

VARIATION, COGNITION, AND EXPERIENCE: LANGUAGE, MIND, AND SOCIETY IN AN INTEGRATED PERSPECTIVE**VARIAÇÃO, COGNIÇÃO E EXPERIÊNCIA: LINGUAGEM, MENTE E SOCIEDADE EM PERSPECTIVA INTEGRADA***Dermeval da Hora¹Translation: Jan Edson Leite²

In recent decades, the notion of cognition has become one of the central axes of articulation between different fields of knowledge, spanning from Philosophy to Linguistics, Psychology, Cognitive Sciences, and, more recently, to studies on artificial intelligence. In this interdisciplinary scenario, language occupies a privileged position, since it presents itself simultaneously as an empirical object, a means of access to the mind, and as a historically situated social practice. This issue of Prolingua Journal fits into this horizon of debates by proposing an integrated reflection on linguistic variation and cognition, understood not as dissociated domains, but as inseparable dimensions of human experience.

Traditionally, most cognitive models have been constructed from an abstract conception of the mind, conceived as a system of symbolic manipulation relatively independent of the body, perception, and social context. This conception, strongly influenced by classical cognitivism and the computational paradigm, has favored formal and idealized descriptions of linguistic knowledge, often to the detriment of the heterogeneity, historicity, and variability observable in natural languages. In contrast to this tradition, sociolinguistic, functionalist, and cognitive linguistic studies have reiterated that variation is not a problem to be eliminated from theory, but rather a central factor in understanding how linguistic knowledge is represented, processed, and mobilized by speakers.

Since its founding works, Variationist Sociolinguistics has shown that heterogeneity is structurally organized and socially conditioned (Weinreich; Labov; Herzog, 2006 [1968]; Labov, 2008 [1972]). This finding has direct implications for cognition: if speakers master variable patterns of use, then their linguistic knowledge cannot be described solely in terms of categorical rules, but must incorporate probabilistic, gradual, and experience-sensitive dimensions. Saying the same thing in two or more ways with the same referential value is not a sign of cognitive instability, but evidence of the flexibility and sophistication of the mental mechanisms involved in language.

This perspective resonates with contemporary approaches in Cognitive Linguistics and Usage-Based Models, according to which linguistic knowledge emerges from recurrent use, frequency, and social interaction (Langacker, 1987; Bybee, 2010, 2016; Croft; Cruse, 2004). In these models, mental representations are conceived as rich in phonetic, morphological, and

* DOI: 10.22478/ufpb.1983-9979.2025v20n2.77986

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semantic details, organized into networks of schemas and exemplars. Variation, far from being peripheral, plays a central role in the formation of these representations, contributing to categorization, generalization, and linguistic change.

Furthermore, the interface between variation and cognition cannot be thought of outside its social dimension. Studies on the perception, evaluation, and social significance of variation demonstrate that speakers associate linguistic variants with identities, territories, styles, and social values, activating automatic inferences during linguistic processing (Silverstein, 2003; Eckert, 2008, 2012). Linguistic cognition, in this sense, is also social cognition: it involves memory, attention, categorization, and affection, articulated with experiences of belonging and exclusion that permeate language practices.

This debate takes on new contours in the contemporary context marked by the expansion of artificial intelligence. Artificial language models, operating on large volumes of data, are often presented as evidence that cognition can be reproduced in machine substrates. However, such models revive classic questions about the nature of mind and language, especially regarding embodied experience, intentionality, and consciousness. Criticism of disembodied cognition, stemming from phenomenology and the philosophy of mind, places the body, perception, and historicity back at the center of reflection, offering a fundamental counterpoint to purely computational readings of language.

It is in this field of theoretical tensions—between abstraction and use, between formalism and experience, between artificial cognition and human cognition—that the present issue is situated. By bringing together studies that address linguistic variation at different levels (phonetic, phonological, morphosyntactic, perceptual, and educational) and from different theoretical frameworks, this volume proposes to understand variation as a privileged observatory of the cognitive functioning of language. Rather than presenting isolated empirical results, the works gathered here engage in a dialogue on a common question: how linguistic heterogeneity informs, structures, and challenges our models of cognition.

Based on this general theoretical introduction, the following sections present the articles that make up this Issue, organized in such a way as to highlight different facets of the relationship between language, cognition, and social experience.

1. Urban norms, social insertion, and variational continua: the coda(s) in Rio de Janeiro

The first article deepens the reflection on phonological variation by articulating linguistic production, cognition, and the social organization of urban space. By analyzing the variation of the coda (s) in two communities often marginalized in normative discourses—slum dwellers in the capital and speakers from the Baixada Fluminense—the study problematizes dichotomous conceptions of norm and deviation, proposing the notion of urban norm continuum as an analytical tool more suited to the complexity of the data.

Based on both Variationist Sociolinguistics and Usage-Based Models, the article demonstrates that speakers from these communities do not automatically align themselves with patterns associated with extreme social exclusion. On the contrary, their linguistic behaviors converge with those observed in middle-class speakers and socially integrated adolescents, revealing that integration into social networks and prestigious institutions plays a decisive role in shaping linguistic use.

From a cognitive point of view, the study shows that the centrality of certain variants—alveopalatal or posterior—in lexical representations varies according to the degree of social integration of the speakers. This finding reinforces the idea that linguistic knowledge is shaped by different social trajectories, integrating experiences of mobility, schooling, and belonging. Variation, in this sense, emerges as both a structural and social index, articulating mind, language, and urban space.

2. Perception, salience, and dialectal contact: /t, d/ before /i/ in Fortaleza

The second article shifts the focus from production to linguistic perception, examining how speakers in Fortaleza, Ceará, evaluate and interpret the variable realization of /t, d/ before /i/ in a context marked by intense intra-state dialectal contact. Anchored in the Theory of Linguistic Variation and Change, in the notion of the social significance of variation, and in studies on linguistic attitudes, the work shows that variation is also a perceptual and evaluative phenomenon, deeply rooted in social cognition.

The results indicate that the occlusive variants [t] and [d], associated with varieties from the interior and south of the state, are highly salient in the Fortaleza community and mobilize evaluations related to "northeasternness," accent, and prosody. The perception of these variants is modulated both by social factors internal to the community and by the migratory experience of the speakers, revealing that exposure to different varieties reorganizes cognitive schemas and categorization patterns.

This study reinforces the idea, recurrent throughout the volume, that linguistic variation functions as a social index (Silverstein, 2003), activating automatic inferences during speech processing. Linguistic cognition thus appears inseparable from social cognition, articulating memory, perception, affectivity, and identity.

3. Phonological awareness, linguistic experience, and teaching

The third paper shifts the discussion to the field of education, examining phonological awareness as a central axis in the development of the Alphabetical Writing System. Although it does not directly address linguistic variation, the article consistently dialogues with the cognitive assumptions that run throughout the volume, conceiving linguistic knowledge as gradual, experiential, and sensitive to use.

Based on a review of the literature and an analysis of the BNCC, the study shows that progress in writing hypotheses is intrinsically linked to the development of awareness of the sound units of language. By valuing pedagogical practices that explore the sound dimension of language—through playful, musical, and literary activities—the article suggests that linguistic diversity can be understood not as an obstacle but as a resource in the literacy process.

In this sense, the work contributes to bringing linguistic research closer to educational practices, reaffirming that a conception of cognition based on experience and use has direct implications for teaching. Language, once again, appears as an embodied social practice, traversed by history, perception, and interaction.

4. Syntactic variation and stability: the government of the verb *ir* (motion)

Expanding the empirical scope of the issue, the fourth article addresses morphosyntactic variation, analyzing the government of the verb *ir* (motion) in data from the NURC Project in Salvador and Rio de Janeiro, in two different decades. Inserted in the paradigm of Quantitative Sociolinguistics, the study describes the competition between the prepositions *a*, *para*, *em*, and *até*, with an analytical focus on the opposition between *a* and *para*.

The results point to the predominance of the variant *a*, traditionally associated with the standard, but also reveal the systematic action of linguistic and social factors, such as permanence in the location, spatial configuration, and age group. The analysis shows that, even within contexts of relative stability, ordered heterogeneity remains the organizing principle of linguistic use.

In dialogue with the other articles in the volume, the study reaffirms that variation is not exclusive to phonetic or phonological levels but permeates the entire grammar. In addition, it reinforces the relevance of the Labovian model for the analysis of syntactic phenomena, demonstrating that sensitivity to usage, context, and social experience is a common feature of different levels of linguistic cognition.

5. Cognitive organization of phonological variation: representations, exemplars, and social experience

Continuing the dialogue between variation and cognition at the empirical level, the fifth article in the volume directly investigates the cognitive organization of phonological variation, taking as its object the variable realization of the coda (r) at the end of words in Rio de Janeiro Portuguese. Within the framework of Use-Based Models and the theory of exemplars, the study starts from the hypothesis that speakers' phonological knowledge incorporates rich and detailed representations of phonetic forms, sensitive to both frequency and accumulated social experience.

Based on controlled production data obtained through the priming technique, the article experimentally tests the idea that multiple variants—including posterior, glottal realizations, and the absence of the coda—coexist in lexical representation, organized around a dominant variant. This dominance, however, is neither uniform nor abstract: it varies according to grammatical category and the social profile of speakers.

The results indicate that, in infinitives, the absence of the coda constitutes the dominant variant regardless of education level, whereas in nouns, the centrality of the variant with coda emerges only among university speakers. These findings reinforce the notion that variation is not limited to the level of performance, but structures linguistic knowledge itself, revealing a probabilistic, graded, and socially informed grammar. Thus, the article contributes to consolidating an understanding of variation as a constitutive dimension of linguistic cognition, in line with the critique of abstract and disembodied models presented at the beginning of the volume.

6. Grammatical variation and cognitive conflict resolution: agreement in Xizronga

The sixth article extends the debate to the domain of morphosyntax, examining verbal agreement with complex subjects in Xizronga, a Bantu language spoken in southern Mozambique. The analysis of the combination of [+HUM] and [-HUM] nuclei reveals that

grammatical variation can be understood as a systematic response to cognitive and semantic conflicts, especially regarding the hierarchization of features such as animacy and humanity.

The results show that, except in specific contexts involving particular nominal classes, the combination of these nuclei generates agreement crises, which are resolved through distinct linguistic strategies: commutative construction, verb repetition, and impersonal construction. These strategies show that grammar does not operate as a rigid and closed system, but as a flexible set of possibilities, sensitive to cognitive, discursive, and communicative pressures.

From a functionalist and cognitive perspective (Givón, 2001; Langacker, 2008), the variation observed in Xizronga can be interpreted as a manifestation of categorization and schematization processes. The alternation between agreement strategies reflects distinct modes of conceptualizing the complex subject, revealing that grammatical variation is an integral part of speakers' linguistic competence.

7. Dialectal perception and social cognition: the fricative /S/ in syllabic coda

The seventh article in the volume shifts the discussion to the empirical domain of perceptual dialectology, exploring how speakers from different Brazilian capitals attribute geographical origin to speakers based on the variable realization of the fricative /S/ in syllabic coda. Inserted in a tradition that dates back to the works of Preston (1999, 2010), the study shows that the perception of linguistic variation is systematic, structured, and cognitively oriented.

The results show that specific variants, such as palatoalveolar and alveolar, function as social indices (Silverstein, 2003), associated with regions, identities, and linguistic stereotypes. The recurring association between palatoalveolar fricatives and cities such as Rio de Janeiro and Recife, as well as between the alveolar variant and São Paulo or Porto Alegre, reveals that listeners mobilize shared sociolinguistic knowledge, albeit unspecialized, to categorize the speech of others.

From a cognitive point of view, the study reinforces the idea that variation is not only produced, but also perceived, evaluated, and interpreted socially. The notion of "perceptual proximity" suggests that speakers' linguistic experience—marked by regional circulation, media exposure, and dialectal contacts—organizes cognitive schemas that guide the identification and categorization of variants. Thus, interdialectal perception emerges as a privileged space for articulation between cognition, variation, and identity.

8. Artificial intelligence, cognition, and the problem of the disembodied mind

The only essay in this thematic issue is dedicated to a philosophical reflection that questions one of the most central debates of our time: the possibility of equating human cognition with artificial cognition. The emergence of artificial intelligence as a technical and epistemic paradigm not only reconfigures social and scientific practices but also raises classic questions about the nature of the mind, consciousness, and subjectivity. In this context, the essay proposes a phenomenological critique of the notion of disembodied cognition, questioning the ontological assumptions that underpin strong computational models of the mind.

Anchored in the contributions of Merleau-Ponty (1999 [1945]), Dreyfus (1972, 1992), Searle (1980, 1992), and Chalmers (1996), the text argues that human cognition cannot be reduced to formal operations on symbols, since it emerges from a lived, situated, and intentional corporeality. Language, in this framework, is not just a system of manipulable rules, but a way of being-in-the-world, traversed by perception, historicity, and social experience. By conceiving AI as a simulacrum of the mind, incapable of accessing the qualia and intentionality of human consciousness, the article reinforces a fundamental axis of this issue: the rejection of abstract and disembodied models of cognition.

This critique has direct implications for linguistic studies, especially those devoted to variation. If cognition is embodied and situated, then linguistic knowledge—and, in particular, variational knowledge—cannot be understood outside of social practices, perceptual experience, and the history of speakers. The initial philosophical discussion, therefore, establishes the theoretical background from which the other articles can be read: linguistic variation as an expression of a deeply human cognition, irreducible to purely computational models.

Final considerations of the introduction

Taken together, the contributions in this issue show that linguistic variation is a privileged observatory of cognition, allowing us to understand how linguistic knowledge is organized, updated, and transformed based on social experience. By articulating production, perception, representation, urban norms, and teaching, this volume reaffirms the need for theoretical models that integrate language, mind, and society, rejecting simplistic dichotomies between competence and use, structure and experience, cognition and sociality.

Thus, this thematic edition proposes not only a collection of empirical studies, but also a theoretical position: understanding human language requires recognizing variation as a constitutive dimension of cognition and cognition as an embodied, historical, and socially situated process.

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