

Sequential conflict resolution under multiple concurrent conflicts: An ERP study

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Main question

Do multiple concurrent conflicts result in a simultaneous or sequential conflict resolution?



Typical conflict tasks





Congruency effect





Concurrent conflicts



(Rey-Mermet & Gade, 2016, JEP:HPP; see also, e.g., Chmielewski & Beste, 2019, Cortex; Frühholz et al., 2011, NeuroImage)



Concurrent conflicts





Concurrent conflicts





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Concurrent conflicts





Interaction between Stroop and Flanker



Sample: 24 students (5 men, Mean_{age} = 23.5, SD_{age} = 5.3)

Error bars represent within-subject 95% confidence intervals (Cousineau, 2005; Morey, 2008).



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Both conflicts are resolved in the same processing stage.

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- What is the neural time course of resolving multiple concurrent conflicts?
- \Rightarrow Using event-related potentials (ERPs)































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separate ERP components



Method





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Behavioral results



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ERP results: P2 & N2



flanker incongruent minus flanker congruent





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ERP results: N450



Stroop incongruent minus Stroop congruent





ERP results: N450



Stroop incongruent minus Stroop congruent





Take-home Message

Sequential conflict resolution

when multiple conflicts are presented concurrently



The question arises...

Why do we observe an interaction between flanker and Stroop conflicts in the RTs while no interaction was found in the ERP components?



























Rey-Mermet, A., Gade, M., & Steinhauser, M. (2019). Sequential conflict resolution under multiple concurrent conflicts: An ERP study. *NeuroImage*, *188*, 411–418.





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