

Problem statement

The Eriksen flanker task (Eriksen & Eriksen, 1974) is a well-known paradigm in cognitive psychology. In this task, participants should suppress responses that are inappropriate in a certain context. Two types of stimuli can be defined in this paradigm: targets and flankers. A target (usually an arrow) is flanked by non-target stimuli which correspond either to the same directional response as the target (congruent flankers), or to the opposite response (incongruent flankers).

An example of a congruent trial is where the target points to the left (e.g. <), and the flankers also point to the left (e.g. <<). In this case, the participant would see the following: <<<<<, where the expected response would be pressing the left response button. An example of an incongruent trial would be '< < > < <', where the participant should press the right response button. The results of this paradigm indicate that participants respond slower and less accurate on incongruent trials.

Try to implement a model that performs the Erikson flanker task, and check whether the incongruency effect (reflected by a decrease in accuracy) can be replicated or not.

References

Eriksen, B. A., & Eriksen, C. W. (1974). Effects of noise letters upon the identification of a target letter in a nonsearch task. *Perception & psychophysics*, 16(1), 143-149.