

Einat Rashal – Curriculum Vitae

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Higher Education

2009-2015: **PhD in Cognitive Psychology**. Department of Psychology, University of Haifa.

Thesis on "Perceptual Organization: Attention, time course, and competition".

Supervisors: Prof. Ruth Kimchi and Prof. Yaffa Yeshurun.

2005-2008: **MA in Cognitive Psychology and Human Factors**, *magna cum laude*. Department of Psychology, University of Haifa.

Thesis on "Pre-cueing attention and target contrast in crowding conditions".

Supervisor: Prof. Yaffa Yeshurun.

2002-2005: **BA in Psychology and Music** (double degree), Department of Psychology and the Department of Music, University of Haifa.

Teaching Experience

Academic years	Course	Institution	Program	Group size	Number of hours taught	Role (see note below for responsibilities)
2005-2008	Introduction to Psychology	University of Haifa, Israel	BA in Psychology	~ 20-60 students 1 group per year	2 weekly hours	Instructor (TA, course coordinator)
2007-2009	Statistics for social sciences	Emeq Yizrael College, Israel	BA in Psychology	~ 30 students 3 groups per year	2 weekly hours	Instructor (TA)
2008-2011	Research methods and academic writing	Emeq Yizrael College, Israel	BA in Psychology BA in Criminology	~ 30 students 2 groups per year	2 weekly hours	Instructor (TA)
2011-2015	Research methods for social sciences	Open University, Israel	BA in Psychology BA in Sociology, Political Science and Communication	~ 10-30 students 1-4 groups per year	3 weekly hours	Instructor

2009-2011	Supporting lectures in Statistics, Methodology, Perception, and introduction to Psychology	University of Haifa, Israel	Dean of Students' office	~ 10-40 students 2-3 groups per year	By students or lecturer request (from 2 sessions a year to 2 weekly hours)	Instructor
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Note. All the positions listed in the table above involved the preparation of lesson plans and the delivery of weekly lectures. Excluding the last entry, the positions also involved preparing weekly/monthly assignments, composing multiple-choice/open questions exams and assessment indices, as well as grading these papers and exams. The methods and academic writing class involved in some cases supervision of practical study design, data collection, and writing an academic report. Statistics and Methods classes involved practical teaching of SPSS.

Research Experience

2022: **visiting researcher** at the Department of Experimental Psychology, Ghent University (UGent), Belgium.

2019-2021: **post-doctoral fellow** at the Department of Experimental Psychology, Ghent University (UGent), Belgium. PI: Prof. Nico Boehler.

Project title: *"Developing a Multi-scale account of Attentional Control as the constraining interface between vision and action: A cross-species investigation of relevant neural circuits in the human and macaque Brain"* (MAC-Brain) (affiliated with the Human Brain Project).

2016-2018: **post-doctoral fellow** at the Brain Mind Institute, Laboratory of Psychophysics (Lpsy), École polytechnique fédérale de Lausanne (EPFL), Switzerland. PI: Prof. Michael Herzog.

Project title: *"Using Psychophysical And Neuroimaging Tools To Identify The Mechanism Underlying Perceptual Dominancy In Vision"* (Perceptual dominancy).

2015-2016: **post-doctoral fellow** at the 'Gestalt Revision' group, Laboratory of Experimental Psychology at the University of Leuven (KU Leuven), Belgium. PI: Prof. Johan Wagemans.

Project title: *"Can depth perception influence the need for attentional resources in perceptual organization?"*

2015-present: **research associate** at the Institute of Information Processing and Decision Making (IIPDM), University of Haifa, Israel.

2004-2015: **research assistant** at the Institute of Information Processing and Decision Making (IIPDM), University of Haifa, Israel.

Other Studies and Professional Training

2019: Seminar on "Lifting your postdoc to the next level: How to become a successful coach?" in Ghent, Belgium.

2019: Information session on General Data Protection Regulation (GDPR) in Ghent, Belgium.

2014: Summer school on "Perceptual organization: Interdisciplinary approaches and research skills" in Leuven, Belgium.

Publications

Articles in peer-reviewed journals

- Rashal, E.**, Senoussi, M., Santandrea, E., Ben-Hamed, S., Macaluso, E., Chelazzi, L., & Boehler, C. N. (2022). An EEG study of the combined effects of top-down and bottom-up attentional selection under varying task difficulty. *Psychophysiology*, 00, e14002. <https://doi.org/10.1111/psyp.14002>
- Rashal, E.**, & Wagemans, J. (2022). Depth from blur and grouping under inattention. *Attention, Perception, & Psychophysics*, 84(3), 878–898. <https://doi.org/10.3758/s13414-021-02402-1>
- Rashal, E.**, Cretenoud, A. F., & Herzog, M. H. (2020). Perceptual grouping leads to objecthood effects in the Ebbinghaus illusion. *Journal of Vision*, 20(8):11. <https://doi.org/10.1167/jov.20.8.11>
- Rashal, E.**, Yeshurun, Y., & Kimchi, R. (2017). Attentional requirements in grouping depend on the processes involved in the organization. *Attention, Perception, & Psychophysics*, 79(7), 2073–2087. <https://doi.org/10.3758/s13414-017-1365-y>
- Rashal, E.**, Yeshurun, Y., & Kimchi, R. (2017). The time course of the competition between grouping organizations. *Journal of Experimental Psychology: Human Perception and Performance*. 43(3), 608–618. <http://dx.doi.org/10.1037/xhp0000334>
- Yeshurun, Y. & **Rashal, E.** (2017). The typical advantage of object-based attention reflects reduced spatial cost. *Journal of Experimental Psychology: Human Perception and Performance*. 43(1), 69–77. <https://doi.org/10.1037/xhp0000308>
- Yeshurun, Y., **Rashal, E.**, & Tkacz-Domb, S. (2015). Temporal crowding and its interplay with spatial crowding. *Journal of Vision*, 15(3):11, 1–16. <https://doi.org/10.1167/15.3.11>
- Rashal, E.**, & Yeshurun, Y. (2014). Contrast dissimilarity effects on crowding are not simply another case of target saliency. *Journal of Vision*, 14(6):9, 1–12, <https://doi.org/10.1167/14.6.9>
- Yeshurun, Y., & **Rashal, E.** (2010). Precueing attention to the target location diminishes crowding and reduces the critical distance. *Journal of Vision*, 10(10):16, 1–12. <https://doi.org/10.1167/10.10.16>

Preprints

- Rashal, E.**, Senoussi, M., Santandrea, E., Ben-Hamed, S., Macaluso, E., Chelazzi, L., & Boehler, N. C. (2021). An EEG study of the combined effects of top-down and bottom-up attentional selection under varying task difficulty. <https://doi.org/10.31234/osf.io/4cxmv>

Manuscripts under review or in revision

- Dolci, C., Boehler, C. N., Santandrea, E., Dewulf, A., Ben-Hamed, S., Macaluso, E., Chelazzi, L., & **Rashal, E.** (in revision). Integrated effects of top-down and statistical learning during on target selection: an EEG study.
- Rashal E.**, & Kimchi, R. (revision submitted). The competition between grouping organizations can be resolved under inattention. *Attention, Perception, & Psychophysics*.
- Rashal, E.**, Santandrea, E., Ben-Hamed, S., Macaluso, E., Chelazzi, L., & Boehler, C. N. (in revision). Effects of task, search difficulty, and salience on the response-locked contralateral negativity (RLpcN). *Attention, Perception, & Psychophysics*.

Manuscripts in preparation

- Choung, O-H., **Rashal, E.**, Kunchulia, M., & Herzog, M. H. *Basic gestalt principles cannot explain Uncrowding*.

Dolci, C., Boehler, C. N., Santandrea, E., Ben-Hamed, S., Macaluso, E., Chelazzi, L., & **Rashal, E.** *Integrated effects of target salience and statistical learning on target selection.*

London, R. E., Chen, Z., Cristoforetti, J., González-García, C., Ivanchei, I., Li, X., Morshed-Sakran, A., Munnik, E., Naveros, J., **Rashal, E.**, Rasoulzadeh, V., Reimer, C., Sahan, M. I., Senoussi, M., Verbruggen, F. *Individual differences in decision making during a global crisis.*

Rashal, E. *Bayesian MLM as a tool for exploring the competition between grouping organizations.*

Research and Travel Grants

2016-2018: **Marie Skłodowska-Curie Individual Fellowship** (H2020-MSCA-IF-2015). Project title: *Perceptual dominance: Using Psychophysical And Neuroimaging Tools To Identify The Mechanism Underlying Perceptual Dominance In Vision* (grant number 708007). 175,420€

2012-2014: **Israel Foundation Trustees (IFT)** Research Grant for Doctorates in Social Sciences. Project title: "Perceptual Organization: Attention, time course, and competition". \$10,000

2013, 2014: **Max Wertheimer Minerva Center for Cognitive Processes and Human Performance** Travel Grant. \$1,200 each.

2013, 2014: **Faculty of Social Sciences, University of Haifa** Travel Grant. \$250 each.

2013: **The National Institute for Psychobiology in Israel** Travel Grant. \$500

2012: **Advanced Studies Office, University of Haifa** Research Grant. \$300

Awards

2014: European Conference on Visual Perception (ECVP) Student Award. 200€

2005: University of Haifa Faculty of Humanities Excellence Award. \$250

Scholarships

2019-2021: Postdoctoral fellowship within the MAC-brain project (FWO contract number S009918N), FLAG-ERA JTC 2017 awarded to Leonardo Chelazzi, Emiliano Macaluso, Suliann Ben Hamed, and Nico Boehler. 93,600€

2015-2016: Erasmus Mundus Action II, Academic Mobility between EU and Israel – EMAIL. 16,000€

2012-2014: Max Wertheimer Minerva Center for Cognitive Processes and Human Performance Scholarship for Research Students. \$28,000

2009-2012: University of Haifa Advanced Studies Excellence Scholarship for Research Students. \$38,000

Academic Services

2021: departmental board postdoctoral representative, UGent.

2020-2021: co-founder and member of the departmental diversity and inclusion committee, UGent.

2020-2021: departmental coordinator of the MSc research internship course, UGent.

2019-2021: EEG lab manager and member of the EEG study approval committee, UGent.

2019-2020: "person of trust" and organizer of a monthly discussion forum for young researchers on issues related to wellbeing in the path of an academic career. Department of Experimental Psychology, UGent.

2016: organizer of the “Brain-Mind Institute (BMI) women’s lunch group”: Discussion forum for young female researchers on gender issues in academic life. Faculty of Life Sciences, EPFL.

2014: organizer and chair of the “Young researchers’ forum”: Discussion forum on work in progress and current issues in cognitive sciences for researchers at the doctorate and post-doc levels. University of Haifa.

2006-2008: coordinator for the “introduction to Psychology” course. Coordinating a team of 8 teaching assistants and multiple guest lecturers.

Supervision:

- Visiting PhD student - Carola Dolci, UGent & University of Verona (2021-2022).
- Masters’ theses - Anneleen Dewulf, UGent (primary supervisor, 2019-2021); Shira Tkacz-Domb, University of Haifa (heavily involved, 2011-2013).
- Graduate and undergraduate research projects - Frenn Bultinck, UGent (2019-2021).
- Undergraduate internship - Benay Baskrut, EPFL & Bilkent University (2018).
- Part-time post doc - Dr. Mehdi Senoussi, UGent (2021).

Evaluator of masters’ theses, undergraduate and graduate research, and internship papers (UGent).

Manager of research staff and budget (University of Haifa, EPFL, UGent).

Reviewer for peer-reviewed journals: Acta Psychologica, Attention, Perception, & Psychophysics, i-Perception, Journal of cognition, Journal of vision, Quarterly Journal of Experimental Psychology, Spanish Journal of Psychology.

Registered expert at the European Commission for proposals evaluation under the Marie Skłodowska-Curie fellowships scheme.

Invited Talks and Seminars

London, R. E., Chen, Z., Cristoforetti, J., González-García, C., Ivanchei, I., Li, X., Morshed-Sakran, A., Munnik, E., Naveros, J., **Rashal, E.**, Rasoulzadeh, V., Reimer, C., Sahan, M. I., Senoussi, M., Verbruggen, F. (2020). Decision making during Covid-19. Invited talk at the workshop: Responding to the Covid-19 pandemic. University of the Western Cape, South Africa (online).

Rashal, E. (2019). Markers of attentional selection in the human EEG. Invited talk at the workshop: Perception and attention mechanisms in the primate brain: an integrated, multi-component perspective. European institute of theoretical neuroscience (EITN), Paris, France.

Rashal, E. (2019). Integration of attention-control factors: an EEG study. Seminar given at the department of Experimental Psychology at UGent, Belgium.

Rashal, E. (2019). Objective Measures of Gestalt Reveal the Complexity of Perceptual Organization. Seminar given at the department of Experimental Psychology at UGent, Belgium.

Rashal, E. (2018). Competition Between Grouping Organizations: Priming & EEG. Invited talk at the practicum for graduate students at the cognitive psychology department, University of Haifa, Israel.

Conference Presentations

Oral presentations

Choung, O., **Rashal, E.**, & Herzog, M. H. (2019, August). Neither Gestalt law nor pixel-wise clustering methods can explain full configuration. 42nd European Conference on Visual Perception (ECVP), Leuven, Belgium. Abstract published in *Perception*, 48, supplement, 28.

- Rashal, E., Yeshurun, Y., & Kimchi, R.** (2017, September). Attentional requirements in perceptual grouping depend on the processes involved in the organization. 20th Conference of the European Society for Cognitive Psychology (ESCoP), Potsdam, Germany.
- Rashal, E. & Yeshurun Y.** (2017, August). The typical advantage of object-based attention reflects reduced spatial cost. 40th European Conference on Visual Perception (ECVP), Berlin, Germany. Abstract published in *Perception*, abstract book, 145.
- Yeshurun, Y., **Rashal, E.**, & Tkacz-Domb, S. (2015, August). Temporal crowding and the effects of spatial attention. 38th European Conference on Visual Perception (ECVP), Liverpool, England. Abstract published in *Perception*, 44, supplement, 182.
- Rashal, E., Yeshurun, Y., & Kimchi, R.** (2015, March). Perceptual organization under inattention. The Tenth Meeting of the Advisory Council of Max Wertheimer Minerva Center for Cognitive Processes and Human Performance, University of Haifa, Israel.
- Yeshurun, Y., **Rashal, E.**, & Tkacz-Domb, S. (2015, March). Crowding across time. The Tenth Meeting of the Advisory Council of Max Wertheimer Minerva Center for Cognitive Processes and Human Performance, University of Haifa, Israel.
- Rashal, E., Yeshurun, Y., & Kimchi, R.** (2015, February). Competition between grouping principles: a primed-matching study. The second Conference on Cognition Research of the Israeli Society for Cognitive Psychology, Akko (Acre), Israel.
- Rashal, E., Yeshurun, Y., & Kimchi, R.** (2014, August). Competition between grouping principles: a primed-matching study. 37th European Conference on Visual Perception (ECVP), Belgrade, Serbia. Abstract published in *Perception* 43, supplement, 176.
- Rashal, E. & Yeshurun Y.** (2014, February). Effects of stimuli contrast and pre-cueing attention in crowding. The first Conference on Cognition Research of the Israeli Society for Cognitive Psychology, Akko (Acre), Israel.
- Rashal, E., Kimchi, R & Yeshurun, Y.** (2013, March). The time course of representation construction of competing grouping principles. The Ninth Meeting of the Advisory Council of Max Wertheimer Minerva Center for Cognitive Processes and Human Performance, University of Haifa, Israel.
- Yeshurun, Y., **Rashal, E.**, & Spehar, B. (2013, March). Crowding modulations by spatial attention, stimuli contrast, and object formation. 33rd Annual Meeting of The Israeli Society of Vision and Eye Research.

Poster Presentations

- Dolci, C., **Rashal, E.**, Baldini, E., Ben-Hamed, S., Macaluso, E., Chelazzi, L., Boehler, C. N., & Santandrea, E. (2022, May). Integrated effect of goal-directed and experience-dependent on attentional deployment. Vision Sciences Society (VSS), St Petersburg, FL, USA.
- Dolci, C., Santandrea, E., Ben-Hamed, S., Macaluso, E., Chelazzi, L., & Boehler, C. N., **Rashal, E.** (2021, August). The integrated effect of pre-cueing endogenous attention and statistical learning of target location. 43rd European Conference on Visual Perception (ECVP), online.
- Rashal, E.**, Senoussi, M., Santandrea, E., Ben-Hamed, S., Macaluso, E., Chelazzi, L., & Boehler, C. N. (2021, August). More than the N2pc – what EEG components can tell us about the integration of attention-control sources. 43rd European Conference on Visual Perception (ECVP), online.

- Rashal, E., Senoussi, M., Santandrea, E., Ben-Hamed, S., Macaluso, E., Chelazzi, L., & Boehler, C. N.** (2021, May). Integrating top-down and bottom-up attention control factors: an EEG study. Vision Sciences Society (V-VSS), online.
- Rashal, E., Boehler, C. N.** (2021, May). Integration of attention control factors: an EEG study. Belgian Association of Psychological Sciences (BAPS), online.
- Rashal, E., Favrod, O., & Herzog, M. H.** (2019, August). Neural dynamics of the competition between grouping organizations. 42nd European Conference on Visual Perception (ECVP), Leuven, Belgium. Abstract published in *Perception*, 48, supplement, 136.
- Rashal, E., Cretenoud, A. F., & Herzog, M. H.** (2018, November). Grouping and objecthood effects in the Ebbinghaus illusion. 26th Annual Workshop on Object Perception, Attention, and Memory (OPAM), New Orleans, LA, USA.
- Rashal, E., Cretenoud, A. F., & Herzog, M. H.** (2018, August). The effect of “objecthood” in the Ebbinghaus illusion. 41st European Conference on Visual Perception (ECVP), Trieste, Italy. Abstract published in *Perception* 48, supplement, 126.
- Rashal, E., Cretenoud, A. F., & Herzog, M. H.** (2017, September). The effect of “objecthood” in the Ebbinghaus illusion. 20th Conference of the European Society for Cognitive Psychology (ESCoP), Potsdam, Germany.
- Rashal, E., & Herzog, M. H.** (2017, May). The mechanism underlying the competition between grouping organizations. Vision Sciences Society (VSS), St Petersburg, FL, USA. Abstract published in *Journal of Vision*, 17(10):164. <https://doi.org/10.1167/17.10.164>.
- Rashal, E., Kimchi, R., & Wagemans, J.** (2016, August). Depth perception affects figure-ground organization by symmetry under inattention. 39th European Conference on Visual Perception (ECVP), Barcelona, Spain. Abstract published in *Perception*, 45, supplement, 256.
- Rashal, E. & Wagemans, J.** (2016, February). Blur depth cue alleviates attentional demands in perceptual grouping. The Third Conference on Cognition Research of the Israeli Society for Cognitive Psychology, Akko (Acre), Israel.
- Rashal, E., Yeshurun, Y., & Kimchi, R.** (2015, August). When do we need attention for grouping? 38th European Conference on Visual Perception (ECVP), Liverpool, England. Abstract published in *Perception*, 44, supplement, 126.
- Rashal, E., Yeshurun, Y., & Kimchi, R.** (2014, May). Can the competition between grouping principles be resolved without attention? Vision Sciences Society (VSS), St Petersburg, FL, USA. Abstract published in *Journal of Vision*, 14(10):805, DOI: 10.1167/14.10.805.
- Tkacz-Domb, S., **Rashal, E.**, & Yeshurun, Y. (2014, May). Spatial and temporal crowding with normal observers. Vision Sciences Society (VSS), St Petersburg, FL, USA. Abstract published in *Journal of Vision*, 14(10), 778, doi:10.1167/14.10.778.
- Tkacz-Domb, S., **Rashal, E.**, & Yeshurun, Y. (2014, February). Spatial and temporal crowding with normal observers. The first Conference on Cognition Research of the Israeli Society for Cognitive Psychology, Akko (Acre), Israel.
- Rashal, E., Kimchi, R., & Yeshurun, Y.** (2013, June). Competition between grouping principles. The Annual Lecture in Memory of Mr. Charles E. Smith 2013, National Institute for Psychobiology in Israel, Hebrew University, Jerusalem, Israel.

Rashal, E., Kimchi, R., & Yeshurun, Y. (2013, May). Competition between grouping principles. Vision Sciences Society (VSS), Naples, FL, USA. Abstract published in *Journal of Vision*, 13(9), 823, doi:10.1167/13.9.823.

Rashal, E. & Yeshurun Y. (2010, May). Temporal crowding with normal observers and its interplay with spatial crowding. Vision Sciences Society (VSS), Naples, FL, USA. Abstract published in *Journal of Vision*, 10(7), 1343, doi:10.1167/10.7.1343.

Rashal, E. & Yeshurun, Y. (2010, April). Do object-based effects merely reduce spatial costs? Selection and Control Mechanisms in Perception and Action. Joint Research Conference of the Institute for Advanced Studies and the Israel Science Foundation. The Hebrew University, Jerusalem.

Rashal E. & Yeshurun Y. (2009, May). The effects of transient attention and target contrast on crowding at different eccentricities. Vision Sciences Society (VSS), Naples, FL, USA. Abstract published in *Journal of Vision*, 9(8), 993, doi:10.1167/9.8.993.

Research and data analysis software and hardware skills

Experiment programming: PsychoPy, E-Prime.

Statistical analysis and data visualization: R/R studio, R-markdown, SPSS, JASP, SAS.

EEG data recording and preprocessing: ActiChamp and BioSemi systems, Brain Vision Analyzer (BVA), EEGLAB, Cartool.

Languages

Hebrew – Native, English – C2, French – B1, Russian – A2, Dutch – A1.

References

- Prof. Nico Böhler
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- Prof. Michael Herzog
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- Prof. Ruth Kimchi
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