
We compared the responses of inferior temporal (IT) cortex neurons to individual and pairs of pattern stimuli. Monkeys were trained to fixate a small (0.5 deg) spot of light while the stimuli were presented extrafoveally. Each stimulus subtended about 1.5 deg and was projected at one of two sites 5 deg contralateral to fixation. On a given trial, stimuli were presented either at one of the sites or simultaneously at both sites.

We found that for eighty-seven percent of responsive IT neurons, addition of a second stimulus decreased the cell's response relative to the response of the more effective of the two stimuli presented alone. While many of the neurons tested responded preferentially to a specific single stimulus, the magnitude of the response attenuation was similar whether the second stimulus was the same as or different from the first stimulus. Furthermore, this effect occurred whether the second stimulus was within or outside the cell's excitatory receptive field. While previous investigations have shown that directed attention can attenuate responses of IT neurons, the effect we have observed is unlikely to be due to attention since our behavioral task only required the animal to maintain fixation of the fixation point.