Topic suggestion for thesis supervision – spring semester 2026

Topics proposed by Martin Brandt

1. **<u>Binding in Visual Short-Term Memory</u>: Reliability of Individual Measurements of Capacity and Binding**
   Research on visual short-term memory investigates whether learned objects are stored as integrated wholes (e.g., as a unit of shape and color — *binding*), or whether individual visual features are stored separately.
   The ability to bind object features is an important predictor of memory performance in aging and in dementia. However, there is no standardized procedure for measuring binding, and little is known about the psychometric properties of such measures.
   In this thesis, a binding measure will be developed based on a student sample and evaluated in terms of its reliability.
2. **<u>Output Interference in Episodic Memory</u>**
   Global memory models propose that all learning experiences influence information retrieval. Does this also apply to the test phase in recognition experiments?
   In other words, does retrieving information from memory change the likelihood of later retrievals? Previous findings suggest this may be the case, but the observed effects are generally small.
   This thesis will test a new idea that may reveal a stronger effect. A simple and short memory experiment is planned, though it will require a larger sample.
3. **<u>Thurstone Scaling of Psychometric Test Instruments</u>**
   Many diagnostic tests, such as the *Beck Depression Inventory* (BDI), present items with several response levels, each arbitrarily assigned a numerical value. The total score is calculated as the sum of item scores.
   However, it is questionable whether items with the same score contribute equally to the measurement of depression. For example, the items *"I would kill myself if I had the chance"* and *"I believe that I look ugly"* both contribute three points to the total score, though their severity clearly differs.
   Russo (1994) demonstrated that such scoring assumptions in the BDI can be problematic, though no complete pairwise comparison—standard for Thurstone scaling—was conducted (as this would require around 4000 judgments per rater, which is impractical).
   However, Thurstone scaling can also be performed with **incomplete pairwise comparisons** if the model is formulated as a **multinomial model**.
   This thesis will test this method and compare the results with those obtained by Russo (1994).

Topics proposed by Beatrice Kuhlmann

Memory Cues: How Effectively Can We Generate Memory Cues for Ourselves vs. for Others?
How do self-generated memory cues compare to those created for other people, to normative cues, and to automatically AI-generated cues?
This question will be explored in an experimental study based on the paradigm of Tullis and Benjamin (2015; https://doi.org/10.3758/s13421-015-0517-3).

Topics proposed by Désirée Schönung

Source Memory and Metamemory
Participants learn words associated with sources (e.g., speakers) and estimate how well they will later remember each source. These estimates are called *Judgments of Source* (JOS), and research in this area is still limited.
We are interested in whether and how accurately participants can predict their own source memory. Three specific questions are suitable for bachelor's or master's theses:

1. **Influence of Source Similarity on Metacognitive Ability**
   Source memory is known to decline when sources are more similar. It remains unclear whether source similarity also affects the accuracy of metamemory judgments about source memory.
2. **Comparison of Different Source Paradigms**
   Research distinguishes between *external* sources (e.g., speakers) and *internal* sources (e.g., imagined vs. thought). Related paradigms include *external*, *internal*, and *reality-monitoring*.
   The open question is: In which paradigm can people most accurately predict their own memory performance?
3. **Age-Related Differences in Memory and Metamemory**
   A comparison of metacognitive predictions and memory performance between younger adults (student sample) and older adults (aged 60+).

Topics proposed by Nikoletta Symeonidou

Do Emotional Contexts Help Retrieval?
A well-established finding in memory research is the *context reinstatement effect*: information is recalled more successfully when the retrieval context matches the learning context (Smith & Vela, 2001).
In simple terms, when the learning context is reinstated at retrieval, memory performance benefits.
However, few studies have examined how *emotional context* affects this effect.
This project investigates whether emotional significance of context enhances or diminishes the context reinstatement effect.
Is context reinstatement equally beneficial for memory when the context is emotional?