

Aytaç Karabay, Ph.D.

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EXPERIENCE

Research experience

Postdoctoral researcher , New York University, Abu Dhabi, UAE Supervisor: Dr. Daryl Fougne	2022–Present
Postdoctoral researcher , University of Groningen, Groningen, NL Project: <i>Hidden brain states underlying efficient representations in working memory</i> Supervisor: Prof. Elkan G. Akyürek	2019–2022
Research assistant , CUNY-Brooklyn College, New York, USA Supervisor: Dr. Daniel Kurylo	2014–2015

Teaching experience

Adjunct Assistant Professor (part-time), Zayed University, Abu Dhabi, UAE			2024–Present
<u>Courses Taught</u>			
Introduction to Psychology	Lecturer	Zayed University	2024
Capstone Project	Supervisor	New York University AD	2022–2025
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
Masters Thesis	Supervisor	University of Groningen	2021; 2022
Bachelors Thesis	Supervisor	University of Groningen	2017–2022
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 Dissertation: <i>From stimulus to representation: Target identification in rapid serial visual Presentation</i> Promotors: Prof. Elkan G. Akyürek & Prof. Monique M. Lorist	2020
M.A., Experimental Psychology , CUNY-Brooklyn College, New York, USA Dissertation: <i>Perceptual grouping by orientation coherence</i> Supervisor: Dr. Daniel D. Kurylo	2015
B.A., Psychology , Ankara University, Ankara, TR Dissertation: <i>Differences between voluntary and involuntary autobiographical memories</i> Supervisor: Prof. Nurhan Er	2011

PUBLICATIONS

Student trainees are underlined
** indicates shared first authorship*

Preprints and submitted papers

Chen, I. *, Buchel, P. *, Karabay, A. , van der Mijn, R., Mathôt, S., & Akyürek, E. G. Concealed information detection in rapid serial visual presentation with oculomotor measures. [<i>under review</i>] https://doi.org/10.31234/osf.io/rtyu6	2023
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- Karabay, A.**, Wolff, M. J., Ruuskanen, V., & Akyürek, E. Behaviorally irrelevant feature matching increases neural and behavioral working memory readout: Support for activity-silent working memory. [revision] <https://doi.org/10.1101/2023.09.12.557327> 2023
- 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> 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> 2022

Journal papers

- Akyürek, E. G., Altınok, A., & **Karabay, A.** Concurrent consumption of cocoa flavanols and caffeine does not acutely modulate working memory and attention. *European Journal of Nutrition*. <https://osf.io/preprints/psyarxiv/49juh> in press
- Karabay, A.***, Nijenkamp, R.*, Sarampalis, A., & Fougnie, D. Introducing ART: a new method of testing auditory memory with circular reproduction tasks. *Behavior Research Methods*. 56(8), 8330-8348. <https://doi.org/10.3758/s13428-024-02477-2> 2024
- Guérin, S. M. R., Tarlao, C., & **Karabay, A.** Our Journey as Intern Junior Editors at the Journal of Experimental Psychology: Human Perception and Performance. *Science Editing*, 11(2), 160-163. <https://doi.org/10.6087/kcse.345> 2024
- 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. *Imaging Neuroscience*, 2, 1–20. https://doi.org/10.1162/imag_a_00173 2024
- Wang, S., **Karabay, A.**, & Akyürek, E. G. Attentional blur and blink: Effects of adaptive attentional scaling on visual awareness. *Consciousness and Cognition*, 117(3), 1–15. <https://doi.org/10.1016/j.concog.2023.103627> 2024
- 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*, 37(6), 554–565. <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
- 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
- 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
- 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

Books

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

Chen, I., Mathôt, S., van der Mij, R., **Karabay, A.**, Bowman, H., & Akyürek, E. Concealed familiar face detection with EEG in rapid serial visual presentation. *23rd Conference of the European Society for Cognitive Psychology (ESCoP)* in Porto, Portugal. 09/2023

Wang, S., **Karabay, A.**, & Akyürek, E. G. Attentional blur and blink: Effects of adaptive attentional scaling on visual awareness. *23rd Conference of the European Society for Cognitive Psychology (ESCoP)* in Porto, Portugal. 09/2023

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, the 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, the Netherlands. 12/2017

Er N., **Karabay, A.**, Kaynar, G., Uysal, M. M., & Boyraz, F. U. İstemli & istemsiz 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 ile kişilik tiplerinin ve yüklem çeşitlerinin ilişkisi (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

Karabay, A., & Fougny, D. Evidence against levels of processing theories of visual awareness. *Asia Pacific Conference On Vision 2024* in Singapore. 07/2024

Sasin, E., Zhou, Y., **Karabay, A.**, Shrestha, S., & Fougny, D. Where's Waldo in the mind: Accessing perceptual and semantic attributes in perception and working memory. *The Vision Sciences Society Meeting 2024* in Florida, USA. 05/2024

Chen, I., Mathôt, S., van der Mij, R., **Karabay, A.**, Bowman, H., & Akyürek, E. Concealed familiar face detection with EEG in rapid serial visual presentation. *the 45th European Conference on Visual Perception (ECVP)* in Paphos, Cyprus. 08/2023

Fougny, 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.**, Lorist, 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, the 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, the 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, the 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, the 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, the 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, the 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 (ECVP)* in Berlin, Germany. 08/2017

Karabay, A., & Akyürek, E. G. Kanizsa effects on temporal integration and attention. *The Heymans Symposium* in Groningen, the Netherlands. 04/2017

Karabay, A., & Kurylo, D.D. Perceptual grouping by orientation coherence. *The Science Day*, Brooklyn College in New York, USA. 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, the Netherlands. 2022

Bapoğlu, O. A. *Pinging individual features of multi-feature objects: an EEG study*. University of Groningen, the Netherlands. 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\$**). 2011–2019

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, the Netherlands. 05/2022
Organized an international hybrid workshop with prof. Elkan G. Akyürek.

Introduction to Python/OpenSesame, Leibniz Institute for Psychology, Germany. 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, the Netherlands. 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, the Netherlands. 2021–2022

Mind-wise science communication Ph.D. committee member, University of Groningen, the Netherlands. 2018–2021

PEER REVIEW & EDITORIAL CONTRIBUTIONS

Editorial experience

Junior editor, Journal of Experimental Psychology: Human Perception and Performance 2023–2024
Supervisor: Prof. Isabel Gauthier

Grant Reviews

National Science Foundation (NSF), USA 2024

Journal Reviews

Attention, Perception, & Psychophysics

Acta Psychologica

Journal of Cognition

SELECTED CERTIFICATES

Teaching and mentoring in academic learning communities, Teaching Unit Psychology of 2018
University of Groningen, Groningen, the Netherlands.

Multivariate pattern analyses (MVPA) in EEG/MEG, Experimenteel-Psychologische 2018
Onderzoekschool, Amsterdam, the Netherlands.

Autumn school: Attention, Experimenteel-Psychologische Onderzoekschool, Amsterdam, the 2018
Netherlands.