

## Ronen Hershman

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Born: January 17, 1985; Israel  
 Military Service: 2003-2006  
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 Innsbruck university (UIBK)  
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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<br><br>Advisor: Prof. Avishai Henik<br><br>Title: Measuring Pupil Size in Numerical Cognition Tasks |
| 2017-2021    | PhD      | Ben-Gurion University of the Negev, Department of Brain and Cognitive Sciences<br><br>Advisor: Prof. Avishai Henik<br><br>Title: Cognitive Control and Pupil Dilation              |
| 2021-2022    | Post-Doc | Ben-Gurion University of the Negev, Department of Psychology<br><br>Advisor: Prof. Avishai Henik   |
| 2022-current | Post-Doc | University of Innsbruck, Department of Psychology<br><br>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) |

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| 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)         |
| 2023           | The Austrian Research Foundation, Austria - Travel Grant (700 EUR)   |
| 2024           | The Austrian Research Foundation, Austria - Travel Grant (500 EUR)   |

#### 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

## 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>

**Hershman, R.**,\* Share, D. L., Weiss, E. M., Henik, A., & Shechter, A.\* (2024). Insights from eye-blinks into the cognitive processes involved in visual word recognition. *Journal of Cognition*, 7(1): 14, 1–9. <https://doi.org/10.5334/joc.343>

Bar-Anan, Y. & **Hershman, R.** (2024). Using Facial Expressions Instead of Response Keys in the Implicit Association Test. *Behavior Research Methods*. 56(1): 468–484. <https://doi.org/10.3758/s13428-023-02060-1>

**Hershman, R.**, Dadon, G., Kiesel, A., & Henik, A. (2024). The Resting Stroop Task: Evidence of Task Conflict in Trials with No Required Response. *Psychonomic Bulletin & Review*. 31(1), 353–360. <https://doi.org/10.3758/s13423-023-02354-7>

**Hershman, R.**, Milshtein, D., & Henik, A. (2024). Processing and Analyzing of Pupillometry Data. In: Papesh, M.H., Goldinger, S.D. (eds) *Modern Pupillometry*. Springer, Cham. [https://doi.org/10.1007/978-3-031-54896-3\\_15](https://doi.org/10.1007/978-3-031-54896-3_15)

**Hershman, R.**, Keha, E., Sapir, A., Weiss, E. M., Henik, A., & Kaufmann, L. (2024). Evidence for Two Types of Task Conflict in a Color-Digit Stroop Task. *Journal of Cognition*. 7(1): 54, 1–12. <https://doi.org/10.5334/joc.386>

**Hershman, R.**, Sapir, A., Keha, E., Wagner, M., Weiss, E. M., & Henik, A. (in press). The Contribution of Difficulty of an Irrelevant Task to Task Conflict. *Quarterly Journal of Experimental Psychology*. <https://doi.org/10.1177/17470218241228709>

**Hershman, R.**,\* Beckmann, L.,\* Keha, E., Wagner, M., Kaufmann, L., & Henik, A. (in press). A color-Digit Stroop Task Shows Numerical Influence on Numerosity Processing. *Memory & Cognition*.

#### **Under review:**

**Hershman, R.**, Keha, E., Beckmann, L., Henik, A., & Sapir, A. (under review). A Task Conflict Gradient in The Gestalt-Color-Digit Stroop Task.

#### **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.**, Wagner, M., & Henik, A. (in preparation). Evidence of both stimulus-stimulus and stimulus-response compatibilities in the color-word Stroop task using measurement of steering wheel movement.

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

Nicolay, A. P.,\* **Hershman, R.**,\* Henik, A., Hämmerer, D., Staggl, S., Weiss, E. M., & Kaufmann, L. (in preparation). Task and information conflicts in the Emotional Stroop task.

Goettfried, E., Barket, R. , **Hershman, R.**, Delazer, M., Auer, M., Berek, K., Ellmerer, P., Seebacher, B., Hegen, H., Di Pauli, F., Deisenhammer, F., Zamarian, L. (in preparation). Facial emotion processing changes in relapsing-remitting multiple sclerosis – An eye-tracking study.

#### **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>st</sup> Annual Meeting of the Psychonomic Society.

**Hershman, R.,** Sapir, A., & Henik. (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 (ECVP).

**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. Presented at the 64<sup>th</sup> Annual Meeting of the Psychonomic Society, San Francisco, USA.

**Hershman, R.,** Share, D. L., Weiss, E. M., Henik, A., & Shechter, A. (2023, November). Insights from Eye Blinks into The Cognitive Processes Involved in Visual Word Recognition. Presented at the 31<sup>st</sup> Object Perception, Attention, & Memory (OPAM) conference, San Francisco, USA

**Hershman, R.,** Share, D. L., Weiss, E. M., Henik, A., & Shechter, A. (2024, August). Insights From Eye Blinks into Cognitive Processes. It will be presented at the 46<sup>th</sup> European Conference on Visual Perception (ECVP), Aberdeen, Scotland.