



FORSCHUNGSKOLLOQUIUM

EXPERIMENTELLE PSYCHOLOGIE

SOMMERSEMESTER 2025

Einladung zum Forschungskolloquium Experimentelle Psychologie

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Masking by four dots: New evidence in the light of competing theories

Dr. Josephine Reuther (Universität Göttingen)

Visual masking is a key paradigm in the investigation of perceptual consciousness, offering insight into the mechanisms and processes underlying conscious visual perception. Masking by four dots is particularly striking, as the brief presentation of four small dots interferes with target processing despite no overlap in space, and without the need for overlap in time. Models explaining this phenomenon include *object substitution*, which attributes masking to a failure of reentrant processing, whereby the initial feedforward signal is replaced before higher-level confirmation can occur; *object updating*, according to which the initial input is continuously revised

to match the current object state; and *information loss* which posits that, due to degradation and added noise, object information fades or becomes too unstable to support conscious access. A key difference between these models lies in the importance they assign to the relationship between target and mask, which is central only to the object updating account. According to this account, masking results when the mask is treated as the continuation of the target, prompting an update to the existing object representation. If the target and mask are instead treated as separate objects, the original target trace remains sufficiently stable to support conscious perception. Similarity is assumed to determine whether visual elements are treated as separate objects or as originating from the same object and, consequently, whether they are updated jointly or independently. Previous findings interpreted in support of the object updating account have suggested that dissimilarity between target and mask reduces masking strength. I will present results from three recent studies that failed to support this similarity hypothesis, re-examine earlier evidence, and discuss the implications for competing models of masking.