

PERSONAL INFORMATION

Scott Laurence Fairhall

Date of birth: 10/04/1976

Citizenship: United Kingdom. New Zealand.

Researcher unique identifier: 0000-0002-8035-4751

EDUCATION

- 2001 – 2006 The University of Auckland - PhD (Department of Psychology)
2000 The University of Auckland - Bachelor of Arts (Honours) 1st Class Honours
1998-1999 The University of Auckland - Bachelor of Science (Major: Physiology)
1994-1996 The University of Auckland - Bachelor of Arts (Major: Psychology)

CURRENT POSITION

- 2017 - Associate Professor,
Center for Mind/Brain Sciences, University of Trento, Italy.

PREVIOUS POSITIONS

- 2016 - 2017 Assistant Professor – tenure track
Center for Mind/Brain Sciences, University of Trento, Italy.
2015 - 2016 Assistant Professor
Center for Mind/Brain Sciences, University of Trento, Italy.
2013 - 2015 Postdoctoral Fellow
Center for Mind/Brain Sciences, University of Trento, Italy.
2009 - 2012 Postdoctoral Fellow
Department of Psychology, Harvard University, Cambridge, MA
Center for Mind/Brain Sciences, University of Trento, Italy (dual affiliation)
2007 - 2008 Postdoctoral Fellow
Neuroimaging Laboratory, Fondazione Santa Lucia, Rome, Italy.
2006 Visiting Scientist
Institute of Neuroradiology, University of Zurich. (*February to August*)

PEER REVIEWED ARTICLES

Tarigopula HP, Bavaresco A, **Fairhall SL**, Truong V, Hasson U (in revision) Improved prediction of behavioral and neural similarity spaces using pruned DNNs. *Neural Networks*.

Fairhall SL (in revision) Sentence-level embeddings reveal dissociable word- and sentence-level cortical representation across coarse- and fine-grained levels of meaning. *Brain and Language*.

Aglinskias A, **Fairhall SL** (2023) Similar representation of names and faces in the network for person perception. *NeuroImage* 274, 120100.

Acunzo DJ, Low DM, **Fairhall SL** (2022) Deep neural networks reveal topic-level representations of sentences in medial prefrontal cortex, lateral anterior temporal lobe, precuneus, and angular gyrus. *NeuroImage* 251, 119005.

Leonardelli E, **Fairhall SL** (2022) Similarity-based fMRI-MEG fusion reveals hierarchical organisation within the brain's semantic system. *Neuroimage* 259, 119405.

- Ubaldi S, Rabini G, **Fairhall SL** (2022) Recruitment of control and representational components of the semantic system during successful and unsuccessful access to complex factual knowledge. *Journal of Neuroscience* 42 (24), 4879-4890
- Liuzzi AG, Ubaldi S, **Fairhall SL** (2021) Representations of conceptual information during automatic and active semantic access. *Neuropsychologia* 160, 107953.
- Rabini G, Ubaldi S, **Fairhall SL** (2021) Combining concepts across categorical domains: a linking role of the precuneus. *Neurobiology of Language*.
- Ubaldi S & **Fairhall SL** (2021) MRI-Indexed Temporal-Tuning reveals organisational and hierarchical structure within the Face and Person Selective Network. *NeuroImage*, 227, 117690.
- Ubaldi S & **Fairhall SL** (2021) fMRI response to automatic and purposeful familiar-face processing in perceptual and non-perceptual cortical regions *Journal of Neurophysiology*, 125: 1058–1067.
- Fairhall SL** (2020) Cross recruitment of domain-selective cortical representations enables flexible semantic knowledge. *Journal of Neuroscience*, 40(15), 3096-3103.
- Aglinskas A, & **Fairhall SL** (2020) Regional Specialization and Coordination Within the Network for Perceiving and Knowing About Others. *Cerebral Cortex*, 30(2), 836-848.
- Giari G, Leonardelli L, Tao Y, Machado M, **Fairhall SL** (2020) Spatiotemporal properties of the neural representation of conceptual content for words and pictures – an MEG study. *Neuroimage* 219, 116913.
- Liuzzi AG, Aglinskas A & **Fairhall SL** (2020) General and feature-based semantic representations in the semantic network. *Scientific Reports*, 10(1), 1-12.
- Leonardelli E, Fait E, **Fairhall SL** (2019). Temporal dynamics of access to amodal representations of category-level conceptual information. *Scientific Reports*, 9(1), 239.
- Fairhall SL**, Porter KB, Bellucci C, Mazzetti M, Cipolli C, Gobbini MI (2017) Plastic reorganization of neural systems for perception of others in the congenitally blind. *NeuroImage*, 158:126-135.
- Fairhall SL**, Schwarzbach, J, Lingnau, A, Van Koningsbruggen MG, Melcher, D (2017) Spatiotopic updating across saccades revealed by spatially-specific fMRI adaptation. *NeuroImage*, 147, 339-345.
- Fairhall SL**, Albi A, Melcher D. (2014) Temporal Integration Windows for Naturalistic Visual Sequences. *PLOS One*, 9 (7), e102248.
- Fairhall SL**, Anzellotti S, Ubaldi S, Caramazza A. (2014) Person and Place Selective Neural Substrates for Entity-Specific Semantic Access. *Cerebral Cortex*, 24:1687–1696.
- Hernandez M, **Fairhall, SL**, Lenci, A, Baroni M & Caramazza A. (2014) Predication Drives Verb Cortical Signatures. *Journal of Cognitive Neuroscience*, 26:1829-1839
- Anzellotti S, **Fairhall SL**, Caramazza A. (2014) Decoding representations of face identity that are tolerant to rotation. *Cerebral Cortex*, 24(8), 1988-1995.
- Fairhall SL** & Caramazza A (2013) Brain regions that represent amodal conceptual knowledge. *The Journal of Neuroscience*, 33:10552-10558.

- Fairhall SL**, Caramazza A. (2013) Category selective neural substrates for person- and place-related concepts. *Cortex* 49:2748-2757.
- Gesierich B, Jovicich J, Riello M, Adriani M, Monti A, Brentari V, Robinson S, Wilson SM, **Fairhall SL**, Gorno-Tempini ML (2012) Distinct neural substrates for semantic knowledge and naming in the temporo-parietal network. *Cerebral Cortex*, 22:2217-2226.
- Fairhall SL**, Anzellotti S, Pajtas, P, Caramazza, A (2011) Concordance between Perceptual and Categorical Repetition Effects in the Ventral Visual Stream, *Journal of Neurophysiology*, 106:398-408.
- Fairhall SL**, Sharma S, Magnusson J, Murphy B (2010) Memory related dysregulation of hippocampal function in major depressive disorder, *Biological Psychology*, 85: 499-503.
- Wu CC, **Fairhall SL**, Hamm JP, Kirk IJ, McNair NA, Cunnington R, Anderson T, Lim VK (2010) Reduced sensorimotor activation in patients with focal hand dystonia using functional magnetic resonance imaging, *Journal of Neurology Neurosurgery and Psychiatry*, 81: 659-665.
- Fairhall SL**, Macaluso E (2009) Spatial attention modulates audiovisual integration at multiple cortical and subcortical sites, *European Journal of Neuroscience*, 29(6): 1247-1257.
- Fairhall SL**, Indovina I, Driver J, Macaluso E (2009) The brain network underlying serial visual search: comparing overt and covert spatial orienting, for activations and for effective connectivity, *Cerebral Cortex*, 19: 2946 - 2958.
- Fairhall SL**, Hamm, J.P, Kirk IJ (2008) Binocular rivalry reveals a dissociation between the subjective experience and induced gamma oscillations, *European Journal of Neuroscience*, 27(1): 213-216.
- Fairhall SL**, Ishai, A (2008) Neural Correlates of Object Indeterminacy in Art Compositions, *Consciousness and Cognition*, 17(3): 923-932
- Fitzgibbon B, **Fairhall SL**, Kirk IJ, Kalev-Zylinska M, Pui K, Dalbeth N, Keelan S, Robinson SE, During M, McQueen FM (2008) Functional MRI in NPSLE patients reveals increased parietal and frontal brain activation during a working memory task compared with controls, *Rheumatology*, 47(1):50-53.
- Ross RM, McNair NA, **Fairhall SL**, Clapp WC, Hamm JP, Teyler TJ, Kirk IJ (2008) Induction of orientation-specific LTP-like changes in visual evoked potentials by rapid sensory stimulation, *Brain Research Bulletin*, 76: 97-101.
- Fairhall SL**, Ishai, A (2007) Effective connectivity within the distributed cortical network for face processing, *Cerebral Cortex*, 19:2400-2406.
- Fairhall SL**, Hamm JP, Kirk IJ (2007) Temporal dynamics of masked word reading. *Consciousness and Cognition*. 16(1):112-23.
- Fairhall SL**, Kirk IJ, Hamm JP (2007) Volition and the idle cortex: beta oscillatory activity preceding planned and spontaneous movement, *Consciousness and Cognition*, 16(2): 221-228.
- Ishai A, **Fairhall SL**, Pepperell R (2007) Perception, memory and aesthetics of indeterminate art, *Brain Research Bulletin*, 73: 319-324.

CONFERENCE PROCEEDINGS

- Fairhall SL**, Giari G, Leonardelli E, Tao Y, Machado. Isolating Perceptual and Conceptual Object Representation Across Time - an MEG study. 25th annual *Meeting of the Organization for Human Brain Mapping*, Rome, Italy. June 2019.
- Acunzo DJ, Low DM, **Fairhall SL**. Using convolutional neural networks and fMRI to understand the hierarchical stages of semantic composition in sentences. *Rovereto workshop on Concepts, Actions, and Objects*, Rovereto, Italy. May, 2019.
- Giari G, Leonardelli E, **Fairhall SL**, Temporal dynamics of conceptual access: a cross-modal MEG study. *Tübingen Systems Neuroscience Symposium*, University of Tübingen, Germany. October, 2018.
- Ubaldi S., **Fairhall SL**. Temporal tuning of face-selective areas differs across semantic processes in core and extended systems. *XXXVI European Workshop on Cognitive Neuropsychology*, Brixen, Italy. January, 2018.
- Leonardelli E, Fait E, **Fairhall SL**. Temporal evolution of conceptual knowledge processing. *XXXVI European Workshop on Cognitive Neuropsychology*, Brixen, Italy.
- Leonardelli E, Fait E, **Fairhall SL**. Temporal evolution of access to category-sensitive supramodal knowledge – an MEG study. *Salzburg Mind Brain Annual Meeting*, Salzburg, Austria. July, 2017
- Fairhall SL**, Ubaldi S, Aglinskias A. Network Organisation in Core and Extended Face Systems, a cognitive approach. 23rd annual *Meeting of the Organization for Human Brain Mapping*, Vancouver, Canada. June 2017.
- Aglinskias A, Ubaldi S, Fait E, **Fairhall SL**. Network level taxonomy of the core/extended person perception system. 17th Annual *Vision Science Society Meeting*, St. Pete's Beach, Florida. May, 2017.
- Ubaldi S, Aglinskias A, Fait E, **Fairhall SL**. Temporal dynamics of the core and extended face perception system with fMRI. *17th Annual Vision Science Society Meeting*, St. Pete's Beach, Florida. May, 2017.
- Aglinskias A, Fait E, **Fairhall SL**. Network level taxonomy of the core/extended person perception system. *Rovereto workshop on Concepts, Actions, and Objects*, Rovereto, Italy. May, 2017.
- Leonardelli E, Fait E, **Fairhall SL**. Category-sensitive supramodal semantic representations – an MEG study. *Rovereto workshop on Concepts, Actions, and Objects*, Rovereto, Italy. May, 2017.
- Ubaldi S, Fait E, **Fairhall SL**. Discovering the temporal dynamics of the core and extended face perception system with fMRI. *Rovereto workshop on Concepts, Actions, and Objects*, Rovereto, Italy. May, 2017.
- Rubicondo D, **Fairhall SL**. Cortical representations of semantic information generalise across sensory-based and abstract knowledge referred to food. 35th *European Workshop on Cognitive Neuroscience*, Bressanone, Italy. January, 2017.
- Aglinskias A, Fait E, **Fairhall SL**. Network level taxonomy of the core/extended person perception system. 35th *European Workshop on Cognitive Neuroscience*, Bressanone, Italy. January, 2017.

- Ubaldi S, Fait E, **Fairhall SL**. Discovering the temporal dynamics of the core and extended face perception system with fMRI. *35th European Workshop on Cognitive Neuroscience*, Bressanone, Italy. January, 2017.
- Leonardelli E, Fait E, **Fairhall SL**. Spatio-temporal dynamics of semantic-access in the face-processing network, an MEG study. *35th European Workshop on Cognitive Neuroscience*, Bressanone, Italy. January, 2017.
- Rubicondo D, Fait E, **Fairhall SL**. Neural representations of semantic food knowledge generalise across taste and abstract information. *10th Annual Rovereto Workshop on Concepts Actions and Objects*, Rovereto, Italy. May, 2016.
- Leonardelli E, Fait E, **Fairhall SL**. Temporal and spatial evolution of access to person knowledge – an MEG study. *10th Annual Rovereto Workshop on Concepts Actions and Objects*, Rovereto, Italy. May, 2016.
- Anzellotti S, **Fairhall SL**, Caramazza A, Decoding orientation-invariant information about individual faces in the ventral stream. *Vision Science Society*. Florida, USA. May 2012.
- Fairhall SL**, Anzellotti S, Ubaldi S, Caramazza A. Semantic Representation within Person and Place Selective Brain Regions. *14th annual Meeting of the Organization for Human Brain Mapping*, Beijing, China. June 2012.
- Fairhall SL**, Caramazza A. Core and Extended Systems in the Supramodal Representation of Abstract Object-Knowledge. *Workshop on Concepts, Actions, and Objects*, Rovereto, Italy. May 2011.
- Fairhall SL**, Anzellotti S, Ubaldi S, Caramazza A. Domain Selectivity in Semantic Systems. *Workshop on Concepts, Actions, and Objects*, Rovereto, Italy. May 2010.
- Fairhall SL**, Macaluso E, Attentional Modulation of Multisensory Audiovisual Integration during Speech Perception. *14th annual Meeting of the Organization for Human Brain Mapping*, Melbourne, Australia. June 2008.
- Fairhall SL**, Macaluso E, Attentional Modulation and Cortical Integration during Multisensory Audio-Visual Integration. *Marie Curie School of Neuroscience: Large-scale interactions in brain networks and their breakdown in brain diseases*. Santo Stefano di Sessania, Italy. March 2008.
- Fairhall SL**, Indovina I, Driver J, Macaluso E, Effective Connectivity During Covert and Overt, Tracking and Search. *Rovereto Attention Workshop*. Rovereto, Italy. October 2007.
- Fitzgibbon B, **Fairhall SL**, Kirk IJ, Keelan S, Dalbeth N, Pui K, McQueen FM, Functional MRI In NP-SLE Patients Undertaking A Working Memory Task Reveals Markedly Increased Activation In Parietal Regions Of The Brain Compared With Controls, *American College of Rheumatology Annual Scientific Meeting* Washington, D.C. November 2006
- Ishai A, **Fairhall SL**, Pepperell R, Visual perception and memory of indeterminate art compositions, *European Conference on Visual Perception*, St Petersburg, Russia. August 2006.
- Fairhall SL** Ishai A, Effective Connectivity within the Distributed Cortical Network or Face Perception, *36th Annual Meeting of the Society for Neuroscience*, Atlanta, Georgia. October 2006
- Ishai A., **Fairhall SL**, Pepperell R. Object indeterminacy in art compositions, *36th Annual Meeting of the Society for Neuroscience*, Atlanta, Georgia. October 2006

- Fairhall SL**, Ishai A, Neural correlates of objects indeterminacy in art compositions, *Zentrum für Neurowissenschaften Zürich Symposium*, Zürich, Switzerland, October 2006.
- Ishai A, **Fairhall SL**, Perception, memory and aesthetics of indeterminate art, *Zentrum für Neurowissenschaften Zürich Symposium*, Zürich, Switzerland, October 2006.
- Kirk IJ, Barnett KJ, Bunzeck N, **Fairhall SL**, Morton AC, Badzakova-Trajkov G, Waldie KE, Involvement of Anterior cingulate and Prefrontal Cortices in the Stroop Colour-Word Task: EEG and fMRI. *Proceedings of the 24th International Australasian Winter Conference on Brain Research*, Queenstown, New Zealand, August 2006.
- Ishai A., **Fairhall SL.**, Pepperell R. Visual perception and memory of indeterminate art compositions, *European Conference on Visual Perception*, St Petersburg, Russia, August 2006
- Fairhall SL**, Clapp WC, Teyler TJ, Kirk IJ, Orientation-specific neuronal facilitation in V1 following external photic tetanic stimulation, *12th annual Meeting of the Organization for Human Brain Mapping*, Florence, Italy. June 2006.
- Fairhall SL**, Kirk IJ, Hamm, JP Queenstown, NZ: *Binocular rivalry and the role of induced gamma synchrony in perceptual binding*. Proceedings of the 23rd International Australasian Winter Conference on Brain Research, August 2005.
- O'Connor K, Hamm JP, **Fairhall SL**, Corballis MC, Kirk IJ., International Meeting for Autism Research, *The Neurophysiological Correlates of Face Processing in Asperger's Syndrome.*, Boston, MA. May 2005.
- Kirk IJ, Clapp WC, **Fairhall SL**, Hamm JP, Hornsey E, Jackson GD. Neural substrates of recognition memory: A 3T fMRI study, Proceedings of the 31st Australasian Experimental Psychology Conference, Dunedin NZ, April 2004.
- Fairhall SL**, Kirk IJ, Hamm JP, The Neural response to sub-threshold word stimuli. *Proceedings of the 21st International Australasian Winter Conference on Brain Research*, Queenstown, NZ. August 2003
- Kirk IJ, Hamm JP, **Fairhall SL**, Bunzeck N, Clapp WC, Hornsey E, Bishop DF Jackson GD, Perirhinal Cortex and Recognition Memory: A 3T fMRI Study. *Proceedings of the 21st International Australasian Winter Conference on Brain Research*, Queenstown, NZ. August 2003
- Waldie KE, G Badzakovaa, **Fairhall SL**, Milne RD, Kirk IJ, Hornsey E, Bishop DF Jackson GD, Orthographic and phonological processing in the normal and the dyslexic brain: An fMRI study. *Proceedings of the 21st International Australasian Winter Conference on Brain Research*. Queenstown NZ, August 2003
- Fairhall SL**, Differential Topographies Between Subtypes of Nouns and Verbs. *Proceedings of the 20th International Australasian Winter Conference on Brain Research*. Queenstown NZ, August 2002.

TEACHING ACTIVITIES

Masters in Data Science – University of Trento

2019 to present – Course Coordinator: Data Science for Neuroimaging, Linguistic, and Behavioural Data .

Masters in Cognitive Science – University of Trento

2018 to present – Lecturer: Foundations in Cognitive Psychology and Cognitive Neuroscience.

2018 to present – Lecturer: Foundations of Cognitive Neuroscience Science.

2015 to present – Course Coordinator: Introduction to Computer Programming for Cognitive Science.

SUPERVISION OF GRADUATE STUDENTS

- Primary supervision:
 - Andrea Belluzzi (PhD student)
 - Aidas Aglinskis (PhD student)
 - Danilo Rubicondo (Masters)
 - Daniel Low (Masters)
 - Giuliano Giari (Masters)

- Co-supervision/tutorship:
 - Bernadette Fitzgibbons (Graduate Student, University of Auckland)
 - Carolyn Wu (Graduate Student, University of Auckland)
 - Sindra Sharma (Graduate Student, University of Auckland)

SCHOLARSHIPS AND GRANTS HELD

2018 – 2020 Framework for the Attraction and Reinforcement of Excellent Research in Italy. *Deep Learning and Semantic Knowledge: from artificial to natural neural networks and back again.*
- €130 000.

2015 – 2021 European Research Council Starting Grant. *Cortical Representation of Abstract Semantic Knowledge.* - €1,472,502.

2006 - Organization for Human Brain Mapping Travel Award US\$ 700

2005 – Doctoral Completion Award \$2000

2003-2004 PhD Scholarship, University of Auckland Vice Chancellor's Early Career Excellence Award (awarded to Jeff Hamm) - \$40 000

2004 – Royal Society of New Zealand Travel Grant recipient – international conference travel - \$1000

2004 – Fellowship grant: The Vivian Smith Advanced Studies Institute of the International Neuropsychological Society Summer Institute - \$2400

2003-2004 Department of Psychology Conference Award - \$1200

2003 – Graduate Research Fund University of Auckland – international conference travel grant award - \$2800

2002-2003 – Faculty of Science Post Graduate Fees Bursary - \$4000

2001 – Faculty of Science Study Award - \$2000

COMMISSIONS OF TRUST

Ad hoc editor: Proceedings of the National Academy of Sciences (PNAS)

Ad hoc reviewer for: Nature Human Behaviour, Nature Communications, Neuron, eLife, Journal of Neuroscience, Cerebral Cortex, NeuroImage, Cortex, European Journal of Neuroscience, Journal of Cognitive Neuroscience, Neuropsychologia, Consciousness and Cognition, Brain and Language, Developmental Cognitive Neuroscience, Scientific Reports, Biology Communications.