

## **UC Merced**

# **Proceedings of the Annual Meeting of the Cognitive Science Society**

### **Title**

Visual selective attention: Priority is all you need

### **Permalink**

<https://escholarship.org/uc/item/1j3716kt>

### **Journal**

Proceedings of the Annual Meeting of the Cognitive Science Society, 46(0)

### **Authors**

Grieben, Raul

Spencer, John

Schöner, Gregor

### **Publication Date**

2024

Peer reviewed

# Visual selective attention: Priority is all you need

**Raul Grieben**

Ruhr-Universität Bochum, Bochum, Germany

**John Spencer**

University of East Anglia, Norwich, Norfolk, United Kingdom

**Gregor Schöner**

Ruhr-Universität Bochum, Bochum, Germany

## Abstract

We present a novel theory and neural process model of visual selective attention to answer long-standing questions in the field of visual attention. We show that the model with fixed parameter values can explain the unexpected efficiency of triple conjunction search (Nordfang & Wolfe, 2014), the influence of a task-irrelevant size singleton on search (Proulx, 2007), and how a third correlated but task-irrelevant feature improves search efficiency (Found, 1998). It also accounts for critical findings in the attention capture literature without the need to introduce different modes (Bacon & Egeth, 1994), signal-suppression (Gaspelin, Leonard, & Luck, 2015; Gaspelin & Luck, 2018; Lien, Ruthruff, & Hauck, 2021) or an attentional window (Theeuwes, 1992, 2023), shedding new light on recent debates.