

How semantic is unconscious semantic integration? A visual masking study

Liad Mudrik

Teal Aviv University

Nathan Faivre

École polytechnique fédérale de Lausanne

Sid Kouider

Ecole Normale Supérieure

Christof Koch

Allen Institute of Brain Science

Abstract: Consciousness' role in high-level semantic integration is still unclear. Here, we presented masked pairs of images, which could be unrelated (e.g., a broken plate and an eagle), associatively related (e.g., a broken plate and a fork) or abstractly related (e.g., a broken plate and a fighting couple). Low-level features of the pairs were controlled for. In each trial, a masked pair (prime) was followed by a second pair (target) of a similar or different type. When the prime pair was visible, equal priming effects were found for both associatively related and abstractly related pairs. Yet when primes were rendered invisible, only associatively related pairs affected target processing. Our findings go beyond previous ones by demonstrating that two simultaneously presented distinct objects can be unconsciously integrated. Critically however, they suggest a crucial role for consciousness in processing semantic relations that transcend those of simple categorical associations.