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Hee Yeon Im

Academic Appointments

Massachusetts General Hospital and Harvard Medical School , Postdoctoral Fellow Martinos Center for Biomedical Imaging, Department of Radiology (Advisor: Kestutis Kveraga)	2015-Current
Brown University , Postdoctoral Associate Department of Cognitive, Linguistics, & Psychological Sciences (Advisor: Joo-Hyun Song)	2014-2015

Education

Johns Hopkins University Ph.D. in Psychological & Brain Sciences (Advisor: Justin Halberda)	2013
Yonsei University (Seoul, Korea) M.Sc. in Cognitive Science (Advisor: Sang Chul Chong)	2008
Yonsei University (Seoul, Korea) B.S. in Psychology	2006
Maryville College (Maryville, TN) Visiting student	2005

Research Interests

General: Behavioral and neural dynamics of Perception, Cognition, and Action

Specific: Global ensemble perception; Object perception; Attention; Goal-directed action; Visuomotor memory; Motor learning; Social cognition; Brain pathways; Hemispheric lateralization

Methods: Behavioral psychophysics; Neuroimaging (fMRI and MEG); Eye movement tracking; Hand movement tracking (reaching); Computational analyses

Publications

- **Im, H.Y.**, Adams, R.B.Jr., Cushing, C., Boshyan, J., Ward, N., & Kveraga, K. (2018). Sex-related differences in behavioral and amygdalar responses to compound facial threat cues. *Human Brain Mapping, 39*, 2725-2741.
- Cushing, C., **Im, H.Y.**, Adams, R.B.Jr., Ward, N., Albohn, N.D., Steiner, T.G., & Kveraga, K. (2018). Neurodynamics and connectivity during facial fear perception: The role of threat exposure and signal congruity. *Scientific Reports, 8*, 2776.
- **Im, H.Y.**, Albohn, N.D., Steiner, T.G., Cushing, C., Adams, R.B.Jr., & Kveraga, K. (2017). Ensemble coding of crowd emotion: Differential hemispheric and visual stream contributions. *Nature Human Behaviour, 1*, 828-842.
- **Im, H.Y.**, Adams, R.B.Jr., Boshyan, J., Ward, N., Cushing, C., & Kveraga, K. (2017). Observer's anxiety facilitates magnocellular processing of clear facial threat cues, but impairs parvocellular processing of ambiguous facial threat cues. *Scientific Reports, 7*, 15151.
- **Im, H.Y.**, Chong, S.C., Sun, J., Steiner, T.G., Albohn, D.N., Adams, R.B.Jr., & Kveraga, K. (2017). Cross-cultural effects on ensemble coding of emotion in facial crowds. *Culture and Brain, 5*, 125-152.
- **Im, H.Y.**, Bédard, P., & Song, J-H. (2016). Long lasting attentional-context dependent visuomotor memory. *Journal of Experimental Psychology: Human Perception & Performance, 42*, 1269-1274.
- **Im, H.Y.**, Zhong, S., & Halberda, J. (2016). Perceptual groups as a unit for rapid extraction of approximate number of elements in random dot arrays. *Vision Research, 126*, 291-307.
- Odic, D., **Im, H.Y.**, Eisinger, R., Ly, R., & Halberda, J. (2016). PsiMLE: A maximum-likelihood approach to estimating psychophysical scaling and variability more reliably, efficiently, and flexibly. *Behavioral Research Methods, 48*, 445-462.

- **Im, H.Y.**, Bédard, P., & Song, J-H. (2015). Encoding attentional-states during visuomotor learning. *Journal of Vision*, 15, 1-16.
- **Im, H.Y.**, Park, W., & Chong, S.C. (2015). Ensemble statistics as a unit of selection. *Journal of Cognitive Psychology*, 27, 114-127.
- **Im, H.Y.**, & Chong, S.C. (2014). Mean size as a unit of visual working memory. *Perception*, 43, 663-676.
- **Im, H.Y.**, & Halberda, J. (2013). The effects of sampling and internal noise on the representation of ensemble average size. *Attention, Perception, & Psychophysics*, 75, 278-286.
- **Im, H.Y.**, & Chong, S.C. (2009). Computation of mean size is based on perceived size. *Attention, Perception, & Psychophysics*, 71, 375-384.
- Park, K.M., Cha, O., Kim, S., **Im, H.Y.**, Chong, S.C., (2007). The Influence of Depth Context on Blind Spot Filling-in. *Korean Journal of Cognitive Science*, 18, 351-370.

Fellowships and Academic Awards

- ECOR Tosteson Postdoctoral Fellowship Award for Medical Discovery (Total: \$ 74,386) 2018
Role: Principal Investigator, Massachusetts General Hospital
- Neuroimaging Funding Initiative for Research Fellows (Total: \$ 12,000) 2015
Role: Principal Investigator, Martinos Center for Biomedical Imaging
- Center for Vision Research Fellowship (Total: \$ 13,742) 2014
Role: Principal Investigator, Brown University
- Collaborative Research Award, Johns Hopkins University 2013
This award supports interdisciplinary research work proposed by graduate students from different laboratories.
- Mary Ainsworth Research Award, Johns Hopkins University 2012
This award recognizes a female graduate student who has demonstrated exceptional scholarly progress in research.

Pending grant application (Under review)

K01 Research Scientist Development Award (Total: \$740,880, National Institute of Mental Health)
Title: *Elucidating sex-specific roles of social anxiety in modulating neurodynamics of social perception*
Role: Principal Investigator

Teaching Experiences

Section Instructor:

Advanced Statistical Methods (Graduate level)	Johns Hopkins University	Fall 2011
Foundations of Mind	Johns Hopkins University	Spring 2011
Functional Human Neuroanatomy	Johns Hopkins University	Spring 2009

Guest Lecturer:

Perception and Mind: <i>Scene Perception</i>	Brown University	Spring & Fall 2014
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Teaching Assistant:

Developmental Psychology	Johns Hopkins University	Fall 2010
Psychology and Law: Clinical Applications	Johns Hopkins University	Spring 2010
Sensation and Perception	Johns Hopkins University	Fall 2009
Introduction to Cognitive Science	Yonsei University	Fall 2007

Ad Hoc Reviewing

Acta Psychologica

Attention, Perception, and Psychophysics

European Journal of Neuroscience
Journal of Cognitive Neuroscience
Journal of Experimental Psychology: General
PLoS One

Journal of Vision
Vision Research
Visual Cognition
Frontiers in Psychology

Invited Talks

Brigham and Woman's Hospital, Boston, MA	2018
Brown University, Providence, RI	2018
Press Conference on Social Behavior at '15 Society for Neuroscience, Chicago, IL	2015
Brown University, Providence, RI	2014
MIT, Cambridge, MA	2013
Korea University, Seoul, Korea	2013
Yonsei University, Seoul, Korea	2013

Manuscripts Under Review (Reprints available)

- **Im, H.Y.**, & Song, J-H., Paradoxical benefits of attentional distraction for visuomotor adaptation without awareness.
- Kveraga, K., **Im, H.Y.**, Ward, N., & Adams, R.B.Jr., Fast saccadic and manual responses to faces presented to the koniocellular visual pathway.
- Cushing, C., **Im, H.Y.**, Adams, R.B.Jr., Ward, N., & Kveraga, K., Magnocellular and parvocellular pathway contributions to facial threat cue processing.
- De Vito, D., Cushing, C., **Im, H.Y.**, Albohn, D.N., Adams, R.B.Jr., & Kveraga, K., Spatial and feature-based attention to expressive faces.

Working Papers

- **Im, H.Y.**, & Halberda, J., A two-state detect-or-guess model of visual perception and memory.
- **Im, H.Y.**, Cushing, C., Ward, N., Boshyan, J., Adams, R.B.Jr., & Kveraga, K., Different temporal characteristics of MEG activation during emotional perception of people and individuals.
- **Im, H.Y.**, Adams, R.B.Jr., Cushing, C., Ward, N., Boshyan, J., & Kveraga, K., The effects of aging in neural processing of facial threat cues via magnocellular and parvocellular pathways.
- **Im, H.Y.**, Bédard, P., & Song, J.-H., Inhibitory modulation of perception and action by repeated colors without consciousness.
- Khvostov, V.A., Utochkin, I.S., & **Im, H.Y.**, Interplay between the Ebbinghaus illusion and hierarchical coding in visual working memory.
- Utochkin, I.S., & **Im, H.Y.**, Segmentability of irrelevant visual feature systemically modulates extraction of ensemble representation from the other visual feature.
- Halberda, J., **Im, H.Y.**, & Ly, R., Attention to early visual features empowers the segmentation of ensemble visual groups.

Conference Presentations (last three years)

- **Im, H.Y.**, Adams, R.B.Jr., Cushing, C., Boshyan, J., Ward, N., & Kveraga, K. (2018). The effects of aging in neural processing of facial threat cues via magnocellular and parvocellular pathways. Poster at *Vision Sciences Society*.
- **Im, H.Y.**, Adams, R.B.Jr., Cushing, C., Boshyan, J., Ward, N., & Kveraga, K. (2018). Sex-related differences in behavioral and neural processing of facial threat cues via magnocellular and parvocellular pathways. Poster at *Cognitive Neuroscience Society*.

- **Im, H.Y.**, Cushing, C., Albohn, D.N., Steiner, T.G., Ward, N., Adams, R.B.Jr., & Kveraga, K. (2017). Neurodynamics of reading crowd emotion: Independent visual pathways and hemispheric contributions. Poster at *Vision Sciences Society*.
- Adams, R.B.Jr., **Im, H.Y.**, Ward, N., Boshyan, J., Cushing, C., & Kveraga, K. (2017). Trait anxiety moderates visual pathway contributions to the processing of clear versus ambiguous threat. Poster at *Vision Sciences Society*.
- Cushing, C., Adams, R.B.Jr., **Im, H.Y.**, Ward, N., & Kveraga, K. (2017). Differential visual pathway contributions to compound facial threat cue processing. Poster at *Vision Sciences Society*.
- Ward, N., De Vito, D., Cushing, C., Boshyan, J., **Im, H.Y.**, Adams, R.B.Jr., & Kveraga, K. (2017). Neurodynamics and hemispheric lateralization in threat and ambiguous negative scene recognition. Poster at *Vision Sciences Society*.
- **Im, H.Y.**, Cushing, C., Adams, R.B.Jr., & Kveraga, K. (2016). Neural dynamics underlying reading of crowd emotion: MEG study. Poster at *International Conference on Biomagnetism*.
- **Im, H.Y.**, Albohn, D.N., Steiner, T.G., Adams, R.B.Jr., & Kveraga, K. (2016). Crowd emotion perception is lateralized in a goal-driven fashion and modulated by observer anxiety and stimulus characteristics: behavioral and fMRI results. Poster at *Vision Sciences Society*.
- **Im, H.Y.**, Adams, R.B.Jr., & Kveraga, K. (2016). Reading crowd emotion: The roles of hemispheric specialization, task goal, anxiety, and facial identity. Poster at *Cognitive Neuroscience Society*.
- Adams, R.B.Jr., **Im, H.Y.**, Cushing, C., Ward, N., Boshyan, J., Steiner, T.G., Albohn, D.N., & Kveraga, K. (2016). Compound facial threat cue perception: Contributions of visual pathways, aging, and anxiety. Poster at *Vision Sciences Society*.
- Song, J.S., **Im, H. Y.**, Gamble, C., & Song, J-H. (2016). Effects of scene consistency in subliminally perceived visual stimuli. Poster at *Vision Sciences Society*.
- Cushing, C., Adams, R.B.Jr., **Im, H.Y.**, Ward, N., & Kveraga, K. (2016). Neurodynamics of facial threat cue perception modulated by anxiety: A MEG study. Poster at *Vision Sciences Society*.
- Khvostov, V.A., Utochkin, I.S., & **Im, H.Y.** (2016). Interplay between the Ebbinghaus illusion and hierarchical coding in visual working memory. Poster at *Vision Sciences Society*.
- Song, J.-H., & **Im, H.Y.** (2016). Paradoxical benefits of attentional distraction for visuomotor memory without explicit awareness. Poster at *Society for Neuroscience*.
- Song, J.-H., **Im, H.Y.**, & Bédard, P. (2015). Encoding attentional-states during visuomotor adaptation. Poster at *Vision Sciences Society*.
- **Im, H.Y.**, & Song, J.-H. (2015). Inhibitory modulation of perception and action by repeated colors without consciousness. Poster at *Vision Sciences Society*.
- **Im, H.Y.**, Albohn, D.N., Adams, R.B.Jr., & Kveraga, K. (2015). The integrative process of reading emotional expressions from a crowd of faces. Poster at *Society for Neuroscience*.
- Halberda, J., **Im, H.Y.** & Zhong, S. (2015). Clustering and number perception in random dot arrays. Talk at *Annual Interdisciplinary Conference*.

References

- **Justin Halberda, Ph.D.**, Johns Hopkins University, MD
- **Kestutis Kveraga, Ph.D.**, Massachusetts General Hospital, Harvard Medical School, MA
- **Joo-Hyun Song, Ph.D.**, Brown University, RI
- **Reginald B. Adams, Jr., Ph.D.**, Pennsylvania State University, PA