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# A Semantic Map of the European Parliament

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## Abstract

Motivated by the rise of populism and shifting power dynamics within the European parliament (EP) since the late 1990s, this study investigates potential ideological drifts in EP speeches using natural language processing methods. We analyze how the semantic content and emotional tone of speeches evolve, and explore how different parliamentary groups compare in their use of language across different legislative periods.

We conduct quantitative text analyses on the novel *\*ParlLawSpeech\** dataset (Schwalbach et al., 2025), which includes machine-readable full text of 574,199 parliamentary speeches alongside their metadata, covering legislative periods from 1999 - 2024.

Using open-source sentence embedding models, we extract rhetorical features from parliamentarians' speeches, evaluate intra- and inter-group alignment on selected topics with a focus on migration and apply text scaling to infer underlying political dimensions, which we then compare against expert-derived assessments. In addition, we incorporate sentiment analysis and complementary NLP techniques to capture specific aspects of political rhetoric.

We expect that speech embeddings will form clusters reflecting party affiliation and ideological alignment. Drawing on existing literature and recent political developments, we further hypothesize an increase in negative sentiment within the immigration debate among centrist and right-wing groups, accompanied by growing semantic similarity between these two factions over the past two decades. Finally, we test whether established migration-related narratives associated with right-wing populism can be identified in parliamentary discourse and how their prevalence has developed over time.