

## Qualifications

Doctoral degree, Humanities, University of Helsinki

Award Date: 15 Oct 1985

Licentiate degree, Natural Sciences, University of Helsinki

Award Date: 28 May 1985

Master's degree, Humanities, University of Helsinki

Award Date: 25 Sept 1979

Bachelor's degree, Social Sciences, University of Helsinki

Award Date: 29 May 1979

## Employment

### Senior Advisor

Senior Advisor

Department of Neuroscience and Biomedical Engineering

Aalto University

1 Jun 2021 → present

### Professor

Department of Computer Science

Aalto University

Finland

1 Jan 2016 → present

### Adjunct professor

University of Helsinki

Helsinki, Finland

1 Jan 1987 → present

## Research output

### Embodied emotions in ancient Neo-Assyrian texts revealed by bodily mapping of emotional semantics

Lahnakoski, J., Bennet, E., Nummenmaa, L., Steinert, U., Sams, M. & Svärd, S., 20 Dec 2024, In: *iScience*. 27, 12, 111365.

### Asymmetry in political polarization at multiple levels of bias

Kluge, A., Adler, E., Nir, L., Halperin, E., Sams, M. & Levy, J., Dec 2024, In: *Political Psychology*. 45, 6, p. 1105-1121 17 p.

### Sisterhood predicts similar neural processing of a film

Bacha-Trams, M., Yorulmaz, G. E., Glerean, E., Ryyppö, E., Tapani, K., Virmavirta, E., Saaristo, J., Jääskeläinen, I. P. & Sams, M., 15 Aug 2024, In: *NeuroImage*. 297, p. 1-14 14 p., 120712.

### Six types of loves differentially recruit reward and social cognition brain areas

Rinne, P., Lahnakoski, J., Saarimäki, H., Tavast, M., Sams, M. & Henriksson, L., Aug 2024, In: *Cerebral Cortex*. 34, 8, bhae331.

### Bodily maps of musical sensations across cultures

Putkinen, V., Zhou, X., Gan, X., Yang, L., Becker, B., Sams, M. & Nummenmaa, L., 25 Jan 2024, In: *Proceedings of the National Academy of Sciences of the United States of America*. 121, 5, p. 1-10 10 p., e2308859121.

### Hippocampus-Centered Network Is Associated With Positive Symptom Alleviation in Patients With First-Episode Psychosis

Alho, J., Lahnakoski, J. M., Panula, J. M., Rikandi, E., Mäntylä, T., Lindgren, M., Kiesepä, T., Suvisaari, J., Sams, M. & Raji, T. T., Dec 2023, In: *Biological Psychiatry: Cognitive Neuroscience and Neuroimaging*. 8, 12, p. 1197-1206 10 p.

**ACT OF FICTION : Simultaneously experienced multiple perspectives of (un)reality when engaging with narrative-based art**

Amir, E., Sofaer, J. & Sams, M., 1 Aug 2023, In: Leonardo Journal. 56, 4, p. 374-378 5 p.

**Decoding brain basis of laughter and crying in natural scenes**

Nummenmaa, L., Malèn, T., Nazari-Farsani, S., Seppälä, K., Sun, L., Santavirta, S., Karlsson, H. K., Hudson, M., Hirvonen, J., Sams, M., Scott, S. & Putkinen, V., Jun 2023, In: NeuroImage. 273, p. 1-9 9 p., 120082.

**Ideological values are parametrically associated with empathy neural response to vicarious suffering**

Zebarjadi, N., Adler, E., Kluge, A., Sams, M. & Levy, J., 22 May 2023, In: Social Cognitive and Affective Neuroscience. 18, 1, p. 1-10 10 p., nsad029.

**Lipreading a naturalistic narrative in a female population: Neural characteristics shared with listening and reading**

Saalasti, S., Alho, J., Lahnakoski, J. M., Bacha-Trams, M., Glerean, E., Jääskeläinen, I. P., Hasson, U. & Sams, M., Feb 2023, In: Brain and Behavior. 13, 2, e2869.

**Body maps of loves**

Rinne, P., Tavast, M., Glerean, E. & Sams, M., 2023, (E-pub ahead of print) In: PHILOSOPHICAL PSYCHOLOGY.

**Under the umbrella : components of empathy in psychology and design**

Chang-Arana, A. M., Surma-aho, A., Holttä-Otto, K. & Sams, M., 1 Aug 2022, In: Design Science. 8, 29 p., 20.

**Exploring the Interpersonal Level of Music Performance Anxiety: Online Listener's Accuracy in Detecting Performer Anxiety**

Chang-Arana, Á. M., Mavrolampados, A., Thompson, M. R., Pokki, N. & Sams, M., 10 May 2022, In: Frontiers in Psychology. 13, 838041.

**Processing of an Audiobook in the Human Brain Is Shaped by Cultural Family Background**

Hakonen, M., Ikäheimonen, A., Hultèn, A., Kauttonen, J., Koskinen, M., Lin, F. H., Lowe, A., Sams, M. & Jääskeläinen, I. P., May 2022, In: Brain Sciences. 12, 5, p. 1-19 19 p., 649.

**Body Maps of Loves**

Rinne, P., Tavast, M., Glerean, E. & Sams, M., 1 Apr 2022.

**Classification of emotion categories based on functional connectivity patterns of the human brain**

Saarimäki, H., Glerean, E., Smirnov, D., Mynttinen, H., Jääskeläinen, I. P., Sams, M. & Nummenmaa, L., 15 Feb 2022, In: NeuroImage. 247, p. 1-10 10 p., 118800.

**Emotion, psychophysiology, and intersubjectivity**

Peräkylä, A., Voutilainen, L., Stevanovic, M., Henttonen, P., Kahri, M., Kivioja, M., Koskinen, E., Sams, M. & Ravaja, N., Nov 2021, *Intersubjectivity in Action. Studies in language and social interaction*. Lindström, J., Laury, R., Peräkylä, A. & Sorjonen, M.-L. (eds.). John Benjamins Publishing Company, p. 303-327 25 p. (Pragmatics and Beyond New Series; vol. 3265).

**Rhythmic Neural Patterns During Empathy to Vicarious Pain: Beyond the Affective-Cognitive Empathy Dichotomy**

Zebarjadi, N., Adler, E., Kluge, A., Jääskeläinen, I. P., Sams, M. & Levy, J., 7 Jul 2021, In: Frontiers in Human Neuroscience. 15, 9 p., 708107.

**Social pleasures of music**

Nummenmaa, L., Putkinen, V. & Sams, M., Jun 2021, In: Current Opinion in Behavioral Sciences. 39, p. 196-202 7 p.

**Movies and narratives as naturalistic stimuli in neuroimaging**

Jääskeläinen, I. P., Sams, M., Glerean, E. & Ahveninen, J., 1 Jan 2021, In: NeuroImage. 224, 14 p., 117445.

**A novel ultrasonic haptic device induces touch sensations with potential applications in neuroscience research**

Hayward, N., Lewis, E., Perra, E., Jousmaki, V., Saarinen, V. M., McGlone, F., Sams, M. & Nieminen, H., 7 Sept 2020, *IUS 2020 - International Ultrasonics Symposium, Proceedings*. IEEE, 4 p. 9251554. (IEEE International Ultrasonics Symposium).

**Inter-subject Similarity of Brain Activity in Expert Musicians After Multimodal Learning: A Behavioral and Neuroimaging Study on Learning to Play a Piano Sonata**

Fasano, M. C., Glerean, E., Gold, B. P., Sheng, D., Sams, M., Vuust, P., Rauschecker, J. P. & Brattico, E., 10 Aug 2020, In: *Neuroscience*. 441, p. 102-116 15 p.

**Auditory representation of learned sound sequences in motor regions of the macaque brain**

Archakov, D., DeWitt, I., Kuśmierk, P., Ortiz-Rios, M., Cameron, D., Cui, D., Morin, E. L., VanMeter, J. W., Sams, M., Jääskeläinen, I. P. & Rauschecker, J. P., 30 Jun 2020, In: *Proceedings of the National Academy of Sciences of the United States of America*. 117, 26, p. 15242-15252 11 p.

**Social perspective-taking shapes brain hemodynamic activity and eye movements during movie viewing**

Bacha-Trams, M., Ryyppö, E., Glerean, E., Sams, M. & Jääskeläinen, I. P., 11 May 2020, In: *Social Cognitive and Affective Neuroscience*. 15, 2, p. 175-191 17 p.

**Empathic accuracy in design: Exploring design outcomes through empathic performance and physiology**

Chang-Arana, A. M., Piispanen, M., Himberg, T., Surma-aho, A., Alho, J., Sams, M. & Holtta-Otto, K., 2020, In: *Design Science*. 6, 34 p., 16.

**Emotions amplify speaker-listener neural alignment**

Smirnov, D., Saarimäki, H., Glerean, E., Hari, R., Sams, M. & Nummenmaa, L., 1 Nov 2019, In: *Human Brain Mapping*. 40, 16, p. 4777-4788 12 p.

**Opioidergic regulation of emotional arousal: A combined PET-fMRI study**

Karjalainen, T., Seppälä, K., Glerean, E., Karlsson, H. K., Lahnakoski, J., Nuutila, P., Jääskeläinen, I., Hari, R., Sams, M. & Nummenmaa, L., Sept 2019, In: *Cerebral Cortex*. 29, 9, p. 4006-4016 11 p.

**Contextual knowledge provided by a movie biases implicit perception of the protagonist**

Afdile, M., Jääskeläinen, I. P., Glerean, E., Smirnov, D., Alho, J., Aimälä, A. & Sams, M., 1 May 2019, In: *Social Cognitive and Affective Neuroscience*. 14, 5, p. 519-527 9 p.

**Inferior parietal lobule and early visual areas support elicitation of individualized meanings during narrative listening**

Saalasti, S., Alho, J., Bar, M., Glerean, E., Honkela, T., Kauppila, M., Sams, M. & Jääskeläinen, I. P., 1 May 2019, In: *Brain and Behavior*. 9, 5, p. 1-9 9 p., e01288.

**Physiological responses to affiliation during conversation: Comparing neurotypical males and males with Asperger syndrome**

Stevanovic, M., Henttonen, P., Koskinen, E., Peräkylä, A., von-Wendt, T. N., Sihvola, E., Tani, P., Ravaja, N. & Sams, M., 1 Jan 2019, In: *PloS one*. 14, 9, p. 1-19 e0222084.

**A drama movie activates brains of holistic and analytical thinkers differentially**

Bacha-Trams, M., Alexandrov, Y. I., Broman, E., Glerean, E., Kauppila, M., Kauttonen, J., Ryyppö, E., Sams, M. & Jääskeläinen, I. P., 9 Nov 2018, In: *Social Cognitive and Affective Neuroscience*. 13, 12, p. 1293-1304 12 p.

**Reproducibility of importance extraction methods in neural network based fMRI classification**

Gotsopoulos, A., Saarimäki, H., Glerean, E., Jääskeläinen, I. P., Sams, M., Nummenmaa, L. & Lampinen, J., 1 Nov 2018, In: *NeuroImage*. 181, p. 44-54 11 p.

**Distributed affective space represents multiple emotion categories across the human brain**

Saarimäki, H., Ejtehadian, L. F., Glerean, E., Jääskeläinen, I. P., Vuilleumier, P., Sams, M. & Nummenmaa, L., 1 May 2018, In: *Social Cognitive and Affective Neuroscience*. 13, 5, p. 471-482 12 p.

### **Empathy, challenge, and psychophysiological activation in therapist-client interaction**

Voutilainen, L., Henttonen, P., Kahri, M., Ravaja, N., Sams, M. & Peräkylä, A., 11 Apr 2018, In: *Frontiers in Psychology*. 9, APR, 530.

### **Neuroanatomical substrate of noise sensitivity**

Kliuchko, M., Puoliväli, T., Heinonen-Guzejev, M., Tervaniemi, M., Toiviainen, P., Sams, M. & Brattico, E., 15 Feb 2018, In: *NeuroImage*. 167, p. 309-315 7 p.

### **Distinct brain areas process novel and repeating tone sequences**

Green, B., Jääskeläinen, I. P., Sams, M. & Rauschecker, J. P., Feb 2018, In: *Brain and Language*. 187, p. 104-114 11 p.

### **Event-related potentials during individual, cooperative, and competitive task performance differ in subjects with analytic vs. holistic thinking**

Apanovich, V. V., Bezdenezhnykh, B. N., Sams, M., Jääskeläinen, I. P. & Alexandrov, Y. I., 1 Jan 2018, In: *International Journal of Psychophysiology*. 123, p. 136-142 7 p.

### **Brain-to-brain hyperclassification reveals action-specific motor mapping of observed actions in humans**

Smirnov, D., Lachat, F., Peltola, T., Lahnakoski, J., Koistinen, O.-P., Glerean, E., Vehtari, A., Hari, R., Sams, M. & Nummenmaa, L., 11 Dec 2017, In: *PloS one*. 12, 12, e0189508.

### **Differential inter-subject correlation of brain activity when kinship is a variable in moral dilemma**

Bacha-Trams, M., Glerean, E., Dunbar, R., Lahnakoski, J. M., Ryyppö, E., Sams, M. & Jääskeläinen, I. P., 1 Dec 2017, In: *Scientific Reports*. 7, 1, p. 1-16 14244.

### **Predictive processing increases intelligibility of acoustically distorted speech: Behavioral and neural correlates**

Hakonen, M., May, P. J. C., Jääskeläinen, I., Jokinen, E., Sams, M. & Tiitinen, H., Sept 2017, In: *Brain and Behavior*. 7, 9, 15 p., e00789.

### **Distributed neural signatures of natural audiovisual speech and music in the human auditory cortex**

Salmi, J., Koistinen, O.-P., Glerean, E., Jylänki, P., Vehtari, A., Jääskeläinen, I., Mäkelä, S., Nummenmaa, L., Nummi-Kuisma, K., Nummi, I. & Sams, M., 15 Aug 2017, In: *NeuroImage*. 157, p. 108-117 10 p.

### **Dissociable roles of cerebral $\mu$ -opioid and type 2 dopamine receptors in vicarious pain: A combined PET-fMRI study**

Karjalainen, T., Karlsson, H. K., Lahnakoski, J. M., Glerean, E., Nuutila, P., Jääskeläinen, I. P., Hari, R., Sams, M. & Nummenmaa, L., 1 Aug 2017, In: *Cerebral Cortex*. 27, 8, p. 4257-4266 10 p.

### **Neural mechanisms for integrating consecutive and interleaved natural events**

Lahnakoski, J., Jääskeläinen, I., Sams, M. & Nummenmaa, L., Jul 2017, In: *Human Brain Mapping*. 38, 7, p. 3360-3376

### **Social laughter triggers endogenous opioid release in humans**

Manninen, S., Tuominen, L., Dunbar, R. I., Karjalainen, T., Hirvonen, J., Arponen, E., Hari, R., Jääskeläinen, I. P., Sams, M. & Nummenmaa, L., 21 Jun 2017, In: *JOURNAL OF NEUROSCIENCE*. 37, 25, p. 6125-6131 7 p.

### **Sequentiality, mutual visibility, and behavioral matching: Body sway and pitch register during joint decision making**

Stevanovic, M., Himberg, T., Niinisalo, M., Kahri, M., Peräsalo, A., Sams, M. & Hari, R., Mar 2017, In: *RESEARCH ON LANGUAGE AND SOCIAL INTERACTION*. 50, 1, p. 33-53 21 p.

### **Consistency of Regions of Interest as nodes of fMRI functional brain networks**

Korhonen, O., Saarimäki, H., Glerean, E., Sams, M. & Saramäki, J., 2017, In: *Network Neuroscience*. 1, 3, p. 254-274

### **Graph coarse-graining reveals differences in the module-level structure of functional brain networks**

Kujala, R., Glerean, E., Pan, R. K., Jääskeläinen, I. P., Sams, M. & Saramäki, J., 1 Nov 2016, In: *European Journal of Neuroscience*. 44, 9, p. 2673-2684 12 p.

**Social touch modulates endogenous  $\mu$ -opioid system activity in humans**

Nummenmaa, L., Tuominen, L., Dunbar, R., Hirvonen, J., Manninen, S., Arponen, E., Machin, A., Hari, R., Jääskeläinen, I. P. & Sams, M., 1 Sept 2016, In: *NeuroImage*. 138, p. 242-247 6 p.

**Hidden sources of joy, fear, and sadness: Explicit versus implicit neural processing of musical emotions**

Bogert, B., Numminen-Kontti, T., Gold, B., Sams, M., Numminen, J., Burunat, I., Lampinen, J. & Brattico, E., 1 Aug 2016, In: *Neuropsychologia*. 89, p. 393-402 10 p.

**Attending to and neglecting people: Bridging neuroscience, psychology and sociology**

Hari, R., Sams, M. & Nummenmaa, L., 5 May 2016, In: *PHILOSOPHICAL TRANSACTIONS OF THE ROYAL SOCIETY B: BIOLOGICAL SCIENCES*. 371, 1693, p. 1-9 20150365.

**Theme issue 'Attending to and neglecting people' compiled and edited by Riitta Hari, Lauri Nummenmaa and Mikko Sams**

Hari, R. (Editor), Sams, M. (Editor) & Nummenmaa, L. (Editor), May 2016, In: *PHILOSOPHICAL TRANSACTIONS OF THE ROYAL SOCIETY B: BIOLOGICAL SCIENCES*. 371, 1693

**Behavioural activation system sensitivity is associated with cerebral  $\mu$ -opioid receptor availability**

Karjalainen, T., Tuominen, L., Manninen, S., Kalliokoski, K. K., Nuutila, P., Jääskeläinen, I., Hari, R., Sams, M. & Nummenmaa, L., 6 Apr 2016, In: *Social Cognitive and Affective Neuroscience*. 11, 8, p. 1310-1316 7 p.

**Early-latency categorical speech sound representations in the left inferior frontal gyrus**

Alho, J., Green, B. M., May, P. J. C., Sams, M., Tiitinen, H., Rauschecker, J. P. & Jääskeläinen, I. P., 1 Apr 2016, In: *NeuroImage*. 129, p. 214-223 10 p.

**Reorganization of functionally connected brain subnetworks in high-functioning autism**

Gleason, E., Pan, R. K., Salmi, J., Kujala, R., Lahnakoski, J. M., Roine, U., Nummenmaa, L., Leppämäki, S., Nieminen-von Wendt, T., Tani, P., Saramäki, J., Sams, M. & Jääskeläinen, I. P., 1 Mar 2016, In: *Human Brain Mapping*. 37, 3, p. 1066-1079 14 p.

**Neural mechanisms supporting evaluation of others' errors in real-life like conditions**

Jääskeläinen, I. P., Halme, H.-L., Agam, Y., Gleason, E., Lahnakoski, J. M., Sams, M., Tapani, K., Ahveninen, J. & Manoach, D. S., 5 Jan 2016, In: *Scientific Reports*. 6, 10 p., 18714.

**Interacting parallel pathways associate sounds with visual identity in auditory cortices**

Ahveninen, J., Huang, S., Ahlfors, S. P., Hämäläinen, M., Rossi, S., Sams, M. & Jääskeläinen, I., 1 Jan 2016, In: *NeuroImage*. 124, p. 858-868 11 p.

**The reliability of continuous brain responses during naturalistic listening to music**

Burunat, I., Toiviainen, P., Alluri, V., Bogert, B., Ristaniemi, T., Sams, M. & Brattico, E., 1 Jan 2016, In: *NeuroImage*. 124, p. 224-231 8 p.

**Discrete neural signatures of basic emotions**

Saarimäki, H., Gotsopoulos, A., Jääskeläinen, I. P., Lampinen, J., Vuilleumier, P., Hari, R., Sams, M. & Nummenmaa, L., 2016, In: *Cerebral Cortex*. 26, 6, p. 2563-2573 11 p.

**Tarinankerronnan psykofysiologiaa**

Peräkylä, A., Voutilainen, L., Henttonen, P., Kahri, M., Stevanovic, T. M., Sams, M. & Ravaja, N., 2016, In: *SOSIOLOGIA*. 53, 3, p. 258-274

**РАЗЛИЧИЯ МОЗГОВОГО ОБЕСПЕЧЕНИЯ ИНДИВИДУАЛЬНОГО, КООПЕРАТИВНОГО И КОНКУРЕНТНОГО ПОВЕДЕНИЯ У СУБЪЕКТОВ С АНАЛИТИЧЕСКИМ И ХОЛИСТИЧЕСКИМ КОГНИТИВНЫМИ СТИЛЯМИ**

Apanovich, V. V., Bezdenezhnykh, B. N., Znakov, V. V., Sams, M., Jääskeläinen, I. & Aleksandrov, Y. I., 2016, In: *Экспериментальная Психология*. 9, 2, p. 5-22 18 p.

**Adult attachment style is associated with cerebral  $\mu$ -opioid receptor availability in humans**

Nummenmaa, L., Manninen, S., Tuominen, L., Hirvonen, J., Kalliokoski, K. K., Nuutila, P., Jääskeläinen, I. P., Hari, R., Dunbar, R. I. M. & Sams, M., Sept 2015, In: Human Brain Mapping. 36, 9, p. 3621-3628 8 p.

**Facilitated early cortical processing of nude human bodies**

Alho, J., Salminen, N., Sams, M., Hietanen, J. K. & Nummenmaa, L., Jul 2015, In: Biological Psychology. 109, p. 103-110 8 p.

**Functional MRI of the vocalization-processing network in the macaque brain**

Ortiz-Rios, M., Kusmierek, W., DeWitt, I., Archakov, D., Azevedo, F. A. C., Sams, M., Jaaskelainen, I. P., Keliris, G. A. & Rauschecker, J. P., 1 Apr 2015, In: Frontiers in Neuroscience. 9, p. 1-10 10 p., 113.

**Constrained spherical deconvolution-based tractography and tract-based spatial statistics show abnormal microstructural organization in Asperger syndrome**

Roine, U., Salmi, J., Roine, T., Nieminen-von Wendt, T., Leppamäki, S., Rintahaka, P., Tani, P., Leemans, A., Sams, M. & Roine, T., 16 Jan 2015, In: Molecular Autism. 6, p. 1-11 11 p.

**Abnormal wiring of the connectome in adults with high-functioning autism spectrum disorder**

Roine, U., Roine, T., Salmi, J., Nieminen-von Wendt, T., Tani, P., Leppämäki, S., Rintahaka, P., Caeyenberghs, K., Leemans, A. & Sams, M., 2015, In: Molecular Autism. 6, p. 1-11 11 p., 65.

**Action in Perception: Prominent Visuo-Motor Functional Symmetry in Musicians during Music Listening**

Burunat, I., Brattico, E., Puolivali, T., Ristaniemi, T., Sams, M. & Toivainen, P., 2015, In: PLoS one. 10, 9, p. 1-18 18 p., e0138238.

**Ihmisen mieli**

Hari, R., Järvinen, J., Lehtonen, J., Lonka, K., Peräkylä, A., Pyysiäinen, I., Salenius, S., Sams, M. & Ylikoski, P., 2015, Helsinki: Gaudeamus. 205 p.

**Sharing the emotional load : Recipient affiliation calms down the storyteller**

Perakyla, A., Henttonen, P., Voutilainen, L., Kahri, M., Stevanovic, M., Sams, M. & Ravaja, N., 2015, In: SOCIAL PSYCHOLOGY QUARTERLY. 78, 4, p. 301-323 23 p.

**Emotional speech synchronizes brains across listeners and engages large-scale dynamic brain networks**

Nummenmaa, L., Saarimäki, H., Glerean, E., Gotsopoulos, A., Hari, R. & Sams, M., 15 Nov 2014, In: NeuroImage. 102, p. 498-509 12 p.

**Synchronous brain activity across individuals underlies shared psychological perspectives**

Lahnakoski, J., Glerean, E. G., Jääskeläinen, I. P., Hyönä, J., Hari, R., Sams, M. & Nummenmaa, L., 15 Oct 2014, In: NeuroImage. 100, p. 316-324 9 p.

**Fronto-parietal network supports context-dependent speech comprehension**

Smirnov, D., Glerean, E., Lahnakoski, J. M., Salmi, J., Jääskeläinen, I. P., Sams, M. & Nummenmaa, L., Oct 2014, In: Neuropsychologia. 63, p. 293-303 11 p.

**Posterior parietal cortex activity reflects the significance of others' actions during natural viewing**

Salmi, J., Glerean, E., Jääskeläinen, I. P., Lahnakoski, J. M., Kettunen, J., Lampinen, J., Tikka, P. & Sams, M., Sept 2014, In: Human Brain Mapping. 35, 9, p. 4767-4776 10 p.

**Effect of attentional load on audiovisual speech perception: Evidence from ERPs**

Alsus, A., Möttönen, R., Sams, M. E., Soto-Faraco, S. & Tiippana, K., 15 Jul 2014, In: Frontiers in Psychology. 5, p. 1-9 9 p., 727.

**Affective stance, ambivalence, and psychophysiological responses during conversational storytelling**

Voutilainen, L., Henttonen, P., Kahri, M., Kivioja, M., Ravaja, N., Sams, M. & Peräkylä, A., Jul 2014, In: Journal of Pragmatics. 68, p. 1-24 24 p.

**Enhanced neural synchrony between left auditory and premotor cortex is associated with successful phonetic categorization**

Alho, J., Lin, F. H., Sato, M., Tiitinen, H., Sams, M. & Jääskeläinen, I. P., 6 May 2014, In: Frontiers in Psychology. 5, p. 1-10 10 p., 394.

**Mental Action Simulation Synchronizes Action-Observation Circuits across Individuals**

Nummenmaa, L., Smirnov, D., Lahnakoski, J. M., Glerean, E., Jaaskelainen, I. P., Sams, M. & Hari, R., 15 Jan 2014, In: JOURNAL OF NEUROSCIENCE. 34, 3, p. 748-757 10 p.

**Increased coherence of white matter fiber tract organization in adults with Asperger syndrome: a diffusion tensor imaging study**

Roine, U., Roine, T., Salmi, J., Nieminen-Von Wendt, T., Leppämäki, S., Rintahaka, P., Tani, P., Leemans, A., Sams, M. & Roine, T., Dec 2013, In: Autism Research. 6, 6, p. 642-650 9 p.

**DID YOU HEAR THAT TOO? EMOTIONS MAKE BRAINS TICK TOGETHER DURING SPOKEN DISCOURSE PROCESSING**

Nummenmaa, L., Heikkilä, H., Gotsopoulos, A., Glerean, E., Jääskeläinen, I., Hari, R. & Sams, M., 2013, In: Journal of Cognitive Neuroscience. p. 183-183 1 p.

**DID YOU HEAR THAT TOO? EMOTIONS MAKE BRAINS TICK TOGETHER DURING SPOKEN DISCOURSE PROCESSING**

Nummenmaa, L., Heikkilä, H., Gotsopoulos, A., Glerean, E., Jaaskelainen, I. P., Hari, R. & Sams, M., 2013, *Conference: 20th Annual Meeting of the Cognitive-Neuroscience-Society Location: San Francisco, CA Date: APR 13-16, 2013.* p. 183-183

**DYNAMIC LARGE-SCALE BRAIN NETWORKS FOR EMOTIONAL PROCESSING**

Glerean, E., Pan, R. K., Sams, M. & Nummenmaa, L., 2013, In: Journal of Cognitive Neuroscience. p. 97-97 1 p.

**Silent lipreading and covert speech production suppress processing of non-linguistic sounds in auditory cortex**

Balk, M., Kari, H., Kauramäki, J., Ahveninen, J., Sams, M., Autti, T. & Jaaskelainen, I. P., 2013, In: OPEN JOURNAL OF NEUROSCIENCE. 3, 3

**The brains of high functioning autistic individuals do not synchronize with those of others**

Salmi, J., Roine, U., Glerean, E., Lahnakoski, J., Nieminen-von Wendt, T., Tani, P., Leppämäki, S., Nummenmaa, L., Jääskeläinen, I. P., Carlson, S., Rintahaka, P. & Sams, M., 2013, In: NEUROIMAGE. CLINICAL. 3, p. 489-497 9 p.

**Visual task enhances spatial selectivity in the human auditory cortex**

Salminen, N., Aho, J. & Sams, M., 2013, In: Frontiers in Neuroscience. 7, p. 1-6 44.

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**Characteristics of auditory sensory memory: Neuromagnetic evidence**

Loveless, N. E., Levänen, S., McEvoy, L. K., Jousmäki, V., Sams, M. & Hari, R., Jan 1997, In: International Journal of Psychophysiology. 25, 1, p. 19-19 1 p.

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**A neuromagnetic study of the integration of audiovisual speech in the brain**

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**Temporal integration in auditory sensory memory: neuromagnetic evidence**

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**Where and when is audiovisual speech integrated: MEG studies**

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**Auditory evoked magnetic fields to tones and pseudowords in healthy children and adults**

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**Human auditory cortex responses to rising versus falling glides**

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**Human auditory cortical mechanisms of sound lateralization: I. Interaural time differences within sound**

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**ABSOLUTE PITCH AND EVENT-RELATED BRAIN POTENTIALS**

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**Brain research with a whole-head 122-channel neuromagnetometer**

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Ritter, W., Paavilainen, P., Lavikainen, J., Reinikainen, K., Alho, K., Sams, M. & Näätänen, R., Nov 1992, In: *Electroencephalography and Clinical Neurophysiology*. 83, 5, p. 306-321 16 p.

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Hari, R., Rif, J., Tiihonen, J. & Sams, M., Feb 1992, In: *Electroencephalography and Clinical Neurophysiology*. 82, 2, p. 152-154 3 p.

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**Human somatosensory evoked potentials to mechanical pulses and vibration: contributions of SI and SII somatosensory cortices to P50 and P100 components**

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**Do event-related potentials reveal the mechanism of the auditory sensory memory in the human brain?**

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**NO VISUAL MISMATCH POTENTIAL FOUND**

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**Brain mechanism of selective listening reflected by event-related potentials**

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**AUTONOMIC CONCOMITANTS OF EVENT-RELATED POTENTIALS IN THE AUDITORY ODDBALL PARADIGM**

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NAATANEN, R., PAAVILAINEN, P., ALHO, K., REINIKAINEN, K. & SAMS, M., 1987, In: International Journal of Neuroscience. 34, 3-4, p. 222-222 1 p.

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CAMMANN, R., PAAVILAINEN, P., ALHO, K., NAATANEN, R., REINIKAINEN, K. & SAMS, M., 1987, In: International Journal of Neuroscience. 34, 3-4, p. 154-155 2 p.

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**Small pitch separation and the selective-attention effect on the ERP**

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**Auditory frequency discrimination and event-related potentials**

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**Cerebral neuromagnetic responses evoked by short auditory stimuli**

Sams, M., Hämäläinen, M., Antervo, A., Kaukoranta, E., Reinikainen, K. & Hari, R., Oct 1985, In: Electroencephalography and Clinical Neurophysiology. 61, 4, p. 254-266 13 p.

**Responses of the primary auditory cortex to pitch changes in a sequence of tone pips: Neuromagnetic recordings in man**

Hari, R., Hämäläinen, M., Ilmoniemi, R., Kaukoranta, E., Reinikainen, K., Alho, K., Näätänen, R., Sams, M. & Salminen, J., 7 Sept 1984, In: Neuroscience Letters. 50, 1-3, p. 127-132 6 p.

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Sams, M., Alho, K. & Näätänen, R., Aug 1983, In: Biological Psychology. 17, 1, p. 41-58 18 p.

**DETERMINATION OF THE ACTIVITY OF MOTOR CORTEX NEURONS IN BEHAVIOR**

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**Auditory evoked transient and sustained potentials in the human EEG: I. Effects of expectation of stimuli**

Hari, R., Sams, M. & Järvilehto, T., Dec 1979, In: Psychiatry Research. 1, 3, p. 297-306 10 p.

**Auditory evoked transient and sustained potentials in the human EEG: II. Effects of small doses of ethanol**

Hari, R., Sams, M. & Järvilehto, T., Dec 1979, In: Psychiatry Research. 1, 3, p. 307-312 6 p.

**Effect of stimulus repetition on negative sustained potentials elicited by auditory and visual stimuli in the human EEG**

Järvilehto, T., Hari, R. & Sams, M., Sept 1978, In: Biological Psychology. 7, 1-2, p. 1-12 12 p.

## **Activities**

### **Creative Technologies**

Beloff, L. (Speaker) & Sams, M. (Contributor)  
30 Mar 2023

### **NATURALISTIC EXPERIMENTAL APPROACHES TO MECHANISMS OF HUMAN BEHAVIOR: RELEVANT FOR STUDYING ABSTRACT CONCEPTS?**

Sams, M. (Invited speaker)  
15 Mar 2021 → 17 Mar 2021

### **7 Experiences – Aalto Experience Summit to endorse Experience Research as a multidisciplinary research field**

Sams, M. (Chair)  
1 Sept 2020 → 2 Sept 2020

### **Emotions: in evolution, in body, in brain**

Sams, M. (Speaker)  
25 Feb 2019 → 26 Feb 2019

### **History of Emotions**

Sams, M. (Organiser)  
7 Nov 2018 → 8 Nov 2018

### **Ihmisaivojen toiminnan mittaaminen taidekokemuksen kuluessa**

Sams, M. (Speaker)  
6 Nov 2018

### **Your in-group influences how you see others**

Sams, M. (Speaker)  
21 Oct 2018

### **International Conference on Cognitive Science**

Sams, M. (Chair)  
18 Oct 2018 → 21 Oct 2018

### **Psychological Human Cognitive Neuroscience**

Sams, M. (Keynote speaker)  
18 Oct 2018 → 21 Oct 2018

### **Decoding Emotions from Brain Activity**

Sams, M. (Speaker)  
11 Oct 2018 → 12 Oct 2018

### **Examiner and opponent in Århus Universitet**

Sams, M. (Examiner)  
28 Jun 2018

### **Expert evaluator of the planned programme “Biomedical and Health Engineering“**

Sams, M. (Reviewer)  
10 Jun 2018

### **Hybrid Labs Symposium**

Sams, M. (Speaker)  
31 May 2018

**Making cognitive neuroscience more psychological.**

Sams, M. (Speaker)

1 Nov 2017

**Making cognitive neuroscience more psychological.**

Sams, M. (Speaker)

29 Oct 2017

**Experience Platform (Event)**

Sams, M. (Member)

1 Sept 2017 → ...

**Kohti psykologista neurotiedettä.**

Sams, M. (Speaker)

28 Apr 2017

**Evaluator for Assistant Professorship in University of Nottingham**

Sams, M. (Examiner)

2017

**Early years of N100 and Mismatch Negativity Response in human auditory neuroscience.**

Sams, M. (Speaker)

7 Nov 2016

**Neurocognition of shared reality.**

Sams, M. (Speaker)

31 Oct 2016

**Aarhus University**

Sams, M. (Visiting researcher)

1 Sept 2016 → 30 Nov 2016

**Homophilic Brains?**

Sams, M. (Speaker)

28 Apr 2016

**Evaluator for promotion to Full Professorhip, Harvard Medical School**

Sams, M. (Reviewer)

2016

**Attending and Neglecting People**

Sams, M. (Member)

16 May 2015 → 20 May 2015

**Neural duets: Shared understanding between two brains that are watching movies.**

Sams, M. (Speaker)

29 Jan 2015

**Evaluator for Associate Professorship in University of Oxford**

Sams, M. (Examiner)

2015

**Neural duets: Shared understanding between two brains that are watching movies**

Sams, M. (Speaker)

14 Nov 2014 → 15 Nov 2014

**Studying brain under naturalistic conditions**

Sams, M. (Speaker)

2 Jun 2014

**Uri Hasson**

Sams, M. (Host)

1 Jan 2014

**Aalto University (Organisational unit)**

Sams, M. (Chair)

2014 → 2017

**Aalto University (Organisational unit)**

Sams, M. (Chair)

2014 → 2017

**Cognition and Emotion (Journal)**

Sams, M. (Editor)

2014 → 2017

**Lyon Neuroscience Research Center**

Sams, M. (Visiting researcher)

2014

**Northwestern University**

Sams, M. (Visiting researcher)

2014

**PloS one (Journal)**

Sams, M. (Editor)

2014 → 2017

**The Neurosciences and Music V, Dijon, 29.5.-1.6.2014, France**

Sams, M. (Contributor)

2014

**Processing of emotional valence in the brain.**

Sams, M. (Speaker)

11 Jun 2013 → 15 Jun 2013

**Brain activity during listening to music and experiencing feelings: naturalistic approach.**

Sams, M. (Speaker)

29 Apr 2013

**Real-world (almost) caused brain activity.**

Sams, M. (Speaker)

22 Apr 2013

**Real-world (almost) caused brain activity.**

Sams, M. (Speaker)

18 Apr 2013

**Studying social brains in real world.**

Sams, M. (Speaker)  
12 Apr 2013

**Intersubjectivity in cognitive neuroscience: Experimentalist's point of view.**

Sams, M. (Speaker)  
5 Apr 2013

**Studying Emotions and music in vivoAALTO project**

Sams, M. (Speaker)  
8 Mar 2013

**Alin Coman**

Sams, M. (Host)  
1 Jan 2013

**2013, San Francisco, USA, 13.-16.4.2013**

Sams, M. (Contributor)  
2013

**Aalto University (Organisational unit)**

Sams, M. (Member)  
2013 → 2017

**Princeton University**

Sams, M. (Visiting researcher)  
2013

**Aalto University (Organisational unit)**

Sams, M. (Member)  
2012 → 2017

**Aalto University (Organisational unit)**

Sams, M. (Chair)  
2012 → 2015

**Doctoral thesis opponent at Aalto University**

Sams, M. (Opponent)  
2012

**University of Oxford**

Sams, M. (Visiting researcher)  
2012

**David McAlpine**

Sams, M. (Host)  
1 Jan 2011

**14th International Congress of ESCAP - European Society for Child and Adolescent Psychiatry, Finland**

Sams, M. (Contributor)  
2011

**34th ARO MidWinter Meeting, Baltimore, Maryland, USA, February 19-23, 2011, USA**  
Sams, M. (Contributor)  
2011

**34th ARO MidWinter Meeting, Baltimore, Maryland, USA, February 19-23, 2011, USA**  
Sams, M. (Contributor)  
2011

**Georgetown University**  
Sams, M. (Visiting researcher)  
2011

**Invited talk in seminar of the Leibniz Institute for Neurobiology, Center for Learning and Memory Research, June 7, 2011, Germany**  
Sams, M. (Contributor)  
2011

**Northwestern University**  
Sams, M. (Visiting researcher)  
2011

**Seminar in University Medical Center (CMU), University of Geneva, Switzerland**  
Sams, M. (Contributor)  
2011

**TheEmbodied Mind: Motion in Communication and Cognition Research, RWTH Aachen University, Germany, 8.-9.4.2011, Germany**  
Sams, M. (Contributor)  
2011

**Yhteistyötapaaminen Emotions in science and art, Portugal**  
Sams, M. (Contributor)  
2010

**2nd International Conference on Imaging in Neuroscience, Tromsø, 9.-13.9.2009, Norway**  
Sams, M. (Speaker)  
2009

**Brain-Learning-Education Network (External organisation)**  
Sams, M. (Chair)  
2009 → 2010

**Evaluator for promotion to Associate Adjunct Professor, UCSD, USA**  
Sams, M. (Reviewer)  
2009

**Frontiers in Human Neuroscience (Journal)**  
Sams, M. (Editor)  
2009 → 2017

**Harry Bronson**  
Sams, M. (Host)  
2009



**Jean-Luc Schwartz**

Sams, M. (Host)  
2009

**Kelly Spencer**

Sams, M. (Host)  
2009

**Learning Mind and Brain, Moscow, 16.-20.11.2009, Russia**

Sams, M. (Contributor)  
2009

**Marc Sato**

Sams, M. (Host)  
2009

**Marshall Dawson**

Sams, M. (Host)  
2009

**Nina Kraus**

Sams, M. (Host)  
2009

**RIKEN BSI Joint Workshop on Cognitive and Social Brain, Tokyo, 25.-26.5.2009, Japan**

Sams, M. (Speaker)  
2009

**Acoustics**

Sams, M. (Chair)  
2008

**Acoustics'08 kokous, Pariisi, 27.6.-5.7. 2008, France**

Sams, M. (Contributor)  
2008

**Alfred Kordelin Foundation (External organisation)**

Sams, M. (Member)  
2008 → 2014

**Christian Benoit Muistosymposium, Grenoble, 27.-31.10.2008, France**

Sams, M. (Speaker)  
2008

**Evaluator for promotion to associate professor, Harvard University, USA**

Sams, M. (Reviewer)  
2008

**Foreign Organisation**

Sams, M. (Visiting researcher)  
2008

**International Organization of Psychology annual meeting, Pietari, 11.-13.9.2008., Russia**

Sams, M. (Speaker)  
2008

**Lyon Neuroscience Research Center**

Sams, M. (Visiting researcher)  
2008

**HCSNet SummerFest**

Sams, M. (Member)  
2007

**HCSNet SummerFest '07, University of New South Wales, Sydney, Desember 3-7, 2007, Australia**

Sams, M. (Contributor)  
2007

**Kylliäinen, Anneli (University of Tampere) Finland**

Sams, M. (Examiner)  
2007

**Kylliäinen, Anneli (University of Tampere) Finland**

Sams, M. (Opponent)  
2007

**Northwestern University, USA, October 15, 2007, USA**

Sams, M. (Contributor)  
2007

**Anu Kujala (Helsinki University, Department of Psychology) Finland**

Sams, M. (Opponent)  
2006

**Brain Awareness week, Helsinki Collegium for Advanced Studies, March 16th, Finland**

Sams, M. (Speaker)  
2006

**Chris Davis**

Sams, M. (Host)  
2006

**Cross-modal interaction in natural and artificial cognitive systems (CINACS), Hamburg, September 28, 2006, Germany**

Sams, M. (Speaker)  
2006

**International Cerebral Palsy Conference, Oulu, February 2-5, 2006, Finland**

Sams, M. (Speaker)  
2006

**Josef Raucher**

Sams, M. (Host)  
2006

**PENS/Hertie Winter School 2006. Brain Basis of Social Interaction: From Concepts to Imaging, Kitzbuhel, Austria, December 10-17, 2006, Austria**

Sams, M. (Speaker)  
2006

**R. Holland Cheng**

Sams, M. (Host)  
2006

**University of Helsinki (External organisation)**

Sams, M. (Chair)  
2006 → 2017

**Vesa Talvitie (Helsinki University, Department of Psychology) Finland**

Sams, M. (Examiner)  
2006

**Yurii Alaxandrov**

Sams, M. (Host)  
2006

**Doctoral thesis opponent at University of Oxford, UK**

Sams, M. (Opponent)  
2005

**Evaluator for promotion of associate professor to full professor, Tilburg University, The Netherlands**

Sams, M. (Reviewer)  
2005

**Määttä, Sara (Kuopion yliopisto)**

Sams, M. (Examiner)  
2005

**8th International Congress on Spoken Language Processing, Jeju, South-Korea, October 4-8, 2004, South-Korea**

Sams, M. (Contributor)  
2004

**Evaluator for promotion for a position of associate professor in radiology: Giorgio Bonmassar, Harvard Medical School**

Sams, M. (Reviewer)  
2004

**Brain Research (Journal)**

Sams, M. (Editorial board member)  
2002

**Human Brain Mapping (Journal)**

Sams, M. (Editorial board member)  
2002

**Journal of Cognitive Neuroscience (Journal)**

Sams, M. (Editorial board member)  
2002

**Psychophysiology (Journal)**

Sams, M. (Editorial board member)  
2002

**Aalto University (Organisational unit)**

Sams, M. (Member)

2001 → 2017

**Yuri I. Alexandrov**

Sams, M. (Host)

2001

**Doctoral thesis opponent at University of Helsinki**

Sams, M. (Opponent)

2000

**Polysteekki (Journal)**

Sams, M. (Editorial board member)

2000 → 2008

**Dominic Massaro**

Sams, M. (Host)

1998

**Donald Schankweiler**

Sams, M. (Host)

1998

**Yuri I. Alexandrov**

Sams, M. (Host)

1998

**International Organization of Psychophysiology (External organisation)**

Sams, M. (Chair)

1997 → 2003

**Doctoral thesis opponent at University of Bergen**

Sams, M. (Opponent)

1996

**Tampere University (External organisation)**

Sams, M. (Member)

1996 → 1998

**TIEDE (Journal)**

Sams, M. (Editorial board member)

1996 → 2006

**Academy of Finland (External organisation)**

Sams, M. (Member)

1995 → 2002

**Brain Research Society of Finland (External organisation)**

Sams, M. (Member)

1995 → 2002

**Prizes**

**International Samuel Sutton prize of the Society for Psychophysiology for 'The best dissertation in psychophysiology in 1985–1986'.**

Sams, M. (Recipient), 1987

## **Projects**

### **Kasvokkain/Nummenmaa/TY**

Sams, M. (Principal investigator) & Volynets, S. (Project Member)

01/09/2016 → 31/12/2016

### **XTREME: Mixed Reality Environment for Immersive Experience of Art and Culture**

Sams, M. (Principal investigator)

01/01/2024 → 31/12/2026

### **MAGICS: National Infrastructure for human virtualization and remote presence**

Sams, M. (Principal investigator) & Ruotoistenmäki, A. (Project Member)

01/07/2020 → 30/11/2021

### **Neuroscience of intergroup processes**

Sams, M. (Principal investigator), Chang Arana, A. (Project Member), Himberg, T. (Project Member) & Ertas Yorulmaz, G. (Project Member)

01/09/2017 → 31/12/2021

### **-: XTREME WP 1 NBE**

Sams, M. (Principal investigator)

01/01/2024 → 31/12/2026

### **-: XTREME WP 2 NBE**

Sams, M. (Principal investigator) & Kloft, A. (Project Member)

01/01/2024 → 26/12/2031

### **-: XTREME WP 3 NBE**

Sams, M. (Principal investigator)

01/01/2024 → 31/12/2026

### **-: XTREME WP 4 NBE**

Sams, M. (Principal investigator)

01/01/2024 → 31/05/2026

### **-: XTREME WP 5 NBE**

Sams, M. (Principal investigator) & Kloft, A. (Project Member)

01/01/2024 → 31/12/2026

### **-: XTREME WP 6 NBE**

Sams, M. (Principal investigator)

01/01/2024 → 31/05/2026