inch'in adı başparmak anlamına geliyor. Ve daha neler neler. Bunların hepsini kaldırıp metrik sisteme geçiyor herif. Yani Fransız devrimi, ya da gerçi sürmedi ama ayların adlarını değiştiriyorlar, haftayı kaldırıp on günlük hafta yapıyorlar. Hafta kelimesini biliyor musun? Heft "7" demek. On gün yapıyorlar. Ayların adı değişiyor. Hepsini. Tüm günlerin hepsi Hristiyanlığa gönderme yapıyor diye, gerçi Almanca ve İngilizce'de biraz daha seküler, güneş günü mesela, ama Fransızca'da ve İtalyanca'da tanrının günü, "Demanch". Bunları da değiştireceğiz falan diye. Zaten yılı değiştiriyorlar. O yüzden, çok ... bir devrim var. Bu devrim sadece siyaset bilimcilerinin anladığı siyasal bir değişim süreci değil. Türkiye'deki, işte kılık kıyafetten tut, senin konun olan alfabe, dil değil mi? Nasıl ayıklanıyor yabancı kelimeler? Her devrimde olduğu gibi biraz abartılıyor, sonra geri toplanılıyor. Orada da tabi her devrimde olduğu gibi daha öncesinde başlamış şeyler var. Şimdi mesela sana şapka ile alfabeden, dilden bahsederken mesela kadınlardan bahsetmedim, çünkü kadınlar zaten İkinci Meşrutiyet'te okullara gidiyorlar, üniversitelere gidiyorlar, hatta bakanlıkta çalışmaya başlıyorlar. Ayrıca, ikinci meşrutiyette İstanbul'da çıkmış gazete ve dergilerin neredeyse her sayısında Latin alfabesi ile ilgili yazı var. Yani Hüseyin Cahit Yalçın deli gibi, sonra çok güzel bir şey var, Hürriyet-i Fikriye diye bir dergi var. Her sayısında Latin alfabesi de Latin alfabesi diye makaleler var. Biliyorsun devrimci takımının çok önemli bir aydını var, Celal Nuri İleri, bu İleri Gazatesini de çıkartan adam. O mesela, neredeyse her sayıda Latin alfabesi ile ilgili yazı var.

3) Peki nedenselliklerini nereye oturtuyorlar? Okunmuyor. Unutma, şimdi istersen bir genel tarih yapalım senle. Şimdi 12-13. yüzyıllarda yazılan eserlerimiz çok duru Türkçe. İlle şiir olması gerekmiyor. Bir takım nesirler de var. Ama Türkler, daha yeni müslüman olmuşlar. Ayrıca, Türk olarak müslümanlıklarının yeni olmasını bırak, bir de, Anadolu'nun yerlileri Türk olarak müslümanlığa geçiyorlar. Dolayısıyla Müslümanlık çok zayıf, yüzeysel. Tabi bunun hoş tarafları da var. Gittikçe İslam kültüründe kayboldukça, Arapça, Farsça ve onların üretmiş oldukları literatüre ciddi katkıda bulunmak için müthiş bir çaba sarf ediyorlar. Bu arada kavramların bazılarını çok iyi bir şekilde Türkçe'ye çeviriyorlar ama hepsini beceremedikleri için Türkçe yavaş yavaş Fars ve Arap vocabulary'si ile dolmaya başlıyor. Bu da işe kolaylık sağlıyor. Neden? Çünkü birt birt birt Arapça'yı biliyorsun. Zaten derdimiz orada. Eğer Arapça kelimeleri biz kendi malımız yaptıktan sonra, kendi dilimizin ses uyumuna uygun bir şekilde yazıyor olsaydık belki sorun kalmazdı. Ama Arapça'ya ve Farsça'ya olan saygılarımızdan ötürü aynı o şekilde bırakıyoruz kelimeleri. Sen mesela, ne diyeyim, bir örnek vereyim. Mesela bekar diyorsun, evlenmemişler için, bikar yazıyorsun. Ne demek bekar? İşsiz demek, Farsça bikar. İşsiz demek. O yüzden işi olmadığı için kız vermiyorlar. Hizmet diyorsun hidemat yazıyorsun. Şimdi bunu çocuğa nasıl öğreteceksin? Okullarda Türkçe öğretmeye başlıyorsun. Şimdi, Osmanlı yazarı "gidebilememiştim" diye bir fiil çekimi yazmıyor. Gitmeye imkan bulamamıştım yazıyor. İmkan Arapça zaten, kısacık. Seslileri nereye koyacağını bilmiyorsun. Bir de, Maarif Nezareti açıldıktan sonra 1840'ların sonunda, Agah Sırrı Levent, Türkçe'de Sadeleşme, Maarif Nezareti Cumhuriyet'in on beş yılı sonrasına kadar Bakanlık sürekli olarak valilere, kaymakamlara şöyle bir mektup yazıyor. Hazırlayacağımız ders kitaplarında kullanabileceğimiz yöremizde kullanılan Türkçe kelimeleri bulup bize gönderin. Abdülhamid döneminde dahi var bu. Bir tarama sözlüğünün zaten arka planı bu. Unutma. Pre-modern devletin kamu eğitimi diye bir sorunu yok. Ne bizde ne Avrupa'da. Devlet böyle işlerle uğraşmıyor. Devlet eğitim veriyor mu? Veriyor. Kime veriyor? Memura veriyor. Bu kadarcık çocuğa ne anlatacaksın? İşte o zaman sağa sola mektup veriliyor. Türkçe kelimeleri bulun da biz onları okul kitaplarında okutalım. Gidiyorsun, köyde dinliyorsun, buluyorsun. U,ü-o,ö seslerinde sıkıntı var. Düşün 1860'larda Latin alfabesi alalım diyenler ortaya çıkıyor. Hem bir de nokta virgül yok, ha diyelim ki aldı, daha sonrasında büyük harf yok. Arnavut Alfabesinin adı ne biliyor musun? İstanbul Alfabesi. Şemseddin Sami yapar. Ayrıca, Rumenler ve Hırvatlar da Latin alfabesine geçiyorlar. Bugünlerde Hırvatistan'da Sırpça kelimeleri çıkarıp, yerel kelimeler koyuyorlar. Senin gözünün önünde, eski topraklarında Latin alfabesine geçiş var.

4) Bireysel olarak deneyimlerinize girmek istiyorum. Osmanlı alfabesi veya Osman-

hıca öğrenmeye ne zaman başladınız ve bu nasıl gerçekleşti?

Çok komik. Ben hiç ders almadım. Ancak bir şey yaptım. Gittim, eski bir alfabe aldım sahaflardan. Kendim alfabeye bakarak öğrendim. Bir de Halide Edip Adıvar'ın kitabını aldım. 22 yaşındaydım o vakitlerde. Tarih bölümüne geçmiştim o dönemde. ElifBa aldım ve romanla onu okudum.

5) Bunu ne motivasyon ile yapmıştınız?

Tarihçi olmaya karar verdikten sonra yaptım, mesleki mecburiyet yani.

6) İnsanlara deney yaparken Osmanlıca ne kadar biliyorsunuz sorusunda nerelerde sınır çizmemiz gerektiğini bilemedim. Osmanlıca bilmek ne zaman başlıyor? Tıpkı diller gibi seviyelere ayırabilir miyiz? C1 Osmanlıca'dan söz edebilir miyiz?

A1 B1 bu işe hiç yaramaz. Neden? Çünkü diyelim alfabeyi çok güzel öğrendin, okumaya ilişkin bir takım temrinleri de yaptın ve artık su gibi okuyorsun diyelim. Gazeteyi alıyorsun, tıkr tıkr okuyorsun. Ayrıca o gazetede geçen Arapça ve Farsça kelimeleri de biliyorsun. Ama o gazetede ya da Tevfik Fikret'in Rubab-ı Şikeste'sindeki bir şiiri ya da gazetesindeki bir haberi, Osmanlı resmi yazışmalarında kullanılan alfabe ile yazılmış bir metni koysan, bir şey okuyamıyorsun. Çünkü yazı biçimi var. Kullanılan fontlar farklı. O yüzden bu A1-B3 falan yaramaz. Sen çok iyi Osmanlıca bilirsin, kelime haznesi olarak da, okursun gazateyi, Başbakanlık'tan valiye yazılmış mektubu verirler sana, apışıp kalırsın. Meşhur bir yayıncı ve matbuacı var, Ebu Ziya Tevfik Bey, Yeni Osmanlıların Tarihi'ni falan da yazmıştır. Çok güzel kitaplar basıyor falan ama yeni stilize bir "kufi" yazıyı kullanıyor, köşeli yazı yazıyor (Gösterir yazarak). Osmanlıca'yı hem okuma hem de kelime haznesi olarak iyi bilen birinin bile bazı fontları, mesela Farsi, bu çeşmeler, camilerin kitabeleri falan Fars şeyiyle yapılır. Farik-i Talik denir. Ayrıca kimse okuyamasın diye yazılan sistemler var. O yüzden bu seviyeler Osmanlıca'ya uygun değil.

7) Farklı dillerde, çoklu dilliliğe sahip olduğunuzu biliyorum. Bir Fransızca öğrenmek ile bir Osmanlıca öğrenmek arasındaki farklar sizce neler? Kendi deneyimleriniz veya dışarıdan gözlemlediklerinizi aktarabilir misiniz?

Fransızca'yı 11 yaşında öğrendim. Halbuki Osmanlıca'yı üniversite öğrencisi iken öğrendim, nasıl karşılaştırabilirim bilmiyorum. Osmanlıca diye bir dil yok. Bu Türkçe. (Bana şunu yazdırdı: "Aktyabr Revaltsiyası Statsiyası") Bu Taşkent'te şimdi olmayan bir metro istasyonu. Ekim Devrimi İstasyonu. Türkçe ama neden? -sı, sı. Anladın mı? Bu da Türkçe. Osmanlıca da böyle.

8) Bu tamlamayı Türkçe yapan şey aslında dilin Matematiği öyle değil mi?

Gramer, dil bilgisi. Evet. Sen yabancı kelimeleri alıyorsun fakat Türkçe tamlama-

malarla yapıyorsun.

9) Osmanlı Tarihi'nde dil oğlanları var, Osmanlıcadan Fransızcaya çevirirken Fransızları çok zorlandığını biliyoruz. Bunun nedeni ne olabilir peki?

Türkçe hiç çeviri okumadın mı? Yanlış dolu. Onlarda daha fazla hata var. Translators traitors (İtalyancasını belirtir.)

10) Arşive girdiğinizde neler değişti?

Resmi kitabet yazısı farklı. İlk gördüğümde böyle bakakaldım. Kafa göz yara yara, bir de bilenlerden yardım alarak öğrendim.

11) Bu sizin bakış açınızı değiştirdi mi sizce? Siz farklı bir alfabe öğrenerek diğer insanlardan farklı düşündüğünüzü hissedebiliyor musunuz?

Bu çok zor bir soru. İşin içinde bir kere başlangıç olarak sınıfsallık var. Çok eğitilmiş, Osmanlı soylusu denilebilecek bir ailenin çocuğuyum. Dolayısıyla çok zengin bir dilin konuşulduğu bir evde büyüdüm. Herkesin bilmediği deneyimler, atasözleri ve saire. Yine evimde Fransızca biliyordum. Daha Fransızca öğrenmeden Fransızca kitaplarım oldu. Çocukken, Donald Duck falan var ya. Babam bana TenTen'in Fransızcalarını aldı. Sonra benim acayip resimli roman koleksiyonum var. Fransızca çoğu. İngilizce ve Türkçe de var. Meşhur romanların Türkçe çevirisi olan resimli romanlarını aldım. Dolayısıyla kulak dolgunluğum vardı. Sonra çok küçük bir yaşta Fransızca öğrendim. Biraz daha palazlanınca da İngilizce öğrendim. Bizde çok iyi öğretiliyordu İngilizce lisede. Ayrıca bir, hele iki yabancı dili küçükken öğrendiğin zaman tak tak tak hemen şeyi kapıyorsun. Almanlar'a "maalesef Almanca bilmiyorum" dediğim zaman inanmıyorlar bana. Çünkü onu çok güzel ve iyi aksanla söylüyorum. Neden? Kulağım var.

12) Bağlantılı olarak şu soruyu sormak istiyorum. Psikolojik bir deneyde bilingual çocukların monolingual çocuklara göre, başka sesler duyduğunda daha çok anlam aradıklarını ve dikkat kesildiklerini biliyoruz. Farklı yazı sistemleri okuyanlarda da bu dilsel farkındalık oluşuyor olabilir mi?

Tabi oluşabilir. Oluşabilir. Ama bakmak lazım. Tabi, ben bunu sökerim diyorsun. Tıpkı şey gibi. İşaretlere bir ses associate ettiğin zaman okumuş oluyorsun. Belki anlamıyorsun. Mesela, ben Kiril alfabesi biliyorum, çünkü Azerbaycan'da yazılmış bir takım kitaplar okudum. Kiril alfabesini öğrendim. Ama Kiril alfabesi ile Rusça okuyamıyorum. Yani okuyorum, anlamıyorum ama. Rusça bir şey ver, çok güzel okurum ama bir halt anlamam. Yunanca bilmiyorum fakat Kavala'ya giderken bütün panoları ben okurdum, çünkü alfabeyi biliyorum. Tıpkı bu şey gibi. Bir takım gericiler, işte bütün bir millet ümmi oldu bir gecede falan diyordu ya. Şimdi yanlış. Çocukları götürmüşsun mahalle mektebine, öğretmişsin Arap alfabesini, Kur'an'ı

da gayet güzel okuyorlar. İkdan gazetesini veriyorsun eline bir halt anlamıyor. Ama Abdurrahman Dilipak gibiler onları okur yazar kabul ediyor. Benim gözümün önünde bir Sudanlı ile bir Faslı arkadaşım Arapça anlaşılamadı. İkinci dil öğrendiği zaman, tecessüsü artıyor. Merakı artıyor. Bir de o (çocuk) tabi ikinci bir dil bildiği için biraz kendini bilim adamı gibi sanıyordur. Ben ötekilerden ilerdeyim havasında, bildiği ikinci dili ötekiler bilmiyorlar. Merakımı da arttırıyor olabilir. Küçük yaşta yabancı dil öğrenmek zekayı geliştiriyor. Bu kesin. İkincil olarak dille olan ilişkin dolayısıyla mı zekan geliştiğın için mi? Bilmiyorum. Diğerlerini öğrenmen daha kolaylaşıyor. Benzerlikler buluyorsun. İster istemez karşılaştırma yapıyorsun. Hele hele sentaks yani kelime dizimi farklı olan dillerde daha da geliştiriyorsun. Farsçada Almancada fiil en sonda. Star Wars'da Yoda öyle konuşuyor. “ Difficult what you say is.”

13) “Alfabe” (ikinci a sesi ile ilgili olarak) kelimesini yanlış telafuz etmemden dolayı diğer insanlar tarafından uyarılmamıştım. Sizin uyarma nedeniniz çok dillilik bir farkındalıktan kaynaklanıyor olabilir mi?

Yok. Bu İstanbul Türkçesine olan fanatikçe bağlılığımın kaynaklanıyor. İstanbul Türkçesi güzel, zarif. İkincisi her dilin en düzgün ve iyi olduğuna karar verilmiş. İngiltere'ye gittiğın zaman Oxfridge, Oxford-Cambridge İngilizcesi, Londra İngilizcesi değil, işçi sınıfı gibi gözüküyor. Fransa'da ?Ren bölgesi İstanbul Türkçesi gibidir. Paris değildir. Fransızca'yı en iyi şekilde konuşanlara ?Ren Fransızcası konuşanlara derler. Her ülkenin yerel ağızları var. Normal. Bir de haber bülteni dili ne ile okunacak akşam, o önemli.

Teşekkürler zamanımızı ayırdığınız için.