

Course Form for PKU Summer School International 2018

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| Course Title | Culture, Behavior and Brain |
| | 文化、行为与大脑 |
| Teacher | Prof. Shihui Han |
| First day of classes | July 2, 2018 |
| Last day of classes | July 27, 2018 |
| Course Credit | 3 credits |
| Course Description | |
| Objective: | |
| <p>Human beings have created the most colourful cultures in the world that not only contextualize our behaviour but shape our mind and brain as well. Do people's behaviour vary across cultures? Whether and how cultures influence human cognitive processes and underlying brain activity? Do individuals engaged in Western and East Asian cultures have distinct cognitive styles during perception and attention? Can we understand cultural differences in social behaviour by examining cultural effects on brain functional organization? Can we modify individuals' brain activity in laboratory by short-term exposure of new cultural values? How does culture interact with genes to modulate brain functions and behaviour? Can we predict future changes of human behaviour by examining current cultural differences in multiple neurocognitive processes? There has been a long history of human thoughts of these interesting issues. However, only recently have these questions been examined by empirical studies that combine psychology, neuroscience, brain imaging, genetics, etc. This 4-weeks course aims to illustrate the important issues regarding the interactive relationships between culture, behaviour and brain, to explain psychological paradigms and brain imaging methods that have been integrated to study cultural influences on cognitive and neural processes, to introduce our current knowledge/theory about the sociocultural brain, and to discuss future questions regarding the interactive relationships between culture, behaviour, and brain. The course will consist of class teaching and discussion and, in the last class, students in small groups will have chance to present their research proposals related to cultural effects on behaviour, mind, and brain.</p> | |
| Pre-requisites /Target audience | |
| Undergraduate and graduate students who are interested in culture and human behavior. Psychology and brain imaging are NOT pre-requisites for this course. | |
| Proceeding of the Course | |
| <p>Week 1-3: teaching and discussion Week 4: visit brain imaging facilities at Peking University, prepare and present project proposals.</p> | |
| Assignments (essay or other forms) | |

Students will be given review and empirical articles for reading and discussion and for preparing their project proposals.

Evaluation Details

Evaluation will be conducted based on students' motivation and activity in classroom and their final project proposals.

Text Books and Reading Materials

Book "The Sociocultural brain" by Shihui Han, Oxford University Press, 2017.
About 20 essays and articles will be assigned to students

Academic Integrity (If necessary)

CLASS SCHEDULE

(Subject to adjustment)

Session 1: *Cultural diversity of human behavior*

Date: July 2nd

【Description of the Session】

This session aims to outline cultural differences of human behavior at both individual and group levels and to introduce psychology/neuroscience perspectives on how to understand and explain human behavior across cultures.

【Questions】

Is there any cultural difference in human behavior? Do people behave differently at the individual and group levels across cultures? Can we and how do we understand these?

【Readings, Websites or Video Clips】

OGBU, J. U. Understanding Cultural Diversity and Learning. Educational Researcher, 21, 5-14.

【Assignments for this session (if any)】

Session 2: *Cultural differences in cognition*

Date: July 4th

【Description of the Session】

This session aims to outline cultural differences of mental processes (including perception, causal attribution etc) that help to understand cultural differences in behavior.

【Questions】

In what aspects of human mind is there cultural difference? How people from different cultures perceive the world and make causal attribution of others' behavior?

【Readings, Websites or Video Clips】

Choi I, Nisbett RE, Norenzayan A. 1999. Causal attribution across cultures: variation and universality. *Psychol. Bull.* 125:47-63.
 Morris M, Peng K. 1994. Culture and cause: American and Chinese attributions for social and physical events. *J. Pers. Soc. Psychol.* 67:949-71.
 Nisbett, R. E., & Miyamoto, Y. (2005). The influence of culture: holistic versus analytic perception. *Trends in cognitive sciences*, 9(10), 467-473.

【Assignments for this session (if any)】

Session 3: *Cultural differences in brain activity underlying cognition*

Date: July 6th

【Description of the Session】

This session aims to outline cultural differences of brain activity underlying visual perception revealed by brain imaging studies. Brain imaging techniques will be introduced at the begin of this session.

【Questions】

Do individuals from different cultures perceive the world in the same way? Does the brain work in the same way to perceive different cultural environments? What are the brain underpinnings of cultural differences in perception and attention?

【Readings, Websites or Video Clips】

Nisbett RE, Masuda T. 2003. Culture and point of view. *Proc. Natl. Acad. Sci. USA* 100:11164-11170.
 Lewis, R. S., Goto, S. G., & Kong, L. L. (2008). Culture and context: East Asian American and European American differences in P3 event-related potentials and self-construal. *Personality and Social Psychology Bulletin*, 34(5), 623-634.
 Hedden, T., Ketay, S., Aron, A., Markus, H. R., & Gabrieli, J. D. (2008). Cultural influences on neural substrates of attentional control. *Psychological science*, 19(1), 12-17.

【Assignments for this session (if any)】

Session 4: *Culture and self*

Date: July 9th

【Description of the Session】

How people think of the self plays a key role in our behavior. This session aims to introduce current theories of culture influences on self-concept and to outline cultural differences of brain activity underlying self-recognition and self-reflection.

【Questions】

How do we recognize the self in a mirror? How does the brain perceive and reflect the self? How does East Asian and Western culture shape brain activity underlying self-recognition and self-reflection? Whether and how religious beliefs influence brain underpinnings of self-reflection?

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| <p>【Readings, Websites or Video Clips】 Ma Y, Bang D, Wang C, Allen M, Frith C, Roepstorff A, Han S: Sociocultural patterning of neural activity during self-reflection. <i>Soc Cogn Affect Neurosci</i> 2014, 9:73-80. Han S, Mao L, Gu X, Zhu Y, Ge J, Ma Y: Neural consequences of religious belief on self-referential processing. <i>Soc Neurosci</i> 2008, 3:1–15. Han S, Northoff G, Vogeley K, Wexler BE, Kitayama S, Varnum MEW: A cultural neuroscience approach to the biosocial nature of the human brain. <i>Ann Rev Psychol</i> 2013, 64:335–359.</p> | |
| <p>【Assignments for this session (if any)】</p> | |
| <p>Session 5: Culture and others</p> | <p>Date: July 11th</p> |
| <p>【Description of the Session】 This session aims to outline cultural differences in social cognition and brain activity underlying others' gesture, emotion and belief.</p> | |
| <p>【Questions】 How does the brain understand others' mental states? Whether and how do cultural experiences shape brain responses to others' emotional states (e.g, pain)? How does culture shape the brain activity underlying social cognition?</p> | |
| <p>【Readings, Websites or Video Clips】 Zhu Y, Zhang L, Fan J, Han S. 2007. Neural basis of cultural influence on self representation. <i>Neuroimage</i> 34:1310--17 Xu, X., Zuo, X., Wang, X., Han, S. (2009). Do you feel my pain? Racial group membership modulates empathic neural responses. <i>Journal of Neuroscience</i>, 29, 8525-8529.</p> | |
| <p>【Assignments for this session (if any)】</p> | |
| <p>Session 6: Cultural priming</p> | <p>Date: July 13th</p> |
| <p>【Description of the Session】 This session aims to outline behavior and neuroscience findings that demonstrate that cultural priming in laboratories influence human brain activity underlying multiple sensory, perceptive, cognitive and affective processes.</p> | |
| <p>【Questions】 Can we shift people's cultural knowledge system in a short period of time? Can temporary shift of cultural value/belief modulate our behavior and related brain activity?</p> | |

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| 【Readings, Websites or Video Clips】 | |
| <p>Sui J, Han S. 2007. Self-construal priming modulates neural substrates of self-awareness. <i>Psychol. Sci.</i> 18:861-686.</p> <p>Lin Z, Lin Y, Han S. 2008. Self-construal priming modulates visual activity underlying global/local perception. <i>Biol. Psychol.</i> 77:93-97.</p> <p>Wang, C., Wu, B., Liu, Y., Wu, X., Han, S.(2015). Challenging emotional prejudice by changing self-concept: Priming independent self-construal reduces racial in-group bias in neural responses to other's pain. <i>Social Cognitive and Affective Neuroscience</i>, 10, 1195-1201.</p> | |
| 【Assignments for this session (if any)】 | |
| Session 7: Culture-gene interaction | Date: July 16th |
| 【Description of the Session】 | |
| This session aims to outline behavioral and brain imaging evidence for culture-gene interaction at the individual level. | |
| 【Questions】 | |
| Do genetic influences on behavior show the same pattern across cultures? In what way does gene interact with culture to shape human brain activity? | |
| 【Readings, Websites or Video Clips】 | |
| <p>Kim HS, Sherman DK, Sasaki JY, Xu J, Chu TQ, et al. 2010a. Culture, distress, and oxytocin receptor polymorphism (OXTR) interact to influence emotional support seeking. <i>Proc. Natl. Acad. Sci. USA</i> 107:15717--21</p> <p>Ma, Y., Wang, C., Li, B., Zhang, W., Rao, Y., Han, S. (2014). Does self-construal predict activity in the social brain network? A genetic moderation effect. <i>Social Cognitive and Affective Neuroscience</i>, 9, 1360-1367.</p> <p>Luo, S. Ma, Y., Liu, Y., Li, B., Wang, C., Shi, Z., Li, X., Zhang, W., Rao, Y., Han, S. (2015). Interaction between oxytocin receptor polymorphism and interdependent culture on human empathy. <i>Social Cognitive and Affective Neuroscience</i>, 10, 1273-1281.</p> | |
| 【Assignments for this session (if any)】 | |
| Session 8: Culture-behavior-brain loop of human development | Date: July 18th |
| 【Description of the Session】 | |
| This session aims to outline a new model of human development by considering the key role of brain in culture-behavior interaction. This session will also discuss whether and how we can predict variations of human behavior and brain in future. | |

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| <p>【Questions】 How do culture, behavior and brain interact during individual and group development? What's the relationship between gene and the culture-behavior-brain loop during human development?</p> | |
| <p>【Readings, Websites or Video Clips】 Han, S., Ma. Y. (2015). A culture-behavior-brain loop model of human development. <i>Trends in Cognitive Sciences</i>, 9, 666-676. Li, S. C. (2003) Biocultural orchestration of developmental plasticity across levels: the interplay of biology and culture in shaping the mind and behavior across the life span. <i>Psychol. Bull.</i> 129, 171-194. Richerson, P. J. et al. (2010) Gene-culture coevolution in the age of genomics. <i>Proc. Natl. Acad. Sci.</i> 107, 8985-8992.</p> | |
| <p>【Assignments for this session (if any)】</p> | |
| <p>Session 9: Implications of cultural neuroscience findings</p> | <p>Date: July 20th</p> |
| <p>【Description of the Session】 This session will encourage students to discuss the implications of the findings that the human brain function is shaped by culture. Discussions will focus on (but not limited to) several topics such as the biosocial nature of the brain, the sociobiological nature of culture, culture and education, cross-cultural communication and conflict, etc.</p> | |
| <p>【Questions】</p> | |
| <p>【Readings, Websites or Video Clips】 Students will be shown a video clip made by BBC about the interactions between Chinese teachers and English students in UK so as to stimulate class discussion.</p> | |
| <p>【Assignments for this session (if any)】</p> | |
| <p>Session 10-12: Visit Brain imaging center and Research proposal presentation</p> | <p>Date: July 23-27th</p> |
| <p>【Description of the Session】 (purpose, requirements, class and presentations scheduling, etc.) A visit to the brain imaging center at Peking University will be organized. Students have chance to be involved in a real fMRI, EEG, or MEG test. This session will also require students to search and read additional literatures and to figure out their own questions regarding culture, behavior and brain. Students will finish research proposals and present and discuss these proposals in class.</p> | |

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| 【Questions】 | |
| 【Readings, Websites or Video Clips】 | |
| 【Assignments for this session (if any)】 | |
| Session 11: Title | Date: |
| 【Description of the Session】 (purpose, requirements, class and presentations scheduling, etc.) | |
| 【Questions】 | |
| 【Readings, Websites or Video Clips】 | |
| 【Assignments for this session (if any)】 | |
| Session 12: <i>Title</i> | Date: |
| 【Description of the Session】 (purpose, requirements, class and presentations scheduling, etc.) | |
| 【Questions】 | |
| 【Readings, Websites or Video Clips】 | |
| 【Assignments for this session (if any)】 | |

