"Hey Siri, let's talk for real" – variability and flexibility in the perception of synthetic voices

Research Project Summary

Postdoctoral Researchers International Mobility Experience
PRIME 2025/26

Synthetic voices are invading our everyday life – via smart-home devices, navigation systems, or service hotlines. While these technological advances are undoubtedly exciting, little is known about our perception of and interaction with synthetic voices, and how this may shape our interaction in the future. A crucial feature in this context is the perceived naturalness of a voice, which is linked to perceived acceptability and trustworthiness and therefore has a direct impact on communication quality. I want to understand how the impression of naturalness is formed for synthetic voices and how it is shaped through experience and exposure, i.e. due to daily contact with a smart-home-device. The present project comprises of three empirical studies which shed light on the variability and flexibility of synthetic voice perception from different angles: Study 1 will focus on long-term effects by exploring individual differences in everyday experience with synthetic voices. Study 2 will test whether synthetic voice perception is amenable to short-term perceptual manipulation. Finally, Study 3 will combine both approaches in an intervention study, testing whether perception of synthetic voice features can be altered via three weeks of regular exposure to synthetic vs human voices (by listening to audiobooks). Together, they will provide unique and complementary insights into how rapid technological innovations such as synthetic voice implementation into everyday devices could shape our perceptual system, with potentially complex consequences for our interaction with machines, but also with other humans.

Keywords: voice perception, synthetic voices, naturalness, human-likeness

Submitted by: Dr. Christine Nussbaum
Date of Submission: 12.08.2025
Time of Project: 1. October 2026 – 31. March 2028 (18 months)
Hosting Institutions: University College London, UK
                     Friedrich Schiller University Jena, Germany
Scientific Mentors: Prof. Dr. Carolyn McGettigan (London)
                     Dr. Nadine Lavan (London)
                     Prof. Dr. Stefan R. Schweinberger (Jena)