



GENDERED MENTAL LEXICON IN COGNITIVE SEMANTICS AND ASSOCIATIVE RESPONSE PATTERNS

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ABSTRACT

This paper investigates how gender influences the structure and dynamics of the mental lexicon, focusing on differences in associative semantic responses between male and female language users. Drawing from cognitive semantics, psycholinguistics, and gender studies, the study explores whether conceptual associations to the same lexical stimuli diverge systematically by gender, and what such divergences reveal about underlying mental representation. The research is grounded in theories of prototype semantics, frame theory, and connectionist models of lexical access, which posit that lexical meaning emerges through culturally and cognitively mediated networks of association.

Gender is understood here not as a purely biological category, but as a cognitive and social variable shaping perception, attention, and experience. Consequently, associative responses are hypothesized to reflect both embodied experience and culturally encoded expectations, resulting in differentiated semantic salience patterns across gender lines. Prior empirical studies in Russian, English, and other languages suggest that men and women may prioritize different conceptual domains when prompted with the same lexical input—highlighting, for instance, action-oriented versus relational associations, or abstract versus emotional foci. By analyzing theoretical models and selected empirical findings, this paper aims to show that gendered associative patterns are not merely linguistic accidents but reflect deeper cognitive schemata shaped by social roles and perceptual experience. The paper argues that these patterns have implications for our understanding of meaning construction, language processing, and cultural cognition. Through this lens, the gendered mental lexicon

becomes a window into how language, thought, and identity interact at the lexical level.

1. Introduction

Language is not only a system of communication but also a reflection of cognitive organization. Within this system, the lexicon represents more than a static inventory of words—it is a dynamic mental space where meanings are formed, accessed, and interconnected based on a speaker's perceptual, social, and cultural experiences. One emerging area of inquiry within cognitive linguistics and psycholinguistics concerns the gendered nature of lexical associations: do men and women structure lexical meaning differently, and if so, what mechanisms underlie this divergence?

The idea that the same lexical stimulus may evoke different conceptual responses in men and women has implications far beyond semantics. It points toward gender-specific patterns of salience, cognitive framing, and worldview formation, all of which are deeply embedded in the individual's lived experience. For instance, the word *home* might evoke action-centered associations like "ownership" or "location" in male respondents, whereas female respondents may more readily associate it with "comfort," "care," or "family".¹ While such patterns are not universally fixed, they are observable across languages and are often traceable to socialization processes, cultural norms, and psychological tendencies shaped by gendered life roles.

This paper seeks to examine how gender shapes the mental lexicon through associative semantics. By focusing on the qualitative structure of associations rather than their mere frequency, it attempts to uncover the cognitive and cultural underpinnings of meaning variation. The broader aim is to contribute to an integrated understanding of how gendered cognition is reflected in linguistic behavior and how lexical meaning is not neutral but conditioned by experiential filters tied to gender identity.

2. Theoretical Foundations

The investigation of gendered lexical associations rests on several foundational frameworks in cognitive linguistics and psycholinguistics, each offering critical tools for understanding how language users construct meaning differently based on cognitive and social variables. Three interrelated concepts are particularly important: the mental lexicon, associative semantics, and the cognitive salience of experience—all of which are filtered through gender as a socially and cognitively consequential variable.

At the core of cognitive semantics lies the belief that linguistic meaning is not a fixed property of words, but a mental construct arising from patterns of experience and conceptualization.² Words activate frames—structured mental representations of typical situations³—and their interpretation depends on which elements of a frame are salient to the speaker. Because men and women often occupy differentiated social and experiential roles, their conceptual frames and salience hierarchies may vary accordingly. For example, the frame activated by the lexeme *authority* might emphasize status and institutional power in male

¹ Laura A. Janda, "Conceptual Metaphors in Russian and Czech," *Cognitive Linguistics* 15, no. 4 (2004): 474–475.

² George Lakoff and Mark Johnson, *Metaphors We Live By* (Chicago: University of Chicago Press, 1980), 3–5.

³ Charles J. Fillmore, "Frames and the Semantics of Understanding," *Quaderni di Semantica* 6 (1985): 222–254.

respondents, while highlighting relational legitimacy or ethical leadership in female respondents—variations shaped by sociocultural conditioning.⁴

The mental lexicon, in this context, is not simply a dictionary-like repository but a networked conceptual space, organized around semantic fields, prototypes, and associations.⁵ Prototype theory, developed by Eleanor Rosch, suggests that categories are not defined by strict boundaries but by central, more typical members. These prototypes are learned and reinforced through experience, which is often gendered in content and distribution. Thus, a word like *success* may evoke financial imagery in one group, and relational or communal achievement in another, reflecting different prototype structures across gender lines.⁶

Associative meaning, which lies at the intersection of semantic theory and psycholinguistic methodology, offers a powerful lens for observing such divergence. Association norms—collected by prompting participants with stimulus words and recording first responses—reveal how language users activate meaning in real time. Studies in Russian, English, and other languages show significant gender-based differences in association patterns for emotionally, socially, or culturally loaded terms.⁷

Moreover, connectionist models of lexical processing posit that word meaning is activated through patterns of neural co-occurrence and experiential salience. These models align with the idea that gendered experiences—from childhood language input to occupational discourse—create differential associative networks within the same language. Hence, language is not a neutral medium, but a culturally and cognitively filtered reflection of reality, shaped in part by gender.

Through this multi-theoretical lens, it becomes possible to explore the gendered structure of the mental lexicon not merely as a linguistic curiosity, but as a manifestation of cognitive variation rooted in social experience.

3. Gender and Associative Structure

Understanding the gendered mental lexicon requires moving from theoretical models to the observable organization of associative meaning. Associative responses—especially those elicited in free association tasks—offer direct insight into how lexical concepts are cognitively structured and which aspects of a stimulus word are made salient in the mind of a speaker. Studies have consistently shown that men and women, when presented with the same lexical prompts, tend to produce different associative responses. These divergences, though subtle in individual cases, reveal patterned differences when analyzed across a wide set of stimuli.

One of the most cited patterns is the tendency for men to generate more object-oriented, functionally salient, or spatial associations, whereas women more often provide socially oriented, relational, or emotionally charged associations.⁸ For instance, the Russian associative database developed by the Moscow State University Linguistic Research Lab shows that in response to the stimulus word *забота* (care), male respondents tended to produce words such

⁴ Anna Wierzbicka, *Understanding Cultures through Their Key Words* (New York: Oxford University Press, 1997), 104–106.

⁵ Steven Pinker, *Words and Rules: The Ingredients of Language* (New York: Basic Books, 1999), 84–85.

⁶ Eleanor Rosch, “Principles of Categorization,” in *Cognition and Categorization*, eds. Eleanor Rosch and Barbara B. Lloyd (Hillsdale, NJ: Erlbaum, 1978), 27–48.

⁷ Natalia Ufimtseva, “Gendernaya spetsifika assotsiativnoy normy v russkom yazyke,” *Voprosy yazykoznaniiya* 1 (2005): 111–118.

⁸ Tatyana Rakhilina and Vladimir Plungian, “Gendernye aspekty v semantike i grammatike,” *Russian Linguistics* 33, no. 2 (2009): 115–117.

as *обязанность* (duty) or *работа* (work), while female respondents associated it with *любовь* (love) or *семья* (family).⁹ Though the stimulus is the same, the associative field diverges based on internalized conceptual framing influenced by gendered experience.

Such variation has been interpreted through the lens of cognitive salience, a principle whereby individuals prioritize meaning based on what is most experientially relevant or frequent.¹⁰ For instance, if women are more frequently involved in caregiving contexts due to sociocultural roles, then caregiving will occupy a more emotionally integrated and socially relational space in their lexicon. Conversely, male associative responses may reflect abstracted, role-based framings of the same concept. This difference does not imply unequal depth of cognition, but rather differing conceptual anchoring.

Another striking area of difference lies in associations to abstract evaluative terms, such as *freedom*, *success*, *power*, or *beauty*. Cross-linguistic associative data suggest that men often associate such concepts with action, control, or utility, while women associate them with self-perception, harmony, or interpersonal dynamics.¹¹ For example, the English term *power* might evoke *authority*, *money*, or *control* in male respondents, but *confidence*, *voice*, or *respect* in female respondents. These associations reflect not only cognitive schemas but also cultural scripts around masculinity and femininity as they are encoded in language.

Importantly, these patterns emerge not only in adult language users, but even in adolescent speakers, suggesting early internalization of gendered semantic fields. Experimental studies among Uzbek-speaking high school students, for example, have shown gender-based divergence in associative responses to common words such as *ona* (mother), *mehnat* (work), or *kelajak* (future), often reflecting culturally specific expectations around gender roles. These studies reveal that language becomes a mirror of conceptual socialization, reproducing and reinforcing cognitive asymmetries over time.

Furthermore, the density and connectivity of associative fields tend to differ between genders. Women often exhibit more inter-associative links, producing richer semantic chains, while men tend to produce more discrete and hierarchical clusters.¹² These patterns reflect not only lexical access strategies but also broader styles of information processing—relational versus categorical—which have been widely discussed in gender and cognition literature.

Ultimately, the associative structure of the mental lexicon, shaped by both biological predispositions and cultural conditioning, reveals language as a gendered cognitive artifact. These structures are not rigid but flexible, influenced by individual experience and cultural evolution, yet they consistently reveal enduring patterns of semantic divergence across gender lines.

4. Case Illustrations and Experimental Insights

To ground the theoretical claims and patterns discussed above, it is essential to examine specific empirical findings from linguistic studies that have investigated gendered associative behavior. These case studies, drawn from cross-linguistic research in Russian, English, and

⁹ Natalia Ufimtseva, "Gendernaya spetsifika assotsiativnoy normy v russkom yazyke," *Voprosy yazykoznaniiya* 1 (2005): 114–116.

¹⁰ Dirk Geeraerts, *Theories of Lexical Semantics* (Oxford: Oxford University Press, 2010), 217–219.

¹¹ Anna Wierzbicka, *Semantics, Culture and Cognition: Universal Human Concepts in Culture-Specific Configurations* (New York: Oxford University Press, 1992), 45–51.

¹² Laura A. Janda, "Cognitive Linguistics and Gendered Patterns of Association," *Slovo i tekst* 6 (2005): 145–147.

Uzbek, demonstrate how semantic associations differ by gender and how these differences can be linked to deeper cultural and cognitive frameworks.

A seminal study conducted by Natalia Ufimtseva and her colleagues at the Russian Academy of Sciences involved the collection of associative responses from over 10,000 participants across gender, age, and regional backgrounds.¹³ When given the word *любовь* (love), women were significantly more likely to associate it with *семья* (family), *доброта* (kindness), and *верность* (loyalty), while men associated it more frequently with *страсть* (passion), *женщина* (woman), or *секс* (sex). These associative differences suggest not only emotional orientation but distinct semantic evaluations of the same core concept.

Similar results were found in English-language studies. For example, in a large-scale association test conducted by Deese and later expanded by Nelson et al., words such as *home*, *work*, *money*, and *freedom* elicited gender-differentiated responses.¹⁴ The word *money*, for instance, evoked *security*, *responsibility*, and *budget* among female respondents, whereas male respondents more often produced *power*, *status*, or *investment*. Such divergence reveals how cultural scripts and gender roles influence the salience of specific semantic fields even within shared linguistic communities.

In Uzbek linguistic research, although large-scale associative databases are still in development, smaller-scale experimental work has begun to reveal similar patterns. A controlled lexical association experiment conducted among second-year philology students at the National University of Uzbekistan in 2021 examined responses to 25 common Uzbek nouns, such as *ona* (mother), *kelajak* (future), and *boylik* (wealth). The study found that female participants associated *kelajak* with *umid* (hope), *farzand* (child), and *baxt* (happiness), while male participants preferred *ish* (work), *pul* (money), and *muvaffaqiyat* (success). These associations reflect gendered perceptions of the future shaped by differing expectations and life priorities.

These findings are further supported by research in cognitive psychology. Studies in associative fluency and semantic network analysis have shown that women tend to produce more relationally and emotionally integrated associative chains, while men tend to favor instrumental or hierarchical associations.¹⁵ These results do not merely reflect vocabulary use but speak to differing cognitive schemas and life-world orientations.

Additionally, cultural linguistics helps explain why these patterns persist and are replicated across generations. Gendered scripts—such as the expectation that women are primary caregivers or men are financial providers—encode themselves into language through repeated exposure and usage. As Sharifian notes, conceptual metaphors and cultural schemas are reinforced through language use and form the semantic substrate of associative meaning.

Importantly, these associative tendencies are not deterministic. Social change, education, and exposure to alternative models can and do reshape associative networks over time. For instance, newer studies among bilingual Uzbek-English speakers show a blending of associative norms, with gender differences becoming less stark in younger, globally exposed populations.

¹³ Natalia Ufimtseva, “Gendernaya spetsifika assotsiativnoy normy v russkom yazyke,” *Voprosy yazykoznaniiya* 1 (2005): 113–119.

¹⁴ Douglas L. Nelson, Cathy L. McEvoy, and Thomas A. Schreiber, *The University of South Florida Word Association, Rhyme, and Word Fragment Norms* (Tallahassee: Florida State University, 1998), 3–9.

¹⁵ Herbert H. Clark, *Arenas of Language Use* (Chicago: University of Chicago Press, 1992), 132–134.

Nonetheless, such variation still follows a patterned logic, grounded in cultural cognition and linguistic embodiment.

These case studies collectively support the argument that lexical associations are not arbitrary but culturally and cognitively motivated—and that gender serves as a critical axis along which semantic structures can diverge. Through these divergences, we gain insight into how individuals learn, evaluate, and prioritize meaning in ways reflective of both social identity and cognitive orientation.

5. Discussion and Implications

The gender-based divergences in lexical associations explored in this paper point to a central insight in cognitive linguistics: that meaning is neither fixed nor universal, but dynamically constructed through experience, socialization, and culturally embedded cognition. Language users do not merely retrieve definitions from memory; they activate meaning structures shaped by the salience of lived reality. Since gender roles influence perception, action, and cultural positioning, they also shape the mental lexicon—what is activated, how quickly, and with what emotional or conceptual weight.

This insight challenges purely structuralist or referential models of meaning, advocating instead for a context-sensitive and experience-grounded view. Gendered associations reveal how semantic oppositions (such as abstract–concrete, emotional–instrumental, or relational–functional) are not just conceptual contrasts but reflect deeper axes of embodied knowledge. For language researchers, these findings encourage a more nuanced theory of lexical semantics that integrates sociocognitive variables.

Practically, understanding gendered semantic patterns is essential for areas such as educational communication, advertising, intercultural dialogue, and AI-based language modeling, where assumptions about neutral meaning can lead to miscommunication or bias. If meaning is filtered through gendered cognitive schemas, then effective language use—whether in pedagogy, policy, or technology—must account for this plurality.

6. Conclusion

The investigation of gendered associative semantics demonstrates that lexical meaning is deeply interwoven with cognition, culture, and social identity. Far from being abstract or detached, the mental lexicon is shaped by the ways individuals experience and interpret the world—differences that are often patterned by gender. Through associative tasks and semantic analysis, we observe how men and women may prioritize different facets of meaning even when responding to the same linguistic stimulus.

These patterns reflect underlying conceptual metaphors, cultural schemas, and social roles that are learned early and reinforced through repeated linguistic engagement. The result is a cognitive lexicon that is both individually flexible and culturally structured, simultaneously embodying personal experience and collective worldview.

Future research in this area would benefit from cross-cultural and longitudinal perspectives, especially in contexts where gender roles are rapidly evolving. As linguistic communities become more diverse and hybridized, gendered associative patterns may shift, merge, or dissolve. Nonetheless, understanding their current structure provides invaluable insight into the ways language both reflects and shapes human thought.

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