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Cognitive Awareness and Study Approach Decision Making

Role: Co-lead Investigator & Data Analyst (2021 – 2023)

Brief Description (full article)

The objective of this project was to examine the influence of mental effort and familiarity on learning perceptions and study strategy preferences. This project required large-scale data management in Excel (600+ participants). With my role, I used skills such as survey design, logistic regression, mediations, and *t*-tests.

Problem

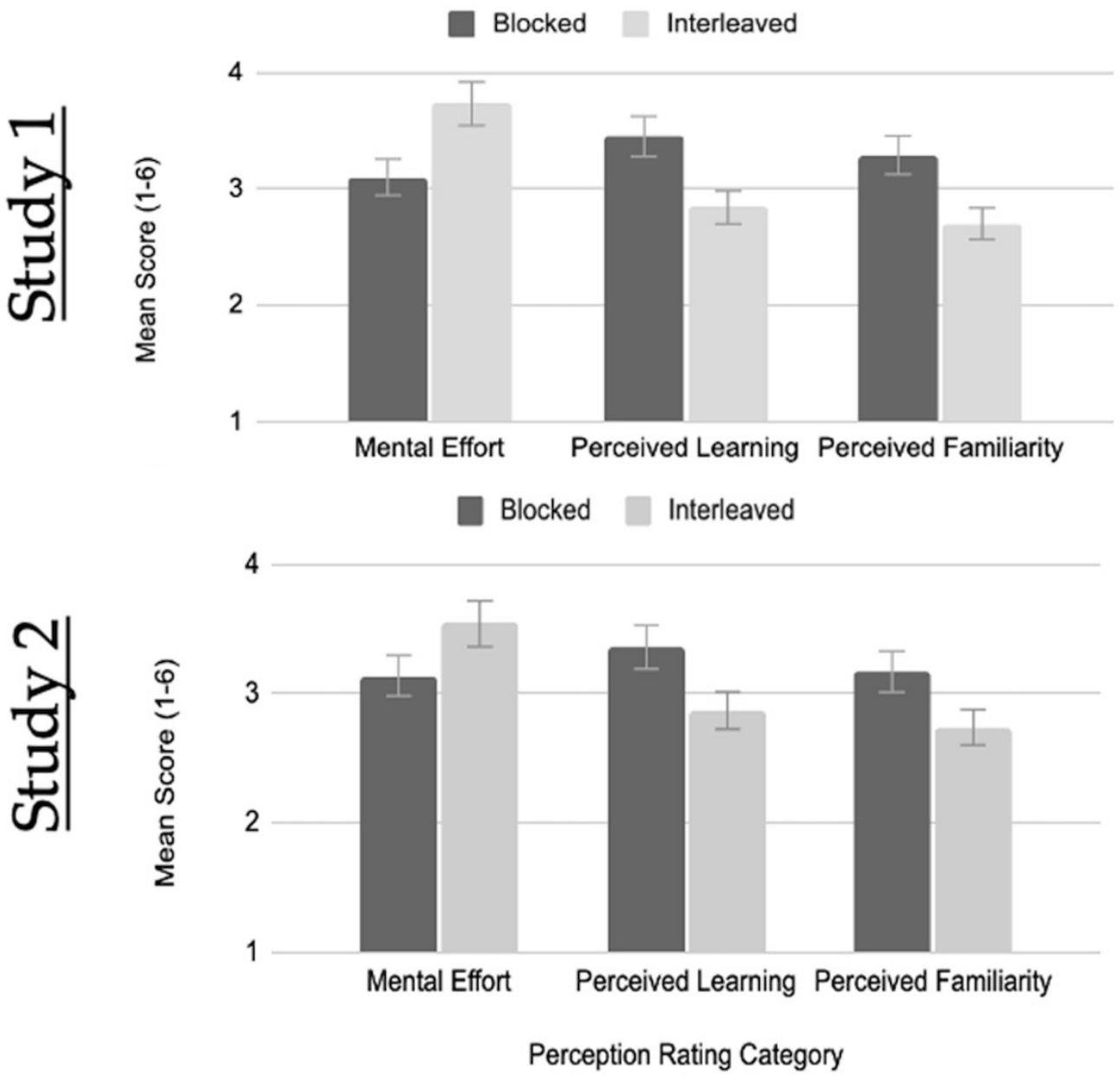
Learners often do not choose ideal study strategies when learning. Past research suggests that learners frequently misinterpret the effort affiliated with efficient strategies as being indicative of poor learning. Expanding upon this past work, I also explored the integration of study habits into this model. Perhaps learners misinterpret the unfamiliarity of efficient strategies as being indicative of poor learning as well.

Design

I conducted two experiments were learners experienced two contrasting study strategies – blocked (grouped together) and interleaved (not grouped together or intermixed) – to learn to discriminate between images of bird families. After experiencing each strategy, learners rated each according to its perceived mental effort, learning, and familiarity. Next, learners were asked to choose which strategy they would use in the future.

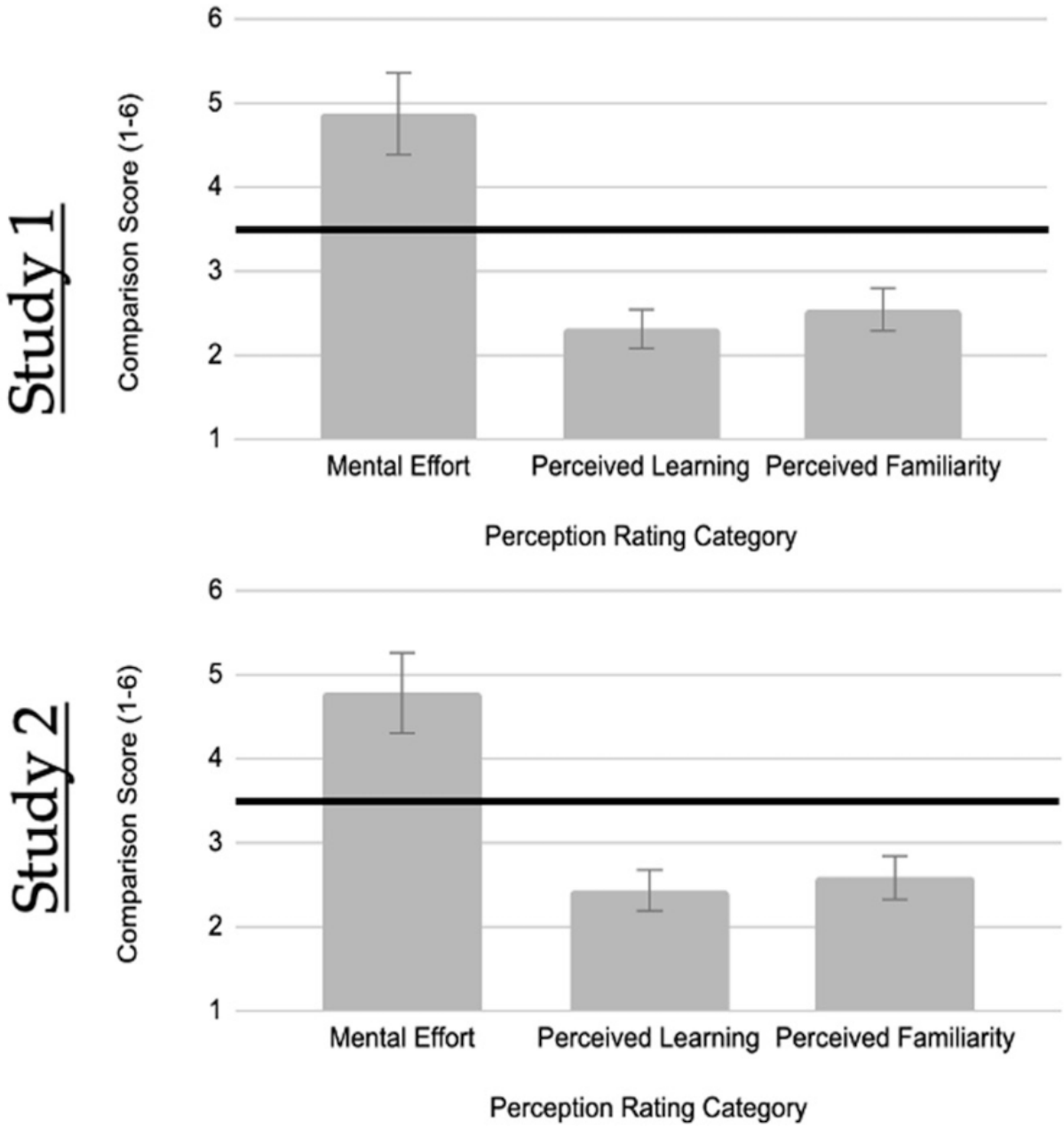
Results

For both studies, when given the opportunity to choose to either use the blocked or interleaved strategy for future use, most participants chose a blocked schedule compared to the interleaved schedule. For both studies, participants perceived the interleaved schedule as being more mentally effortful than the blocked. They also judged the interleaved schedule as less effective for their learning when compared to the blocked schedule. Lastly, they judged the interleaved schedule as being less familiar than the blocked schedule.



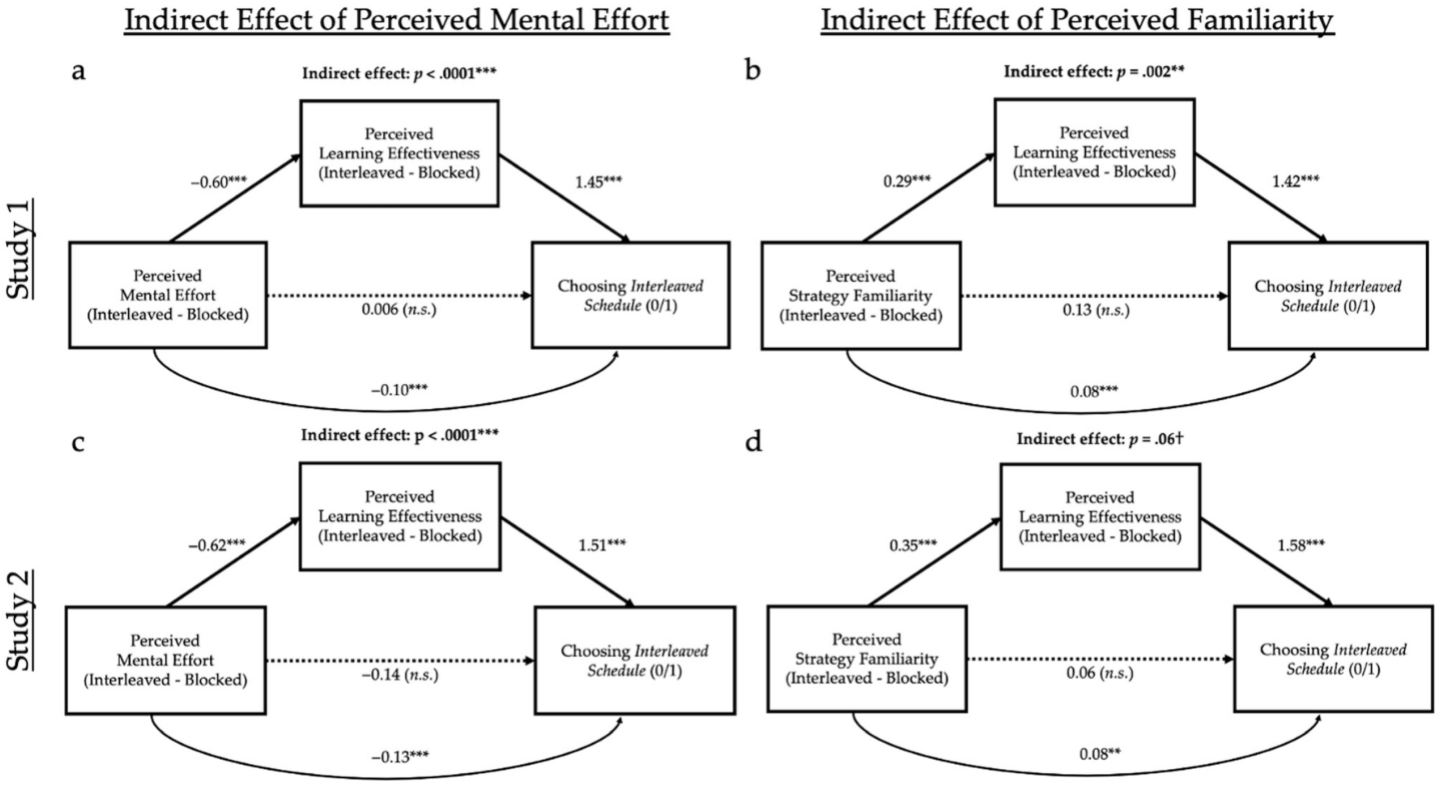
Results (cont.)

For both studies, participants also judged an interleaved schedule as being significantly more effortful than a blocked schedule, as significantly less effective for learning, and as significantly less familiar.



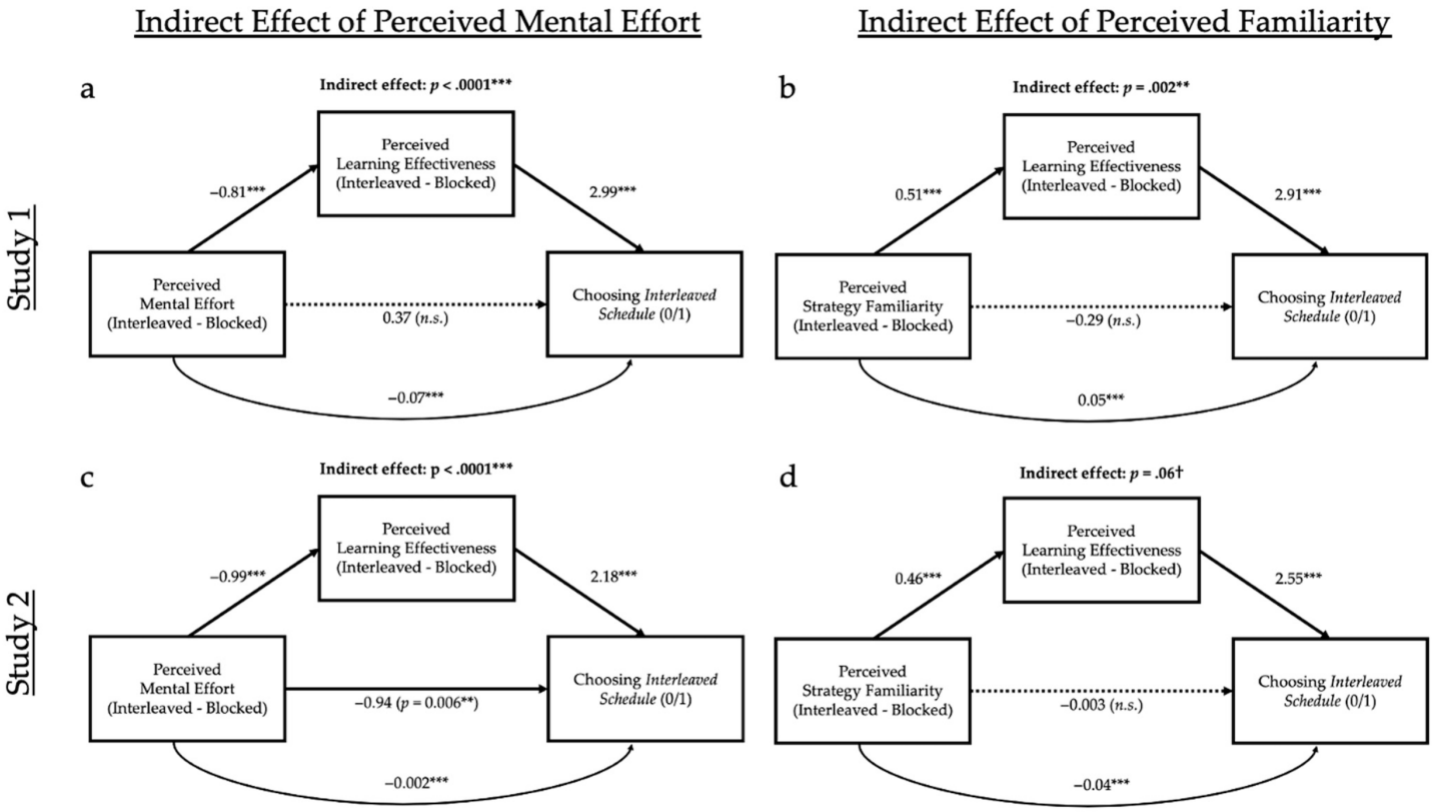
Results (cont.)

For both studies, mediation analyses revealed the more learners perceived interleaving as effortful, the less they perceived they learned, and consequently they were less likely to choose this method. Additionally, the more learners perceived interleaving as being less familiar, the less they perceived they learned, and consequently the less likely they were to choose this method.



Results (cont.)

Further, for both studies, mediation analyses revealed the more learners perceived interleaving as effortful, compared to blocked learning, the less they perceived they learned, and consequently they were less likely to choose this method. Additionally, the more learners perceived interleaving as being less familiar, compared to blocked learning, the less they perceived they learned, and consequently the less likely they were to choose this method.



Findings

Learners are making ineffective learning judgments based on their perceptions of mental effort and familiarity and, therefore, do not make use of optimal study strategy decisions in self-regulated learning decisions.