# Merger or contrast: the distinction between /ɔ/ and /o/ in Paris and Marseille

*Eva van Kampen[1], Heather Burnett[2], Remco Knooihuizen[1], Alexander Martin[1]*
[1] University of Groningen, [2] Université Paris Cité

Standard French distinguishes between the mid vowels /ɔ/ and /o/, which creates minimal pairs such as *pomme* 'apple' /pɔm/ vs. *paume* 'palm of the hand' /pom/. Earlier studies have identified a shift in the relation between these two phonemes as their realisations appear to be converging (Cecelewski et al., 2014, Hansen, 2011). However, there is variability between speakers at the regional and individual levels in whether these are distinct categories: Avanzi (2017) reported regional perceptual differences between speakers from the North and the South of France, with predominantly distinct categories in the North and merged categories in the South. Weng and Martin (in prep.), however, show that speakers *within* each region differ in their production of these vowels. In light of this intra-regional variation, they argue for a stronger focus on the level of the individual. Despite this observation, there is still no detailed description of the production of the vowels /ɔ/ and /o/ that takes this variability into account. Such a description at the individual level is, however, necessary to provide insight into the development of changes at the community level (Labov, 2001). Therefore, the objective of the current study is to map the extent of individual-level variation in the production of these vowels as a first step towards further research.

Specifically, this project aims to map the differences between speakers in two regions of France in order to assess vowel variation in major French cities: Paris in the north and Marseille in the south. For this purpose, we use the CaFé corpus (*Cartographie linguistique des féminismes*, Abbou & Burnett, 2024), which contains sociolinguistic interviews with 40 speakers from Paris and 20 speakers from Marseille. We have created an automated analysis pipeline using the tools Pyannote (Plaquet & Bredin, 2023), Whisper (Radford et al., 2022) and the Montreal Forced Aligner (McAuliffe et al., 2017), which processes audio files to identify, extract and analyse target vowels. This method allows us to analyse data from a corpus of natural speech (approximately 90 hours) without manual intervention.

Our analysis focuses on the frequencies of the first and second formants (F1 and F2, following Storme, 2017), which allows us to determine whether a speaker produces a reliable acoustic contrast between the two vowels using the Pillai score (following Stanley & Sneller, 2023). These scores allow us to take the first steps in a socio-phonetic analysis of the variation found in the production of /ɔ/ and /o/ on an individual level. At the Dag van de Fonetiek, we will go into detail on the variability between individual speakers as well as on the geographical dimension.

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