

Oakyoon Cha

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

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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 Awareness"

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, October 24). *Computational model explains percept switches and returns in binocular rivalry* [Oral presentation]. Korean Society for Digital Psychology, Seoul, Korea.
- Cha, O. (2025, May 16–20). *Modeling the influence of oscillation frequency on perceptual stability during binocular rivalry* [Poster presentation]. Vision Sciences Society, St. Pete Beach, FL, USA.
<https://doi.org/10.1167/jov.25.9.1905>
- Kim, H. [Hyerim], & Cha, O. (2025, May 16–20). *The role of luminance contrast in motion silencing illusion* [Poster presentation]. Vision Sciences Society, St. Pete Beach, FL, USA. <https://doi.org/10.1167/jov.25.9.2316>
- Kim, N. [Nayoung], & Cha, O. (2025, May 16–20). *Relational scene understanding relies on cortical processing evidenced by dichoptic presentation* [Poster presentation]. Vision Sciences Society, St. Pete Beach, FL, USA. <https://doi.org/10.1167/jov.25.9.2013>
- Kim, S. [Suyeon], & Cha, O. (2025, May 16–20). *How does task-irrelevant variability influence ensemble judgments?* [Poster presentation]. Vision Sciences Society, St. Pete Beach, FL, USA.
<https://doi.org/10.1167/jov.25.9.2012>
- 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 orientation* [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 Gobors* [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>