Oakyoon Cha

Sogang University
Department of Psychology
35 Baekbeom-ro, Mapo-gu
Seoul 04107, Republic of Korea
oakyoon@sogang.ac.kr
https://dcantlab.org

Last update: 4/10/2025

Education

2014—2017 **Ph.D. in Cognitive Science, Yonsei University**, Seoul, Korea.
Advisor: Sang Chul Chong

2009—2011 **Ph.D. in Cognitive Science, Yonsei University**, Seoul, Korea.
Advisor: Sang Chul Chong

2000—2009 **B.A. in Psychology & Cognitive Science, Yonsei University**, Seoul, Korea.

Research Experience

2025— **Assistant Professor, Sogang University**, Seoul, Korea.

2021—2025 **Assistant Professor, Sungshin Women's University**, Seoul, Korea.

2018—2021 **Postdoctoral Researcher, Vanderbilt University**, Nashville, TN, USA.
Advisors: Randolph Blake & Isabel Gauthier

Work Experience

2005—2006 **Researcher/Developer, Communications Lab, SK Communications.**

2003—2005 **Developer, E-commerce Platform, Danal.**

Grants

3/1/2023—2/28/2033 **"Neural Oscillation Model of Visual Awarenes"**
National Research Foundation of Korea (No. RS-2023-00211668)
Annual Direct Costs: approx. $70,000 (1st year), $110,000 (2nd year—)
Total Direct Costs: approx. $1,060,000

3/1/2022—12/31/2023 **"Masked-Face Perception and Masked-People Perception"**
National Research Foundation of Korea (No. 2022R1C1C1008628)
Annual Direct Costs: approx. $125,000 (1st year), $76,000 (2nd year)
Total Direct Costs: approx. $201,000

Awards

2021 **Bob Fox Award of Excellence in Post-Doctoral Research, Department of Psychology, Vanderbilt University.**

2020 **Elsevier/Vision Research Travel Award, Annual Meeting of the Vision Sciences Society.**

2017 Distinguished Thesis, Yonsei University.

2017 Student Travel Award, Annual Meeting of the Korean Society for Brain and Neural Science.

2016 Grand Prize, SK Creative Challenge, HCI Korea 2016.

2016 Student Travel Award, Annual Meeting of the Korean Society for Cognitive and Biological Psychology.

2015 Student Travel Award, Annual Meeting of the Korean Society for Cognitive and Biological Psychology.

2011 Merited Thesis, Yonsei University.

Publications

Cha, O. (2025). Categorical frequency judgments as effective ensemble judgments for object features. *Scientific Reports*, *15*, 10531. https://doi.org/10.1038/s41598-025-93760-5

Cha, O., & Blake, R., (2024). Procedure for extracting temporal structure embedded within psychophysical data. *Behavior Research Methods*, *56*(6), 5482–5500. https://doi.org/10.3758/s13428-023-02282-3

Chang, T.-Y., Cha, O., & Gauthier, I. (2024). A general ability for judging simple and complex ensembles. *Journal of Experimental Psychology: General*, *153*(6), 1517–1536. https://doi.org/10.1037/xge0001582

Chang, T.-Y., Cha, O., McGugin, R., Tomarken, A., & Gauthier, I. (2024). How general is ensemble perception? *Psychological Research*, *88*(3), 695–708. https://doi.org/10.1007/s00426-023-01883-z

Kacin, M., Cha, O., & Gauthier, I. (2023). The relation between ensemble coding of length and orientation does not depend on spatial attention. *Vision*, *7*(1), 3. https://doi.org/10.3390/vision7010003

Gauthier, I., Cha, O., & Chang, T.-Y. (2022). Mini Review: Individual differences and domain-general mechanisms in object recognition. *Frontiers in Cognition*, *1*, 1040994. https://doi.org/10.3389/fcogn.2022.1040994

Cha, O., Blake, R., & Gauthier, I. (2022). Contribution of a common ability in average and variability judgments. *Psychonomic Bulletin & Review*, *29*(1), 108–115. https://doi.org/10.3758/s13423-021-01982-1

Kacin, M., Gauthier, I., & Cha, O. (2021). Ensemble coding of average length and average orientation are correlated. *Vision Research*, *187*, 94–101. https://doi.org/10.1016/j.visres.2021.04.010

Cha, O., Blake, R., & Gauthier, I. (2021). The role of category- and exemplar-specific experience in ensemble processing of objects. *Attention, Perception, & Psychophysics*, *83*(3), 1080–1093. https://doi.org/10.3758/s13414-020-02162-4

Cha, O., Son, G., Chong, S. C., Tovar, D. A., & Blake, R. (2019). Novel procedure for generating continuous flash suppression: Seurat meets Mondrian. *Journal of Vision*, *19*(14), 1. https://doi.org/10.1167/19.14.1

Cha, O., & Blake, R. (2019). Evidence for neural rhythms embedded within binocular rivalry. *Proceedings of the National Academy of Sciences of the United States of America*, *116*(30), 14811–14812. https://doi.org/10.1073/pnas.1905174116

Cha, O., Blake, R., & Chong, S. C. (2018). Composite binocular perception from dichoptic stimulus arrays with similar ensemble information. *Scientific Reports*, *8*, 8263. https://doi.org/10.1038/s41598-018-26679-9

Cha, O., & Chong, S. C. (2018). Perceived average orientation reflects effective gist of the surface. *Psychological Science*, *29*(3), 319–327. https://doi.org/10.1177/0956797617735533

Eo, K., Cha, O., Chong, S. C., & Kang, M. S. (2016). Less is more: Semantic information survives interocular suppression when attention is diverted. *Journal of Neuroscience*, *36*(20), 5489–5497. https://doi.org/10.1523/JNEUROSCI.3018-15.2016

Cha, O., & Chong, S. C. (2014). The background is remapped across saccades. *Experimental Brain Research*, *232*(2), 609–618. https://doi.org/10.1007/s00221-013-3769-9

Baek, Y., Cha, O., & Chong, S. C. (2012). Characteristics of the filled-in surface at the blind spot. *Vision Research*, *58*, 33–44. https://doi.org/10.1016/j.visres.2012.01.020

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*(4), 351–370. https://doi.org/10.19066/cogsci.2007.18.4.002

Invited Talks

May, 2024 "How effective are low-frequency events in shaping perception?"
Randolph Blake Festschrift, Department of Psychology, Vanderbilt University.

Oct., 2019 "Finding evidence for neural rhythms in behavioral data."
CCN Brown Bag Seminar, Department of Psychology, Vanderbilt University.

Oct., 2018 "Ensemble as lossy compression rather than dumb averaging."
CCN Brown Bag Seminar, Department of Psychology, Vanderbilt University.

Nov., 2017 "Ensemble information reflects effective gist of a visual scene."
Center for Cognitive Science, Yonsei University.

Mar., 2016 "The background is remapped across saccades."
Center for Neuroscience Imaging Research, Institute for Basic Science.

Conference Presentations

Cha, O. (2025, February 12–14). *Sampling rate of visual awareness* [Symposium]. Korean Society for Cognitive and Biological Psychology, Gwangju, Korea.

Kim, N. [Nayoung], & Cha, O. (2025, February 12–14). *Relational scene understanding relies on cortical processing evidenced by dichoptic presentation* [Poster presentation]. Korean Society for Cognitive and Biological Psychology, Gwangju, Korea.

Kim, S. [Suyeon], & Cha, O. (2025, February 12–14). *How does task-irrelevant variability influence ensemble judgments?* [Oral presentation]. Korean Society for Cognitive and Biological Psychology, Gwangju, Korea.

Cha, O. (2024, May 17–22). *Theta- and alpha-band frequency advantages for sensory gating* [Poster presentation]. Vision Sciences Society, St. Pete Beach, FL, USA. https://doi.org/10.1167/jov.24.10.470

Gauthier, I., Chang, T.-Y., & Cha, O. (2024, May 17–22). *A general ability for simple and complex ensemble judgments* [Oral presentation]. Vision Sciences Society, St. Pete Beach, FL, USA. https://doi.org/10.1167/jov.24.10.329

Kim, H. [Hyerim], Kim, N. [Nayoung], Kim, H. [Hyunu], & Cha, O. (2024, May 17–22). *Masked-face recognition leads to learning of new perceptual abilities* [Poster presentation]. Vision Sciences Society, St. Pete Beach, FL, USA. https://doi.org/10.1167/jov.24.10.503

Kim, S. [Suyeon], & Cha, O. (2024, May 17–22). *Multiplicative effect of task-irrelevant feature variability on variability judgments* [Poster presentation]. Vision Sciences Society, St. Pete Beach, FL, USA. https://doi.org/10.1167/jov.24.10.505

Kim, H. [Hyerim], Kim, N. [Nayoung], Kim, H. [Hyunu], & Cha, O. *Masked-face recognition leads to learning of new perceptual abilities* [Oral presentation]. Korean Society for Cognitive and Biological Psychology, Seoul, Korea.

Kim, S [Suyeon], & Cha, O. (2024, February 1—3). *Multiplicative effect of task-irrelevant feature variability on variability judgments* [Poster presentation]. Korean Society for Cognitive and Biological Psychology, Seoul, Korea.

Cha, O. (2023, May 19—24). *Contribution of a common ability in judgments for the mode of object identities* [Poster presentation]. Vision Sciences Society, St. Pete Beach, FL, USA. https://doi.org/10.1167/jov.23.9.4741

Gauthier, I., & Cha, O. (2023, May 19—24). *Faces are not processed holistically in ensemble judgments* [Poster presentation]. Vision Sciences Society, St. Pete Beach, FL, USA. https://doi.org/10.1167/jov.23.9.4583

Kim, S. [Suyeon], & Cha, O. (2023, May 19—24). *Diversity of items within attentional window explains "cost-free" diversity judgments* [Poster presentation]. Vision Sciences Society, St. Pete Beach, FL, USA. https://doi.org/10.1167/jov.23.9.4718

Kim, S. J., & Cha, O. (2023, May 19—24). *Face recognition plays a role in ensemble judgments of facial features* [Poster presentation]. Vision Sciences Society, St. Pete Beach, FL, USA. https://doi.org/10.1167/jov.23.9.5217

Lee, J. [Jumi], & Cha, O. (2023, May 19—24). *Multitasking without task switching* [Poster presentation]. Vision Sciences Society, St. Pete Beach, FL, USA. https://doi.org/10.1167/jov.23.9.5203

Kim, S. [Suyeon], & Cha, O. (2023, February 16—17). *Diversity of items within attentional window explains "cost-free" diversity judgments* [Oral presentation]. Korean Society for Cognitive and Biological Psychology, Seoul, Korea.

Kim, S. J., & Cha, O. (2023, February 16—17). *Face recognition plays a role in ensemble judgments of facial features* [Oral presentation]. Korean Society for Cognitive and Biological Psychology, Seoul, Korea.

Lee, J. [Jumi], & Cha, O. (2023, February 16—17). *Multitasking without task switching* [Oral presentation]. Korean Society for Cognitive and Biological Psychology, Seoul, Korea.

Chang, T.-Y., Cha, O., McGugin, R. W., Tomarken, A. J., & Gauthier, I. (2022, May 12—18). *A general ability for ensemble perception* [Poster presentation]. Vision Sciences Society, St. Pete Beach, FL, USA. https://doi.org/10.1167/jov.22.14.4013

Cha, O. (2021, July 15—16). *Common and feature-specific mechanisms of ensemble perception* [Symposium]. Korean Society for Cognitive and Biological Psychology.

Cha, O., & Blake, R. (2021, May 21—26). *Extracting evidence for neural rhythms from behavioral measurements* [Poster presentation]. Vision Sciences Society, St. Pete Beach, FL, USA. https://doi.org/10.1167/jov.21.9.1958

Cha, O., Blake, R., & Gauthier, I. (2020, June 19—24). *Judgments of average and variance within object ensembles rely on a common ability* [Poster presentation]. Vision Sciences Society, St. Pete Beach, FL. https://doi.org/10.1167/jov.20.11.841

Blake, R., Cha, O., Son, G., & Chong, S. C. (2019, May 17—22). *Novel procedure for generating continuous flash suppression: Seurat meets Mondrian* [Poster presentation]. Vision Sciences Society, St. Pete Beach, FL. https://doi.org/10.1167/19.10.63c

Cha, O., Blake, R., & Gauthier, I. (2019, May 17—22). *Stimulus-specific learning facilitates ensemble processing of cars* [Poster presentation]. Vision Sciences Society, St. Pete Beach, FL. https://doi.org/10.1167/19.10.32

Cha, O., & Chong, S. C. (2018, May 18—23). *Ensemble information is built with a bag of free-floating visual features* [Poster presentation]. Vision Sciences Society, St. Pete Beach, FL. https://doi.org/10.1167/18.10.317

Cha, O., & Chong, S. C. (2017, August 30—31). *Ensemble similarity between binocular images promotes binocular matching* [Poster presentation]. Korean Society for Brain and Neural Science, Seoul, Korea.

Cha, O., Blake, R., & Chong, S. C. (2017, May 19—24). *Dissimilarity between feature ensembles triggers binocular rivalry without competing local features* [Poster presentation]. Vision Sciences Society, St. Pete Beach, FL, USA. https://doi.org/10.1167/17.10.1221

Cha, O., & Chong, S. C. (2017, January 19—20). *Effect of the skewness and peak of orientation distributions on the perceived average orientaion* [Poster presentation]. Korean Society for Cognitive and Biological Psychology, Busan, Korea.

Cha, O., & Chong, S. C. (2016, May 13—18). *Objects held in visual working memory compete for access to resources* [Poster presentation]. Vision Sciences Society, St. Pete Beach, FL, USA. https://doi.org/10.1167/16.12.1053

Cha, O., & Chong, S. C. (2016, January 21—23). *Objects held in visual working memory compete for access to resources* [Oral presentation]. Korean Society for Cognitive and Biological Psychology, Jeju, Korea.

Eo, K. Y., Cha, O., Kang, M.-S., & Chong, S. C. (2015, May 15—20). *Attending away makes semantic information available during rivalry* [Oral presentation]. Vision Sciences Society, St. Pete Beach, FL, USA. https://doi.org/10.1167/15.12.382

Kang, K., Cha, O., & Chong, S. C. (2015, May 15—20). *Relational information decays faster than object features in visual working memory* [Poster presentation]. Vision Sciences Society, St. Pete Beach, FL, USA. https://doi.org/10.1167/15.12.535

Cha, O., & Chong, S. C. (2015, January 14—16). *Contour integration affects perceived mean orientations of Gabors* [Oral presentation]. Korean Society for Cognitive and Biological Psychology, Jeju, Korea.

Eo, K. Y., Cha, O., Kang, K., & Chong, S. C. (2015, January 14—16). *Influence of pupil size on brightness perception* [Poster presentation]. Korean Society for Cognitive and Biological Psychology, Jeju, Korea.

Kang, K., Cha, O., & Chong, S. C. (2015, January 14—16). *Relational information decays faster than object features in visual working memory* [Poster presentation]. Korean Society for Cognitive and Biological Psychology, Jeju, Korea.

Kang, M.-S., Eo, K. Y., Cha, O., & Chong, S. C. (2014, November 15—19). *Inattention opens door for unconscious processing during continuous flash suppression* [Oral presentation]. Society for Neuroscience, Washington, DC, USA.

Cha, O., & Chong, S. C. (2014, May 16—21). *Contour integration affects perceived mean orientations of Gabors* [Poster presentation]. Vision Sciences Society, St. Pete Beach, FL, USA. https://doi.org/10.1167/14.10.1429

Eo, K. Y., Cha, O., Jung, Y., & Chong, S. C. (2014, May 16—21). *The relationship between vividness of visual imagery and indirect size-measurements of the visual cortex* [Poster presentation]. Vision Sciences Society, St. Pete Beach, FL, USA. https://doi.org/10.1167/14.10.43

Cha, O., & Chong, S. C. (2011, June 24). *Analyzing electrophysiological signals using genetic algorithm* [Oral presentation]. Korean Society for Cognitive Science, Seoul, Korea.

Baek, Y., Cha, O., & Chong, S. C. (2011, June 24). *Binocular rivalry and the perception at the blind spot* [Oral presentation]. Korean Society for Cognitive Science, Seoul, Korea.

Baek, Y., Cha, O., & Chong, S. C. (2011, May 6—11). *Temporal dynamics of binocular rivalry at the blind spot* [Poster presentation]. Vision Sciences Society, Naples, FL, USA. https://doi.org/10.1167/11.11.304

Cha, O., & Chong, S. C. (2010, May 7—–12). *Background is remapped across saccades* [Poster presentation]. Vision Sciences Society, Naples, FL, USA. https://doi.org/10.1167/10.7.516

Baek, Y., Kim, J., Cha, O., & Chong, S. C. (2009, May 8—13). *The quality of filled-in surface at the blind spot* [Poster presentation]. Vision Sciences Society, Naples, FL, USA. https://doi.org/10.1167/9.8.1028