

Title: Visual and Auditory Cues to Attention

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Auditory research has shown that by playing tones at certain frequencies subsequently presented tones of a similar frequency are more easily detected when masked in background white noise. This demonstrates a frequency selectivity effect; attention to a particular frequency band make tones within that band more discernible. Similarly, in visual research it has been shown that visual stimuli presented within smaller or larger areas (demarked by different size squares) are better detected and identified when the area is smaller. This demonstrated what is known as a zoom lens model for visual attention; the more zoomed in you are, the more clear things are. In line with this research we sought to determine whether the zoom lens model of visual attention carried over to auditory attention, such that focus on smaller visual areas would cause increased focus onto smaller frequency bands.

Firstly, the experiment sought to replicate both the zoom lens effect and the frequency selectivity effect independently. Secondly it investigated whether different focal area sizes would increase the frequency selectivity effect.

The experiment was successful to a degree in replicating the zoom lens effect on visual attention. Smaller focal areas increased the discrimination of visual stimuli significantly when compared with the larger area (though having no cue at all was no different than the larger area).

Unfortunately the experiment was unable to replicate the frequency selectivity effect. This may have been to do with the very tight controls required in previous experiments to achieve such a result, but of course this did raise problems in terms of investigating the interaction. How can we see whether visual attention affects frequency selectivity when we can't replicate a frequency selectivity effect?! Despite this, the investigation did find a marginally significant interaction between visual focus size and frequency selectivity, with small visual focal areas creating a slight frequency selectivity effect, which while promising was not enough to reach any concrete conclusion about the effect.

Further research in this field would require a more solid method for replicating a frequency selectivity effect, such that the effect of visual cues to attention on frequency selectivity could be properly assessed.