

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

Editorial experience

Junior editor , Journal of Experimental Psychology: Human Perception and Performance Supervisor: Prof. Isabel Gauthier	2023–2024
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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 Dissertation: <i>From stimulus to representation: Target identification in rapid serial visual Presentation</i> Promotors: Prof. Elkan G. Akyürek & Prof. Monicque 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

Akyürek, E. G., Altınok, A., & Karabay, A. Concurrent consumption of cocoa flavanols and caffeine does not acutely modulate working memory and attention.	2024
https://osf.io/preprints/psyarxiv/49juh	

- 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. 2023
<https://doi.org/10.31234/osf.io/rtyu6>
- 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. 2023
<https://doi.org/10.1101/2023.09.12.557327>
- Karabay, A.***, Nijenkamp, R.*, Sarampalis, A., & Fougny, D. Introducing ART: a new method of testing auditory memory with circular reproduction tasks. 2023
- Wang, S., **Karabay, A.**, & Akyürek, E. G. Which visual working memory model accounts best for target representation in the attentional blink? 2022
<https://doi.org/10.1101/2022.09.15.508098>
- Fougny, 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. 2022
<https://doi.org/10.31234/osf.io/evqtn>

Journal articles

- 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*. 2024
https://doi.org/10.1162/imag_a_00173
- 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. 2024
<https://doi.org/10.1016/j.concog.2023.103627>
- 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. 2023
<https://doi.org/10.1177/02698811231161579>
- 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. 2023
<https://doi.org/10.1111/psyp.14155>
- 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. 2022
<https://doi.org/10.1007/s00394-021-02767-x>
- 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. 2022
<https://doi.org/10.1037/xge0001156>
- Karataş, O., **Karabay, A.**, & Alici, 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. 2022
<https://doi.org/10.31828/tpy1301996120211203m000043>
- Karabay, A.**, & Kurylo, D. D. Discriminating global orientation of two element sets. *Journal of Cognition*, 3(1), 1-13. 2020
<https://doi.org/10.5334/joc.127>
- 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. 2019
<https://doi.org/10.1016/j.actpsy.2019.04.002>
- 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. 2018
<https://doi.org/10.1007/s00213-018-4861-4>
- 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. 2017
<https://doi.org/10.3758/s13414-017-1333-6>

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. 2021
İstanbul, Turkey.

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

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

<i>Mind-wise science communication Ph.D. committee member, University of Groningen, the Netherlands.</i>	2018–2021
<i>Psychology Ph.D. council member, University of Groningen, the Netherlands.</i>	2016–2019

SELECTED CERTIFICATES

<i>Teaching and mentoring in academic learning communities, Teaching Unit Psychology of University of Groningen, Groningen, the Netherlands.</i>	2018
<i>Multivariate pattern analyses (MVPA) in EEG/MEG, Experimenteel-Psychologische Onderzoekschool, Amsterdam, the Netherlands.</i>	2018
<i>Autumn school: Attention, Experimenteel-Psychologische Onderzoekschool, Amsterdam, the Netherlands.</i>	2018