

Visual accentuation constrains the structure of perceptual organization

Jurgis Skilters

University of Latvia, Riga, Latvia

Līga Zarina

University of Latvia, Riga, Latvia

Baingio Pinna

University of Sassari, Sassari, Italy

Megija Gintere

University of Latvia, Riga, Latvia

Santa Bartušēvica

University of Latvia, Riga, Latvia

Solvita Umbrasko

University of Latvia, Riga, Latvia

Ardis Platkājis

Riga Stradins University, Riga, Latvia

Laura Zelģe

University of Latvia, Riga, Latvia

Jānis Mednieks

Riga Stradins University, Riga, Latvia

Aleksejs Ševčenko

Riga Stradins University, Riga, Latvia

Nauris Zdanovskis

Riga Stradins University, Riga, Latvia

Agnese Anna Pastare

Riga Stradins University, Riga, Latvia

Artūrs Šilovs

Riga Stradins University, Riga, Latvia

Abstract

Perceptual organization contains two interrelated sets of phenomena: visual grouping and figure-ground segmentation. Different types of grouping and segmenting (and interaction and competition between them) have been described. Less clear is what happens once an accent is added in grouping or segmenting. According to several eye tracking experiments (n=35), apart from pop-out effect of particular elements, the overall structure of the visual field is changed. If compared to the non-accentuated stimuli, adding single accent to both grouping and segmentation stimuli induces not only local changes in saccadic processes but also a more global difference in gaze alignment. Most importantly, accent assigns a directional effect to the visual structure, typically decreases the average fixation time (by 11-28% depending on stimuli) and changes location of fixations and decreases their variation (if compared to non-accentuated stimuli). However, no significant differences between the number of fixations in non-accentuated and accentuated stimuli can be observed.