

# Failure to Replicate the Mehta and Zhu (2009) Color Effect

June 21, 2013

Mehta and Zhu (2009) reported several studies in *Science* on the effects of the colors red and blue over a series of cognitive tasks. Red was hypothesized to induce a state of avoidance motivation which would cause people to become more vigilant and risk-averse in a task. Blue was hypothesized to induce a state of approach motivation which would cause people to use more innovative or risky strategies. Studies appear in high-impact journals, like *Science*, often because they report novel or far-reaching effects. Such studies need to be replicated in order to determine whether the finding is reliable.

My lab has focused on replication of their first experiment, an anagram task where you needed to unscramble letters to discover the original word. The authors reported that avoidance-related words were solved more quickly if they appeared on a red background and approach-related words were solved more quickly on a blue background. Their effect-size scores would be classified as large (Cohen's  $d$  ranged from 0.81 to 1.11). In this study, we used the exact same anagrams and colors used by Mehta and Zhu. We increased the number of participants in our study ( $n = 263$ ) over that used by Mehta and Zhu ( $n = 69$ ) in order to increase the likelihood that we could detect effects. Our solution-time results were in the same range as Mehta and Zhu but our results did not show the predicted pattern. Avoidance words were not solved more quickly on red backgrounds and approach words were not solved more quickly on blue backgrounds. Other effects were present as expected, shorter words were solved more quickly than longer words. The present result, and others from my lab, argue against the existences of this particular color-priming effect.

For a PDF of the poster and related work visit my [research Web page](#).

**Kenneth M. Steele**  
*Appalachian State University*