

# Steven H. Thompson

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## RESEARCH INTERESTS

culture | social networks | brain networks

I am interested in understanding how social context, culture, and biology mutually influence behavior. I use experimental and neuroimaging methods to study how people learn about their social world (social relationships, social and cultural norms, etc.) and how this internalized knowledge about the social world in turn influences their thoughts, behaviors, and decisions.

## EMPLOYMENT

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| 2018-present | Robert J. Eichelberger Distinguished Postdoctoral Fellow,<br>Human Sciences Campaign, U.S. Army Research Laboratory<br>Visiting Scholar, Bioengineering, University of Pennsylvania<br>Mentor: Dr. Jean Vettel |
| 2016-2018    | Postdoctoral Research Fellow, Bioengineering, University of Pennsylvania<br>Mentor: Dr. Danielle Bassett   |

## EDUCATION

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|------|---|
| 2016 | PhD, Social Psychology, University of Michigan, Ann Arbor<br>Dissertation Committee: Shinobu Kitayama (chair), Israel Liberzon, Emily Falk, Allison Earl. "Understanding the link between brain activation, choice, and attitude change for European Americans and East Asians" |
| 2013 | M.S., Social Psychology, University of Michigan, Ann Arbor  |
| 2009 | B.A., Psychology, Colgate University  |

## GRANTS AND AWARDS

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|------|--|
| 2018 | Robert J. Eichelberger Distinguished Postdoctoral Fellow, Human Sciences Campaign, U.S. Army Research Laboratory<br><i>Individual postdoctoral fellowship from the Army Research Laboratory to study effects of culture on group decision-making and team performance.</i> |
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| 2017      | Ruth L.Kirschstein National Research Service Award (NRSA), National Institutes of Health, National Institute on Minority Health and Health Disparities (declined)<br><i>Individual postdoctoral fellowship to study effects of SES on health decisions</i>          |
| 2014      | East Asia and Pacific Summer Institute (EAPSI) Fellowship, National Science Foundation (\$15,000)<br><i>Competitive award for U.S. graduate students to conduct research and develop collaborations with international scholars in the East Asia-Pacific region</i> |
| 2013      | International Cultural Neuroscience Consortium (ICNC) Travel Award (\$500)<br><i>International competitive award granted to ten graduate student researchers presenting at the SAN Annual Meeting each year</i>   |
| 2013      | SAN Annual Meeting Poster Award, Social and Affective Neuroscience Society<br><i>Competitive award given to the top 5% of posters submitted to the SAN Annual Meeting</i>   |
| 2013      | Pat Gurin Distinguished Lecture Award, University of Michigan (\$200)<br><i>Competitive award given to the top six PhD student research projects in Psychology</i>  |
| 2012-2016 | Rackham Conference Travel Grant, University of Michigan (\$3,700)<br><i>Award for graduate students at the University of Michigan to present research at one academic conference per year</i>   |
| 2011-2016 | Culture & Cognition Graduate Fellowship, University of Michigan<br><i>Full tuition support for 5 years of graduate study</i>  |
| 2011-2015 | Undergraduate Research Opportunity Program (UROP) Mentorship Funding, University of Michigan (\$4,500)<br><i>Grant to mentor undergraduate students interested in research</i>  |

## PUBLICATIONS

### Peer-Reviewed

1. Doré, B.P., **Tompson, S.H.**, O'Donnell, M.B., & Falk, E.B. (in press). Neural mechanisms of emotion regulation moderate the predictive value of affective and value-related brain responses to persuasive messages. *Journal of Neuroscience*.
2. **Tompson, S.H.**, Kahn, A.E., Falk, E.B., Vettel., J.M., & Bassett, D.S. (in press). Individual differences in learning social and non-social network structures. *Journal of Experimental Psychology: Learning, Memory, and Cognition*.

3. Cooper, N., Garcia, J.O., **Tompson, S.H.**, O'Donnell, M.B., Falk, E.B., & Vettel, J.M. (2018). Time-evolving dynamics in brain networks forecast responses to health messaging. *Network Neuroscience*.
4. Cooper, N., **Tompson, S.H.**, O'Donnell, M. B., Vettel, J. M., Bassett, D. S., & Falk, E. B. (2018). Associations between coherent neural activity in the brain's value system during antismoking messages and reductions in smoking. *Health psychology*.
5. Javanbakht, A., **Tompson, S.H.**, Yoon, C., King, T., Kitayama, S., & Liberzon, I. (2018). Gene by culture effects on emotional processing of social cues among Asians and European Americans. *Behavioral Sciences*.
6. San Martin, A., Sinaceur, M., Maddux, W.W., **Tompson, S.H.**, Madi, A., & Kitayama, S. (2018). Self-assertive interdependence in Arab culture. *Nature Human Behavior*.
7. **Tompson, S.H.**, Falk, E.B., Vettel, J.M., & Bassett, D.S. (2018). Network Approaches to Understand Individual Differences in Brain Connectivity: Opportunities for Personality Neuroscience. *Personality Neuroscience*.
8. **Tompson, S.H.**, Huff, S., Yoon, C., King, A., Liberzon, I., & Kitayama, S. (2018). The dopamine D4 receptor gene (DRD4) modulates cultural variation in emotional experience. *Culture and Brain*.
9. Pegors, T., **Tompson, S.**, O'Donnell, M.B., & Falk, E.B. (2017). Predicting behavior change from persuasive messages using neural representational similarity and social network analyses. *Neuroimage*.
10. **Tompson, S.**, Chua, H.F., & Kitayama, S. (2016). Connectivity between mPFC and PCC predicts post-choice attitude change: The self-referential processing hypothesis of choice justification. *Human Brain Mapping*.
11. Cooper, N., **Tompson, S.**, O'Donnell, M.B., & Falk, E.B. (2015). Brain activity in self- and value-related regions in response to online antismoking messages predicts behavior change. *Journal of Media Psychology*.
12. Falk, E.B., O'Donnell, M.B., **Tompson, S.**, Gonzalez, R., Dal Cin, S., Strecher, V., & An, L. (2015). Functional brain imaging predicts public health campaign success. *Social Cognitive and Affective Neuroscience*.
13. Hyde, L.W., **Tompson, S.**, Creswell, J.D., & Falk, E.B. (2015). Cultural neuroscience: New directions as the field matures – What do cultural neuroscience findings mean? *Culture and Brain*.
14. **Tompson, S.**, Lieberman, M.D., & Falk, E.B. (2015). Grounding the neuroscience of behavior change in the sociocultural context. *Current Opinions in Behavioral Sciences*.

15. Kitayama, S., King, A., Yoon, C., **Tompson, S.**, Huff, S., & Liberzon, I. (2014). The Dopamine Receptor Gene (DRD4) Moderates Cultural Difference in Independent versus Interdependent Social Orientation. *Psychological Science*.
16. Kitayama, S., Chua, H.F., **Tompson, S.**, & Han, S. (2013). Neural mechanisms of dissonance: An fMRI investigation of choice justification. *Neuroimage*.
17. Kitayama, S. & **Tompson, S.** (2010). Envisioning the future of cultural neuroscience. *Asian Journal of Social Psychology*.

#### Book Chapters

18. **Tompson, S.H.**, Bassett, D.S., Falk, E.B., & Vettel., J.M. (in press) Using neuroimaging to predict behavior: An overview with a focus on the moderating role of sociocultural context. In P. Davis, A. O'Mahony, & J. Pfautz (Eds.), *Social Behavioral Modeling for Complex Systems*.
19. Kitayama, S. & **Tompson, S.** (2015). The biosocial model of dissonance: Connecting brain, behavior, and culture. *Advances in Experimental Social Psychology*.
20. Kitayama, S., **Tompson, S.**, & Chua, H.F. (2014), Neuro-cultural mechanisms of choice justification: Culture, dissonance, and the brain. In J. Forgas & E. Harmon-Jones (Eds.), *Control Within: Motivation and its Regulation*.

#### Manuscripts Under Review

1. Bansal, K., Verstynen, T., Garcia, J.O., **Tompson, S.H.**, Vettel, J.M., & Muldoon, S.F. *Cognitive chimera states in human brain networks*. Manuscript under review (Revise and Resubmit).

#### Manuscripts in Preparation

1. **Tompson, S.H.**, Kahn, A.E, Falk, E.B., Vettel., J.M., & Bassett, D.S. *Functional brain network architecture supporting the learning of social versus non-social networks*. Manuscript in preparation.
2. **Tompson, S.H.**, Falk, E.B., O'Donnell, M.B., Cascio, C.N., Bayer, J.B., Vettel., J.M., & Bassett, D.S. *Response inhibition in adolescents is moderated by brain connectivity and social network structure*. Manuscript in preparation.
3. Schmälzle, R., Cooper, N., O'Donnell, M.B., **Tompson, S.H.**, Cantrell, J., Vettel, J.M., & Falk, E.B. *Predicting nationwide campaign effects from multivariate brain activity signatures of negative emotion and vividness*. Manuscript in preparation.

## CONFERENCE PRESENTATIONS

### Invited Talks and Paper Presentations

1. **Tompson, S.H.**, Falk, E.B., O'Donnell, M.B., Cascio, C.N., Bayer, J.B., Vettel, J.M., & Bassett, D.S. (November 2018). *Response Inhibition in Adolescents is Moderated by Brain Connectivity and Social Network Structure*. Invited talk at North American Social Networks Conference, Washington, DC.
2. **Tompson, S.H.** (November 2017). *Culture and Team Performance*. Invited talk at US Army Research Laboratory, Aberdeen, MD.
3. **Tompson, S.**, Falk, E.B., Vettel, J., & Bassett, D.S. (October 2017). *Network learning*. Invited talk at Army Research Labs Cognition and Neuroergonomics Collaborative Technology Alliance All-Hands Meeting, University of Florida, Gainesville, FL.
4. **Tompson, S.**, O'Donnell, M.B., Pegors, T., & Falk, E.B. (April 2016). *The Moderating Effects of Message and Audience Characteristics on the Link Between Neural Activation and Behavior Change*. Data blitz presentation at the Research Center for Group Dynamics Seminar Series, University of Michigan, Ann Arbor, MI.
5. **Tompson, S.**, & Kitayama, S. (April 2016). *Neural mechanisms of choice justification: Separable in-choice and post-choice mechanisms influence attitude change*. Invited talk at the Decision Consortium, University of Michigan, Ann Arbor, MI.
6. **Tompson, S.**, Huff, S., Uchida, Y., Kitayama, S., & Yoon, C. (May 2015). *Cultural background influences the effects of social information on decision-making*. Paper presented at the Decision Consortium Annual Conference, University of Michigan, Ann Arbor, MI.
7. **Tompson, S.**, Falk, E.B., & Kitayama, S. (February 2015). *Grounding the neuroscience of behavior change in the sociocultural context*. Invited talk at the Cognition and Cognitive Neuroscience Forum, University of Michigan, Ann Arbor, MI.
8. **Tompson, S.**, Huff, S., Yoon, S., King, T., Liberzon, I., & Kitayama, S. (February 2015). *Positivity and emotional balance are influenced by the dopamine receptor gene (DRD4) and cultural background*. Data blitz presentation at SPSP Cultural Psychology Pre-Conference, Long Beach, CA.
9. **Tompson, S.**, Kitayama, S., & Uchida, Y. (June 2014). *Understanding how and why people incorporate others' preferences into personal choices*. Invited talk at the Kokoro Research Center, Kyoto, Japan.
10. **Tompson, S.**, Chua, H.F., & Kitayama, S. (April 2013). *Choice and the neural constructions of independent selves*. Paper presented at the 14<sup>th</sup> Annual Pat Gurin Distinguished Lecture Series. Ann Arbor, MI.

11. **Tompson, S.,** Kitayama, S., Chua, H.F., & Han, S. (April 2011). *Neural mechanisms of cognitive dissonance: The role of the self in choice justification*. Paper presented at the 2<sup>nd</sup> Annual Conference on Cultural Neuroscience. Ann Arbor, MI.

#### Poster Presentations

1. **Tompson, S.H.,** Kahn, A.E., Falk, E.B., Vettel, J.M., & Bassett, D.S. (November 2018). *Functional brain network architecture supporting the learning of social versus non-social networks*. Poster to be presented at the SfN Annual Conference, San Diego, CA.
2. **Tompson, S.H.,** Kahn, A.E., Falk, E.B., Vettel, J.M., & Bassett, D.S. (March 2018). *Individual differences in learning social and non-social network structures*. Poster presented at the SPSP Annual Conference, Atlanta, GA.
3. **Tompson, S.H.,** Huff, S.T., Yoon, C., King, A., Liberzon, I., Vettel, J.M., Falk, E.B., Kitayama, S., & Bassett, D.S. (March 2017). *Neural Representations of Choice Information for European Americans and East Asians*. Poster presented at the SAN Annual Conference, Los Angeles, CA.
4. **Tompson, S.,** Huff, S., Kitayama, S., & Yoon, C. (February 2016). *The social side of choice: Cultural background influences the effects of social information on decision-making*. Poster presented at SPSP Annual Conference, San Diego, CA.
5. **Tompson, S.,** Huff, S., Kitayama, S., & Yoon, C. (May 2015). *The social side of choice: Cultural background influences the effects of social information on decision-making*. Poster presented at APS Annual Conference, New York, NY.
6. **Tompson, S.,** Falk, E.B., O'Donnell, M.B., & An, L. (February 2014). *Education level moderates self-related neural responses to anti-smoking messages*. Poster presented at SPSP Annual Conference, Austin, TX.
7. **Tompson, S.,** Chua, H.F., & Kitayama, S. (April 2013). *Choose, and it becomes part of you: Neural constructions of independent selves*. Poster presented at SAN Annual Conference. San Francisco, CA.
8. **Tompson, S.,** Chua, H.F., & Kitayama, S. (January 2013). *Choose, and it becomes part of you: Neural constructions of independent selves*. Poster presented at SPSP Annual Conference. New Orleans, LA.
9. **Tompson, S.,** Kitayama, S., Chua, H.F., & Han, S. (April 2012). *Neural bases of choice justification*. Poster presented at the CCMB Conference on Culture and Mental Health. Ann Arbor, MI.
10. **Tompson, S.,** Chua, H.F., Han, S., & Kitayama, S. (October 2010). *Are participants in neuroimaging research more independent?* Poster presented at the 4<sup>th</sup> Annual Meeting of the Social and Affective Neuroscience Society. Chicago, IL.

11. **Tompson, S.,** Kitayama, S., Chua, H.F., & Han, S. (April 2010). *Neural bases of dissonance: Anterior insula activity during choice predicts post-choice self-activation*. Poster presented at the 1<sup>st</sup> Annual Conference on Cultural Neuroscience. Ann Arbor, MI.

## TEACHING

### Teaching Interests

Introductory Psychology | Social Psychology | Research Methods | Judgment and Decision-Making  
fMRI Data Analysis | Attitudes and Social Cognition | Cultural Psychology | Social Neuroscience

### Graduate Student Instructor

Introduction to Social Psychology (Psych 280), *University of Michigan* (2013 & 2014)

Led twice weekly 2-hour discussion sessions of 25-30 students per class, including designing syllabi, lesson plans, examinations, and writing assignments, leading class and group discussions, grading, and office hours; taught with Ethan Kross, PhD and with Allison Earl, PhD

Cultural Psychology (Psych 487), *University of Michigan* (2014)

Led twice weekly 1-hour discussion sessions of 25-30 advanced level psychology majors per class, including designing syllabi, lesson plans, examinations, and writing assignments, leading class and group discussions, grading, and office hours; taught with Shinobu Kitayama, PhD

Self-Concept and Motivation (Psych 487), *University of Michigan* (2012)

Led twice weekly 1-hour discussion sessions of 25-30 advanced level psychology majors per class, including designing syllabi, lesson plans, examinations, and writing assignments, leading class and group discussions, grading, and office hours; taught with Daphna Oyserman, PhD

Summer Institute on Cultural Neuroscience, *University of Michigan* (2012 & 2013)

Led twice daily 1.5 hour discussion sessions of 10-15 graduate students during 2-week intensive graduate-level summer institute, including designing syllabi and lesson plans, leading class and group discussions, leading a workshop on fMRI data analysis, and supervising group projects; taught with Shinobu Kitayama, PhD & Carolyn Yoon, PhD

### Grading Positions

Social Development (Psych 353), *University of Michigan* (2015 & 2016)

Leading People and Organizations (MO 503), *Ross School of Business, University of Michigan* (2015)

### Guest Lectures

The Cultural Psychology of Self & Identity (2012)

In Psych 487, an upper-level undergraduate course on self-concept and motivation by Daphna Oyserman, PhD. *University of Michigan, Ann Arbor*.

Understanding Choice and Goal Pursuit (2014)

In Psych 487, an upper-level undergraduate course on cultural psychology by Shinobu Kitayama, PhD. *University of Michigan, Ann Arbor.*

#### Persuasion and Social Influence (2014)

In Psych 280, an introductory social psychology course for undergraduates by Allison Earl, PhD. *University of Michigan, Ann Arbor.*

### **UNDERGRADUATE MENTORING**

Throughout graduate school, I was involved in training and mentoring 6-8 undergraduates per semester. Students were involved in designing and running studies, creating experiments using Qualtrics and E-Prime, entering and analyzing data, as well as writing up their work and presenting it at local workshops and conferences.

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| 2015-2016 | Supervision of Mingzhi Cao and Sarah Birkbeck's Undergraduate Research Opportunity Program research projects with Dr. Shinobu Kitayama  |
| 2014-2015 | Supervision of Jia Wen Teo's Psych 422 (precursor to honors thesis) research project with Dr. Shinobu Kitayama                          |
| 2014-2015 | Supervision of Christy Li and Marika Shimomura's Undergraduate Research Opportunity Program research projects with Dr. Shinobu Kitayama |
| 2015      | Mentored and endorsed Christy Li's Undergraduate Research Opportunity Program Blue Ribbon: Best Poster Award                            |
| 2013-2014 | Supervision of Sabrina Bilimoria's Undergraduate Research Opportunity Program research project with Dr. Shinobu Kitayama                |
| 2012-2013 | Supervision of Jonathan Lee's Psych 422 (precursor to honors thesis) research project with Dr. Shinobu Kitayama                         |
| 2012-2013 | Supervision of Saule Tamkus and Michael Haupt's Undergraduate Research Program research project with Dr. Carolyn Yoon                   |
| 2011-2012 | Supervision of Grace McKenna and Alexis Turner's Undergraduate Research Program research project with Dr. Shinobu Kitayama              |

### **RESEARCH SKILLS**

My research employs multi-method approaches to address social psychological questions, and I have expertise conducting research using functional magnetic resonance imaging (fMRI), electroencephalogram/event-related potentials (EEG/ERP), behavioral genetics, online surveys, and in-lab experiments. I also have experience conducting longitudinal research, maintaining a pool of previously genotyped participants for follow-up research, and managing data sets that track changes in attitudes and behavior over time. My research has used samples from university subject pools (i.e., intro



to psych subject pool), online sampling (i.e., MTurk and Lancers), and community samples. In my postdoctoral work, I have also been developing expertise in applying machine learning and graph theory to analyze dynamic fluctuations in brain networks.

### Trainings, Workshops, and Webinars

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| 2010 | Summer Institute on Cultural Neuroscience, University of Michigan, Ann Arbor |
| 2016 | ICOS Big Data Camp, University of Michigan, Ann Arbor                        |
| 2018 | Applied Topology in Neuroscience workshop, University of Pennsylvania        |
| 2018 | SPSP Multi-level Modeling Online Webinar Series                              |

### Computer Programs

Python, Matlab, R, E-Prime, PsychoPy, SPM

### **PROFESSIONAL SERVICE**

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|--------------|---|
| 2015-2016    | Graduate Student Coordinator, Social Psychology Area Brown Bag<br><i>Helped to organize and coordinate weekly brown bag series</i>  |
| 2014-2015    | UM Psychology Departmental Associate<br><i>1 of 2 graduate students annually selected to attend Departmental Faculty meetings.</i>  |
| 2014-2015    | Social Psychology Area Alumni Speaker Series Co-Chair<br><i>1 of 2 graduate students responsible for organizing annual speaker series</i>   |
| 2013-2014    | Social Psychology Area Alumni Speaker Series Coordinator<br><i>1 of 5 graduate students involved in organizing annual speaker series</i>  |
| 2013-present | Reviewer: Culture and Brain, Human Brain Mapping, NeuroImage, Neuropsychobiology, Personality & Social Psychology Bulletin, Perspectives on Psychological Science, Social Cognitive and Affective Neuroscience, Social Neuroscience |

### **ASSOCIATION MEMBERSHIPS**

Society for Neuroscience (SfN)  
Society for Personality and Social Psychology (SPSP)  
International Cultural Neuroscience Consortium (ICNC)