Rui Pei

Contact Information

3620 Walnut Street
Philadelphia, PA 19104
rui.pei@asc.upenn.edu
215-600-5242
Website: https://ruipei1.github.io/website
Github: https://github.com/ruipei1
Twitter: @ruipei_penn
OSF: https://osf.io/xrhau/

Education

Annenberg School for Communication *Philadelphia, PA, 2017 – present*
University of Pennsylvania
Ph.D. in Communication, degree expected May 2021
Advisor: Emily Falk, Committee Members: Robert Hornik, Joseph Capella
Dissertation title: Cultural differences in the developmental trajectory of susceptibility to social influence during adolescence
Research areas: developmental neuropsychology, computational methods, communication neuroscience

Annenberg School for Communication *Philadelphia, PA, 2015 – 2017*
University of Pennsylvania
M.A. in Communication, 2017

Brown University *Providence, RI, 2011 - 2015*
B.Sc. in Cognitive Neuroscience

Publications

Pei, R., Lauharatanahirun, N., Cascio, C. N., O'Donnell, M. B., Shope, J. T., Simons-Morton, B. G., Vettel, J. M., & Falk, E. B. (2020). Neural processes during adolescent risky decision making are associated with conformity to peer influence. *Developmental Cognitive Neuroscience*, 44, 100794.
*Top paper award at International Communication Association Annual Meeting

Pei, R., Schmaelzle, R., Kranzler, E., O'Donnell, M. B., & Falk, E. B. (2019). Neural activity during anti-smoking message exposure predicts subsequent message sharing engagement. *American Journal of Preventive Medicine*, 56 (2, Supplement 1), S40–S48.
*Top paper award at International Communication Association Annual Meeting

Pei, R., Kranzler, E. C., Suleiman, A. B., & Falk, E. B. (2019). Promoting adolescent health: insights from developmental and communication neuroscience. *Behavioural Public Policy*. 3(1), 47 - 71

Kranzler, E. C., Schmälzle, R., **Pei, R.,** Hornik, R. C., & Falk, E. B. (2019). Message-Elicited Brain Response Moderates the Relationship Between Opportunities for Exposure to Anti-Smoking Messages and Message Recall. *Journal of Communication*, 69(6), 589-611.
*Top paper award at International Communication Association Annual Meeting

Kranzler, E. C., Schmälzle, R., O'Donnell, M. B., **Pei, R.,** & Falk, E. B. (2018). Adolescent neural responses to antismoking messages, perceived effectiveness, and sharing intention. *Media Psychology*, 0(0), 1–27.

Working papers

Pei, R., Bayer, J., Cascio, C.N., O'Donnell, M.B., Falk, E.B. Meshi, D. (in prep). Connectedness and habitual use of social media predict the neural response to social exclusion in adolescents.
This study investigates the link between individual differences in Facebook usage (connectedness on Facebook and habitual use of Facebook) and their psychological and neural responses to social exclusion. The results of this study suggest that individuals who report more habitual use of Facebook or who report feeling connected on Facebook may have better perceived embeddedness in their social groups, which may buffer the psychological effects of social exclusion through distinct neural mechanisms.

Pei, R., Cosme, D., Andrews, M.E., Mattan, B.D., Falk, E.B. (in prep). Cultural influence on COVID-19 cognitions and growth speed: the role of cultural collectivism.
Many challenges faced by humans require large-scale cooperation for communal benefits. We examined what motivates such cooperation in the context of social distancing and mask wearing to reduce the transmission intensity of COVID-19. We hypothesized that collectivism contributes to people's willingness to engage in these behaviors. Consistent with preregistered predictions, across three studies (n = 2864), people's collectivist orientation is positively associated with intentions, positive beliefs, norm perceptions, and policy support for the preventive behaviors. In separate analyses at the country level (n = 52 countries), more collectivist countries demonstrated lower growth rate in both COVID-19 confirmed cases and deaths. Together, these studies bring new real-world empirical evidence relevant to cooperation in social dilemmas and highlight the need to consider culture in public health policies and communications.

Pei, R., O'Donnell, M.B., & Falk, E.B. (in prep). Neural risk sensitivity and the clustering structure of adolescents' social networks.
This work explores the association between adolescent's neural risk sensitivity and the clustering structure of their social network. Our results show that adolescents with higher neural risk sensitivity tend to have more clusters in their social network. In an online follow-up study, we found a positive relation between adolescents' behavioral risk taking tendencies and the number of clusters in their social networks. These findings highlight that risk taking may be linked to the formation of social groups and lends support to one of the potential implications of heightened reward-related neural activity during adolescence: having more groups of friends.

Pei, R., Kranzler, E., Falker, E.B. (in prep). Cultural values moderate the developmental trajectory of peer influence effects during adolescence
Prior research conducted in Western societies suggests that individuals become less susceptible to peer influence from late adolescence to adulthood. Here, our data from a different culture (China) show that adolescents from more collectivistic societies may grow more susceptible to peer influence as they reach adulthood.

Pei, R., Lauharatanahirun, N., Falk, E.B. (in prep). Shared neural dynamics to health messages underlie similar message evaluation among adolescents.
In this work, we examine the association between individuals' evaluation to health messages and inter-subject correlation in their time series of neural responses when viewing the health messages. Health message evaluations were measured

using self-report as well as participants' linguistic feedback. Our data demonstrate that higher ISC in multiple cortical and subcortical regions (i.e. posterior parietal cortex) was associated with higher similarity in message evaluation among participant, indicating that message evaluation is driven by high-level processing of health messages during message exposure.

Grants

Wharton Russell Ackoff Doctoral Student Fellowship • $3000 2019
Wharton Risk Management Center
Developmental trajectory of peer effects on adolescent decision making: a cultural perspective

Awards

Top 5 Paper Award 2019
International Communication Association
Communication Science & Biology Interest Group

Top 5 Paper Award 2018
International Communication Association
Communication Science & Biology Interest Group

Top 5 Paper Award 2017
International Communication Association
Information Systems Division

Technical skills

Python (including nilearn/nibabel packages), R, SPM, Javascript

Peer-reviewed Presentations

Presentations

Promising themes for anti-smoking campaigns targeting young adults in China: an investigation based on the Integrative Model. Pei, R., Lian, Y., Chen, J. X. (2020) The Medicine, Humanity and Media: Health China & Health Communication. Online conference/Beijing, China.

Habitual social media use is associated with increased neural activity in the mentalizing network during social exclusion. Pei, R., Meshi, D., Bayer, J., Cascio, C.N., O'Donnell, M.B., Falk, E.B. (2020) International Communication Association Annual Meeting. Online conference.

Neural activity during risky decision making reflects adolescents' online social network clustering structure. Pei, R., Lauharatanahirun, N., Cascio, C.N., O'Donnell, M.B., Falk, E.B. (2020) To be presented at the Society for Research on Adolescents Biennial meeting (conference rescheduled to 2021 due to COVID-19). Online conference.

Adolescent's neural and self-report responses to fear vs. humor appeals in tobacco-prevention messages. Pei, R., Lauharatanahirun, N., Falk, E.B. (2019) The Medicine, Humanity and Media: Health China & Health Communication. Beijing, China

Neural activity during risky decision making reflects online social network clustering structure. Pei, R., Lauharatanahirun, N., Cascio, C. N., O'Donnell,

M.B., Vettel, J.M., Falk, E.B. (2019) Best papers in Communication Science and Biology, International Communication Association Annual Meeting. Washington, DC

Are Neural Mechanisms Associated with Social Feedback and Conformity Different among Teens and Young Adults? Cascio, C., Pei, R., Falk, E.B. (2019) International Communication Association Annual Conference. Washington, DC

Message-elicited brain response moderates the relationship between opportunities for exposure to anti-smoking messages and message recall. Kranzler, E. C., Schmälzle, R., **Pei, R.,** Hornik, R.C., & Falk, E. B. (2019) International Communication Association Annual Conference. Washington DC, USA.

Safety versus risk endorsing peer attitudes influence adolescent risk taking through distinct neural mechanisms. Pei, R., Cascio, C., Simons-Morton, B., Falk, E. (2018) Best Papers in Communication Science and Biology, International Communication Association Annual Conference. Prague, Czech Republic.

Counterproductive effects of repeated exposure to health campaign messages: Evidence from a neuroimaging study. Liu, J., So, J., **Pei, R**., & Falk, E.B. (2018) International Communication Association Annual Conference. Prague, Czech Republic.

Adolescent neural responses to anti-smoking messages, perceived ad effectiveness, and sharing intention and elaboration. Kranzler, E., **Pei, R**., Schmaelzle, R., O'Donnell, M.B., & Falk, E. B. Podium Presentation, (2018) Annual Meeting of Society for Research on Nicotine & Tobacco. Baltimore, MD.

Neural activity during anti-smoking message exposure predicts subsequent message elaboration. Pei, R., Schmaelzle, R., Kranzler, E., O'Donnell, M. B., & Falk, E. B. (2017) Best Papers in Information Systems Division, International Communication Association Annual Conference. San Diego, CA.

Posters

Neural activity during risky decision making reflects online social network clustering structure. Pei, R., Lauharatanahirun, N., Cascio, C.N., O'Donnell, M.B., Vettel, J.M., Falk, E.B. (2019) Social and Affective Neuroscience Society Annual Conference. Miami, Florida

Neural activity during anti-smoking message exposure predicts subsequent message elaboration. Pei, R., Schmaelzle, R., Kranzler, E., O'Donnell, M. B., & Falk, E. B. (2017) Social and Affective Neuroscience Society Annual Conference. Los Angeles, CA

Role of reinforcement learning in tic expression: Integrating methods from behavioral psychology and computational neuroscience. Conelea, C., Frank, M., Frank, H., Wiecki, T., **Pei, R.,** & Freeman, J. (2014) Annual conference of the Association for Behavioral and Cognitive Therapies. Philadelphia, PA

Industry-related research experience

Microsoft Research Asia
Research fellow for Dr. Xie Xing *Beijing, China, January 2018 – July 2018*

- Combined online survey and linguistic analyses to examine factors contributing to successful search engine advertisements.
- Examined the associations between personality traits and individuals' information seeking behavior.

Pediatric Anxiety Research Clinic of Rhode Island Hospital
Research assistant *Providence, RI, May 2013 – May 2015*

- Investigated cognitive and emotional processes in exposure-based behavioral treatments for pediatric anxiety disorder and OCD.
- Designed an hour-long MATLAB and Psychtoolbox based behavioral task for a research project on Tourette's syndrome.
- Assisted fMRI and TMS neuropsychology experiments on tic suppression.

The Neuromarketing Labs
Summer intern *Stuttgart, Germany, July – September 2014*

- Designed neuropsychological experiments to test efficacy and optimization strategies for a novel wearable product.
- Assisted EEG based neuromarketing studies to determine appropriate pricing of a commercial products/

Teaching

Graduate Teaching Assistant
University of Pennsylvania *Philadelphia, PA, September 2017–December 2017*
Fall 2017 COMM310 The Communication Research Experience

- Facilitated the development and preparation of course materials.
- Directly supervise two undergraduate students during semester-long research projects.

Undergraduate Teaching Assistant
Brown University *Providence, RI, January 2013–May, 2015*
Spring 2013 CLPS0010 Elementary Psychology
Fall 2013 NEUR1030 Neural Systems
Fall 2014 CLPS0010 Elementary Psychology
CLPS0010:

- Responsible for weekly classes of 15 students to facilitate main lectures, collaborate with professors and other TAs with course material design.
- Led discussions, answer questions, and help review course materials in office hours.
- Graded weekly writing assignments and exam papers.

NEUR1030

- Independently taught weekly recitations (about 50 students in size) to solidify course materials.
- This course included three closed-book exams. Before each exam, I and other three TAs led 2-hour long Q&A sessions (about 200 students in size) to answer questions that the students had prepared.

Affiliations

Social Affective Neuroscience Society
International Communication Association
Society for Research on Adolescence