



Early Differentiation of Responses to Emotional Face Repetition

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INTRODUCTION

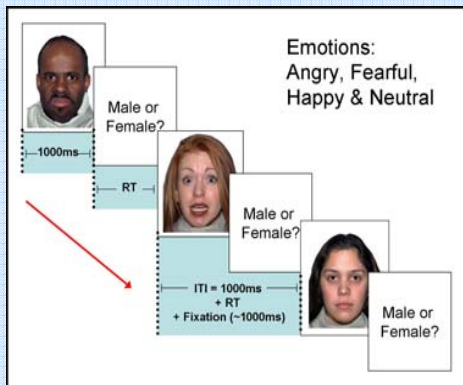
- Very Early Responses to Facial Expression

Previous studies reported early global effects of expression² but did not observe any differentiation by expression earlier than ~140ms.

- Repetition Attenuation to Specific Expressions

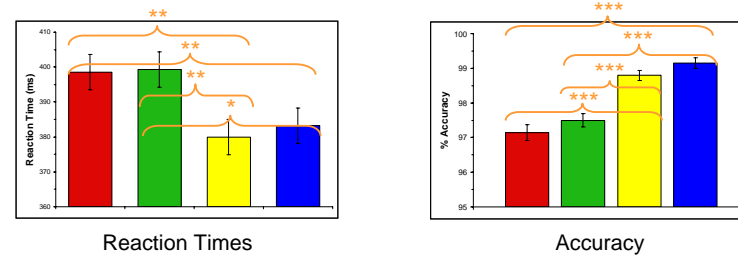
No studies examined changes over repetitions in ERPs evoked by different facial expressions.

METHODS

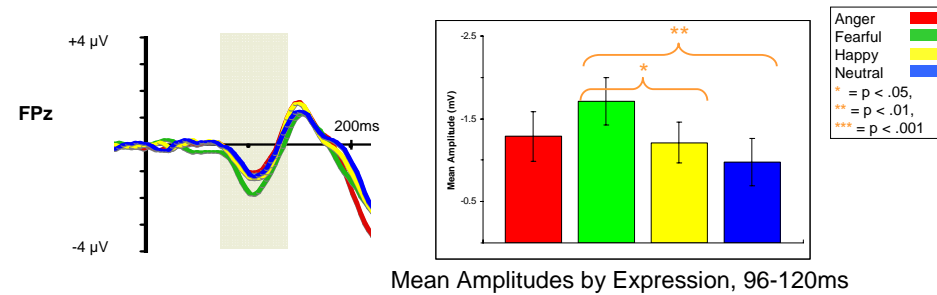


- Participants: 22 undergraduates (mean age 20, SD 2.9)
- Stimuli: Angry, Fearful, Happy and Neutral Face pictures; 40 separate identities⁴
- Gender discrimination task
 - 2 blocks, 160 faces each
 - Each identity in each expression

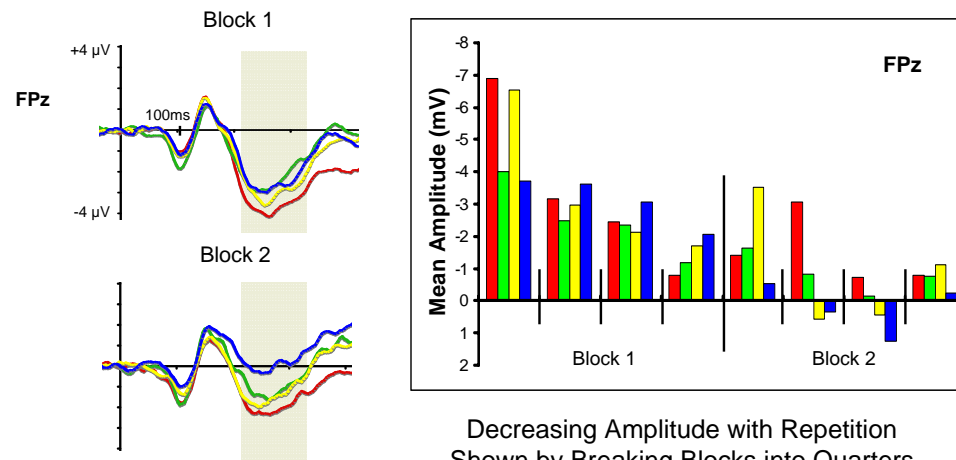
Negative Expressions Lead to Poorer Performance



Early Enhanced Response to Fear than Other Expressions



Later Decreases in Amplitude Following Expression Repetition (~260ms)



Decreasing Amplitude with Repetition Shown by Breaking Blocks into Quarters

RESULTS

- Expression affects RT and accuracy
- Early (~108ms) enhanced frontal ERPs evoked by fear compared to other expressions
 - ERPs to fearful expressions occur *earlier* in latency than either subdurally-recorded face-specific N200 from fusiform gyrus¹, or scalp-recorded N170 ERPs³ recorded from lateral posterior scalp
- ERPs at ~260ms were significantly attenuated by expression repetition both within and between blocks

CONCLUSIONS

- Emotional expressions differentiated by 108ms
- Face expression analysis may precede other face specific processing
- Repetition of emotional expression attenuated responses at 260ms is independent of identity
 - May indicate privileged processing of expression information

REFERENCES

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