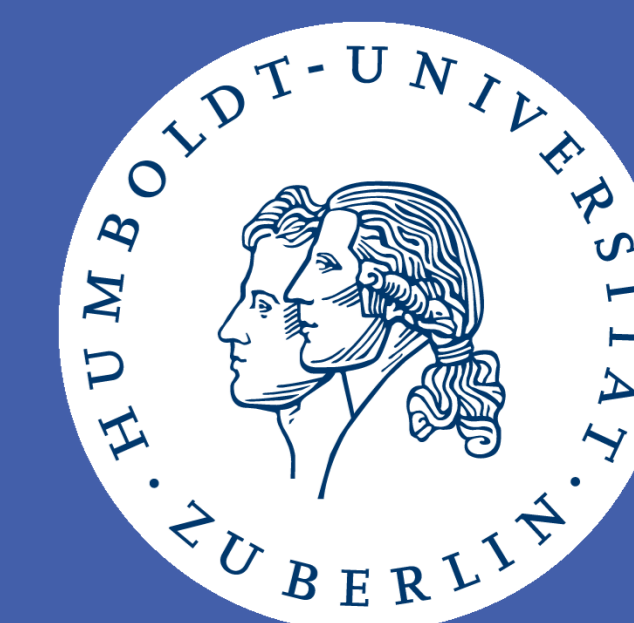


Blocking Mimicry – Or not?

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ABSTRACT

Facial mimicry is the imitation of the emotional facial expressions of others. Mimicry is said to be an embodiment process that is relevant for emotional understanding. Studies aiming to block mimicry to assess the influence on emotional processes use various techniques. Two of these are instructions to not move the face and holding a pen in the mouth using the lips. We used these methods to “block” mimicry in an affective priming paradigm with a no block control condition. Facial EMG was recorded throughout at the Corrugator Supercilii (frown) and Zygomaticus Major (smile) sites. In all conditions, a significant affective priming effect was found, suggesting that both primes and targets were processed.

EMG results showed consistent significant mimicry effects for Corrugator activity in response to angry versus happy targets, suggesting that the upper face was not affected by the manipulation. Results for Zygomaticus Major suggest inconsistent blocking effects depending on the preceding prime. In sum, the two blocking procedures tested only resulted in incomplete blocking. This incomplete blocking did not affect the emotional processes underlying affective priming.

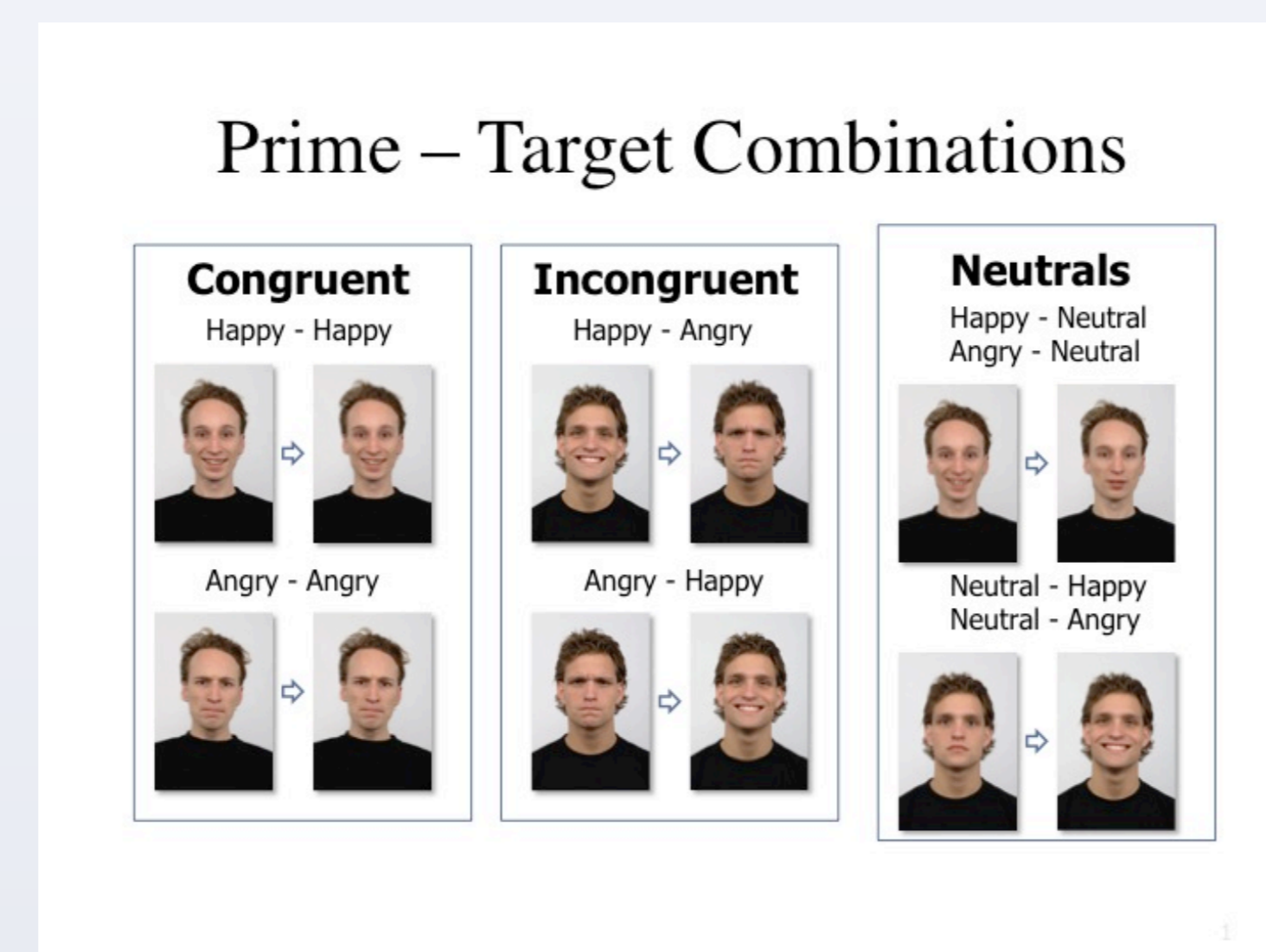
INTRODUCTION

In research on embodiment effects on emotional processing a common manipulation consists of blocking facial activity during the task. This has been done in different ways. Thus, participants have been provided with hockey mouth-guards (e.g., Rychlowska et al., 2014), or asked to hold a pen between the lips (e.g., Oberman et al., 2007) or simply to not move the face (e.g., Stel et al., 2008). However, in none of these studies did the authors attempt to assess whether these manipulations actually blocked facial reactions to the stimuli. This was the goal of the present study.

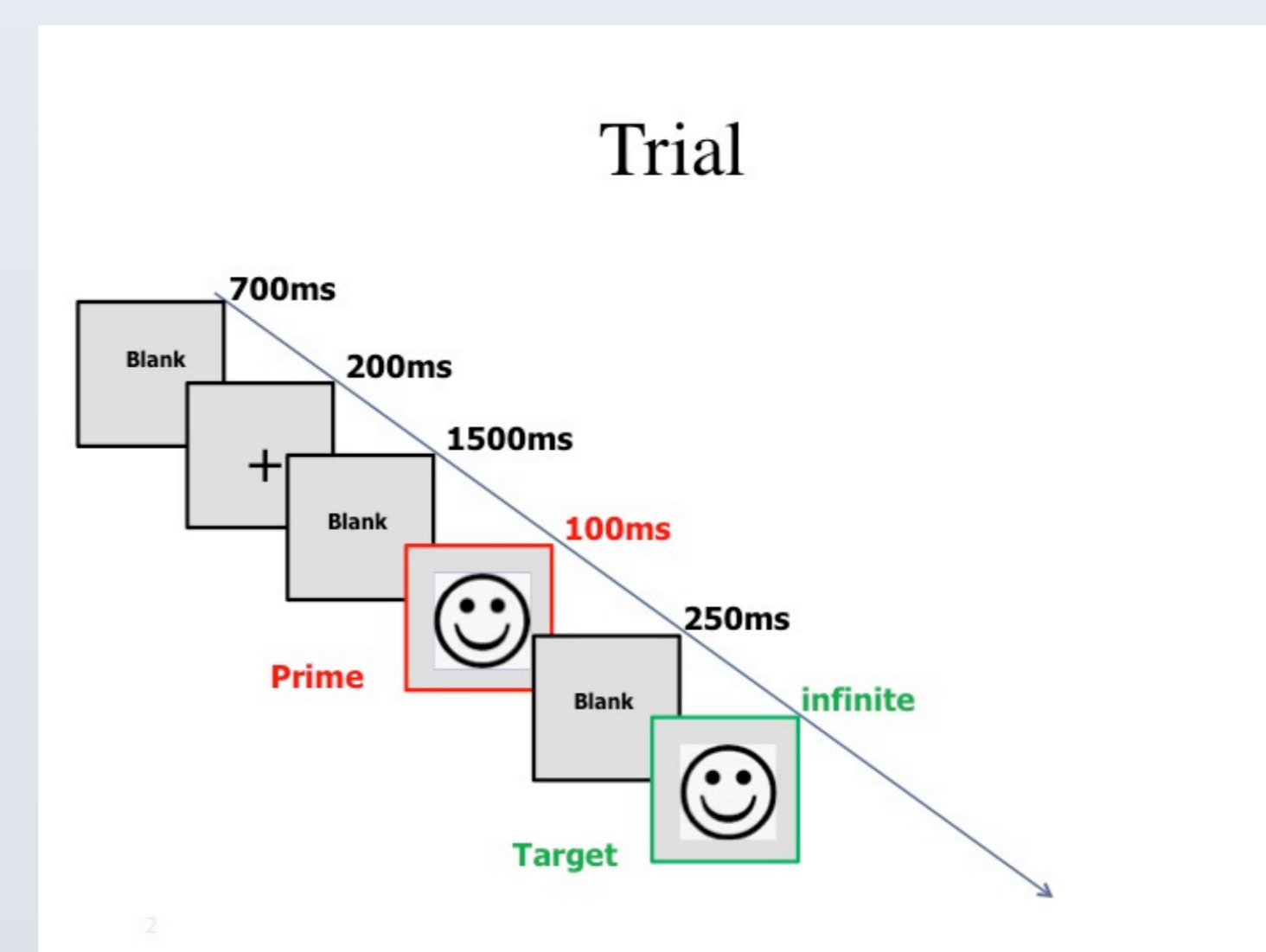
For this, participants first saw either a positive or negative emotional facial expression, which they were told to disregard (prime) and then a second expression that was either positive or negative in valence, which they were to rate for valence (target). The classic affective priming effect consists of a relatively faster response when the two expressions are congruent in valence rather than incongruent. For the purpose of this study we added “neutral” primes and targets. This was done to be able to measure the full course of mimicry to both primes and targets as mimicry reactions are relatively slow and only peak at 1sec after stimulus presentation. This means that reactions to primes and reactions to targets overlap. Participants completed the task in one of three conditions: Holding a pen between the lips (lips), being instructed not to move their face (mask) and a control condition.

METHODS

Stimuli



Procedure



Participants: A total of 110 women, 51 men and 1 gender unknown with a mean age of 26 years (SD = 5.5) participated individually and received €8.

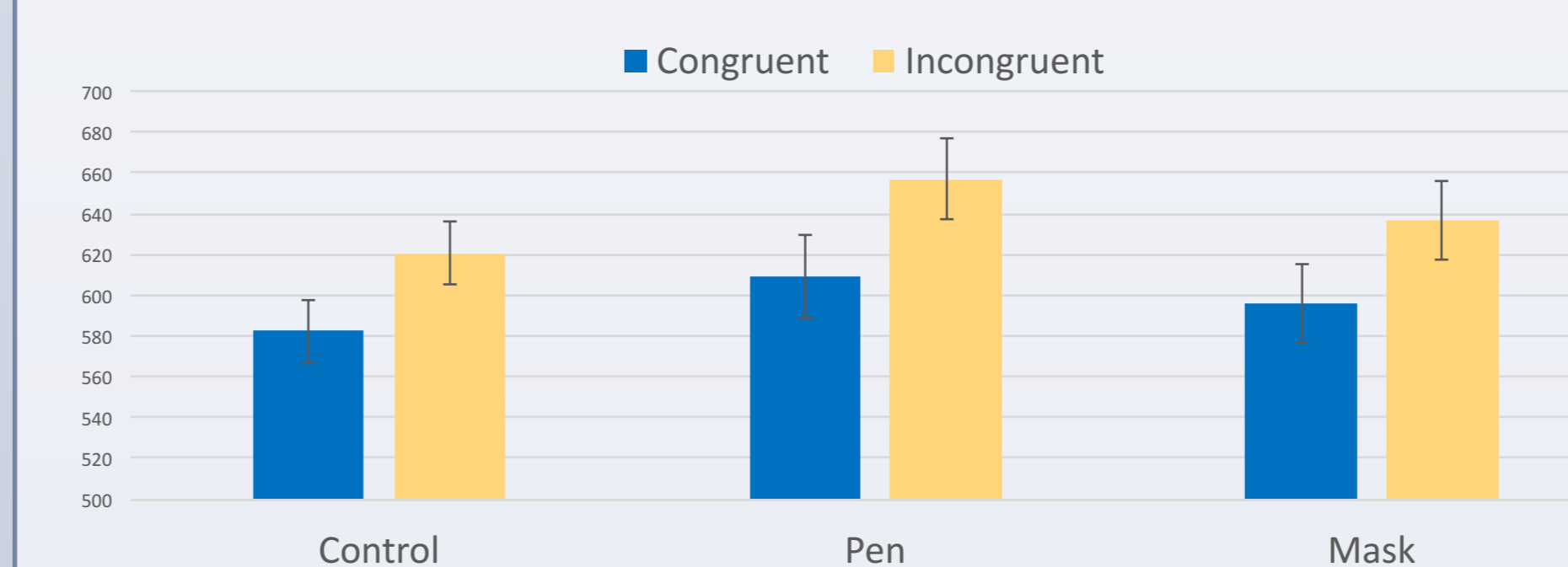
Manipulation: Participants were instructed to either hold a pen between the lips (N=42), to not move the face (a stiff facial mask was applied to provide additional feedback, N=46), or received no additional instructions (N=74).

Facial EMG: Facial mimicry was assessed using facial EMG at the Corrugator supercilii (frown), Orbicularis oculi (wrinkles around the eyes), and the Zygomaticus major (lifting the corners of the mouth in a smile) sites. Facial activity was measured during stimuli presentation on the left side of the face using bipolar placements of Easycap GmbH Ag/AgCl miniature surface electrodes filled with Signa gel by Parker Laboratories Inc. The skin was cleansed with lemon prep peeling and 70 % alcohol. Raw EMG data were sampled with a mindware bio amplifier with a 50 Hz notch filter at 1000 Hz and band pass filtered between 30 and 300 Hz.

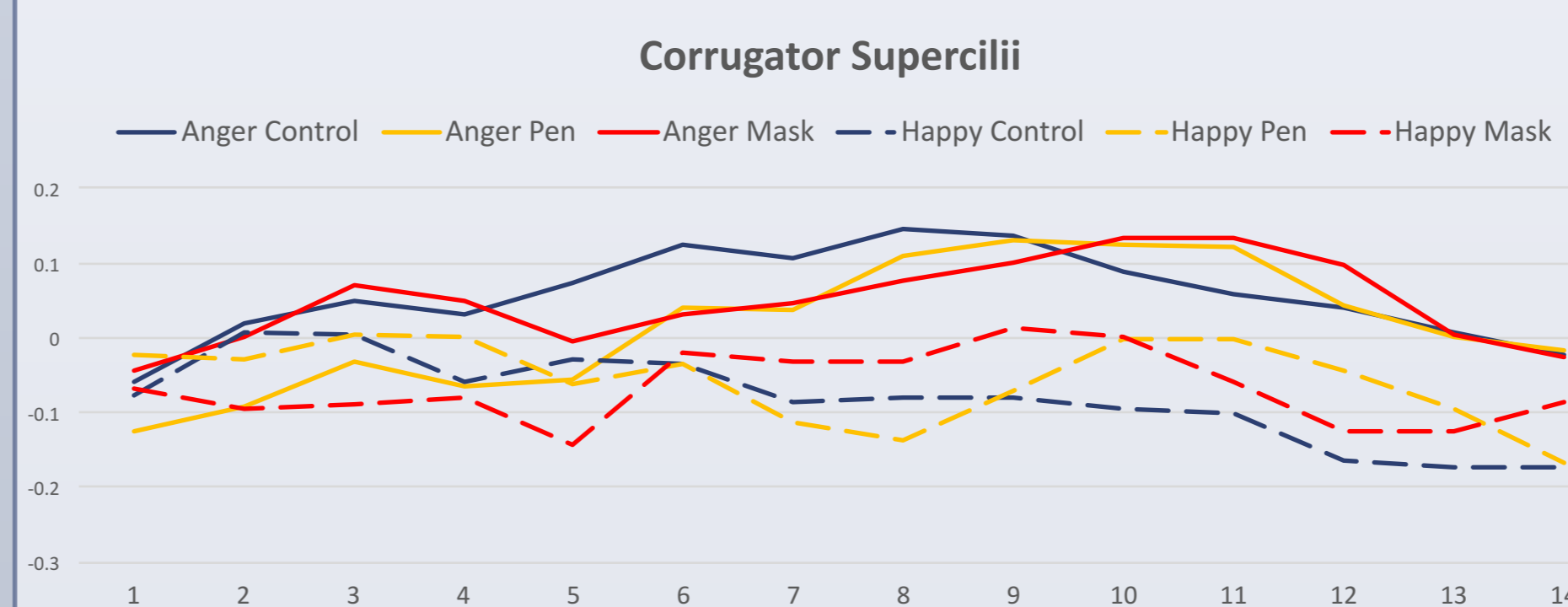
Reaction time: Participants pressed the P or the Q-key to indicate that the target showed either a positive or negative emotion expression. The response key assignment was counterbalanced across participants.

RESULTS

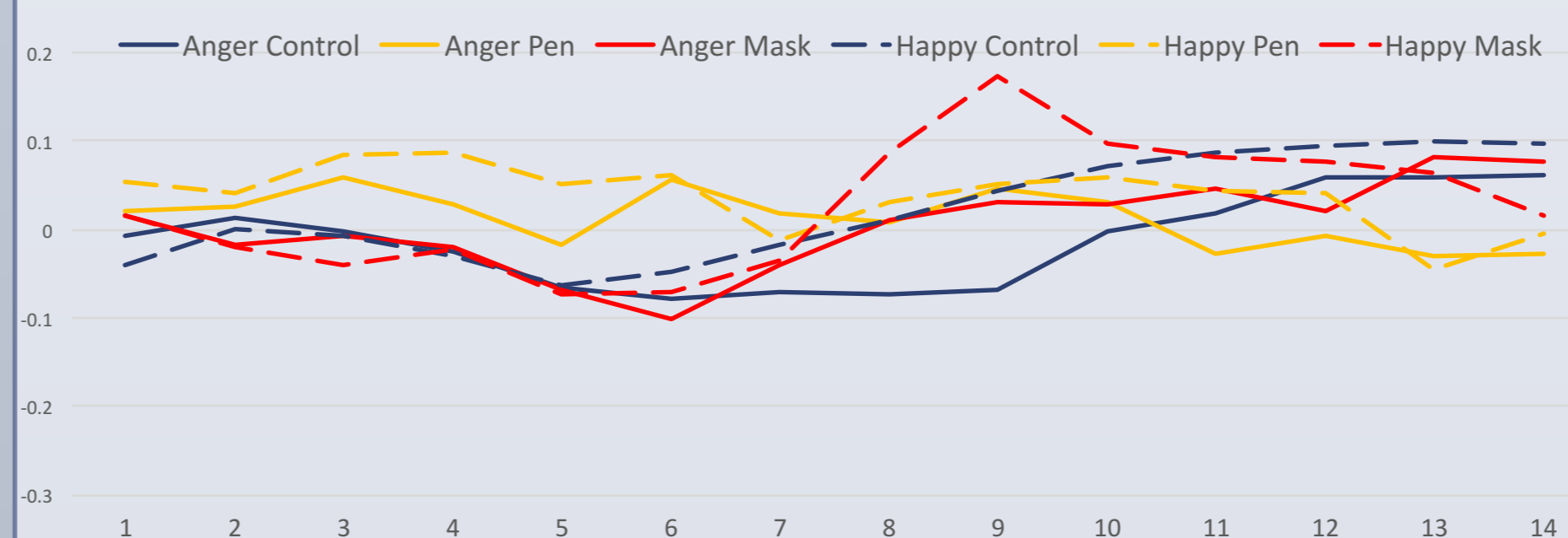
A 2 (congruency) x 3 (condition) analysis of variance revealed a main effect of congruency, but no interaction.



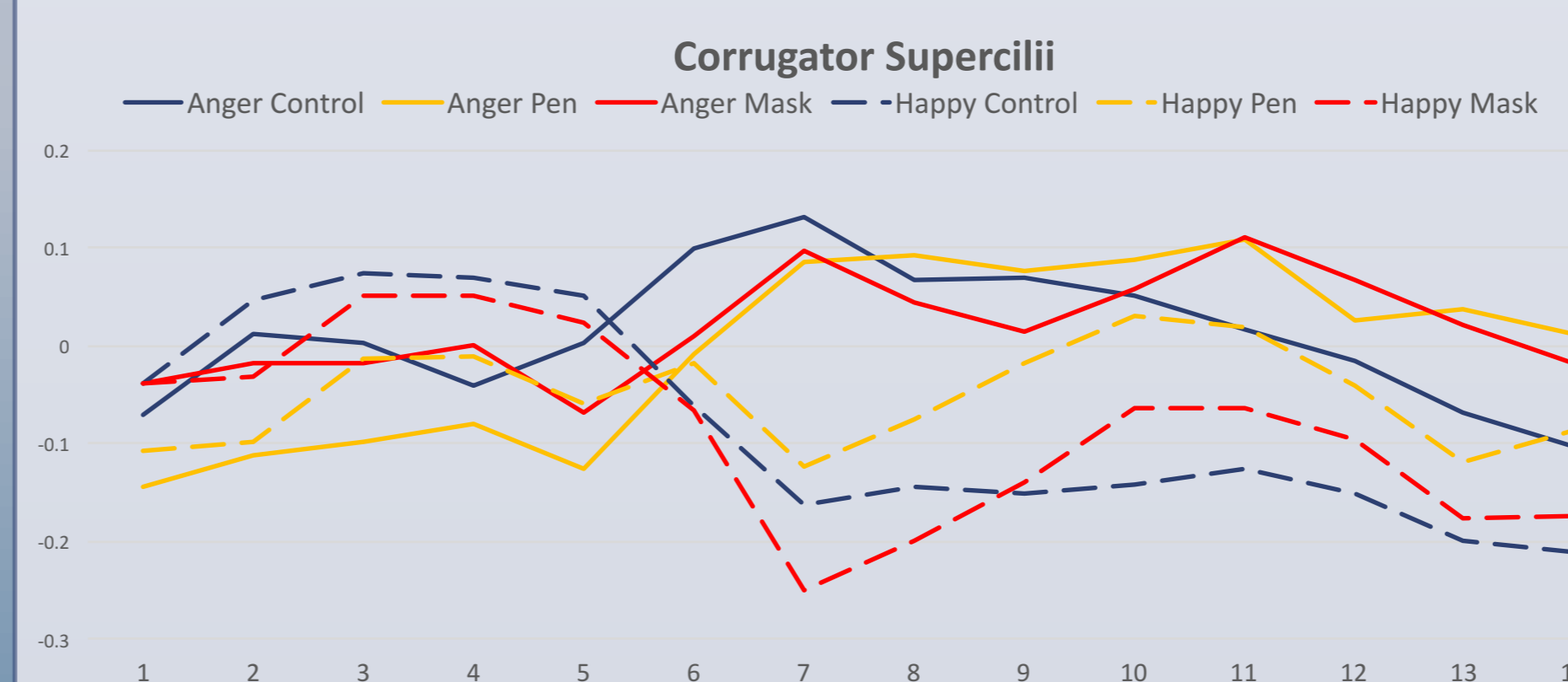
Congruent Prime-Target



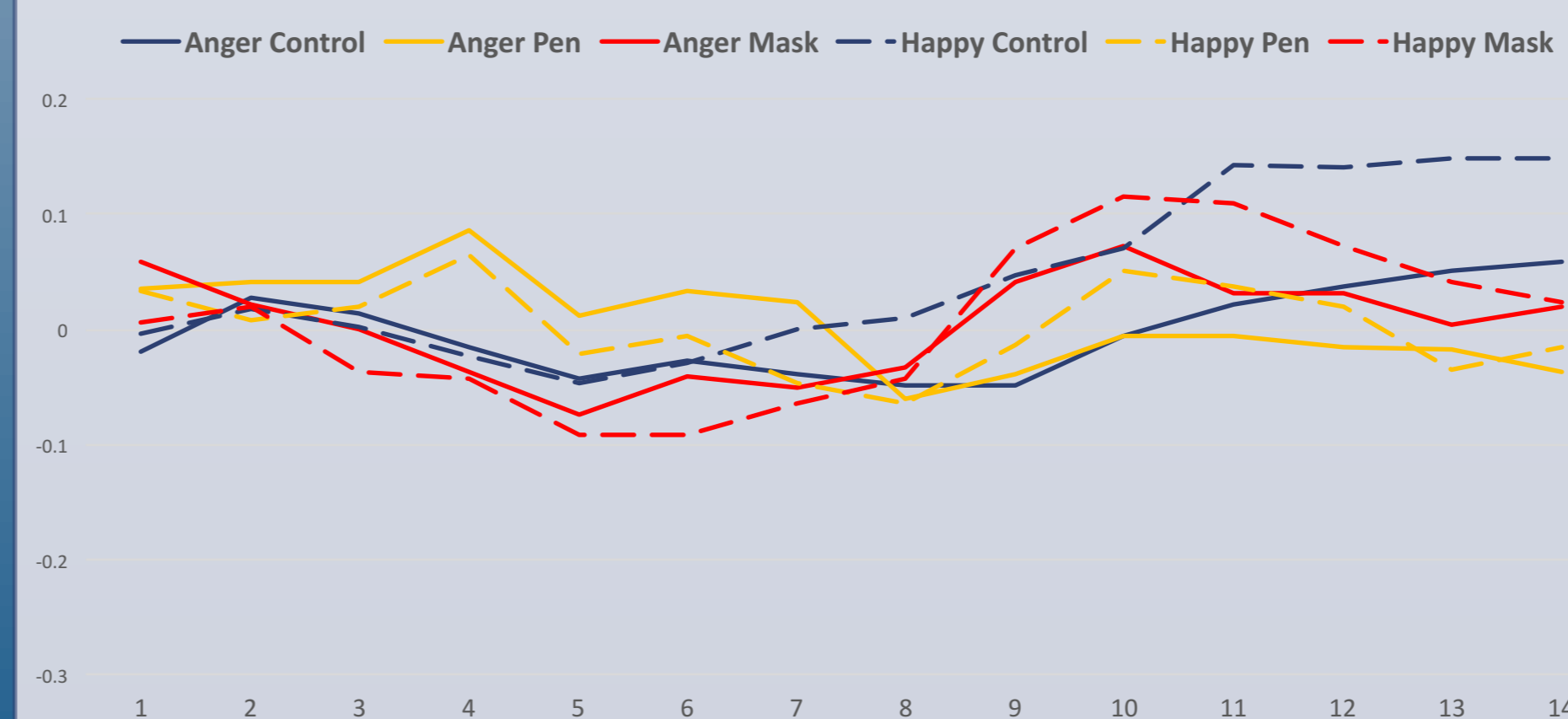
Zygomaticus Major



Incongruent Prime-Target

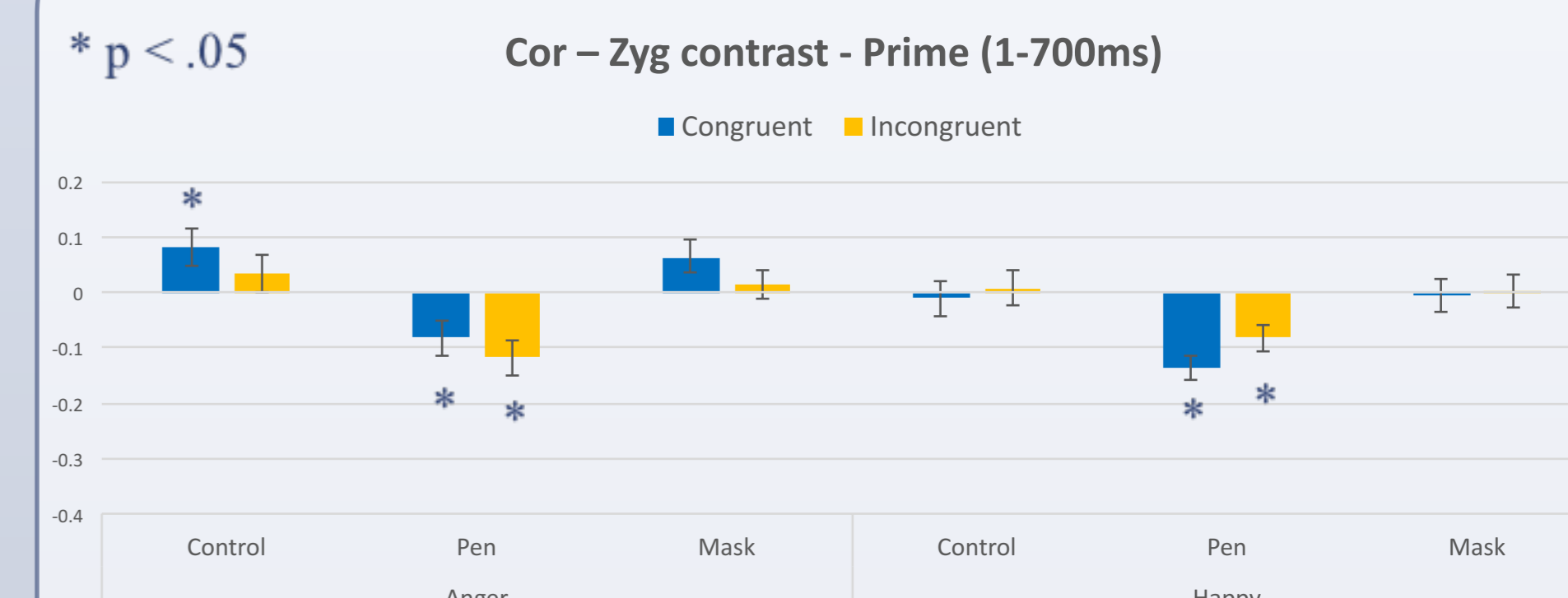


Zygomaticus Major

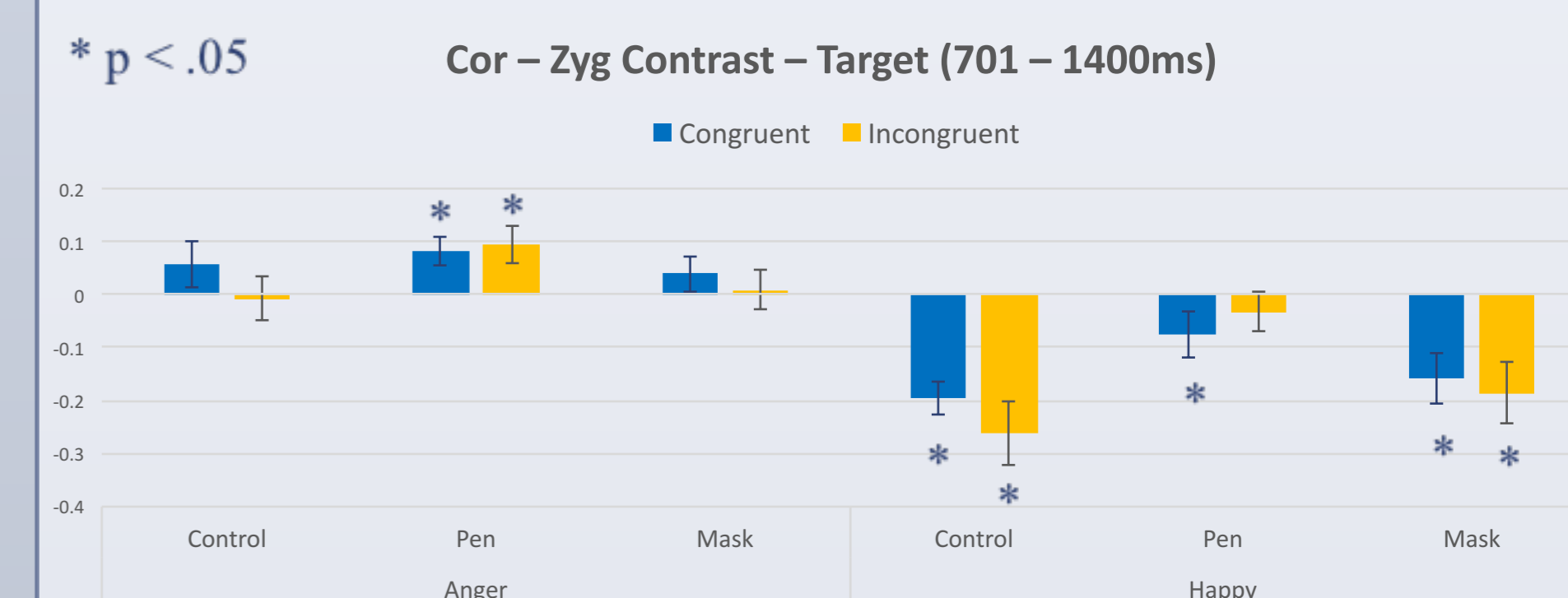


Overall, no main effects of condition nor condition by emotion interactions emerged for the full time sequence.

RESULTS (cont.)



Overall, facial reactions to primes were unsystematic. In the control and mask conditions, the means suggested Cor > Zyg in the pen condition the pattern was reversed.



Overall, mimicry emerged significantly in the control and the mask condition only for happy targets. Only in the pen condition were contrasts for angry targets significant. For the above analyses, the N for the control condition was weighted to N=40.

Conclusion

The pattern of findings suggests first, that neither the pen nor the instructions were effective in blocking mimicry reactions. Second, affective priming effects do not seem to be mediated through facial mimicry.

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Poster Handout

