

## Atsushi Kikumoto

Department of Cognitive, Linguistic, Psychological Sciences

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### Education

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- 2013 – 2020      PhD, Psychology and Cognitive Neuroscience  
University of Oregon, Eugene, OR
- 2009 – 2012      Bachelor of Science, Psychology (honors), Biology (minor),  
University of Oregon, Eugene, OR
- 2008 – 2010      The Associate of Arts Oregon Transfer (AAOT),  
Lane Community College, Springfield, OR

### Research Experience

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- 2020 – present      Postdoctoral Research Associate  
Brown University, Providence, RI, United States  
Director: David Badre
- 2010 – 2020      Research assistant / PhD Graduate Student Researcher  
University of Oregon, Eugene, OR, United States  
Director: Ulrich Mayr
- 2018                  Visiting Junior Scholar  
Max Planck Institute of Human Development, Berlin, Germany  
Director: Ulman Lindenberger, Markus Werkle-Bergner, and Myriam Sander
- 2010 – 2012      Research assistant  
University of Oregon, Eugene, OR, United States  
Director: Ed Vogel
- 2010 – 2012      Research assistant  
University of Oregon, Eugene, OR, United States  
Director: Margaret Sereno

### Publications (\* denotes that authors contributed equally to the work)

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**Kikumoto, A., & Mayr, U. (2020).** Conjunctive representations that integrate stimuli, responses, and rules are critical for action selection. *Proceedings of the National Academy of Sciences of the United States of America*. <https://doi.org/10.1073/pnas.1922166117>

Sereno, M. E., Robles, K. E., **Kikumoto, A.**, & Bies, A. J. (2020). The Effects of Three-Dimensional Context on Shape Perception. *Psychological Science*, 956797620901749. doi:10.1177/0956797620901749

Moss, M. E., **Kikumoto, A.**, & Mayr, U. (2020). Does conflict resolution rely on working memory? *Journal of Experimental Psychology: Learning, Memory, and Cognition*. doi:10.1037/xlm0000801

**Kikumoto, A.**, & Mayr, U. (2019). Balancing model-based and memory-free action selection under competitive pressure. *eLife*, 8. doi:10.7554/eLife.48810

Hubbard, J\*, **Kikumoto, A\***, & Mayr, U. (2019). EEG Decoding Reveals the Strength and Temporal Dynamics of Goal-Relevant Representations. *Scientific Reports*, 9(1), 9051. doi:10.1038/s41598-019-45333-6

**Kikumoto, A.**, & Mayr, U. (2018). Decoding hierarchical control of sequential behavior in oscillatory EEG activity. *eLife*, 7. doi:10.7554/eLife.38550

**Kikumoto, A.**, & Mayr, U. (2017). The nature of task set representations in working memory. *Journal of Cognitive Neuroscience*, 29(11), 1950–1961. doi: 10.1162/jocn\_a\_01173

**Kikumoto, A.**, Hubbard, J., & Mayr, U. (2015). Dynamics of task-set carry-over: evidence from eye-movement analyses. *Psychonomic bulletin & review*, 1-8. doi:10.3758/s13423-015-0944-y

Mayr, U., Kleffner-Canucci, K., **Kikumoto, A.**, & Redford, M.A. (2014), Control of task sequences: What is the role of language? *Journal of Experimental Psychology: Learning, Memory, and Cognition*, 40(2). doi:10.1037/a0035221

## Publications in preparation

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**Kikumoto, A.**, & Mayr, U. (2020). The Role of Conjunctive Representations in Controlling Actions. In *bioRxiv* (p. 2020.04.30.070227). <https://doi.org/10.1101/2020.04.30.070227>

Tsubomi, H., Fukuda, K., **Kikumoto, A.** Mayr, U., & Vogel, E (in prep). Dropping no-longer necessary items from visual working memory.

## Invited Talks

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**Kikumoto, A.**, Byers A., Mayr, U. (2018, April). “Towards optimal competitive behavior: wins versus losses determine model-based versus random choices in competitive task switching”, Presentation at University of Kansei Gakuin, Kyoto, Japan.

**Kikumoto, A.**, Tsubomi, H., Fukuda, K. & Mayr, U. (2017, August). “Tracking individual representation in visual working memory”, Presentation at Max Planck Research Institute for Human Development, July 2017, Berlin, Germany.

**Kikumoto, A.**, & Mayr, U. (2013, August). "Nature of task set carry-over", Primate Research Institute Kyoto University, Kyoto, Japan.

## Conference Talks

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**Kikumoto, A.** & Mayr, U. (2019). "The role of conjunctive representations in stopping actions". Psychonomic Society, November 2019, Montreal, QC, Canada.

**Kikumoto, A.** & Mayr, U. (2019). "Conjunctions between rules and stimulus-response codes drive action selection". Control Processes, May 2019, Providence, RI, USA.

**Kikumoto, A.** & Mayr, U. (2018). "The nature of rule-based action selection". Psychonomic Society, November 2018, New Orleans, LA, USA.

**Kikumoto, A.** & Mayr, U. (2018). "Probing the nature of task-set representations". Presentation for Experimental Psychology Society, January 2018, London, UK.

**Kikumoto, A.** & Mayr, U. (2017). "Competitive task switching: balancing model-based and memory-free action selection". Psychonomic Society, November 2017, Vancouver, BC, Canada.

**Kikumoto, A.** & Mayr, U. (2014). "Using the contralateral delay activity to probe the nature of task set representations", Presentation for the Psychonomic Society, November 2014, Long Beach, CA, USA.

Dungan, J.B., **Kikumoto, A.** & Vogel, E.K. (2012). "Stability of visual working memory representations across changes in eye positions", Presentation for the Cognitive Science Association for Interdisciplinary Learning (CSAIL), August 2012, Hood River, OR, USA.

## Conference Poster Presentations

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**Kikumoto, A.**, Sameshima, T. & Mayr, U. (2019). "How does stopping of actions affect action-relevant representations?", Poster for the Cognitive Neuroscience Society, March 2019, San Francisco, CA, USA.

**Kikumoto, A.**, Sameshima, T. & Mayr, U. (2018). "Sticky rules: conjunctions between rules and stimulus-response Codes Drive Action Selection", Poster for the Cognitive Neuroscience Society, March 2018, Boston, MA, USA.

Tsubomi, H., Fukuda, K., **Kikumoto, A.**, Mayr, U. & Vogel, E. (2018). "Removal of no-longer necessary items from working memory after task accomplishment", Poster for the Psychonomic Society, November 2015, Louisiana, LA, USA.

Moss, M., **Kikumoto, A.** Mayr, U. (2018). "Efficient coding of abstract inter-chunk relationship", Poster for the Psychonomic Society, November 2015, Louisiana, LA, USA.

**Kikumoto, A.**, Corona, C., Karpf, J. & Mayr, U. (2017). "Towards optimal competitive behavior: wins versus losses determine model-based versus random choices in competitive task switching", Poster for the Cognitive Neuroscience Society, March 2017, San Francisco, CA, USA.

Moss, M., **Kikumoto, A.** & Mayr, U. (2017). "Do working memory and conflict resolution share common cognitive resources", Poster for the Cognitive Neuroscience Society, March 2017, San Francisco, CA, USA.

Bies, A., **Kikumoto, A.**, Lazarides, S., & Sereno, M. (2017). "Shape constancy in anaglyphs: Effects of angle, context and instruction", Poster for Vision Science Society, May 2017, FL, USA.

**Kikumoto, A.**, Schäfer, T., Sameshima, T., Anderson, D., McGuirk, W. & Mayr, U. (2016). "Mapping out the representational space for decision using EEG delta oscillations", Poster for the Cognitive Neuroscience Society, November 2016, New York, NY, USA.

Morales, P.J., Hubbard, J., **Kikumoto, A.** & Mayr, U. (2016). "Probability contexts modulate mediofrontal prediction error signals in response to gains and losses". Poster for the Cognitive Neuroscience Society, November 2016, New York, NY, USA.

Bies, J. A., **Kikumoto, A.**, Boydston, R., Greenfield, A., Chauvina, A., Taylor, R., & Sereno, M., (2016). "Percepts from noise patterns: The role of fractal dimension in object pareidolia", Poster for Vision Science Society, May 2016, FL, USA.

**Kikumoto, A.**, Corona, C., Sameshima, T. & Mayr, U. (2015). "Decoding hierarchical representations of complex sequences from EEG oscillatory activity", Poster for the Psychonomic Society, November 2015, Chicago, IL, USA.

Tsubomi, H., Fukuda, K., **Kikumoto, A.** & Vogel, E. (2015). "Forgetting no-longer necessary items from visual working memory", Poster for the Psychonomic Society, November 2015, Chicago, IL, USA.

Jost, K., Mayr, U., **Kikumoto, A.** & Schwarzkopp, T. (2015). "Visual working memory and filtering out distractors: evidence for an age-specific delay in filtering". Poster for the Cognitive Neuroscience Society, May 2015, San Francisco, CA, USA.

**Kikumoto, A.**, Williams, L., Robson, S. & Mayr, U. (2014). "Using the contralateral delay activity to probe the nature of task set representations", Poster for the Cognitive Neuroscience Society, March 2015, San Francisco, CA, USA.

Hubbard, J., **Kikumoto, A.** & Mayr, U. (2014). "Pupillometric indicator of proactive control in task-switching", Poster for the Psychonomic Society, November 2014, Long Beach, CA, USA.

Dungan, J.B., **Kikumoto, A.** & Vogel, E.K. (2012). "Stability of visual working memory representations across changes in eye positions", Poster for the Society for the Neuroscience (SfN), August 2012, New Orleans, LA, USA.

Dungan, J.B., **Kikumoto, A.** & Vogel, E.K., (2012). "Stability of visual working memory representations across changes in eye positions", Poster for the Society for the Neuroscience (SfN), August 2012, New Orleans, LA.

**Kikumoto, A.** & Mayr, U. (2011). "Passive listening to music engages executive control", Poster for the NorthWest Cognition & Memory (NOWCAM), May 2011, Vancouver, BC, USA.

## **Awards and Scholarships**

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2018: Pre-doctoral stipend of Max Planck Society (Max Planck Institute of Human Development)

2017: Gregores Research Award (University of Oregon)

2014: Graduate Student Award for the Cognitive Neuroscience Society

2011: Best Poster Presentation Award for the Northwest Cognitive & Memory (NOWCAM)

2009: International Deans Excellence Award Scholarship (University of Oregon)

2008: Shining Star Scholarship (Lane Community College)

## **Teaching and Mentorship**

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2013 – 2019 Graduate student mentor for Honors Program: Chihoko Hayashi, Lauren Williams (University of Utah), Dagger Anderson, Caitlin Corona (Johns Hopkins University), Megan Carson, Tesufuai Sameshima, Ali Byers, Izabella Dickerson, Vy Tran

2017 Teaching assistant and lab instructor for PSY302: Statistical method.

2016 Teaching assistant for PSY449/549: Human Neuropsychology.

2016 Teaching assistant and guest lecture for PSY438/538: Perception.

2015 Teaching assistant for PSY436/536: Human performance.

2014 Teaching assistant for PSY202: Mind and Brain.

2008 – 2010 Psychology tutor with the CRLA Advanced level tutor certificate

## **Training**

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2018: fsl course for neuroimaging analysis at University of Oxford

2017: Model-based neuroscience summer school at University of Amsterdam