

Crowding Counting

Introduction

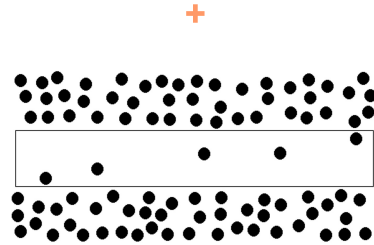
How well can we count cluttered objects in the periphery?

Human counting accuracy is well documented for centrally-viewed objects. Given a single glimpse, accuracy is perfect for up to 3 or 4 objects, but beyond that, error increases linearly with the number of objects viewed. One popular counting model supposes that two independent mental processes cover these two distinct domains: *subitizing* and *magnitude estimation*, respectively. But what happens to accuracy when objects are crowded (peripherally viewed and cluttered), as is common in everyday experience? Does the dichotomy of up-to-3 vs. 4-and-above still hold?

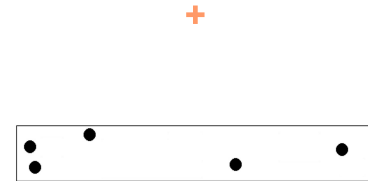
Methods & Results

For each task, fixate the + and estimate the number of dots in the box. When the dots are crowded, this is quite hard.

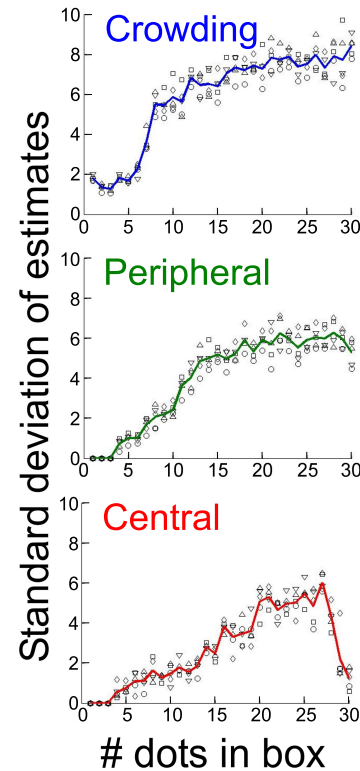
Task 1: Crowding



Task 2: Peripheral

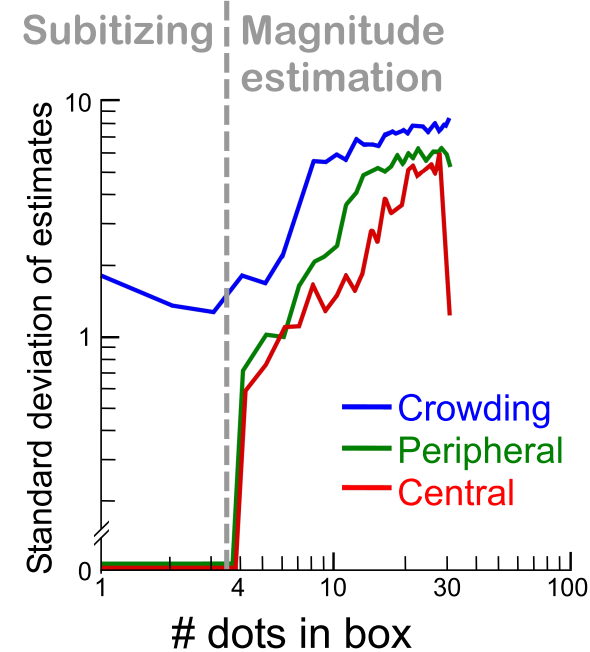


Task 3: Central



Conclusions

Crowding cripples subitizing, yet spares magnitude estimation.



Crowding greatly damages counting accuracy for up to 3 objects, but hardly impairs accuracy for greater numbers.