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Raffaella Bernardi · Greg Kobele ·  
Sylvain Pogodalla (Eds.)

# Formal Grammar

24th International Conference, FG 2019  
Riga, Latvia, August 11, 2019  
Proceedings

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# Preface

The Formal Grammar conference series (FG) provides a forum for the presentation of new and original research on formal grammar, mathematical linguistics, and the application of formal and mathematical methods to the study of natural language. Themes of interest include, but are not limited to:

- Formal and computational phonology, morphology, syntax, semantics, and pragmatics
- Model-theoretic and proof-theoretic methods in linguistics
- Logical aspects of linguistic structure
- Constraint-based and resource-sensitive approaches to grammar
- Learnability of formal grammar
- Integration of stochastic and symbolic models of grammar
- Foundational, methodological, and architectural issues in grammar and linguistics
- Mathematical foundations of statistical approaches to linguistic analysis

Previous FG meetings were held in Barcelona (1995), Prague (1996), Aix-en-Provence (1997), Saarbrücken (1998), Utrecht (1999), Helsinki (2001), Trento (2002), Vienna (2003), Nancy (2004), Edinburgh (2005), Malaga (2006), Dublin (2007), Hamburg (2008), Bordeaux (2009), Copenhagen (2010), Ljubljana (2011), Opole (2012), Düsseldorf (2013), Tübingen (2014), Barcelona (2015), Bolzano-Bozen (2016), Toulouse (2017), and Sofia (2018).

FG 2019, the 24th conference on Formal Grammar, was held in Riga, Latvia, on August 11, 2019. The conference comprised an invited talk, by Tal Linzen, and seven contributed papers selected from 11 submissions. The present volume includes an abstract of the invited talk and the contributed papers.

We would like to thank the people who made the 24th FG conference possible: the invited speaker, the members of the Program Committee, and the organizers of ESSLLI 2019, with which the conference was colocated.

August 2019

Raffaella Bernardi  
Greg Kobele  
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# **What Inductive Biases Enable Human-Like Syntactic Generalization? (Abstract of Invited Talk)**

Tal Linzen

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Humans generalize their knowledge of language in a systematic way to syntactic structures that are rare or absent in their linguistic input, an observation traditionally discussed under the banner of “the poverty of the stimulus”. This generalization behavior has motivated structural (innate) inductive biases. In this talk, I will demonstrate how neural networks with and without explicit syntactic structure can be used to test for the necessity and sufficiency of such structural biases. Focusing on subject-verb agreement as well as subject-auxiliary inversion in English question formation, I will argue that explicit structural biases are still necessary for human-like generalization in a learner trained on text only.

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