

# Aytaç Karabay

New York University, Saadiyat Island  
Abu Dhabi, UAE  
Phone: +971 50 3114072  
a.karabay@nyu.edu  
[aytackarabay.com](http://aytackarabay.com)

## EXPERIENCE

### Research Experience

- Postdoctoral Researcher**, New York University, Abu Dhabi, UAE 2022-Ongoing  
Advisor: dr. Daryl Fougne
- Postdoctoral Researcher**, University of Groningen, Groningen, NL 2019-2022  
Project: *Hidden brain states underlying efficient representations in working memory*  
Advisor: prof. Elkan G. Akyürek

### Editorial Experience

- Junior editor**, Journal of Experimental Psychology: Human perception and performance 2023 - 2024  
Advisor: prof. Isabel Gauthier

### Teaching Experience

- |                             |                     |                         |             |
|-----------------------------|---------------------|-------------------------|-------------|
| Introduction to Psychology, | Teaching assistant, | New York University AD  | 2023        |
| Thinking,                   | Teaching assistant, | New York University AD  | 2023        |
| Cognition and Attention,    | Guest lecturer,     | University of Groningen | 2021; 2022  |
| Academic Skills,            | Lecturer,           | University of Groningen | 2018 – 2019 |
| Honors Research Practicum,  | Mentor,             | University of Groningen | 2017 - 2018 |

## EDUCATION

- Ph.D., Cognitive Neuroscience**, University of Groningen, Groningen, NL 2020  
Dissertation: *From Stimulus to Representation: Target Identification in Rapid Serial Visual Presentation*  
Promotors: prof. Elkan G. Akyürek, prof. Monique M. Lorist
- M.A., Experimental Psychology**, CUNY-Brooklyn College, New York, USA 2015  
Dissertation: *Perceptual Grouping by Orientation Coherence*  
Supervisor: dr. Daniel D. Kurylo
- B.A., Psychology**, Ankara University, Ankara, TR 2011  
Dissertation: *Differences Between Voluntary and Involuntary Autobiographical Memories*  
Supervisor: prof. Nurhan Er

## PUBLICATIONS

*Student trainees are underlined*  
*\* indicates equal first authorship*

### Preprints and submitted papers

- Karabay, A.\***, Nijenkamp, R.\*, Sarampalis, A., Fougne, D. Introducing ART: a new method of testing auditory memory with circular reproduction tasks [*under review*]. 2023
- Kandemir, G.\*, Wolff, M. J. \*, **Karabay, A.**, Stokes, M. G., Axmacher, N., & Akyürek, E. G. Concurrent maintenance of both veridical and transformed working memory representations. 2022  
<https://doi.org/10.1101/2022.10.28.514218> [*preprint*]

- Wang, S., **Karabay, A.**, Akyürek, E. G. Which visual working memory model accounts best for target representation in the attentional blink? <https://doi.org/10.1101/2022.09.15.508098> [preprint] 2022
- Fougnie, D. L., **Karabay, A.**, Alvarez, G., & Brady, T. F. If at first you don't succeed, try, try again: Second chances reveal more information in working memory. <https://doi.org/10.31234/osf.io/evqtn> [preprint] 2022

### **Journal Articles**

- Altınok, A., **Karabay, A.**, Balta, G, de Jonge, J., & Akyürek, E.G. Effects of gamma-aminobutyric acid on working memory and attention: A randomized, double-blinded, placebo-controlled, crossover trial. *Journal of Psychopharmacology*. <https://doi.org/10.1177/02698811231161579> 2023
- Chen, I. Y., **Karabay, A.**, Mathôt, S., Bowman, H., & Akyürek, E. G. Concealed identity information detection with pupillometry in rapid serial visual presentation. *Psychophysiology*, 60(1). 1-14. <https://doi.org/10.1111/psyp.14155> 2023
- Altınok, A.**, **Karabay, A.**, & Akyürek, E. G. Acute effects of cocoa flavanols on visual working memory: Maintenance and updating. *European Journal of Nutrition*, 61(3), 1665–1678. <https://doi.org/10.1007/s00394-021-02767-x> 2022
- Karabay, A.**, **Wilhelm, S. A.**, de Jonge, J., Wang, J., Martens, S., & Akyürek, E. G. Two faces of perceptual awareness during the attentional blink: Gradual and discrete. *Journal of Experimental psychology: General*, 151(7), 1520–1541. <https://doi.org/10.1037/xge0001156> 2022
- Karataş, O., **Karabay, A.**, & Alıcı, T. The effects of long-term cocoa flavanols intake on cognitive functions and mood, and the physiological mechanisms underlying these effects: A literature review. *Turkish Psychological Articles*, 25(49). 1–26. <https://doi.org/10.31828/tpy1301996120211203m000043> 2022
- Karabay, A.**, & Kurylo, D. D. Discriminating global orientation of two element sets. *Journal of Cognition*, 3(1), 1-13. <https://doi.org/10.5334/joc.127> 2020
- Karabay, A.**, & Akyürek, E. G. Temporal integration and attentional selection of color and contrast target pairs in rapid serial visual presentation. *Acta Psychologica*, 196, 56–69. <https://doi.org/10.1016/j.actpsy.2019.04.002> 2019
- Karabay, A.**, Saija, J. D., Field, D. T., & Akyürek, E. G. The acute effects of cocoa flavanols on temporal and spatial attention. *Psychopharmacology*, 235(5), 1497–1511. <https://doi.org/10.1007/s00213-018-4861-4> 2018
- Karabay, A.**, & Akyürek, E. G. The effects of Kanizsa contours on temporal integration and attention in rapid serial visual presentation. *Attention, Perception, & Psychophysics*, 79(6), 1742–1754. <https://doi.org/10.3758/s13414-017-1333-6> 2017

### **Book Chapters**

- Karabay, A.** Duyum ve Algı (Sensation and Perception). In . G. ZEREN (Eds.), *Fizyolojik Psikoloji (Physiological Psychology)* (pp. 203–233). Eğiten Kitap. Ankara, Turkey. 2022
- Cotton, R. (2013). *Learning R* (Sünbül, Ö., Sünbül, S. Ö., & **Karabay, A.**, Trans). Pegem Press. İstanbul, Turkey. 2021

## **PRESENTATIONS**

### **Talks**

#### ***Invited Talks***

- Karabay, A.** Taking a snapshot of the brain: Visual impulse reveals (non)persistent neural activity by perturbation and increasing signal-noise ratio. *CCN meeting, Ghent University* in Gent, Belgium. 08/2022

## Conference Talks

- Akyürek, E. G., Kandemir, G., Wolff, M., **Karabay, A.**, & Wilhelm, S. Probing latent working memory representations in EEG. *22st Conference of the European Society for Cognitive Psychology (ESCoP)* in Lille, France. 08/2022
- Chen, I., Buchel, P., **Karabay, A.**, Mathôt, S., & Akyürek, E. G. Concealed familiar face detection with pupillometry in rapid serial visual presentation. *22st Conference of the European Society for Cognitive Psychology (ESCoP)* in Lille, France. 08/2022
- Wang, S., **Karabay, A.**, & Akyürek, E. G. Which working memory model accounts best for target representation during the attentional blink? *22st Conference of the European Society for Cognitive Psychology (ESCoP)* in Lille, France. 08/2022
- Karabay, A.**, Wolff, M. J., Ruuskanen, V., & Akyürek, E. G. A visual impulse reveals memoranda embedded in functional connectivity: Evidence for activity-silent WM states. Symposium *Interactions between sensory representations and cognitive control in working memory* at the *International Conference of Cognitive Neuroscience 2020* in Helsinki, Finland. 05/2022
- Karabay, A.**, Wang, J., Wilhelm, S., Martens, S., & Akyürek, E. G. Two faces of the Attentional Blink: Gradual and discrete loss of perceptual awareness. *17th NVP Winter Conference* in Egmond, Netherlands. 12/2019
- Karabay, A.**, Wang, J., Martens, S., & Akyürek, E. G. The Attentional Blink: Binary Or Gradual? *21st Conference of the European Society for Cognitive Psychology (ESCoP)* in Tenerife, Spain. 09/2019
- Kandemir, G., **Karabay, A.**, & Akyürek, E. G. Decoding Sensory and Abstract Information From Activity Silent Brain States. *21st Conference of the European Society for Cognitive Psychology (ESCoP)* in Tenerife, Spain. 09/2019
- Karabay, A.**, Saija J., Field, D. T., & Akyürek, E.G. The Acute Effects of Cocoa Flavanols on Temporal and Spatial Attention. *The winter conference 2017 of De Nederlandse Vereniging voor Psychonomie* in Egmond, Netherlands. 12/2017
- Er N., **Karabay, A.**, Kaynar, G., Uysal, M. M., & Boyraz, F. U. İstemli & İstemsiz Otobiyografik Anılarda Yaşa Bağlı Değişimler (Variations of Voluntary and Involuntary Autobiographical Memories Depending on Age). *The 17th National Psychology Congress* in Istanbul, Turkey. 05/2012
- Karabay, A.**, & Çakmak, M.A. Engellenme Karşısında Verilen Tepkiler İle Kişilik Tiplerinin Ve Yükleme Çeşitlerinin İlişkisi (The Relationship between Frustration Responses, Personality Types, and Attribution). *The 14th Ulusal Psikoloji Öğrencileri Kongresi (14th National Conference of Psychology Students)* in Istanbul, Turkey. 12/2009

## Posters

- Fougne, D., **Karabay, A.**, Nijenkamp, R., Sarampalis, A. Introducing ART: a new method of testing auditory memory with circular reproduction tasks. *The Vision Sciences Society Meeting 2023* in Florida, USA. 05/2023
- Chen, I., **Karabay, A.**, Mathôt, S., Buchel, P., van der Mij, R., Bowman, H., & Akyürek, E. Concealed familiar face detection with oculomotor measures and EEG in rapid serial visual presentation. *The Vision Sciences Society Meeting 2023* in Florida, USA. 05/2023
- Karabay, A.**, Kandemir, G., Kovács, E.R., & Akyürek, E.G. Pinging attentional task rules: Neural mechanisms underlying attending and suppressing in visual search tasks. *The 22st Conference of the European Society for Cognitive Psychology (ESCoP)* in Lille, France. 08/2022
- Altınok, A., **Karabay, A.**, Lorient, M. M., Weiden, D., & Akyürek, E.G.. The Acute Effects of Caffeine and Cocoa Flavanols on Working Memory and Attention. *The 22st Conference of the European Society for Cognitive Psychology (ESCoP)* in Lille, France. 08/2022
- Chen, I., Buchel, P., **Karabay, A.**, Mathôt, S., Bowman, H., & Akyürek, E. G. Concealed information detection with pupillometry in rapid serial visual presentation. *The International Conference of Cognitive Neuroscience 2020* in Helsinki, Finland. 05/2022

**Karabay, A.**, Wolff, M. J., Ruuskanen, V., & Akyürek, E. G. Visual impulse perturbation: Neural sonar or just noise-reducer? *The 18th NVP Winter Conference* in Egmond, Netherlands. 04/2022

Chen, I., **Karabay, A.**, Mathôt, S., Bowman, H., & Akyürek, E. G. Concealed identity information detection with pupillometry in rapid serial visual presentation. *The 18th NVP Winter Conference* in Egmond, Netherlands. 04/2022

Wang, S., **Karabay, A.**, & Akyürek, E. G. (2022, April). Which working memory model accounts best for target representation in the attentional blink? *The 18th NVP Winter Conference* in Egmond, Netherlands. 04/2022

Altınok, A., Balta, G., **Karabay, A.**, & Akyürek, E. G. The effects of gamma-aminobutyric acid (GABA) on working memory and attention. *The 18th NVP Winter Conference* in Egmond, Netherlands. 04/2022

Kandemir, G., **Karabay, A.**, & Akyürek, E. G. Seeing double? Activity-silent maintenance of mental rotation products and their originals. *The 17th NVP Winter Conference* in Egmond, Netherlands. 12/2019

Altınok, A., **Karabay, A.**, & Akyürek, E. G. The Acute Effects Of Cocoa Flavanols On Visual Working Memory. *The 21st Conference of the European Society for Cognitive Psychology (ESCoP)* in Tenerife, Spain. 09/2019

Kandemir, G., **Karabay, A.**, & Akyürek, E. G. Decoding Visual Working Memory Before and After Mental Operations. *The BCN Winter Meeting* in Twente, Netherlands. 02/2019

**Karabay, A.**, & Akyürek, E. G. Target Color and Contrast Influences Temporal Attention in Rapid Serial Visual Presentation. *The International meeting of the Psychonomics Society in Amsterdam, Netherlands; the 40th European Conference on Visual Perception (ECP)* in Berlin, Germany. 08/2017

**Karabay, A.**, & Akyürek, E. G. Kanizsa Effects on Temporal Integration and Attention. *The Heymans Symposium* in Groningen, Netherlands. 04/2017

**Karabay, A.**, & Kurylo, D.D. Perceptual Grouping by Orientation Coherence. *The Science Day, Brooklyn College* in NY, the US. 05/2015

Er, N., **Karabay, A.**, Kaynar, G., Uysal, M. M., & Boyraz, F. U. Autobiography Of Aging Mind: Age-Related Effects On Voluntary And Involuntary Autobiographical Memories. *The IX International Cognitive Neuroscience Meeting* in Istanbul, Turkey. 04/2012

## SUPERVISED MASTER THESES

Ruuskanen, V. *Investigating the functionality of visual impulses in decoding working memory using matching and non-matching impulse stimuli*. University of Groningen, NL. 2022

Bapoğlu, O. A. *Pinging individual features of multi-feature objects: an EEG study*. University of Groningen, NL. 2021

## RELEVANT SKILLS

**Technical skills:** JASP (*advanced*); SPSS (*advanced*); R (*advanced*); Matlab (*moderate/advanced*); Python (*moderate/advanced*); OpenSesame (*advanced*); E-prime (*advanced*); MS Office (*advanced*); Memory modeling; EEG; Multivariate Pattern Analysis; GitHub; Classification; WordPress

**Language Skills:** Turkish (*native*); English (*professional*); Dutch (*beginner*)

## GRANTS & FELLOWSHIPS

YLSY Fellowship from Ministry of National Education, Turkey. Complete coverage of tuition, stipend, and partial coverage of research costs for masters and Ph.D. degrees (**200.000\$**).

## AWARDS

*Open Research award* for the study 'Concealed familiar face detection with pupillometry in rapid serial visual presentation', by Open Science Programme, University of Groningen, Groningen, the Netherlands. 2022

*Best poster presentation award* in Searching for the Working Memory Engram workshop with the presentation 'A visual impulse reveals memoranda embedded in functional connectivity: Evidence for activity-silent WM states', Groningen, the Netherlands. 2022

## ORGANIZED WORKSHOP & SEMINARS

*Searching for the Working Memory Engram*, University of Groningen, NL. 05/2022  
An international hybrid workshop with prof. Elkan G. Akyürek

*Introduction to Python/OpenSesame*, Leibniz Institute for Psychology, DE. 08/2020  
Worked as a tutor for the workshop by dr. Sebastiaan Mathôt. Topics: Introduction to Python/Numerical Python, Introduction to OpenSesame, Advanced numerical Python, Building online experiment, Collecting data, Analyzing with Python.

*Mindwise Science Communication Workshop*, University of Groningen, NL 2019; 2020  
Organized a workshop with Mindwise Science Communication PhD Committee

## ORGANIZATIONAL EXPERIENCE

*Ph.D. and Postdoc Representative*, Department of Experimental Psychology, University of Groningen, NL 2021-2022

*Mind-wise Science Communication Ph.D. Committee*, University of Groningen, NL 2018-2021

*Psychology Ph.D. Council Member*, University of Groningen, NL 2016-2019

## SELECTED CERTIFICATES

*Teaching and Mentoring in Academic Learning Communities*, Teaching Unit Psychology of University of Groningen, Groningen, NL 2018

*Multivariate pattern analyses (MVPA) in EEG/MEG*, Experimenteel-Psychologische Onderzoekschool, Amsterdam, NL 2018

*Autumn school: Attention*, Experimenteel-Psychologische Onderzoekschool, Amsterdam, NL 2018