

Does self-construal predict activity in the social brain network? A genetic moderation effect

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cognition and behaviors such as emotional support seeking (Kim *a.*, 2010, 2011) and willingness to volunteer for prosocial causes (Sasaki *a.*, 2013). However, to date, little is known about whether and how genes interact with cultural traits to shape the brain activity underlying social cognition. The current study investigated this by examining whether a specific genetic polymorphism influences the association between a cultural trait and activity in the social brain network. Given that the 5-HTTLPR modulates the neural activity associated

After the fMRI scanning, participants were asked to complete Self-esteem Scale (Rosenberg, 1965), SCS (Singelis, 1994) and the harm avoidance subscale from the Tridimensional Personality Questionnaire (Cloninger *a.*, 1993). The SCS scale consists of 24 items for assessing individual differences in independent/interdepend-

frontal cortex (Table 2). The brain activity related to self-reflection on mental attributes was negatively correlated with the measure of interdependence in the bilateral superior parietal cortex, right TPJ, left middle frontal cortex, right middle frontal cortex and cerebellum.

Interestingly, the hierarchical regression analysis showed significant gene \times interdependence interaction on the activity in the mPFC, bilateral middle frontal cortex, bilateral TPJ, superior parietal cortex, left

network only in Chinese participants. Previous research has shown that the s allele frequency is different across different cultural groups, being much higher in Asian than Caucasian populations (Kunugi *a.*, 1997). The interdependence of self-construals dominates East Asian populations whereas the independence of self-construals is encouraged in Western populations (Markus and Kitayama, 1991). Given these biological and cultural differences among populations, future research should address whether the genetic moderation effect observed in our work also exists in Western cultural contexts.

The current work reported the association between self-construals and brain activity during reflection on the self and mother but did not address why the correlation between interdependence of self-construal and neural activity was positive in some brain regions but negative in other brain regions in l/l allele carriers. It is likely that the distinct patterns of associations between a cultural trait and neural activity in the social brain network may reflect the fact that a specific cultural trait may facilitate one neural strategy but inhibit another neural strategy related to social cognition. This may be tested in future research.

Finally, the previous research found that depressive symptoms in s allele carriers are more sensitive to life experiences (e.g. Caspi *a.*, 2003), whereas the current work reported evidence for the association between a cultural trait and neural activity in the social brain network in l/l but not s/s carriers. There are at least two possible reasons for these different observations. One possibility is that s/s carriers in Chinese population adopt the interdependence to a strong degree such that s/s genotype individuals showed little variation of the asso-

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