

## Cognitive styles as predictors of interference on Dot-Probe Test

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Attempts to measure automatic processes involved in psychological phenomena has a long history; examples include Freud's free association methods and the use of projective tests. Recent advances in cognitive science have led to far greater understanding of and ability to isolate various features of automatic cognitive processes. Implicit measures have been most frequently used to study cognitive processes. Nonetheless, the possible impacts of individual differences on such subtle measurements have not been subjected to much studies. Therefore, the current study tested the relationship between Individual differences in cognitive styles on the participants' performance on dot-probe test as one of the most widely used measures of implicit cognitions. Eighty undergraduate students (32.5% male, Mean= 21, SD = 2.1) from Ferdowsi University of Mashhad were recruited and tested using the following measures: Sternberg Anxiety Test, computer-based Riding's Cognitive Style Analysis (CSA) and a modified version of dot-probe (pictorial and lexical) to measure test anxiety. After giving their informed consent, participants completed the tests in the following order: Sternberg Anxiety Test, the CSA, and the dot-probe tests (in an counterbalanced order for the two versions of the test). All participants had 5 minutes break between two versions of the dot-probe test. The results of a series of hierarchical multiple regression analyses revealed that cognitive styles could predict participants' performance on the pictorial dot-probe, such that participants with verbal and bimodal cognitive styles showed greater levels of interference than those with imagery cognitive style ( $\Delta R^2 = 0.137$ ,  $F(2, 76) = 2.58$ ,  $p = .02$ ), even after controlling for test order, age, gender, and participants state anxiety in the model. The effect was not observed with the lexical version of the dot-probe test ( $\Delta R^2 = 0.047$ ,  $F(2, 76) = 2.09$ ,  $p = 0.06$ ). The results suggest that individuals with verbal and bimodal cognitive styles were more reactive to the pictorial content of the test, whereas those with imagery cognitive style did not show differential sensitivity for the distinctive content of the pictures in the test anxiety version of the dot-probe test. We also conclude that the lexical version of the dot-probe test is probably less sensitive to the individuals' different cognitive styles. The results support the vast literature on the importance of the relationships between cognitive styles and the contents of psychological tasks and tests.

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