Recent studies have shown the importance of peripheral vision for processing real-world scene images. Larson and Loschky (2009) showed that the central 5° of an image could be completely removed from a scene with no decrease in basic-level scene the role of the spatiotemporal dynamics of visual attention in scene gist acquisition.

In sum, the goals of the current study were to determine (a) whether there is any difference in the utility of central versus peripheral vision in acquiring the basic-level scene category of a scene over the time course of a single fixation, and (b) if such differences exist, whether they are more consistent with the idea advantage for peripheral vision, the sequential attention model, or parallel and preattentive processes across the visual field would best explain the spatiotemporal dynamics of scene gist recognition.

Our window and scotoma stimuli were constructed using a bounding box at the center of the image for the entire time period from the onset of the target to the offset of the mask, and that there processing time, $F(4, 212) = 77.40$, $p < .001$, Cohen's $f = .752$,[4] as well as significant linear trend, $F(1, 53) = 257.16$, $p < .001$. There was no main effect detected in the window versus scotoma comparison, $F(1, 53) = 1.53$, $p = .22$, Cohen's $f = .031$.

Our chief interest was whether or not there would be a significant interaction between the window/scotoma viewing conditions and processing time. As shown in Figure 3, there was a significant interaction, $F(4, 212) = 4.05$, $p = .003$, Cohen's $f = .150$, such that there was an advantage for the window conditions over the scotoma conditionsmce58.2(2e)-2(in)]TJ/Cs8cw7.5(condan)]TJ/Cscondi05(conrtst)-3n

tion. However, after an additional 70-ms processing time (94-ms

Cohen's f = .172. Of greater interest, however, the window condition produced better scene categorization performance than the scotoma condition, $F(1, 80) = 23.69$, $p < .001$, Cohen's f = 167. However, the interaction between viewing condition and processing time did not affect scene categorization accuracy, $F(4, 320) = 0.27$, $p = .90$.[6] The lack of an interaction indicates that the advantage for the window image condition over the scotoma image was present over the entire first 100 ms of processing.

This result is consistent with both reading and scene percep-

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Bayes Factors providing good evidence for the null. As before, this equivalence between window and scotoma conditions, when given the equivalent of one eye fixation's processing time, means that any difference observed between these two conditions at earlier processing times cannot be the result of differences in viewable information available to each. Rather, these differences must be due to spatiotemporal differences in processing.

The remaining data were submitted to a 2 (attentional manipulation: window- vs. scotoma-dominant conditions) $\times$ 2 (viewing condition: window vs. scotoma image) $\times$ 3 (SOA: 35, 71, 106) mixed factorial ANOVA. As shown in Figure 5, scene categorization increased with processing time (SOA), $F(2, 208) = 18.39$, $p < .001$, Cohen's $f = .165$.[7] Of greater interest, however, and consistent with Experiments 1 and 2, the window conditions produced better categorization performance than the scotoma conditions, as evidenced by a significant main effect of viewing condition, $F(1, 104) =$

Second, Experiment 3 showed that the central advantage was eliminated when attention was strategically allocated to the visual periphery. The latter finding is hard to reconcile with claims that the central advantage is due to differences in content, but is consistent with the zoom-out hypothesis.[9]

However, an important question for future research is which information is used in central vision and peripheral vision

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