Ella Striem-Amit, Ph.D.

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SCHOLARLY PROFILE

I am interested in the balance between innate brain organization and experience-dependent plasticity.
My primary research focuses on studying adults with specific sensory deprivation (blind, deaf or dysplasic, born without hands) to learn how selective sensory experiences shape their sensory, motor and cognitive systems.
These models serve to assess the roles of critical developmental periods, compensatory cross-modal plasticity and sensory-independent (a-modal) processes in the human brain.

RESEARCH EXPERIENCE

2014 **Postdoctoral fellow in Psychology**, Department of Psychology, ***Harvard University***
EU Horizons 2020 Marie Skłodowska-Curie fellow,
Rothschild Postdoctoral fellow,
Israel National Postdoctoral Award for Advancing Women in Science Revson fellow
Faculty Advisor: Alfonso Caramazza, Professor of Psychology

EDUCATION

2014 **Ph.D. in Neurobiology**, Department of Medical Neurobiology, Hebrew University, Jerusalem, Israel
Dissertation: Neuroplasticity in the blind and sensory substitution for vision
Faculty Advisor: Amir Amedi, Associate Professor, Medical Neurobiology

2007 **M.Sc. in Brain and Behavior,** Department of neurobiology, Hebrew University, Jerusalem, Israel
Dissertation: Functional magnetic resonance imaging evidence for cortical plasticity in congenitally blind humans
Faculty Advisor: Ehud Zohary, Professor of Neurobiology

2004 **B.Sc. in Life sciences and Psychology**, Hebrew University, Jerusalem, Israel

PUBLICATIONS

1. **Striem-Amit, E*.,** Wang, X*., Bi, Y., and Caramazza, A. (2018). "Neural representation of visual concepts in people born blind" ***Nature Communications*** 9 :1, 5250.
2. **Striem-Amit, E**., Vannuscorps, G., and Caramazza, A. (2018). "Plasticity based on compensatory effector-use in the association but not primary sensorimotor cortex of people born without hands" ***Proceedings of the National Academy of Sciences***. https://doi.org/10.1073/pnas.1803926115
3. Vannuscorps, G., Wurm, M., **Striem-Amit, E**. and Caramazza, A. (2018). "Large-scale organization of the hand action observation network in individuals born without hands" ***Cerebral Cortex***.
4. **Striem-Amit, E.*,** Vannuscorps, G.*, and Caramazza, A. (2017). "Sensorimotor-independent development of hands and tools selectivity in the visual cortex," ***Proceedings of the National Academy of Sciences***, 114, 4787-4792.
5. **Striem-Amit, E.** (2017). Brain plasticity: When the Feet and Mouth Replace the Hand. ***Current Biology*** 27, R356-R358. (dispatch)

*Equal contribution

6. **Striem-Amit, E**., Almeida, J., Belledonne, M., Chen, Q., Yuxing, Y., Han, Z., Caramazza, A., Bi, Y. (2016) "Topographical functional connectivity patterns exist in the congenitally, prelingually deaf." ***Scientific Reports*** 6, 29375.
7. **Striem-Amit, E.***, Ovadia-Caro, S.*, Caramazza, A., Margulies, D., Villringer, A. and Amedi, A. (2015). "Functional connectivity of visual cortex in the blind follows retinotopic organization principles," ***Brain*** 138:6, 1679-95.
8. Heimler B. **Striem-Amit E**., Amedi A. (2015) "Origins of task-specific sensory-independent organization in the visual and auditory brain: neuroscience evidence, open questions and clinical implications." ***Current Opinion in Neurobiology*** 35, 169-177.
9. **Striem-Amit, E.** and Amedi, A. (2014). "Visual cortex extrastriate body-selective area activation in congenitally blind people seeing by using sounds," ***Current Biology*** 24:6.
10. **Striem-Amit, E**., Cohen, L., Dehaene, S., and Amedi, A. (2012). "Reading with sounds: Sensory substitution selectively activates the visual word form area in the blind," ***Neuron*** 76:3, 640-652.
11. **Striem-Amit, E.**, Guendelman, M. and Amedi, A. (2012) "'Visual' acuity of the congenitally blind using visual-to-auditory sensory substitution," ***PLoS One*** 7(3): e33136.
12. **Striem-Amit E,** Dakwar O, Reich L, Amedi A. (2012) "The large-scale organization of "visual" streams emerges without visual experience," ***Cerebral Cortex*** 22:7, 1698-1709.
13. **Striem-Amit E.***, Bubic A.*, Amedi A. (2011) "Neurophysiological mechanisms underlying plastic changes and rehabilitation following sensory loss in blindness and deafness," ***Frontiers in the Neural Bases of Multisensory Processes***, (Editors M.M. Murray and M. T. Wallace).
14. **Striem-Amit, E.***, Hertz, U.* and Amedi, A. (2011). "Extensive cochleotopic mapping of human auditory cortical fields obtained with phase-encoding fMRI," ***PLoS One*** 6:3, e17832.
15. **Striem-Amit. E.**, Dakwar, O., Hertz, U., Meijer, P., Stern, W., Merabet, L., Pascual-Leone, A. and Amedi, A. (2011). The neural network of sensory-substitution object shape recognition, ***FNRE*** 1:2, 271-278.
16. Bubic A.*, **Striem-Amit E.***, Amedi A. (2010) "Large-scale brain plasticity following blindness and the use of sensory substitution devices." ***Multisensory object perception in the primate brain***, Springer Press (Editors J. Kaiser and M.J. Naumer).
17. Azulay, H.*, **Striem, E.*** and Amedi, A. (2009). "Negative BOLD in sensory cortices during verbal memory: A component in generating internal representations," ***Brain Topography*** 21; 221-231.
18. Raz, N., **Striem, E**., Pundak, G., Orlov, T., and Zohary, E. (2007). "Superior serial memory in the blind: a case of cognitive compensatory adjustment," ***Current Biology*** 17, 1129-1133.

FELLOWSHIPS

EU Horizon's 2020 Marie Skłodowska-Curie Individual Fellowship	2015-18	€263,385
Israel National Postdoctoral Award for Advancing Women in Science	2015-16	$40,000
Rothschild postdoctoral fellowship	2014-15	$40,000
Fulbright Post-doctoral fellowship	2013-14 (Declined)	$37,500
Harry and Sylvia Hoffman fellowship for outstanding PhD students	2010-13	$45,000

PRESENTATIONS

Invited Talks

Striem-Amit, E., Istituto Italiano di Tecnologia (IIT) Seminar, Genoa, Italy (2018)
Striem-Amit, E., Northwestern University Psychology Colloquium, Evanston (2018)
Striem-Amit, E., Yale University Cognitive Psychology Seminar, New Haven (2017)
Striem-Amit, E., Georgetown University Neuroscience Seminar, Washington DC (2017)
Striem-Amit, E., National Institute of Mental Health (NIMH) Brain and Cognition Seminar, Washington DC, (2017)
Striem-Amit, E., Stanford Vision Seminar, Stanford University (2017)
Striem-Amit, E., Cognitive and Perception Seminar, University of Washington, Seattle (2017)
Striem-Amit, E., Harvard Cognition, Brain and Behavior Research Seminar, Harvard University (2016)

Striem-Amit, E., New York University Dept. of Psychology, NY (2016)
Striem-Amit, E., National Rehabilitation Hospital Plasticity Seminar Series, Washington DC (2016)
Striem-Amit, E., Georgetown University Medical Center, Washington DC (2016)
Striem-Amit, E., Department of Cognitive, Linguistic & Psychological Sciences Perception Action Seminar Series, Brown University, Providence (2016)
Striem-Amit, E., Psychology Department Colloquium, Northeastern University, Boston (2016)
Striem-Amit, E., Reich L, Dakwar O, Guendelman M, Cohen, L., Dehaene, S., and Amedi, A. IEEE Applied Imagery Pattern Recognition Workshop (IEEE-AIPR), Washington DC (2014)
Striem-Amit, E., Ovadia-Caro, S., Caramazza, A., Margulies, D., Villringer, A. and Amedi, A. Center for Mind/Brain Sciences, University of Trento, Italy. (2014)

Seminars/symposia in Scientific Conferences

Striem-Amit, E., "Future of neuroengineering" symposium, Georgetown University, Washington DC (2018)
Striem-Amit, E., The Blind Brain Workshop, Lucca, Italy (invited speaker) (2018)
Striem-Amit, E., Hand, Brain and Technology Conference, Ascona, Switzerland (2018)
Striem-Amit, E., Israeli Society for Neuroscience meeting, Eilat, Israel (2017)
Striem-Amit, E., Society for Neuroscience meeting, Washington DC (nanosymposium chair and speaker) (2017)
Striem-Amit, E., American Synesthesia Association 12th National Conference, Cambridge MA (2017)
Striem-Amit, E., International Multisensory Research Forum (symposium co-chair and speaker) (2017)
Striem-Amit, E., Vannuscorps, G., and Caramazza, Vision Sciences Society Annual Meeting, St. Pete, Florida (2016).
Striem-Amit, E., Ovadia-Caro, S., Caramazza, A., Margulies, D., Villringer, A. and Amedi, A. Rovereto Concepts, Actions, and Objects workshop, Rovereto, Italy (2015)
Striem-Amit, E. Ovadia-Caro, S., Caramazza, A., Margulies, D., Villringer, A. and Amedi, A. Society for Research in Child Development 2015 Biennial Meeting, Philadelphia (2015)
Striem-Amit, E., Reich L, Dakwar O, Cohen, L., Dehaene, S., and Amedi, A. 9th Federation of European Neuroscience Societies Forum of Neuroscience, Milan, Italy (2014)
Striem-Amit, E., Cohen, L., Dehaene, S., and Amedi, A. ISVER annual meeting, Israel (2013)
Striem-Amit, E., Cohen, L., Dehaene, S., and Amedi, A. Society for Neuroscience 42nd meeting, New Orleans (2012)
Striem-Amit E., Dakwar O, Reich L, Amedi A 20th annual meeting, Israel society for neuroscience, Eilat, Israel (2011)

TEACHING and MENTORING EXPERIENCE

In Israeli universities teacher assistant positions entail the responsibility for a sub-course that includes its own syllabus (loosely complementing the main class). My responsibility in the courses below included **developing and delivering lectures, preparing tests, leading class discussion, designing laboratory experiments, and generating new course materials**, under the broad instruction of the main class supervisor.

Lecturing as a Teaching Assistant

2012-13 "Functional neuroanatomy," Department of Cognition, Hebrew University
2008-11 "Cellular physiology" and "Systems physiology," Department of Medical Neurobiology, Hebrew University
2005-07 "Introduction to physiology," Department of Neurobiology, Hebrew University

Advising

2015-17 Mentoring two undergraduate students, Department of Psychology, Harvard University
2009-14 Co-mentoring three M.Sc. students and ten undergraduates, Department of Medical Neurobiology, Hebrew University

MEDIA COVERAGE and DISSEMINATION

Media Coverage

2017 Interview for and coverage of my work at the *New Yorker*
2016 Interview for *AAAS Science Update* podcast

2012-16 Widespread coverage of scientific findings by popular press and online avenues:
Papers highlighted by scientific journals: *Nature Reviews Neuroscience* and *Nature*, twice.
Covered by the Harvard Gazette.
Press releases covered extensively by multiple popular science media avenues worldwide (in more than 12 different languages, e.g., *Science* magazine, dailymail, science daily, wired, le scienze, süddeutsche, science-et-vie)

Scientific Outreach and Dissemination

- Volunteer scientist, Skype a Scientist K-12 STEM outreach program. 2018-
- Various parlor meetings and presentations at homes and schools, 2011-
- Meetings for raising awareness to SSDs in voluntary organizations for the visually impaired (e.g. "Lighthouse international" "Foundation Fighting Blindness") and in the New England eye center, 2012
- "Think Next" Microsoft exhibit for technology, 2012
- Short scientific outreach tour in the USA organized by the American friends of the Hebrew university, 2012
- International "Brain Awareness Week" in Jerusalem, 2011
- The Israeli Presidential conference "Facing tomorrow" led by Israeli president Shimon Peres, 2011
- Interview on the Australian ABC radio national program "The science show," 2010
- Online video blog (vlog1, vlog2), 2010

AWARDS and ACADEMIC RECOGNITION

The Sieratzki UK-Israel Young Researcher Prize for Advances in Neuroscience, 2017
The Harvard FAS Postdoctoral Award for Professional Development, 2017
The Aharon Katzir Prize for a doctoral recipient for excellence in natural sciences, 2014
Hebrew University Faculty of Medicine Prize for a doctoral recipient, 2014
Faculty of medicine scholarship for excellence, 2007-11
M.Sc., *Magna Cum laude*, 2007
The Organization of the Human Brain Mapping (OHBM) abstract award, 2006
Faculty of science scholarship for excellence, 2005-06
B.Sc., Amirim honors program, *Magna Cum laude*, 2004
Faculty of science scholarship for excellence of the "Amirim" program, 2002-04
Hebrew University dean's honor list, 2002

PROFESSIONAL SERVICE

Journal reviews (Ad hoc)

PNAS, Current Biology, Journal of Neuroscience, Cerebral Cortex, Journal of Cognitive Neuroscience, Neuroimage, Neuropsychologia, Frontiers in Psychology, Brain and Cognition, iPerception, Brain Topography.
See reviewing service detail at Publons.

Journal reviewer board

Brain Topography

Professional Memberships

Society for Neuroscience (SfN), Organization for Human Brain Mapping (OHBM), Cognitive Neuroscience Society (CNS), Israeli Society for Neuroscience (ISFN)