Seeing grammar through the eyes of bilinguals

Bilingualism is known to have a strong impact on language development. Yet, there is still much to uncover. One such aspect relates to how bilinguals sharing one language will end up building their own grammar or dealing differently with so-called 'grammatical illusions'.
We’re not all equal when it comes to language learning. Some of us speak only our national language but are submitted to local dialects at home. Meanwhile, others have had to combine several languages in their early childhood. Some have found themselves in a similar situation when they moved to another country. In truth, the spectrum of possible language combinations and contexts leading to these combinations would easily make anyone’s head spin.

This multifaceted bilingualism was at the heart of Marit Westergaard and Evelina Leivada’s DIVA (Disentangling variation: A crosslinguistic investigation of bilingualism and non-standardization) project. Together, they studied different combinations of Greek and other languages or dialects to find out how they affect language development and grammatical outcomes.

**Your project investigates the impact bilingualism has on language development. What gaps in knowledge did you aim to fill and why was it important?**

Westergaard: DIVA studied different groups of bilinguals, including speakers of non-standard varieties. The goal was to uncover how a developmental trajectory – for example, people exposed to a second language in adulthood, people who have spoken two or more languages since their birth, etc. – will impact various domains of grammar. We ended up testing over 500 people in various European countries. This type of cross-border, large-scale testing is extremely difficult to conduct, especially when the linguistic communities at hand include speakers of minority or non-standard languages.

Leivada: The acquired datasets are a novelty in themselves. From a theoretical point of view, we address a knowledge gap related to how people with different developmental trajectories process grammatical illusions. These are sentences that are ungrammatical but give the impression of being grammatical, for instance: ‘More people have been to Paris than I have.’ Much like optical illusions, linguistic illusions trick people into believing that the sentence is well formed or provoke an erroneous response. For example, the Moses illusion asks how many animals of each type Moses brought onto the ark. Most people answer two, because they are tricked by the way the question is phrased into not noticing that the reference is to Moses and not Noah.

One aspect of the DIVA project involved a comparison between people with different developmental trajectories to find out how they fare in spotting grammatical illusions. Our results suggest that bilinguals perform better, but they are also slower. This evidence of a novel bilingual trade-off helps us understand better the differences in linguistic processing across various populations (monolinguals and different types of bilinguals).
Westergaard: The first innovation of DIVA is its comparative method. It spans both domains of grammar and developmental trajectories. In terms of methodology, the key innovation boils down to the language groups that were tested. Cypriot Greek is a largely understudied language that lacks the status of an official language. The linguistic reality of Cyprus is diglossic: people juggle their local variety of Cypriot Greek and the official language which is standard Greek. They speak two varieties of the same language. Due to various factors, the linguistic profile of this population hadn’t been developed systematically until recently.

By combining this with the testing of bilingual speakers combining standard Greek with Norwegian, Swedish or Danish, we effectively created a novel network for enhanced cooperation between linguistic communities across five European countries (Cyprus, Denmark, Greece, Norway and Sweden).

Finally, the topic of grammatical illusions and the potentially differential performance of bilinguals in spotting the illusion had never been studied before DIVA.

Leivada: We tested various grammatical phenomena collecting both offline and online responses. One example revolved around opinions on how good or bad a sentence sounds, and how quickly this opinion is being formed. To make this work, we needed the testing language to remain constant for all participants. This is because grammatical phenomena are grammaticalised in different ways across different languages, and such differences could have affected the reaction times.

Greek was chosen as the language of testing due to my own expertise. Norway was chosen as the host country for two reasons: its growing Greek community and the fact that it is home to the Language Acquisition, Variation & Attrition (LAVA) group (presently AcqVA Aurora), directed by Westergaard. The focus of the group is on language variation in different settings and environments, and this was an excellent home for DIVA.

Westergaard: Undoubtedly the realisation that a new way forward is necessary to tackle the long-standing debate around the effects of bilingualism on cognition. We
recently collaborated with Jason Rothman and Jon Andoni Duñabeitia in publishing a roadmap for future research on this topic.

**What do you hope will be the long-term impact of the project?**

Leivada: We hope that DIVA provides a strong argument to the voices calling for research to move away from sterile dichotomies. These fail to approach bilingualism as a spectrum of experience.

**Have you been following up on the project’s results since its end? How so?**

Leivada: Project funding has ended, but our work on the topic has not! We are still working on the results of DIVA, analysing datasets, planning new projects; and we believe that more interesting findings are coming.

This is an important benefit of the Marie Skłodowska-Curie Actions. These fellowships are about developing new research skills under the supervision of highly skilled experts, all this while promoting mobility and creating excellent networking possibilities. These projects foster long-lasting ties.

Westergaard: One of our plans for the future – also in the context of the newly funded AcqVA Aurora centre – is to proceed with the multi-lab collaboration that is presented in our roadmap for future research. It will focus on bilingualism and how it impacts neurocognition. More specifically, we envision a multi-lab collaboration that seeks to understand whether certain contexts of bilingualism provide a better opportunity to capture cognitive effects compared to others.

**Keywords**

DIVA, bilingual, language development, grammar, grammatical illusions, LAVA

**Related projects**

[DIVA](#)  
**Disentangling variation: A crosslinguistic investigation of bilingualism and non-standardization**