

Nikos Angelopoulos, Lena Baunaz, Diego Pescarini

Variation across modules

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Introduction

Current linguistic theory posits that language is structured as a modular system. This system comprises several core computational modules – semantics, syntax, phonology, and likely morphology – which operate largely independently. These modules are interconnected by interfaces, analogous to membranes, that selectively permit the transfer of certain linguistic features while restricting others.

Crucially, linguistic variation exists independently of this modular architecture. Each module appears to allow for a degree of internal freedom, resulting in the acquisition of linguistic variants. While these variants can be diverse, they ultimately coalesce into robust crosslinguistic patterns, arguably reflecting the constraints imposed by each individual module.

This workshop aims to bring together experts from diverse subfields within linguistics, including phonology, morphology, syntax, and semantics, to explore the complex interplay between modularity and variation in language.

State of the art

In the early 1980s, Chomskyan linguists proposed that the Faculty of Language consists of invariable principles and a set of parameters that allow languages to vary according to a finite set of choices (e.g., null vs. non-null subject languages). Chomsky's Principles and Parameters framework was developed within Generative Grammar and supported the idea of modularity in language. Chomsky (1986, 1995) further refined this model, characterizing the language faculty as an autonomous computational system governed by universal principles and parameters. More recently, Chomsky (2000) has continued to explore the modular nature of language and its implications for cognitive science and the evolution of linguistic capacity.

However, due to the rigidity of the Principles and Parameters model, it was gradually replaced by alternative approaches, culminating in the Borer-Chomsky Conjecture (Baker, 2008). According to this conjecture, linguistic variation arises from the properties (or features) of functional elements such as determiners, tense markers, and complementizers. As Borer (1984: 29) argues, associating parameter values with lexical entries reduces them to the lexicon, which must be learned anyway, while the syntactic algorithm remains unaffected by variation (Longobardi, 2001).

If parameters are learned alongside function words, no higher-level universal constraint is expected to shape the features of lexical items (Boeckx & Leivada, 2013). Thus, variation cannot arise from the Faculty of Language, which Chomsky (2005:6) describes as "nearly uniform for the species", while variation results from experience. Wexler & Manzini (1987) introduce a grammar-external aspect, focusing on the connection between parameters and learnability—the conditions under which learners converge on target language parameter values. They propose the Subset Principle, which dictates that if two languages are compatible with the input data, the learning function must select the more restrictive language (Wexler & Manzini, 1987: 433).

Longobardi (2018) suggests that parameters can be reduced to a finite number of schemata. Parameters are properties of functional heads (in line with the *Borer-Chomsky Conjecture*), learned from experience, but their format must remain uniform across languages.

Biberauer, Holmberg, Roberts, & Sheehan (2010) propose a more restrictive theory, reviving the spirit of the original Principles and Parameters framework. They suggest that languages are shaped by a range of parameters, from macroparameters that apply to multiple functional heads, to microparameters affecting individual functional elements. The more embedded a parametric choice is within the hierarchy, the less it impacts the syntax. Macroparameters are viewed as hierarchies of meso-, micro-, and nano-parameters, with the latter aligning with parameters in the *Borer-Chomsky* model.

Parametric models differ in their approach. The *Borer-Chomsky* model is the most permissive, suggesting that parameters are degrees of freedom within the Faculty of Language, with external factors like learnability shaping them (Berwick & Chomsky, 2011). In contrast, other models, such as those by Roberts et al. and Longobardi et al., are more restrictive, as variation is constrained by parametric hierarchies or schemata that pre-emptively limit the properties encoded by functional heads.

Research Questions

This workshop will address the following key research questions:

- The theory of variation summarized in Section II primarily relies on syntactic evidence and aims to explain syntactic variation. However, a comprehensive theory of variation should be applicable across different modules of language and explain how such modules interact. How do the individual modules of language (semantics, syntax, phonology, morphology) constrain and shape the patterns of variation observed within and across languages? Are there specific types of variation that are characteristic of particular modules?
- What is the relationship between the analysis of microvariation in genealogically related languages and the broader typological generalizations observed across unrelated languages? How can we reconcile the fine-grained detail of microvariation studies with the broader patterns of typological variation?
- What role do extensive linguistic datasets play in the ongoing debate surrounding the nature and modeling of linguistic variation, particularly in the context of Parametric Theory? How can large datasets inform our understanding of the parameters that govern linguistic variation?
- How are quantitative methods reshaping the way we account for linguistic variation? How is quantitative testing on both typological and microvariation data contributing to new perspectives on parametric modeling in syntax and other modules?
- While current linguistic datasets and parametric models are significantly smaller than the scale of "big data" and "Small Language Models" used in AI, can we anticipate any impact of the recent advancements in Artificial Intelligence on the analysis of linguistic variation data? Could these tools offer new insights or methodologies for analyzing variation?

Expected Outcomes

The workshop is expected to:

- Advance our understanding of the intricate relationship between modularity and variation in language.
- Identify key areas for future research in the study of linguistic variation.
- Foster collaboration and exchange of ideas among researchers from different subfields.
- Potentially lead to publications, such as a special issue of a journal or an edited volume, showcasing the research presented at the workshop.

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Contact information

Diego Pescarini
CNRS, Université Côte d'Azur, BCL
diego.pescarini@cnrs.fr