

## Ronen Hershman

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Born: January 17, 1985; Israel  
 Military Service: 2003-2006  
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### EDUCATION

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2008-2012	BSc	Ben-Gurion University of the Negev, Physics and Computer Science
2015-2017	MA	Ben-Gurion University of the Negev, Department of Brain and Cognitive Sciences  Advisor: Prof. Avishai Henik  Title: Measuring Pupil Size in Numerical Cognition Tasks
2017-2021	PhD	Ben-Gurion University of the Negev, Department of Brain and Cognitive Sciences  Advisor: Prof. Avishai Henik  Title: Cognitive Control and Pupil Dilation
2021-2022	Post-Doc	Ben-Gurion University of the Negev, Department of Psychology  Advisor: Prof. Avishai Henik
2022-current	Post-Doc	University of Innsbruck, Department of Psychology  Advisor: Prof. Elisabeth M. Weiss

### EMPLOYMENT HISTORY

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2015 - 2017	Teaching Assistant, Department of Psychology, Ben-Gurion University of the Negev
2016 - 2018	Teaching Assistant, Department of Brain and Cognitive Sciences, Ben-Gurion University of the Negev
2020	Teaching Assistant, Department of Brain and Cognitive Sciences, Ben-Gurion University of the Negev
2022-current	Lecture, Department of Psychology, University of Innsbruck

**RESEARCH INTERESTS**

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I am interested in the relationship between cognitive mental load and pupil dilation and how their regulatory interactions are influenced by different conditions. Understanding of these interactions and relationships is an essential and necessary tool for efficiently studying preverbal (e.g., infants) and nonverbal participants (e.g., neurological patients). My research thus far has included behavioral and psychophysiological (mainly eye-tracking) methods that were applied on healthy populations. Some of those methods (like CHAP –Open-Source Software for Processing and Analyzing Pupillometry Data) were created for this purpose.

**METHODS**

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I have expertise in programming and analyzing behavioral and psychophysiological (eye-movement) paradigms. I have worked with various software programs including MATLAB, Psychtoolbox, SPSS, STATISTICA and JASP. I am also familiar with the Linux environment and with various programming languages.

**SOCIETY MEMBERSHIP**

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2015-2021	Israel Society of Cognitive Psychology – ISCoP
2015-2018	European Society of Eye Movement – ECEM
2016-2021	European Conference on Visual Perception - ECVF
2017-2023	European Society of Cognitive Psychology - ESCoP
2017-2021	Vision Sciences Society - VSS
2018-2020	Mathematical Cognition and Learning Society - MCLS
2019-2023	Psychonomic Society

**EDUCATIONAL ACTIVITIES**

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Teaching Assistant in courses: Introduction to Statistics, Probability, Linear Algebra, Calculus, and Cellular Basis of Neuroscience.

Lecture in courses: Special Clinical Methods of Research, Seminar on basic- and practice deepening: pupillometry, and Seminar on basic- and practice deepening: pupillometry, Seminar on basic- and practice deepening: Eye movements.

**AWARDS AND FELLOWSHIPS**

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August 2016	The Zlotowski Neuroscience Center - Travel Grant (500 USD)
May 2017	The Zlotowski Neuroscience Center - Travel Grant (500 USD)

2017	Dean's Award for MA, Ben-Gurion University of the Negev, Israel
April 2018	The Zlotowski Neuroscience Center - Travel Grant (500 USD)
2018	The Inter-Faculty Brain Sciences School - Tuition Scholarship
2019	The Ministry of Science & Technology, Israel - Travel Grant (10,000 NIS)
2019-2021	Mid way Negev - Tsin Scholarships for Excellence PhD
September 2019	The Zlotowski Neuroscience Center - Travel Grant (500 USD)
2020	The Ministry of Science & Technology, Israel - Travel Grant (canceled due to COVID-19, 10,000 NIS)
2020	Zlotowski Best Research Project of 2020 Academic Year (500 USD)
2021	Dean's Award and prize for PhD, Ben-Gurion University of the Negev, Israel (4,000 NIS)
2021-2022	A short-term post-doctoral scholarship, Ben-Gurion University of the Negev, Israel
2022-2023	Post-doctoral scholarship, The Bloom School of Graduate Studies, The University of Haifa, Israel (declined due to concurrent funding, 180,000 NIS)
2022-2023	Post-doctoral scholarship, Haifa Brain and Behavior Hub, The University of Haifa, Israel (declined due to concurrent funding, 180,000 NIS)

#### Ad Hoc Reviewer:

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- Behavior Research Methods
- Behavioral Sciences
- Experimental Psychology
- Journal of Experimental Child Psychology
- Journal of Experimental Psychology: General
- Journal of Experimental Psychology: Human Perception and Performance
- Journal of Experimental Psychology: Learning, Memory, and Cognition
- Memory & Cognition
- MethodsX
- Neurobiology of Aging
- PloS One
- Psychological research
- Quarterly Journal of Experimental Psychology
- Scientific Reports
- Series on Studies in Singapore Education: Research, Innovation, and Practice

## SCIENTIFIC PUBLICATIONS

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### Articles in scientific journals:

**Hershman, R.**, Henik, A., & Cohen, N. (2018). A novel blink detection method based on pupillometry noise. *Behavior Research Methods*, 50(1), 107-114. <https://doi.org/10.3758/s13428-017-1008-1>

**Hershman, R.**, Henik, A., & Cohen, N. (2019). CHAP: Open-source software for processing and analyzing pupillometry data. *Behavior Research Methods* 51(3), 1059-1074. <https://doi.org/10.3758/s13428-018-01190-1>

**Hershman, R.**, & Henik, A. (2019). Dissociation between Reaction Time and Pupil Dilation in the Stroop Task. *Journal of Experimental Psychology: Learning, Memory, and Cognition*. 45(10), 1899-1909. <https://dx.doi.org/10.1037/xlm0000690>

**Hershman, R.** & Henik, A. (2020). Pupillometric contributions to deciphering Stroop conflicts. *Memory & Cognition*. 48(2), 325-333 <https://dx.doi.org/10.3758/s13421-019-00971-z>

**Hershman, R.**, Levin, Y., Tzelgov, J., & Henik, A. (2021). Neutral Stimuli and Pupillometric Task Conflict. *Psychological Research*. 85(3), 1084–1092. <https://dx.doi.org/10.1007/s00426-020-01311-6>

**Hershman, R.**, Levin, Y., Tzelgov, J., & Henik, A. (2021). The Contribution of Meaning to the Detection of Task Conflict. *Quarterly Journal of Experimental Psychology*. 74(9), 1553-1561. <https://doi.org/10.1177/17470218211001331>

Sapir, A., \* **Hershman, R.**, \* & Henik, A. (2021). Top-Down Effect on Pupillary Response: Evidence from Shape from Shading. *Cognition*. 212, 104664. <https://doi.org/10.1016/j.cognition.2021.104664>

Glikzman, Y., Berebbi, S., **Hershman, R.**, & Henik, A. (2022). BGU-MF: Ben-Gurion University Math Fluency Test. *Applied Cognitive Psychology*. 36(2), 293-305. <https://doi.org/10.1002/acp.3918>

**Hershman, R.**,\* Beckmann, L.,\* & Henik, A. (2022). Task and Information Conflicts in the Numerical Stroop Task. *Psychophysiology*, 59(9), e14057. <https://dx.doi.org/10.1111/psyp.14057>

Shechter, A., **Hershman, R.**, & Share, D. (2022). A pupillometric study of developmental and individual differences in cognitive effort in visual word recognition. *Scientific Reports*, 12(1), 1–7. <https://doi.org/10.1038/S41598-022-14536-9>

**Hershman, R.**,\* Milshtein, D.,\* & Henik, A. (2023). Contribution of Temporal Analysis of Pupillometry Measurements to Cognitive Research. *Psychological Research*, 87(1), 28–42. <https://dx.doi.org/10.1007/s00426-022-01656-0>

Bar-Anan, Y. & **Hershman, R.** (in press). Using Facial Expressions Instead of Response Keys in the Implicit Association Test. *Behavior Research Methods*. <https://doi.org/10.3758/s13428-023-02060-1>

**Hershman, R.**, Dadon, G., Kiesel, A., & Henik, A. (in press). The Resting Stroop Task: Evidence of Task Conflict in Trials with No Required Response. *Psychonomic Bulletin & Review*. <https://doi.org/10.3758/s13423-023-02354-7>

### Under review:

**Hershman, R.**, Milshtein, D., & Henik, A. (under review). Processing and Analyzing of Pupillometry Data.

Milshtein, D., \* **Hershman, R.,\*** & Henik, A. (under review). Attention to Intention: Pupillometry as Temporal Measure for Intentional Component during Emotional Imagery.

**Hershman, R.,\*** Beckmann, L.,\* Keha, E., Wagner, M., Kaufmann, L., & Henik, A. (under review). A color-number Stroop task shows numerical influence on numerosity processing.

**Hershman, R.,\*** Share, D. L., Weiss, E. M., Henik, A., & Shechter, A.\* (under review). Insights from eye-blinks into the cognitive processes involved in visual word recognition.

**Hershman, R.,** Keha, E., Weiss, E. M, Henik, A, & Kaufmann, L. (under review). Evidence for a Double-Task Conflict in a Color-Digit Stroop Task.

**Hershman, R.,** Ayelet Sapir, Wagner, M., Elisabeth M. Weiss, & Henik, A. (under review). The Contribution of Difficulty of an Irrelevant Task to Task Conflict.

#### **In preparation:**

**Hershman, R.,** Beckmann, L., Keha, E., & Henik, A. (in preparation). Evidence for Both Task and Information Conflicts in the Color-Digit Stroop Task: A Pupillometry Study.

**Hershman, R.,** Gozansky, E., Keha, E., Kalanthroff, A., & Henik, A. (in preparation). Pupillometric Comparison between Vocal and Manual Color-Word Stroop task.

#### **CONFERENCE PRESENTATIONS**

##### **Oral presentations:**

**Hershman, R.,** Cohen, N., & Henik, A. (2017, August). CHAP: An Open Source Software for Processing and Analyzing Pupillometry Data. Presented at the 19<sup>th</sup> European Conference on Eye Movements (ECEM), Wuppertal, Germany.

**Hershman, R.,** & Henik, A. (2018, February). Disassociation between Reaction Time and Pupil Dilation in Stroop Task: Evidence of Task Conflict. Presented at the Zlotowski Annual Retreat, Sde Boker, Israel.

**Hershman, R.,** & Henik, A. (2018, February). Disassociation between Reaction Time and Pupil Dilation in Stroop Task: Evidence of Task Conflict. Presented at the 5<sup>th</sup> Israeli Society for Cognitive Psychology (ISCOP) Conference, Akko (Acre), Israel.

**Hershman, R.,** & Henik, A. (2019, February). Semantic and response conflicts in the Stroop task: Evidence from a Pupillometry Study. Presented at the 6<sup>th</sup> Israeli Society for Cognitive Psychology (ISCOP) Conference, Akko (Acre), Israel.

**Hershman, R.,** & Henik, A. (2019, September). Dissociation between reaction time and pupil dilation in the color-word Stroop task. Presented at the 21<sup>st</sup> European Society for Cognitive Psychology (ESCoP) Conference, Tenerife, Spain.

**Hershman, R.,** & Henik, A. (2020, February). The Contribution of Temporal Analysis of Pupillometry to Deciphering Cognitive Conflicts. Presented at the Zlotowski Annual Retreat, Ein Gedi, Israel.

**Hershman, R.** & Henik, A. (2020, October). Cognitive Control and Pupil Dilation. Presented at the 2020 Zlotowski Best Research Winners seminar, Beer-Sheva, Israel.

**Hershman, R.**, Milshtein, D., & Henik, A. (2021, August). The Contribution of Temporal Analysis of Pupillometry to Deciphering Cognitive Conflicts. Presented at the online 43<sup>rd</sup> European Conference on Visual Perception (ECVP).

**Hershman, R.**, Sapir, A., & Henik, A. (2021, November). Deeper is Darker: A Pupillometry Study. Presented at the 29<sup>th</sup> Object Perception, Attention, & Memory (OPAM) virtual conference.

**Hershman, R.**, Beckmann, L., Keha, E., Wagner, M., & Henik, A. (2022, March). The Color-Number Stroop Task. Presented at the Zlotowski Annual Retreat, Ein Gedi, Israel.

#### **Presentation of posters at conferences:**

**Hershman, R.**, Cohen, N., & Henik, A. (2016, February). CHAP: An Open Source Software for Processing and Analyzing Pupillometry Data. Presented at the 3<sup>rd</sup> Conference on Cognition Research of the Israeli Society for Cognitive Psychology (ISCOP), Akko (Acre), Israel.

**Hershman, R.**, Cohen, N., & Henik, A. (2016, August). CHAP: An Open Source Software for Processing and Analyzing Pupillometry Data. Presented at the 39<sup>th</sup> European Conference on Visual Perception (ECVP), Barcelona, Spain.

**Hershman, R.**, Cohen, N., & Henik, A. (2017, February). Blink Detection Based on "Noise" in Pupillometry Data. Presented at the 4<sup>th</sup> Israeli Society for Cognitive Psychology (ISCOP) Conference, Akko (Acre), Israel.

**Hershman, R.**, Cohen, N., & Henik, A. (2017, May). CHAP: An Open Source Software for Processing and Analyzing Pupillometry Data. Presented at the 17<sup>th</sup> Annual Meeting of the Vision Sciences Society (VSS), St. Pete Beach, FL, United States.

**Hershman, R.**, Henik, A., & Cohen, N. (2017, August). Blink Detection Based on "Noise" in Pupillometry Data. Presented at the 40<sup>th</sup> European Conference on Visual Perception (ECVP), Berlin, Germany.

**Hershman, R.**, Cohen, N., & Henik, A. (2017, September). CHAP: An Open Source Software for Processing and Analyzing Pupillometry Data. Presented at the 20<sup>th</sup> European Society for Cognitive Psychology (ESCoP) Conference, Potsdam, Germany.

**Hershman, R.**, Beckmann, L., & Henik, A. (2018, April). The Dissociation between Pupil Dilation and Reaction Time in the Numerical Stroop Task. Presented at the 1<sup>st</sup> Mathematical Cognition and Learning Society (MCLS) Conference, Oxford, United Kingdom.

**Hershman, R.**, Henik, A., & Cohen, N. (2018, May). Novel Blink Detection Method Based on Pupillometry Noise. Presented at the 18<sup>th</sup> Annual Meeting of the Vision Sciences Society (VSS), St. Pete Beach, FL, United States.

**Hershman, R.** & Henik, A. (2018, August). Disassociation between Reaction Time and Pupil Dilation in the Stroop Task. Presented at the 41<sup>th</sup> European Conference on Visual Perception (ECVP), Trieste, Italy.

**Hershman, R.**, Devyatko, D., Wagner, M., Kimchi, R., & Henik, A. (2019, February). When the brain fools your eyes: Pupil response in motion-induced blindness. Presented at the 6<sup>th</sup> Israeli Society for Cognitive Psychology (ISCOP) Conference, Akko (Acre), Israel.

**Hershman, R.**, & Henik, A. (2019, March). Dissociation between Reaction Time and Pupil Dilation in the Stroop Task. Presented at the 15<sup>th</sup> Karniel Computational Motor Control Workshop (CMCW), Beer-Sheva, Israel.

**Hershman, R.**, & Henik, A. (2019, November). Dissociation between Reaction Time and Pupil Dilation in the Stroop Task. Presented at the 60<sup>th</sup> Annual Meeting of the Psychonomic Society, Montréal, Canada.

**Hershman, R.**, & Henik, A. (2019, November). The Contribution of Temporal Analysis of Pupillometry to Deciphering Cognitive Conflicts. Presented at the 27<sup>th</sup> Object Perception, Attention, & Memory (OPAM) conference, Montréal, Canada.

**Hershman, R.** & Henik, A. (2020, February). The Resting Stroop Task: Evidence of Task Conflict in Trials with No Required Response. Presented at the 7<sup>th</sup> Israeli Society for Cognitive Psychology (ISCOP) Conference, Akko (Acre), Israel.

**Hershman, R.** & Henik, A. (2020, June). The Contribution of Temporal Analysis of Pupillometry to Deciphering Cognitive Conflicts. Presented at the virtual 20<sup>th</sup> Annual Meeting of the Vision Sciences Society (VVSS).

**Hershman, R.**, Milshtein, D. & Henik, A. (2020, November). The Contribution of Temporal Analysis of Pupillometry to Deciphering Cognitive Conflicts. Presented at the virtual 61<sup>th</sup> Annual Meeting of the Psychonomic Society.

**Hershman, R.**, Sapir, A., & Henik, A. (2021, February). Top-down effect on pupillary response: evidence from shape from shading. Presented at the virtual 8<sup>th</sup> Israeli Society for Cognitive Psychology (ISCOP) Conference.

**Hershman, R.**, Levin, Y., Tzelgov, J., & Henik, A. (2021, August). The Contribution of Meaning to the Detection of Task Conflict. Presented at the online 43<sup>rd</sup> European Conference on Visual Perception (ECPV).

**Hershman, R.**, Levin, Y., Tzelgov, J., & Henik, A. (2021, November). The Contribution of Meaning to the Detection of Task Conflict. Presented at the virtual 62<sup>nd</sup> Annual Meeting of the Psychonomic Society.

**Hershman, R.**, Beckmann, L., & Henik, A. (2022, February). Task and Information Conflicts in the Numerical Stroop Task. Presented at the virtual 9<sup>th</sup> Israeli Society for Cognitive Psychology (ISCOP) Conference.

**Hershman, R.**, Sapir, A., Wagner, M., Weiss, E. M., & Henik, A. (2023, November). The Contribution of Difficulty of an Irrelevant Task to Task Conflict. Will be presented at the 64<sup>th</sup> Annual Meeting of the Psychonomic Society, San Francisco, USA.