Exponent®
Engineering & Scientific Consulting

Stephen Walenchok, Ph.D.

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Professional Profile

Dr. Walenchok has expertise in the field of cognitive science with an emphasis on attention, visual perception, memory, and visual search, which he has studied using both behavioral and eye-tracking methodologies. His decade of experience in studying human cognition and behavior translates to a range of issues in human factors.

These range from informing how prior experience influences product usability, to investigating the ways in which failures of attention and perception might impact transportation safety. Dr. Walenchok currently applies his knowledge to human factors questions in user research and failure analysis, in areas which include consumer electronics, vehicle safety, and ergonomics.

Prior to joining Exponent, Dr. Walenchok began his research in vision science managing a laboratory at the University of Pittsburgh, where he gained expertise using eye-tracking and behavioral techniques. He employed this methodological expertise during his graduate studies at Arizona State University, where he earned his Ph.D. There, his research focused on how prior experience, memory limitations, language, and biases of visual attention can influence human perceptual performance.

Academic Credentials & Professional Honors

Ph.D., Psychology, Arizona State University, 2018

M.A., Psychology, Arizona State University, 2014

B.Phil., Psychology, University of Pittsburgh, 2010

Professional Affiliations

American Psychological Association

Association for Psychological Science

The Psychonomic Society

Vision Sciences Society

Publications

Crump, C., Walenchok, S. C., Johnson, C., Pauszek, J. R., & Young, D. (in press). Stress, operator error, and transportation accidents. Paper to be presented as a talk at Human Factors and Ergonomics Society in Baltimore, MD (October 2021).

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Godwin, H. J., Hout, M. C., Alexdottir, K. J., Walenchok, S. C., & Barnhart, A. S. (in press). Avoiding potential pitfalls in visual search and eye movement experiments: A tutorial review. Attention, Perception, & Psychophysics.

Hebert, K. P., Goldinger, S. D., & Walenchok, S. C. (2021). Eye movements and the label feedback effect: Speaking modulates visual search via template integrity. Cognition, 210(2). doi: 10.1016/j.cognition.2021.104587

Walenchok, S. C., Goldinger, S. D., & Hout, M. C. (2020). The confirmation and prevalence biases in visual search reflect separate underlying processes. Journal of Experimental Psychology: Human Perception and Performance, 46(3), 274-291.

Ratiu, I., Hout, M. C., Walenchok, S. C., Azuma, T., & Goldinger, S. D. (2017). Comparing visual search and eye movements in bilinguals and monolinguals. Attention, Perception, & Psychophysics, 79(6), 1695-1725.

Walenchok, S. C., Hout, M. C., & Goldinger, S. D. (2016). Implicit object naming in visual search: Evidence from phonological competition. Attention, Perception, & Psychophysics, 78(8), 2633-2654.

Godwin, H. J., Walenchok, S. C., Houpt, J. W., Hout, M. C., & Goldinger, S. D. (2015). Faster than the speed of rejection: Object identification processes during visual search for multiple targets. Journal of Experimental Psychology: Human Perception and Performance, 41(4), 1007-1020.

Hout, M. C., Walenchok, S. C., Goldinger, S. D., & Wolfe, J. M. (2015). Failures of perception in the low-prevalence effect: Evidence from active and passive visual search. Journal of Experimental Psychology: Human Perception and Performance, 41(4), 977-994.

Presentations

Conference Talks

Hebert, K. P., Walenchok, S. C., & Goldinger, S. D. (2017). Eye movements and the label feedback effect: Speaking modulates visual search, but probably not visual perception. *Talk presented at the European Conference on Eye Movements in Wuppertal, Germany (August 2017).*

Walenchok, S. C., Goldinger, S. D., & Hout, M. C. (2017). Your attention seeks confirmation: Visual confirmation bias overshadows prevalence effects in visual attention. Talk presented at the European Conference on Eye Movements in Wuppertal, Germany (August 2017).

Walenchok, S. C., Goldinger, S. D., & Hout, M. C. (2017). Examining confirmatory strategies in visual search: Prevalence learning counteracts confirmation bias. Talk presented at the Southwestern Psychological Association Conference in San Antonio, TX (April 2017).

Walenchok, S. C., Houpt, J. W., Godwin, H. J., Hout, M. C., & Goldinger, S. D. (2016). Is this object "gray" or is this object "not blue"?: Confirmatory and disconfirmatory strategies influence object identification during visual search. Talk presented at the annual Object Perception, Attention, and Memory meeting in Boston, MA (November 2016).

Hout, M. C., Walenchok, S. C., Goldinger, S. D., & Wolfe, J. M. (2014). The low-prevalence effect is due to failures of attention, not premature search termination or motor errors: Evidence from passive search and eye-movements. Talk presented at the annual Vision Sciences Society meeting in St. Petersburg, FL (May 2014).

Walenchok, S. C., Hout, M. C., & Goldinger, S. D. (2013). What does that picture sound like to you?: Oculomotor evidence for phonological competition in visual search. Paper presented as a talk at the

annual Object Perception, Attention and Memory meeting in Toronto, Canada (November 2013).

- Paper in Visual Cognition, 21(6), 718-722.

Invited Talks

Walenchok, S. C., Goldinger, S. D., & Hout, M. C. (2016). Examining confirmatory strategies in visual search: People are more flexible than you think. Research talk presented at New Mexico State University, Department of Psychology (Las Cruces, NM, September 2016).

Walenchok, S. C., Reichle, E. D., & Goldinger, S. D. (2016). Dissociating attention and saccades: Evidence against a strict premotor theory of attention. Research talk presented at The First International Workshop of Reading Science: Our Current Understanding and Future Directions on Chinese Reading, at Sun Yat-sen University (Guangzhou, China, June 2016).

Walenchok, S. C., Houpt, J. W., Godwin, H. J., Hout, M. C., & Goldinger, S. D. (2016). Is this object "gray" or is this object "not blue"?: Confirmatory and disconfirmatory strategies influence object identification during visual search. Presented at the annual Arizona State/University of Arizona Cognitive Conclave (Tempe, Arizona, December 2016).

Walenchok, S. C., Hout, M. C., & Goldinger, S. D. (2016). What does that picture sound like to you? Implicit object naming interferes with visual search. Research talk presented at the biweekly Coffee and Cognition seminar, Department of Speech and Hearing Science, Arizona State University (Tempe, Arizona, February 2016).

Walenchok, S. C., Hout, M. C., Goldinger, S. D., & Wolfe, J. M. (2013). Hiding in plain sight: Examining the low-prevalence effect in visual search. Research talk presented at the annual Arizona State/University of Arizona Cognitive Conclave (Tucson, Arizona, December 2013).

Poster Presentations

Hebert, K. P., Goldinger, S. D., & Walenchok, S. C. (2018). Do as I say, not as I say: Listening produces the label feedback effect in visual search. Poster presented at the annual Psychonomic Society conference in New Orleans, LA (November 2018).

Walenchok, S. C. & Goldinger, S. D. (2018). Not worth the effort: Distributed displays and larger set sizes encourage efficient deployment of attention in visual search. Poster presented at the annual Vision Sciences Society meeting in St. Petersburg, FL (May 2018).

Walenchok, S. C., Reichle, E. D., & Goldinger, S. D. (2017). Investigating the Relationship between attention and oculomotor programming using lexical decision. Poster presented at the annual Psychonomic Society conference in Vancouver, Canada (November 2017).

Walenchok, S. C. & Goldinger, S. D. (2017). Examining confirmation bias and the low-prevalence effect in visual search with spatially distributed displays. Poster presented at the annual Object Perception, Attention, and Memory conference in Vancouver, Canada (November 2017).

Chen, F. M., Walenchok S. C., Goldinger, S. D., & Hout, M. C. (2017). Examining confirmation bias in visual search. Poster presented at the annual Arizona Psychology Undergraduate Research Conference in Tempe, AZ (February 2017).

Walenchok, S. C., Goldinger, S. D., & Hout, M. C. (2016). The low-prevalence effect counteracts confirmatory bias in visual search. Poster presented at the annual Psychonomic Society meeting in

Boston, MA (November 2016).• Also presented at the ARMADILLO conference in El Paso, TX (October 2016).

Hebert, K. P., Walenchok, S. C., & Goldinger (2016). Eye movements and the label feedback effect: Speaking modulates visual search, but probably not visual perception. Poster presented at the annual Society for the Neurobiology of Language conference, London, UK (August 2016)• Also presented at the annual Psychonomic Society meeting in Boston, MA (November 2016).

Walenchok, S. C., Goldinger, S. D., & Hout, M. C. (2016). Examining confirmatory strategies in visual search: People are more flexible than you think. Poster presented at the annual Vision Sciences Society meeting in St. Petersburg, FL (May 2016).

Walenchok, S. C., Godwin, H. J., Houpt, J. W., Hout, M. C., & Goldinger, S. D. (2015). Greater than parallel: Distinguishing features can be combined for efficient object identification in visual search. Poster presented at the annual Psychonomic Society meeting in Chicago, IL (November 2015).

Hout, M. C., Godwin, H. J., Walenchok, S. C., Houpt, J., & Goldinger, S. D. (2015). Faster than the speed of rejection: Object identification processes during visual search for multiple targets. Poster presented at the annual Vision Sciences Society meeting in St. Petersburg, FL (May 2015).

Walenchok, S. C., Hout, M. C., & Goldinger, S. D. (2015). Phonological interference in visual search: Object names are automatically activated in non-linguistic tasks. Poster presented at the annual Vision Sciences Society meeting in St. Petersburg, FL (May 2015).

Walenchok, S. C., Hout, M. C., & Goldinger, S. D. (2014). Beanie and the beast: Articulatory suppression fails to inhibit covert object naming during search. Poster presented at the annual Object Perception, Attention and Memory meeting in Long Beach, CA (November 2014).

Walenchok, S. C., Reichle, E. D., & Goldinger, S. D. (2014). Dissociating attention and saccades: Evidence against a strict premotor theory of attention. Poster presented at the annual Psychonomic Society meeting in Long Beach, CA (November 2014).

Walenchok, S. C., Hout, M. C., & Goldinger, S. D. (2014). Categorical contextual cueing in visual search. Poster presented at the annual Vision Sciences Society meeting in St. Petersburg, FL (May 2014).

Walenchok, S. C., Hout, M. C., & Goldinger, S. D. (2013). Is an image worth a phonological representation? Investigating the effect of target-distractor phonological similarity in multiple-target search. Poster presented at the annual Vision Sciences Society meeting in Naples, FL (May 2013).

Conference Organizer

Object Perception, Attention, and Memory (OPAM)

- November 2018 in New Orleans, LA and November 2019 in Montreal, QC.

Peer Reviews

Attention, Perception, & Psychophysics

Quarterly Journal of Experimental Psychology

Scientific ReportsVision

Visual Cognition