

Orofacial electromyographic correlates of induced verbal rumination

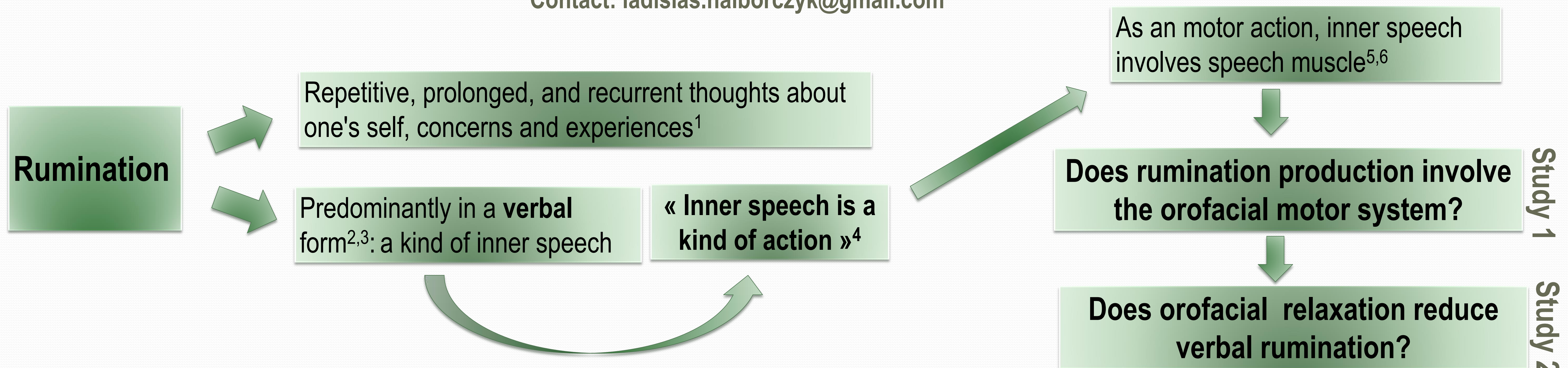
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Background



Methods

EMG

Facial: Language related muscle: *orbicularis oris superior* (OOS)
Language unrelated muscle: *frontalis* (Front.)
Non-facial: Language non-related muscle: *flexor carpi radialis* (FCR)

HF-HRV

Signal acquisition: Delsys mini Trigno wireless sensors (analyzed using II-lead ECG)

SUBJECTIVE REPORTS

To confirm the ruminative nature of inner verbal production, we used different Visual Analogue Scales (VAS) to evaluate state-rumination

RUMINATION INDUCTION

Based on forced failure-tasks, we used a home-made false I.Q. test to induce negative emotion. Then, we used the Nolen-Hoeksema and Morrow⁷ rumination induction, asking our participants to reflect upon the causes and consequences of their feelings

DATA PROCESSING

EMG signals have been processed under Labchart 8 and Matlab r2014a. HF-HRV has been computed using Labchart 8, Statistics were performed with Rstudio

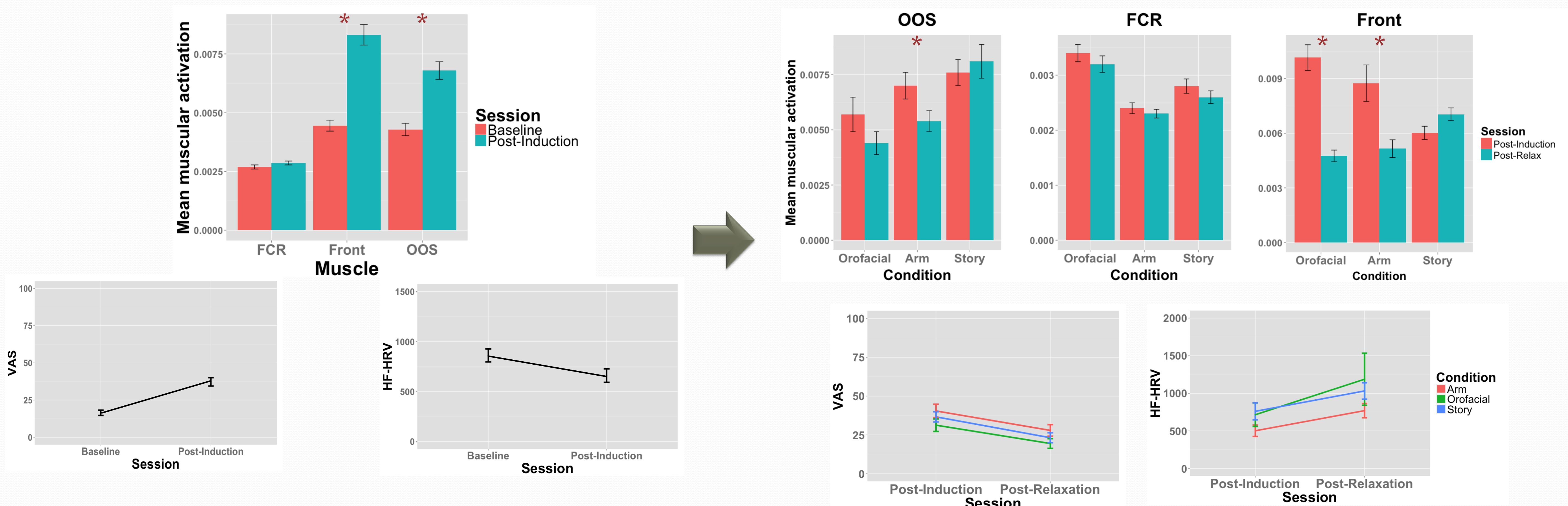
Study 1: Rumination Induction

Physiological activity and self-reports were recorded before and after a rumination induction

Study 2: Orofacial relaxation

Physiological activity and self-reports were recorded before and after listening to either an orofacial-specific relaxation session or an arm-specific relaxation session or a neutral story

Results



Discussion and Perspectives

The observed increased OOS activity after rumination induction corroborates the hypothesis that verbal rumination is a kind of motor action. The observed increased *Front.* activity further suggests that rumination involves frontalis muscle contraction, as observed in anxious states. This suggests that rumination shares some features with negative thoughts, worry and anxiety.

References

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