Dear Dr Verghese,

Thank you for considering our manuscript for publication in Vision Research. We have carefully considered and responded to the comments from the two reviewers in our responses below. The largest change is that we have replicated the experiment in eight new participants who participant in both parts of the experiment. The new data are now presented as Experiment 1, while the data from the previous manuscript (the re-analysis of Clarke et al 2009) are presented as a second Experiment. The new results address reviewer 1’s comments about the small n and the fact that different subjects used in both parts of the original experiment. We replicate the findings, demonstrating they are robust and extend to a larger sample tested using different equipment.

With regards to Reviewer 2’s comments regarding Signal Detection Theory, we agree with Reviewer 2 on many points, and we discussed these issues extensively while developing this project. While there are pros and cons of both paradigms, we ultimately decided on the approach we have taken here of minimizing false positives rather than cueing the target location. We have revised the paper to make our reasoning more clear, but we stand by this decision, for reasons outlined in the paper and the responses to the reviewer below.

The comments of Reviewer 2 also helped us recognize that we had not been sufficiently clear in emphasizing the main aim of our study, which was not to critique or test the optimal model, but to compare the stochastic search model to human behavior. Our methods allow us to make this comparison. The optimal model presented in our paper was included to help the reader make some comparisons between our study and Najemnik & Geisler’s, and despite its differences, our optimal model’s behaviour (in terms of the number of fixations required to find the target) is consistent with the results presented by Najemnik & Geisler (2005, 2008).

These issues are discussed in more details in the response to reviewers.

Alasdair Clarke