

REVIEW

***Viorica Marian, 2024, Puterea limbajului.
Cum ne transformă mintea codurile pe care le folosim pentru a
gândi, a vorbi, a trăi. Translated by Iulian Comănescu,
Bucharest: Editura Humanitas¹***

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Abstract:

This review of *Puterea limbajului. Cum ne transformă mintea codurile pe care le folosim pentru a gândi, a vorbi, a trăi* (original English title *The Power of Language: How the Codes We Use to Think, Speak, and Live Transform Our Minds*), authored by the psycholinguist Viorica Marian, aims to highlight the cognitive particularities of multilingual speakers, as revealed through experimental studies and tests – especially those employing *eye-tracking technologies* – conducted over the years on multilingual subjects.

Moreover, Marian’s study innovatively addresses the evolution of communication codes in the context of contemporary technological advancements.

Keywords:

Language, thought, communication codes, multilingualism, eye-tracking.

Viorica Marian’s work offers a nuanced and comprehensive analysis of the relationship between language and thought, with a primary focus on the *multilingual speaker*. In this monograph, authored by the renowned psycholinguist and professor at Northwestern University in Evanston, Illinois, the complexity of multilingual cognition is explored, along with the ways in which knowledge of multiple languages shapes thought, enhances creativity, and fosters critical thinking throughout one’s life.

¹ The volume is the Romanian translation of the original English edition authored by Viorica Marian, *The Power of Language: How the Codes We Use to Think, Speak, and Live Transform Our Minds*, published in 2023 by Dutton/Penguin Random House.

Structured in two parts – *I. Self* and *II. Society* – this study undertakes a complex, interdisciplinary and transdisciplinary approach. It draws on methodologies and analytical tools from psycholinguistics, sociolinguistics, and cognitive science, while also incorporating insights from neuroscience and philosophy, thereby enriching the scholarly value of the book.

In the *Introduction*, Marian invokes the biblical legend of the Tower of Babel to underscore the centrality of language in human interaction, stating:

“Language as the key to reaching heaven certainly asserts its power. The story of the Tower of Babel illustrates the way language can be used both to include and to exclude, to communicate and to hinder communication.” (Introduction, p. 11)

This thesis on the power of language is further supported by references to *Una stella tranquilla*, a work by Holocaust survivor Primo Levi, in which the Italian writer reflects on the limitations of language and the human relationship with the external world. In this context, Marian discusses the constraints of the *language-thought* relationship, drawing on recent findings in machine learning. Neuroscience experiments conducted at Stanford University involved the application of large datasets to study how the brain organizes operations related to cognitive tasks such as reading and decision-making. The computational algorithms revealed neural activity patterns that did not align with human language-based classifications. In other words, these algorithms suggested the existence of “*constructs for which we do not have labels (yet)*” (*Introduction*, p. 12).

Building on these experimental directions, Viorica Marian argues that terms like *memory* or *perception* do not precisely describe the constructs emerging from machine learning, and that the vocabulary we use and the way we conceptualize these phenomena are inherently imprecise. Despite the existence of “*real categories out in the world*” (*Ibidem*), the author emphasizes the significance of linguistic and mental categories, as they have tangible consequences in areas such as perception, science, and even bigotry:

“Understanding the power of language also makes you more aware when you are being manipulated by others through words, whether those others are politicians, advertisers, lawyers, co-workers or family members.” (Introduction, p. 15)

In the first part of the book, comprising six chapters, Marian examines how languages influence the individual, based on a series of tests such as the *Stroop* test and experiments involving *eye-tracking* technologies.

The first chapter, *Mind Boggling*, sets the stage for exploring the multilingual brain. Viorica Marian presents the results of several *eye-tracking* tests conducted on bilingual subjects, who were asked to move objects while their eye movements were recorded. These movements were influenced by the phonetic similarities between words in different languages (cf. *the arbitrariness of the linguistic sign*), such as: *marker* (Eng.) vs. *marka* “stamp” (Rus.); *glove* (Eng.) vs. *glaz* “eye” (Rus.); *shark* (Eng.) vs. *şarik* “balloon” (Rus.).

The interpretation of bilinguals’ eye movements during these tasks reveals that everyday objects are perceived through the lens of the languages known and used at that moment. More precisely, the author describes the impact of multilingualism on the individual as extending beyond executive function to include psychological dimensions such as memory, emotion, and perception. Thus, learning a new language entail adopting a new way of structuring the world around us.

In the second chapter, *The Parallel-Processing Super-Organism*, the research framework based on *eye-tracking* techniques is further developed. These tests aimed to identify the degree of simultaneous co-activation of the languages known by multilingual speakers, regardless of whether a particular language was actively being used.

Marian reports that *eye-tracking* tests conducted initially on Russian-English bilinguals, and later on speakers of Spanish and English, Japanese and English, Dutch and English, German and Dutch, French and German, Hindi and English, and others, yielded the following results:

- i) the brain does not duplicate its effort;
- ii) the brain expands its parallel-processing capacity;
- iii) the brain modifies its higher-order cognitive processes to manage this type of parallel activation:

“The brain is, in essence, a parallel-processing super-organism, and even more so in multilinguals.” (Part One, Chapter II, p. 38)

This section of the book offers particularly insightful and illuminating reflections on the conceptual networks activated when a lexical unit is triggered in the mind of a bilingual or multilingual speaker. Viorica Marian

illustrates a conceptual network that reflects the activation of the English word *pot* in the brain of a Russian-English bilingual (*Appendix 1*).

In the following chapter, *On Creativity, Perception and Thought*, the author explores the link between thought, creativity, and multilingualism, examining how cognitive architecture is shaped by the knowledge of another language. She presents the results of studies on the relationship between creativity and bilingualism, which show that bilingual speakers outperform monolinguals in creative tasks, such as identifying alternative uses for common objects. For instance, the *Alternate Uses Task* – a widely used tool for measuring creativity and part of the divergent thinking assessment – demonstrates that bilinguals perform better when switching between languages.

Marian also discusses various linguistic theories – such as cognitivism, structuralism, and linguistic determinism – to explain how the use of different languages by a multilingual speaker influences the conceptualization of emotions, perceptions, and interpersonal relationships, depending on the idiom employed.

Chapter Four, *The Word Made Flesh* – a metaphor echoing the biblical verse “*The Word Became Flesh*” (John 1:1-14) – addresses the theory that multilingualism alters both the structure and function of the multilingual speaker’s brain and may even influence cellular-level chemistry.

To support her claims, Marian draws on examples from the Japanese language. For instance, the term *kotodama* (“word-spirit”) conveys the idea that words can alter physical reality. She also references terms from Japanese mythology used to name historical eras, such as *Reiwa* (“harmony”), the codename for the current era.

Chapter Five, *Childhood, Ageing and In-Between*, discusses the neurocognitive effects of multilingualism on the human brain. Marian outlines the benefits of learning foreign languages, particularly the delay of dementia-related symptoms. According to her, using multiple languages fosters a more interconnected neural network, which can functionally compensate for anatomical deterioration.

Chapter Six, *Another Language, Another Soul*, explores the close relationship between language, thought, and social behaviour. Drawing on various surveys and tests conducted with bilingual and multilingual subjects, Viorica Marian argues that language influences the expression of emotions –

sensitivity or insensitivity –, decision-making, social interaction, memory, and attitudes toward traditions, superstitions, space, and time.

Regarding the mechanisms that shape psychological processes, Marian highlights structural differences among languages. She refers to the morphological distinctions languages make in expressing verb tenses – such as present and future. Languages that mark this distinction (e.g., French, Greek, Italian, Spanish, and English) are considered to have a strong future-time reference. In contrast, languages that do not (e.g., Mandarin, Estonian, and Finnish) are classified as having a weak future-time reference. This distinction correlates with a greater tendency among speakers of weak-future-reference languages to adopt behaviours that benefit their future selves.

The second part of the reviewed work, *Society*, opens with Section VII, *The Ultimate Influencer*, in which Viorica Marian explores the relationship between language and society. She expands her analysis to examine how language can shape individual choices and contribute to the formation of identity by broadening one's social perspective.

More specifically, the author discusses the power of language as it manifests in the structures and functions of society. The examples she provides span various domains – politics, administration, economics, and rhetoric. Notably, she references the term *newspeak*, coined in George Orwell's dystopian novel *1984*, a language engineered by a totalitarian regime to control the population of Oceania and suppress subversive ideas such as free will.

In Chapter Eight, *Words of Change*, Marian addresses issues related to various lexical and grammatical categories and how individuals perceive the realities these categories reflect. She reviews differences in grammatical gender marking across languages – such as English, Russian, and German – and notes that speakers involved in experiments on grammatical gender perceive objects differently. For instance, German-English bilinguals describe the concept of *key* – a masculine noun in German – as *hard*, *heavy*, *jagged*, *metal* and *useful*; whereas Spanish speakers – whose language assigns the noun a feminine gender – describe it as *golden*, *intricate*, *little*, *lovely*, *shiny* and *tiny*.

The following section, *Found in Translation*, delves into the relationship between phonetic structure and word meaning, traditionally

considered arbitrary. Here, Marian discusses the presence of phonetic symbolism in poetry, invoking sound devices such as euphony and alliteration, as well as prosodic elements, to support the idea that certain sounds may evoke specific thoughts or emotions.

In the chapter *The Codes of Our Minds*, Marian traces the evolution of languages and communication codes, from the Rosetta Stone to the most recent coding systems used in information technology.

A particularly compelling paragraph in this chapter explores the relationship between natural and artificial languages, which the author characterizes as symbiotic, yielding mutual benefits.

The final chapter, *The Future of Science and Technology*, addresses the origin of language in relation to thought:

“Studying the relationship between language and thought inevitably leads to the question of where language comes from. And, for that matter, where thought comes from. If language and thought are two sides of the same coin (an arguable view, as we saw in the discussion of linguistic determinism), then language would have to be derived from a source outside the human realm, because thought is impossible without language and before language there would have been no thought.” (Part II, Chapter II, p. 216)

The author presents several recent scientific and technological discoveries and their potential impact on the evolution of human communication – both positively and negatively. Marian argues that advanced technologies (such as microchips and neurograins) may enhance communication for individuals who have suffered trauma or were born without the faculty of speech.

In the *Conclusion*, Viorica Marian classifies multilingualism as a facet of multiple intelligences, adding that learning a new language can be facilitated not only by an individual’s natural aptitude but also by social policies that support the emergence of multilingual communities.

She also presents the results of a study conducted by the U.S. Department of State, which outlines the number of hours required for a native English speaker to learn another language. The statistics are as follows:

i) Category I languages (600-750 hours, 24-30 weeks): Danish, Dutch, Italian, Norwegian, Portuguese, Romanian, Spanish, Swedish, French;

ii) Category II languages (approximately 900 hours, 36 weeks): German, Indonesian, etc.;

iii) Category III languages (approximately 1,100 hours, 44 weeks): Albanian, Bulgarian, Greek, Nepali, etc.;

iv) Category IV languages (2,200 hours, 88 weeks): Arabic, Cantonese, Mandarin, Japanese, Korean.

Additionally, Marian offers practical advice for language learning, such as enrolling in language courses and engaging in travel.

In *The Power of Language*, Viorica Marian skilfully weaves together personal reflections with current research in neuroscience on the vast topic of human thought and the evolution of communication codes, placing particular emphasis on the complex relationship between language and thought.