

## Short-term fellow Talk

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### Investigating the integration of lyrics and musical tune in song comprehension

**When:** Monday, August 14th, 14:15

**Where:** Campus Golm, Haus 14, Raum 2.15/16

**Alice Karbanova** is a PhD candidate at Masaryk University in Brno, Czech Republic, specializing in experimental linguistics. She is currently a Short-term fellow in Project B01. With a background that includes earning Master's degrees in both French language and linguistics, as well as in Viola performance, she is also employed at the Slovak Philharmonic. Her research centers around exploring the shared cognitive foundations of music and language, particularly at the semantic level. A central inquiry in her work revolves around whether music and language compete for processing resources during the act of listening to a song. Her overarching objective is to shed light on the intricate processes involved in perceiving and comprehending a multifaceted semiotic entity, namely, a song.

**Abstract:** The study of music and language has lately gained significant interest due to their shared cognitive processes (Jentschke et al., 2005). Overlapping brain areas for the processing of both musical and language meaning (Steinbeis & Koelsch, 2008) as well as shared conceptual networks for language and music (Schön et al., 2010) have been suggested. The capacity of music to convey concepts has been empirically proven (Painter & Koelsch, 2011). Music is meaningful on multiple levels (e.g., Carraturo et al., 2022; Slevc, 2012), and given the shared access to semantic representations, any type of musical meaning can prime a meaningful concept. This research aims to investigate how music influences the understanding of lyrics in a song and how the two information sources merge to form meaningful representations (Casasanto & Lupyan, 2015). We view songs, ecological cultural objects, as an act of communication, wherein musical accompaniment adds pragmatic information to the lyrical content. Our current experimental study uses excerpts from Boris Vian's works to collect semantic associations and affective norms corresponding to both lyrics and music in order to calculate their position in a semantic space. By assessing the similarity or divergence of semantic impressions evoked by these components, we aim to empirically determine whether lyrics and musical accompaniment evoke the same concepts in listeners, and which component exerts a

stronger influence on the resulting interpretation. This research emphasizes the role of musical accompaniment in modulating the comprehension of lyrics, providing valuable insights into the complex interplay between music and language cognition.

#### References:

Carraturo, G., Ferreri, L., Vuust, P., Matera, F., & Brattico, E. (2022). Empathy but not musicality is at the root of musical reward: A behavioral study with adults and children. *Psychology of Music*, 030573562210811. <https://doi.org/10.1177/03057356221081168>

Casasanto, D., & Lupyan, G. (2015). Casasanto, D. & Lupyan, G. (2015). *All Concepts are Ad Hoc Concepts. In The Conceptual Mind: New directions in the study of concepts. E. Margolis & S. Laurence (Eds.) pp. 543-566. Cambridge: MIT Press. All Concepts Are Ad Hoc Concepts Mar. 543-566.*

Jentschke, S., Koelsch, S., & Friederici, A. D. (2005). Investigating the relationship of music and language in children: influences of musical training and language impairment. *Annals of the New York Academy of Sciences*, 1060, 231–242. <https://doi.org/10.1196/annals.1360.016>

Painter, J. G., & Koelsch, S. (2011). Can out-of-context musical sounds convey meaning? An ERP study on the processing of meaning in music. *Psychophysiology*, 48(5), 645–655. <https://doi.org/10.1111/j.1469-8986.2010.01134.x>

Schön, D., Gordon, R., Campagne, A., Magne, C., Astésano, C., Anton, J. L., & Besson, M. (2010). Similar cerebral networks in language, music and song perception. *NeuroImage*, 51(1), 450–461. <https://doi.org/10.1016/j.neuroimage.2010.02.023>

Slevc, L. R. (2012). Language and music: Sound, structure, and meaning. *Wiley Interdisciplinary Reviews: Cognitive Science*, 3(4), 483–492. <https://doi.org/10.1002/wcs.1186>

Steinbeis, N., & Koelsch, S. (2008). Comparing the processing of music and language meaning using EEG and fMRI provides evidence for similar and distinct neural representations. *PLoS ONE*, 3(5), 1–7. <https://doi.org/10.1371/journal.pone.0002226>