

Elisa C. Baek, Ph.D.

Department of Psychology
University of California, Los Angeles
5562 Pritzker Hall, Los Angeles, CA 90095
elisabaek@gmail.com

APPOINTMENTS

National Science Foundation SBE Postdoctoral Research Fellow 2019 - Present
Department of Psychology, UCLA
Sponsoring Scientists: Carolyn Parkinson, Mason Porter, Matthew Lieberman

EDUCATION

Ph.D., Communication August 2019
Annenberg School for Communication, University of Pennsylvania
Communication Neuroscience Lab
Certificate in Social, Cognitive, and Affective Neuroscience (SCAN)
Dissertation title: *The Role of Mentalizing in Information Propagation*
Dissertation Committee: Emily Falk (advisor), Joseph N. Cappella, Robert Hornik

M.A., Communication May 2016
Annenberg School for Communication, University of Pennsylvania

B.A., Communication and Cognitive Neuroscience May 2012
University of Pennsylvania
Honors Thesis: An Examination of African Americans in Time and Newsweek
Advertisements
Advisor: John Jackson

RESEARCH AND TEACHING INTERESTS

- Social neuroscience, cognitive neuroscience, communication neuroscience, social connection/disconnection, social network analysis, information propagation, persuasion, social influence, health communication

FELLOWSHIPS, HONORS & AWARDS

National Science Foundation SBE Postdoctoral Fellowship - \$165,000	2019-2022
Highly-ranked abstract (top 20%) for Society for Affective Science	2021
Kavli Summer Institute in Cognitive Neuroscience Fellow, UC Santa Barbara	2019
Summer School in Social Neuroscience and Neuroeconomics, Duke University	2019
Wharton Risk Center Russell Ackoff Doctoral Student Fellowship - \$2,744	2018-2019
Best Papers in Information Systems, International Communication Association	2016

Top Paper in Mass Communication, International Communication Association	2016
Top Paper in Mass Communication, Social and Affective Neuroscience Society	2016

PUBLICATIONS

* denotes equal author contributions

Baek, E.C., O'Donnell, M.B., Scholz, C., Pei, R., Garcia, J.O., Vettel, J.M., & Falk, E.B. (2021). Activity in the brain's valuation and mentalizing networks is associated with propagation of online recommendations. *Scientific Reports*, 11(1), 11196. <https://doi.org/10.1038/s41598-021-90420-2>

Baek, E.C., Porter, M.A., & Parkinson, C. (2021). Social network analysis for social neuroscientists. *Social Cognitive and Affective Neuroscience*, 16(8), 883-901. <https://doi.org/10.1093/scan/nsaa069>

Chang, H.Y., Scholz, C., **Baek, E.C.**, O'Donnell, M.B., & Falk, E.C. (2021). Being the gatekeeper: How thinking about sharing affects neural encoding of information. *Cerebral Cortex*, bhab060. <https://doi.org/10.1093/cercor/bhab060>

Baek, E.C., Scholz, C., & Falk, E.B. (2020). The neuroscience of persuasion and information propagation: Key role of the mentalizing system. In K. Floyd & R. Weber (Eds.), *Handbook of Communication Science and Biology*. Routledge.

Doré, B.P., Scholz, C., **Baek, E.C.**, & Falk, E.B. (2020). Population sharing of health news information is reflected in a distributed neural index of value. *Social Cognitive and Affective Neuroscience*, 15(10), 1111-1119. <https://doi.org/10.1093/scan/nsaa129>

Scholz, C., Jovanova, M., **Baek, E.C.**, & Falk, E.B. (2020). Media-content sharing as a value-based decision. *Current Opinion in Psychology*, 31, 83-88. <https://doi.org/10.1016/j.copsyc.2019.08.004>

Scholz, C., **Baek, E.C.**, O'Donnell, M. B., & Falk, E. B. (2020). Decision-making about broad- and narrowcasting: a neuroscientific perspective, *Media Psychology*. 23(1), 131-155. <https://doi.org/10.1080/15213269.2019.1572522>

Doré, B.P., Scholz, C., **Baek, E.C.**, Garcia, J.O., O'Donnell, M.B., Bassett, D.S., Vettel, J.M., & Falk, E.B. (2019). Brain activity predicts population information sharing by capturing consensus judgments of value. *Cerebral Cortex*, 29(7). <https://doi.org/10.1093/cercor/bhy176>

Baek, E.C. & Falk, E.B. (2018). Persuasion and Influence: What makes a successful persuader? *Current Opinion in Psychology*, 24, 53-57. <https://doi.org/10.1016/j.copsyc.2018.05.004>

***Baek, E.C.**, *Scholz, C., O'Donnell M.B., & Falk, E.B. (2017). Neural correlates of selecting and sharing information. *Psychological Science*, 28(7), 851-861.
<https://doi.org/10.1177/0956797617695073>

*Scholz, C., ***Baek, E.C.**, O'Donnell M.B., Kim, H.S., Cappella, J.N., & Falk, E.B. (2017). A neural model of valuation and information virality. *Proceedings of the National Academy of Sciences*, 114(11), 2881-2886. <http://doi.org/10.1073/pnas.1615259114>

PAPERS UNDER REVIEW, PREPRINTS, AND WORKING PAPERS

Baek, E.C., Hyon, R., López, K., Finn, E.S., Porter, M.A., & Parkinson, C. (preprint; revise & resubmit at *Nature Communications*). Popularity is linked to neural coordination: Neural evidence for an Anna Karenina principle in social networks. <https://psyarxiv.com/6fj2p/>

Baek, E.C., Hyon, R., López, K., Porter, M.A., & Parkinson, C. (preprint; under review). Lonely individuals process the world in idiosyncratic ways. <https://psyarxiv.com/yt872>

Baek, E. C. & Parkinson, C. (invited & in prep). Computational Social Neuroscience. In J. Chiao (Ed.), *The Oxford Handbook of Social and Affective Neuroscience*, New York: Oxford University Press.

Baek, E. C. & Parkinson, C. (invited & in prep). Shared understanding and social connection: Integrating approaches from social psychology, social network analysis, and neuroscience. *Social and Personality Psychology Compass*.

Baek, E.C., Tamir, D.I., & Falk, E.B. (preprint). Considering others' mental states causally increases feelings of social bonding and information sharing.
<https://psyarxiv.com/nw43x/>

Baek, E.C., Hyon, R., López, K., Porter, M.A., & Parkinson, C. (in prep). Convergence across subjects in neural responses during spontaneous viewing predicts sharing of naturalistic stimuli.

Baek, E.C., Kim, H., Chey, J., Youm, Y., & Parkinson, C. (in prep). Individuals who occupy central positions in a real-life social network show increased sensitivity to social exclusion.

Kim, H., Kwak, S., **Baek, E.C.**, Baldina, E., Youm, Y., & Chey, J. (in prep). Brain connectivity during social exclusion differs depending on intimacy with rejecters among older adults living in a village.

Scholz, C., **Baek, E.C.**, & Falk, E.B. (in prep). Using neuroscience to causally increase the spread of information.

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Scholz, C., Doré, B.P., **Baek, E.C.**, O'Donnell, M.B., & Falk, E.B. (in prep). A neural propagation system: Neurocognitive and preference synchrony in information sharers and their receivers.

Cascio, C.N., **Baek, E.C.**, O'Donnell, M.B., & Falk, E.B. (in prep). Social influence: A functional connectivity approach to conformity.

INVITED TALKS

Invited Talk (2021, June). CogniTalks hosted by the Cognito Student Union at the Department of Brain & Cognitive Sciences at the University of Amsterdam.

Invited Talk (2021, April). Innovators in Cognitive Neuroscience, hosted by the Center for Cognitive Neuroscience at Dartmouth College in collaboration with University of Pennsylvania, Yale University, Massachusetts Institute of Technology, Princeton University, Harvard University, Colombia University, and Gallaudet University

Invited Talk (2021, April). Seminar on Cognitive Processing and Development hosted by Neuro-COGNiMATH at the Department of Psychology at the Benemérita Universidad Autónoma de Puebla, Mexico.

Invited Talk (2019, November). UCLA Networks Meeting.

Invited Talk (2019, October). UCLA Social Psychology Colloquium.

Invited Talk (2019, April). Princeton University Neuroscience and Social Decision Making talk series.

Invited Talk (2018, November). Wharton Neuroscience Initiative Student Society (WINSS) Undergraduate Meeting.

Invited Talk (2018, February), 4th Annual SCAN Retreat, Center for Neuroscience and Society, University of Pennsylvania.

Invited Talk (2017, November), Guest Lunch Series, Center for Neuroscience and Society, University of Pennsylvania.

CONFERENCE PRESENTATIONS

* denotes equal author contributions

Baek, E.C., Hyon, R., López, K., Porter, M.A., Parkinson, C., & Reavis, E.A. (2021, November). Neural coordination between participants during naturalistic perception: Towards a marker of social dysfunction in schizophrenia. To be presented at Neuroscience 2021, the annual meeting of the Society for Neuroscience.

- Baek, E.C.**, Hyon, R., López, K., Porter, M.A., & Parkinson, C. (2021, May). Convergence across subjects in neural responses during spontaneous viewing predicts sharing of naturalistic stimuli. Presented at the annual meeting of the International Communication Association (virtual presentation due to COVID-19).
- Chan, H.Y., Scholz, C., **Baek, E.C.**, O'Donnell, M.B., & Falk, E.B. (2021, May). Share versus read: Delineating share-forward and click-through of news information on social media. Presented at the annual meeting of the International Communication Association (virtual presentation due to COVID-19). ****Promising Student Papers of Information Systems****
- Chan, H.Y., Scholz, C., **Baek, E.C.**, O'Donnell, M.B., & Falk, E.B. (2021, May). Being the gatekeeper: How neural encoding of information is affected during sharing decisions. Presented at the annual meeting of the International Communication Association (virtual presentation due to COVID-19).
- Baek, E.C.**, Hyon, R., López, K., Porter, M.A., & Parkinson, C. (2021, April). Lonely individuals process the world in idiosyncratic ways. Presented at the annual meeting of the Social and Affective Neuroscience Society (virtual due to COVID-19).
- Baek, E.C.**, Hyon, R., López, K., Porter, M.A., & Parkinson, C. (2021, April). Lonely individuals process the world in idiosyncratic ways. Presented at the annual meeting of the Society for Affective Science (virtual due to COVID-19). ****Highly-ranked abstract (top 20%) selected for publication in *Affective Science*****
- Baek, E.C.**, Hyon, R., López, K., Porter, M.A., & Parkinson, C. (2021, February). Popular people in a social network exhibit synchronized neural responses to naturalistic stimuli, and unpopular people exhibit idiosyncratic neural responses. Presented at the Social Cognition Preconference (data blitz) at the annual meeting of the Society for Personality and Social Psychology (virtual due to COVID-19).
- Baek, E.C.**, Hyon, R., López, K., Porter, M.A., & Parkinson, C. (2021, February). Convergence in neural responses during spontaneous viewing predicts sharing. Presented at the annual meeting of the Society for Personality and Social Psychology (virtual due to COVID-19).
- Baek, E.C.**, Hyon, R., López, K., Porter, M.A., & Parkinson, C. (2021, February). Popular people in a social network exhibit synchronized neural responses to naturalistic stimuli, and unpopular people exhibit idiosyncratic neural responses. Presented at the annual meeting of the Society for Social Neuroscience (virtual due to COVID-19).
- Baek, E.C.**, Kim, H., Chey, J., Youm, Y., & Parkinson, C. (2020). Individuals who occupy central positions in a real-life social network show increased sensitivity to social exclusion. Accepted at the annual meeting of the Social and Affective Neuroscience Society (postponed due to COVID-19).

Baek, E.C., Scholz, C., O'Donnell, M.B., Parkinson, C., & Falk, E.B. (2020). Density of real-life social networks is associated with brain activity during social decisions. Accepted at the annual meeting of the Social and Affective Neuroscience Society (postponed due to COVID-19).

Hyon, R., Lopéz, K., **Baek, E.C.**, Porter, M.A., Parkinson, C. (2020). Inter-subject similarity in multi-voxel response pattern trajectories reflect similarities in preferences and personality. Accepted at the annual meeting of the Social and Affective Neuroscience Society (postponed due to COVID-19).

Scholz, C., **Baek, E.C.**, & Falk, E.B. (2020, May). Using neuroscience to causally manipulate information sharing. Presented at the annual meeting of the International Communication Association (virtual presentation due to COVID-19).

Doré, B.P., Scholz, C., **Baek, E.C.**, & Falk, E.B. (2020, October). Population news sharing is reflected in distributed reward-related brain activity. Presented at the annual meeting of the Association for Consumer Research (virtual presentation due to COVID-19).

Baek, E.C., Scholz, C., & Falk, E.B. (2019, April). Narcissists show different psychological and neural motivations for interpersonal sharing. Presented at the annual meeting of the Social and Affective Neuroscience Society, Miami, FL.

Doré, B.P., Cooper, N., Tompson, S., Scholz, C.S., **Baek, E.C.** & Falk, E.B. (2019, May). Population-level stimulus effects are reflected in distributed neural representations of affect and value. Presented at the annual meeting of the Social and Affective Neuroscience Society, Miami, FL. ****Top Poster Award****

Garcia, J.O., Bansal, K., Rungratsameetaweemana, N., **Baek, E.C.**, Wasylyshyn, N., Roy, H., Lauharatanahirun, N., Johnson, T., Fernandez, R., O'Donnell, M.B., Falk, E.B., Metcalfe, J., & Vettel, J.M. (2019, March). Brain network communities between driver-passenger dyads capture successful communication while driving. Presented at the International IEEE EMBS Conference on Neural Engineering, San Francisco, CA.

Doré, B.P., Scholz, C., **Baek, E.C.**, & Falk, E.B. (2019, May). Information virality is reflected in a distributed neural representation of value. Presented at the annual meeting of the International Communication Association, Washington D.C. ****Top Paper Award in Communication Science & Biology****

*Cascio, C.N., ***Baek, E.C.**, O'Donnell, M.B., & Falk, E.B. (2018, May). Social influence: A functional connectivity approach to conformity. Presented at the annual meeting of the International Communication Association, Prague, Czech Republic.

Pareman, J.M., Doré, B.P., **Baek, E.C.**, Scholz, C., O'Donnell, M.B., & Falk, E.B. (2018, May). MVPA reveals decisions to consume or share news involve distributed processing in medial prefrontal cortex. Presented at the annual meeting of the Social and Affective Neuroscience Society, Brooklyn, NY.

*Cascio, C.N., ***Baek, E.C.**, O'Donnell, M.B., & Falk, E.B. (2018, May). Social influence: A functional connectivity approach to conformity. Presented at the annual meeting of the Social and Affective Neuroscience Society, Brooklyn, NY.

Baek, E.C., Scholz, C., O'Donnell, M.B., & Falk, E.B. (2017, May). Negativity spreads socially: Negativity bias in opinion change is associated with activity in the brain's mentalizing system. Presented at the annual meeting of the International Communication Association, San Diego, CA.

Scholz, C., **Baek, E.C.**, O'Donnell, M.B., & Falk, E.B. (2017, May). A neural propagation system: Neurocognitive and preference synchrony in information sharers and their receivers. Presented at the annual meeting of the International Communication Association, San Diego, CA.

Doré, B.P., Scholz, C., **Baek, E.C.**, O'Donnell, M.B., & Falk, E.B. (2017, May). Neural prediction of population sharing behavior relates to domain familiarity. Presented at the annual meeting of the International Communication Association, San Diego, CA.

Baek, E.C., Scholz, C., O'Donnell, M.B., & Falk, E.B. (2017, March). Negativity spreads socially: Negativity bias in opinion change is associated with activity in the brain's mentalizing system. Presented at the annual meeting of the Social and Affective Neuroscience Society, Los Angeles, CA.

Scholz, C., **Baek, E.C.**, O'Donnell, M.B., & Falk, E.B. (2017, March). A neural propagation system: Neurocognitive and preference synchrony in information sharers and their receivers. Presented at the annual meeting of the Social and Affective Neuroscience Society, Los Angeles, CA. ****Top Poster Award****

Doré, B.P., Scholz, C., **Baek, E.C.**, O'Donnell, M.B., & Falk, E.B. (2017, March). Neural prediction of population sharing behavior relates to domain familiarity. Presented at the annual meeting of the Social and Affective Neuroscience Society, Los Angeles, CA.

Baek, E.C.**, *Scholz, C., O'Donnell M.B., & Falk, E.B. (2016, June). Neural correlates of selecting and sharing information. Presented at the annual meeting of the International Communication Association, Fukuoka, Japan. *Best Papers in Information Systems Award****

*Scholz, C., ***Baek, E.C.**, O'Donnell, M.B., & Falk, E.B. (2016, June). The value of sharing: A neural model of self-related and social processing in value-based virality. Presented at the annual meeting of the International Communication Association, Fukuoka, Japan. ****Top Paper in Mass Communication Award****

Scholz, C., **Baek, E.C.**, O'Donnell, M.B., & Falk, E.B. (2016, June). Sharing for the (social) self and others: An fMRI study of the neural mechanisms driving broad- and

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narrowcasting. Presented at the annual meeting of the International Communication Association, Fukuoka, Japan.

***Baek, E.C., *Scholz, C., O'Donnell, M.B., & Falk, E.B.** (2016, April). Neural correlates of selecting and sharing information. Presented at the annual meeting of the Social Affective Neuroscience Society, New York, NY.

***Scholz, C., *Baek, E.C., O'Donnell, M.B., Kim, H.S., Cappella, J.N., & Falk, E.B.** (2016, April). Value-based virality: A neurocognitive model of news retransmission. Presented at the annual meeting of the Social Affective Neuroscience Society, New York, NY.
****Top Poster Award****

Baek, E.C., Cascio, C.N., O'Donnell, M.B., Bayer, J., Tinney Jr., F.J., & Falk, E.B. (2016, January). Personal distress & neural mechanisms of social influence. Presented at the Society for Personality and Social Psychology, San Diego, CA.

TEACHING & MENTORSHIP EXPERIENCE

Mentoring Research Assistants and Graduate Students	2019 - Present
Supervision of Research Assistants	2017-2019
Mentor , Graduate/Undergraduate Mentorship Program, University of Pennsylvania	2014-2019
Teaching Fellow , The Communication Experience (COMM 310)	Fall 2017
Guest Lecturer , Introduction to Communication Behavior (COMM 125)	Summer 2017
Training for Teaching Assistants , Penn Center for Teaching & Learning	Summer 2017

SAMPLE MEDIA COVERAGE

Canadian Broadcasting Company – 12 interviews across radio stations in Canada (February 28, 2017). “Why do some news stories go viral and others don’t?”

Popular Science: <http://www.popsoci.com/viral-article-brain-imaging?dom=rss-default&src=syn>

Psychological Science:
<http://www.psychologicalscience.org/publications/observer/obsonline/brain-activity-can-predict-which-articles-go-viral.html>

Vice: https://tonic.vice.com/en_us/article/mris-say-were-all-needy-attention-seekers-on-facebook

Mashable: <http://mashable.com/2017/02/27/why-stories-go-viral/#uyu4kTwSMOqW>

Philly Voice: <http://www.phillyvoice.com/will-story-go-viral-penn-researchers-use-mri-prove-you-subconsciously-know-answer/>

ACADEMIC SERVICE

Ad Hoc Reviewing (Journals)

Cerebral Cortex
Cognitive, Affective, and Behavioral Neuroscience
Current Psychology
NeuroImage
Science Advances
Social Cognitive and Affective Neuroscience
Social Neuroscience

Ad Hoc Reviewing (Conferences)

International Communication Association
Communication Science and Biology Division
Information Systems Division
Health Communication Division

Professional Development and Wellness Committee, Annenberg School 2015-2016

OUTREACH

Baek, E.C., Hyon, R., Porter, M.A., & Parkinson, C. (in press). How do our brains support our friendships? *Frontiers for Young Minds*. **Note: this article was written to introduce new scientific ideas to young audiences (pre-teens and teens).**

Volunteer Research Consultant, Asian Mental Health Collective	2020-Present
Guest Speaker for AP Psychology Class, Lakeridge High School	2021
Guest Speaker for AP Psychology Class, Schroeder High School	2020
LA County Science & Engineering Fair, Special Awards Judge (virtual due to COVID-19)	2020
Presenter, Brain Awareness Week, UCLA Project Synapse (cancelled due to COVID-19)	2020

SKILLS & ADDITIONAL TECHNICAL TRAINING

Data Sciences in the Social and Behavioral Sciences Workshop (Virtual)	2020
NeuroHackademy (Virtual)	2020

Programs: R, Python, fMRIPrep, Matlab

Language Skills: Korean (fluent)

PROFESSIONAL AFFILIATIONS

International Communication Association (ICA)
Social and Affective Neuroscience Society (SANS)

Society for Personality and Social Psychology (SPSP)

Society for Neuroscience (SfN)

Society for Social Neuroscience (S4SN)

Society for Affective Science (SAS)

OTHER PROFESSIONAL EXPERIENCE

Account Manager, Digital Media Solutions, Conshohocken, PA 2013-2014

- Cultivated relationships with influential individuals on social media to increase engagement in advertising campaigns by 100% in two months, resulting in an overall revenue increase of 150%
- Quantitatively analyzed social media engagement trends to assess success of ad campaigns

Analyst (Client Consulting), The Nielsen Company, Bensalem, PA 2012-2013

- Analyzed competitive landscape of drug products worth \$7.8 billion in global sales through statistical forecasting; led team meetings to facilitate discussion with project directors

Marketing Intern, Promoting Group, Los Angeles, CA 2011

- Generated targeted content to increase market presence; maintained interaction with clients

Social Media Fellow, Institute of Cultural Inquiry, Los Angeles, CA 2010, 2011

- Implemented optimal tools to coordinate 2-month global arts interactive project