

Successful resolution of conflict is crucial in everyday life, as it allows people to cope with problematic situations and adjust their behaviour according to current goals. Interestingly, very often we do not even realize that we are coping with a conflict and yet it is effectively solved (for example, we want to go through the street and suddenly a red light comes on or when we try to learn with the TV on). The main aim of the project is to investigate the neurocognitive mechanism responsible for conflict resolution in the two commonly used research paradigms: go/no task and flanker task. Although, for many years, these tasks were investigated separately, more and more recent studies have been suggesting that these tasks may tap into the same neurocognitive mechanism of conflict resolution and in both of them response inhibition is needed to successfully resolve a conflict. The idea of the same underlying processes in both the go/no-go and the flanker tasks is motivated by observation of N2 event-related component in each of them. However, the evidence for this argument is so far limited. As a consequence, it is still unclear whether these two tasks tap a common conflict resolution mechanism or reflect functionally different mechanisms. On top of that, there is an ongoing debate about the role of the N2 component in indexing conflict resolution and, more specifically, response inhibition. The planned project builds on our recent findings related to the electrophysiological underpinnings of performance in a flanker task and aims to better understand the neurocognitive mechanisms underlying conflict resolution in the go/no-go and the flanker tasks and to elucidate a functional role of the N2 ERP component in indexing conflict resolution and response inhibition. Within-subjects design, manipulation of trial-type probability, as well as employment of ERP measurement will help to pinpoint behavioural and neural indices of conflict resolution in the go/no-go and the flanker tasks and, moreover, directly contrast indices across the tasks. According to the best of our knowledge, the proposed project will be the first attempt to directly contrast the indices of conflict resolution between the go/no-go and the flanker tasks. As a consequence, the project will serve as a primer to inform theories of cognitive control about the mechanisms of conflict resolution across these two commonly used paradigms. Furthermore, the project will bring better understanding of the N2 ERP component in indexing conflict resolution and response inhibition across different versions of the same paradigm and as well as across different paradigms. At the same time, the project will offer a battery of experimental tasks that can be applied to the assessment of cognitive processes and determine atypical/impaired cognitive processes.