Do Socio-Cultural Factors Influence on Moral Judgment at the Neural Level?

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Introduction

- The present study investigates **the cultural influences on the neural correlates of moral decision making processes**.
- We compare the neural correlates of moral judgment between **Korean and American participants.**

Method

- Subjects: 8 Korean and 8 American healthy university students.
- Moral dilemmas: Greene et al. (2001)'s **moral-personal, moral-impersonal, and non-moral dilemmas**. A total of 60 dilemma questions.
- Cultural perspective survey: Gelfand et al. (2011)'s **cultural tightness-looseness questionnaire** and Singelis et al. (1995)'s **self-construal scale**.
- Image acquisition: 3T whole-body scanner + 8-channel head coil. Spiral in-and-out sequence.
- Behavioral and survey data analysis: The mean response time and number of solutions considered morally appropriate are compared between cultural groups. The correlation between brain activity and survey data is calculated.
- Image data analysis: Whole-brain ANOVA and t-test comparisons between cultural groups under each dilemma condition.

Fig 1. Mean Response Time

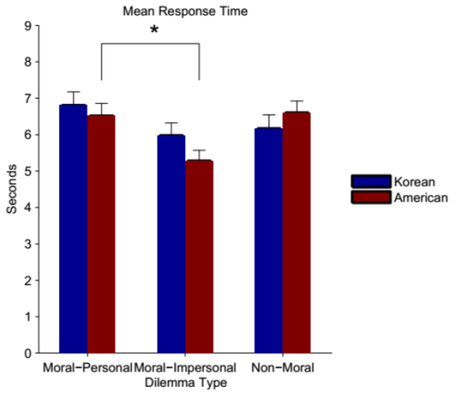


Fig 2. % of Solutions Considered Morally Appropriate

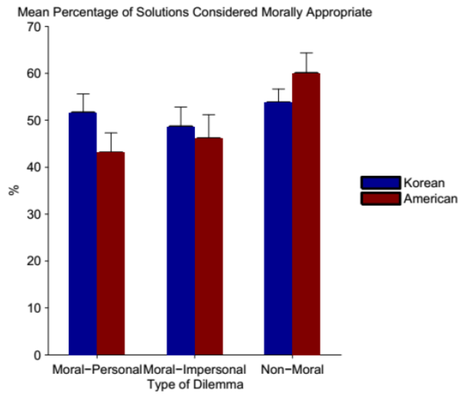


Fig 3. Between-group difference under the moral-personal condition

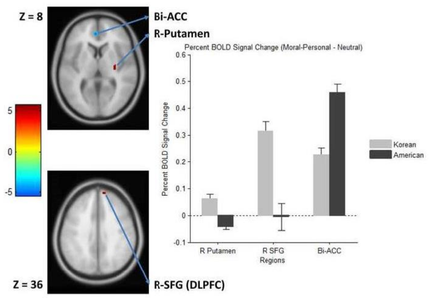


Fig 4. Between-group difference under the moral-impersonal condition

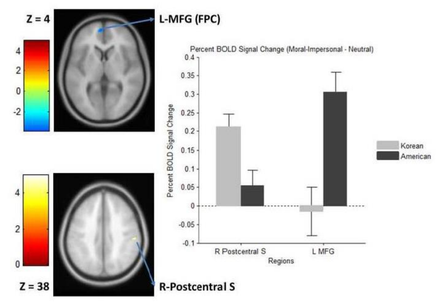


Fig 5. Correlation between brain activity and survey data under the moral-personal condition

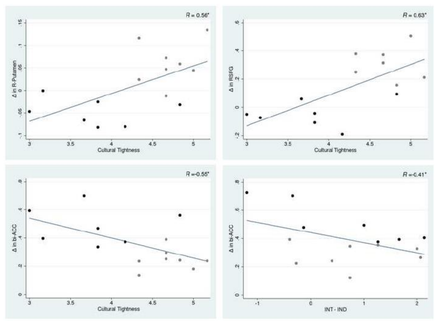
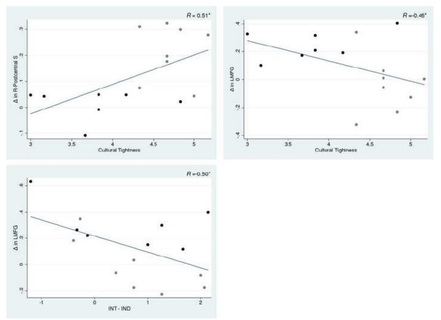


Fig 6. Correlation between brain activity and survey data under the moral-impersonal condition



Discussion

•Moral-personal condition

-Korea: **communal** culture, which pursues harmony rather than conflict solving → increased neural activity in social-intuition regions (**Putamen**) and cognitive control regions (**DLPFC**).

-America: **multicultural** society, where people are more likely to be exposed to value conflicts → enhanced activity in regions associated with conflict monitoring and solution (**ACC**).

•Moral-impersonal condition

-Korea: **formal moral education** more than 9-10 years → stronger activity in regions associated with fast problem solving and mental approximation (**Postcentral sulcus**).

-America: **did not usually get formal moral education** → stronger activity in regions associated with non-familiar problem solving (**Frontopolar cortex**).

Limitations

-Its **small sample size** (8+8) significantly threats the statistical power and generalizability of the present study. At least 16 per group are required.

-Because **its dilemma set is basically hypothetical**, **more realistic and everyday life moral dilemmas** should be developed and applied.

Han, H., Glover, G. H., & Jeong, C. (2014). Cultural Influences on the Neural Correlate of Moral Decision Making Processes. *Behavioral Brain Research, 259*, 215-228