

# Unlucky by Chance: Cultural Salience and Performance in High-Stakes Exams

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This paper examines how culturally salient symbols affect performance in high-stakes settings by exploiting a widely held superstition in China: the number “4,” which is phonetically associated with “death.” Using administrative records for over 10 million students who took the national college entrance examination (Gaokao), we study whether the randomly assigned candidate ID number, specifically its final digit, affects test outcomes. We find that certain digits are associated with differences in test performance, and that the number “4”, in particular, predicts significantly lower scores. This effect is specific to the last digit of the ID and is not observed when “4” appears in other positions. It is concentrated among Han Chinese students and stronger in regions with deeper Confucian cultural roots, as proxied by the density of Confucian temples. These patterns point to a psychological mechanism in which culturally charged cues, when made salient in high-pressure situations, distort cognitive performance. Our findings highlight how group-specific beliefs and symbolic associations can undermine fairness, even within procedurally neutral institutions. The results underscore the need to consider cultural cognition and behavioral responses in the design of high-stakes educational systems.