

Curriculum Vitae

May 21, 2013

Daniel E. Callan Ph.D.

Senior Researcher

ATR Neural Information Analysis Laboratories

2-2-2 Hikaridai, Seika-cho, Soraku-gun,

Kyoto 619-0288 Japan

Phone: 81 774 95 1050

Email: dcallan@atr.jp

Webpage: <http://www.cns.atr.jp/~dcallan/index.html>

Date of Birth: April 21, 1969; United States of America

Research Interests

Perception, Action, and Learning: Multiple brain imaging methods (EEG, MEG, fMRI, MRI, DTI) and analysis techniques (Bayesian constrained current source localization, independent component analysis, decoding using machine learning/neural networks, connectivity analyses) are used to investigate, with high spatial and temporal precision, the neural processes related to perception, action, and learning with an emphasis on identifying activity predicting performance using a model based approach. Various techniques to facilitate performance by modulating activity in related neural networks are employed including the use of tDCS as well as by applying adaptive reinforcement learning of decoded neural feedback. This research has focused on speech and language tasks as well as complex perceptual motor aviation related tasks.

Neuroergonomics: The goal is to investigate how the brain works in complex interactive environments in order to be able to directly apply what we discover in the laboratory to the development of assistive technology that works in real world conditions. Through the use of an EEG brain computer interface (using constraints from fMRI), decoded neural correlates of various mental states (e.g. attention, readiness to learn, fatigue, workload, anxiety) are used to give feedback to facilitate learning and performance. Application of this research is relevant for operation of vehicles (e.g. planes and UAVs) as well as for rehabilitation following brain and/or bodily injury.

Education

Ph.D., Communicative Sciences and Disorders (1998) December
University of Wisconsin - Madison

MS, Experimental Psychology (1994) May
University of Wisconsin - Madison

BA, Psychology (1991) June
University of California - Riverside
Education Abroad Program to Japan
ICU International Christian University – Tokyo

Professional Experience

2013 April, 1 – Present

Senior Researcher; Center for Information and Neural Networks CiNET, National Institute of Information and Communications Technology NICT, Osaka University

2010 April, 1 – March 31 2013

Senior Researcher; ATR Neural Information Analysis Laboratories; Project Leader and Founder of Aviation Cerebral Experimental Sciences ACES

2009 November 1 - Present

Visiting Research Fellow; Collaboration with The Neurosciences Institute, San Diego, California

2006 April 1 - 2010 March 31

Senior Researcher; ATR Computational Neuroscience Laboratories

2005 April 1 - 2006 March 31

Researcher; ATR Computational Neuroscience Laboratories; and National Institute of Information and Communications Technology

2002 April 1 - 2005 March 31

Researcher; ATR Human Information Science Laboratories

2000 April 1 – 2002 March 31

Researcher; ATR Brain Activity Imaging Center

1999 January 17 - 2000 March 31

Visiting researcher; ATR Human Information Processing Laboratories

1998 June 1 - 1998 September 5

Intern researcher; ATR Human Information Processing Laboratories

1995 September 1 - 1998 December 17

Research Assistant for Ray Kent; Waisman Center, University of Wisconsin-Madison.

1996 September 1 - 1997 May 31

Maternal Child Health Interdisciplinary Leadership Education in Neurodevelopmental and Related Disabilities Program; Waisman Center, University of Wisconsin-Madison.

1996 July 21 - 1996 August 4

Oxford Summer School on Connectionist Modeling; Department of Experimental Psychology, Oxford University.

1993 September 1 - 1995 May 31

Research Assistant for Virginia Marchman; Department of Psychology, University of Wisconsin-Madison.

1992 September 1 - 1992 December 20

Teaching Assistant for Introductory Psychology; Department of Psychology, University of Wisconsin-Madison.

1990 September 20 - 1991 June 20

Research Assistant for Steven Clark; Department of Psychology, University of California, Riverside.

Teaching/Supervising Experience

Ana Claudia Silva de Souza

Supervision of PhD Research for Dissertation

Amy Hubbard

Supervision of PhD Research for Dissertation

Sungshin Kim

Supervision of PhD Research for Dissertation

Marion Dohen

Supervision of Post Doctoral Research

Tosif Ahamed

Supervision of Research

Mario Gamez

Research Engineer under my supervision at ATR Neural Information Analysis Laboratories; Member of the Aviation Cerebral Experimental Sciences Project.

Daniel Cassel

Research Engineer under my supervision at ATR Neural Information Analysis Laboratories; Member of the Aviation Cerebral Experimental Sciences Project.

Cengiz Terzibas

Research Engineer under my supervision at ATR Neural Information Analysis Laboratories; Member of the Aviation Cerebral Experimental Sciences Project.

Technical Experience

Extensive experience with functional magnetic resonance imaging fMRI, electroencephalography EEG, and magnetoencephalography MEG as well as some experience with transcranial magnetic stimulation TMS, transcranial direct current stimulation tDCS, and near infrared spectroscopy NIRS.

Software/Programming:

Matlab, SPM, FSL, EEGLAB, ICA, Curry, Brain Voyager, Free Surfer.

Analyses combining multiple brain imaging methods:

VBMEG Variational Bayesian Multimodal Encephalography.

Machine Learning Techniques for Decoding, Classifying, and Reconstruction:

Neural Networks, Support Vector Machine, Sparse Logistic Regression, Sparse Regression.

Awards/Grants

Editor's Award for Best Article of the Year (1999) for the Journal of Speech, Language, and Hearing Research.

Callan, D., Kent, R., Roy, N., & Tasko, S. (1999). Self-organizing map for the classification of normal and disordered female voices. *Journal of Speech Language and Hearing Research*, 42 (2), 355-366.

Kakenhi Young Investigator Grant (April 2004 – April 2006).

Kakenhi Scientific Research Grant (April 2009 – April 2012).

Scholar/Athlete Award (Cross-Country 1987) (Track 1988)

Professional Organizations

Society for Neuroscience

The Association for Aviation Psychology

Review Activities

National Science Foundation, Human Frontiers Science Program

Proceedings of the National Academy of Sciences, Journal of Neuroscience, Cerebral Cortex, Human Brain Mapping, NeuroImage, Journal of Cognitive Neuroscience, Cognitive Brain Research, Cortex, Neuropsychologia, Experimental Brain Research, PLoS ONE, Experimental Brain Research, Neuroreport, Neuroscience Letters, Neuroscience Research, European Journal of Neuroscience, BMC Neuroscience, BMC Neurology, Brain and Language, Journal of Speech Language and Hearing Research, Speech Communication, Journal of the Acoustical Society of America

Journal Publications

H-Index = 18

i10-Index = 21

Number of Citations = 1461

Published Articles

Callan, D., Terzibas, C., Cassel, D., Callan, A., Kawato, M., Sato, M. (2013). Differential activation of brain regions involved with error-feedback and imitation based motor simulation when observing self and an expert's actions in pilots and non-pilots on a complex glider landing task. *NeuroImage* 72, 55-68.

Silva de Souza, A. Yehia, H., Sato, M., Callan, D. (2013). Brain activity underlying auditory perceptual learning during short period training: simultaneous fMRI and EEG recording. *BMC Neuroscience* 14 (8), 1-13.

Callan, A., Callan, D., Ando, H. (2013). Neural correlates of sound externalization. *NeuroImage* 66, 22-27.

Hubbard, A., McNealy, K., Scott, A., Callan, D., Bookheimer, S., Dapretto, M. (2012). Altered integration of speech and gesture in children with autism spectrum disorders. *Brain and Behavior* 2 (5), 606-619.

Callan, D., Gamez, M., Cassel, D., Terzibas, C., Callan, A., Kawato, M., Sato, M. (2012). Dynamic visuomotor transformation involved with remote flying of a plane utilizes the 'Mirror Neuron' system. *PLoS ONE* 7(4), 1-14.

Callan, D., Callan, A., Gamez, M., Sato, M., Kawato, M. (2010). Premotor cortex mediates perceptual performance. *Neuroimage* 51, 844-858.

Callan, D., Schweighofer, N. (2010). Neural correlate of the spacing effect in explicit verbal semantic encoding support the deficient-processing theory. *Human Brain Mapping* 31, 645-659.

Callan, A., Osu, R., Yamagishi, Y., Callan, D., Inoue N. (2009). Neural correlates of resolving uncertainty in driver's decision making. *Human Brain Mapping* 30 (9), 2804-2812.

Hubbard, A., Wilson, S. M., Callan, D., Dapretto, M. (2009). Giving speech a hand: Gestures modulates activity in auditory cortex during speech perception. *Human Brain Mapping* 30(3), 1028-1037.

Callan, D., Schweighofer, N. (2008). Positive and negative modulation of word learning by reward anticipation. *Human Brain Mapping* 29(2), 237-249.

Yamagishi, N., Callan, D., Anderson, S. J., Kawato, M. (2008). Attentional changes in pre-stimulus oscillatory activity within early visual cortex are predictive of human visual performance. *Brain Research* 1197, 115-122.

Callan, D., Kawato, M., Parsons, L., Turner, R. (2007). Speech and song: The role of the cerebellum. *The Cerebellum* 6, 321-327.

Callan, D., Tsytsarev, V., Hanakawa, T., Callan, A., Katsuhara, M., Fukuyama, H., Turner, R. (2006). Song and speech: Brain regions involved with perception and covert production. *NeuroImage* 31, 1327-1342.

Callan, A., Callan, D., Tajima, K., Akahane-Yamada, R., (2006). Neural processes involved with native and nonnative perceptual identification of vowel duration and consonant speech contrasts. *NeuroReport* 17(12), 1353-1357.

Callan, A., Callan, D., Masaki, S. (2005). When meaningless symbols become letters: Neural activity change in learning new phonograms. *NeuroImage* 28, 553-562.

Yamagishi, N., Goda, N., Callan, D., Anderson, S. J., Kawato, M. (2005). Attentional shifts towards an expected visual target alter the level of alpha-band oscillatory activity in the human calcarine cortex. *Cognitive Brain Research* 25, 799-809.

Callan, D., Jones, J., Callan, A., Akahane-Yamada, R. (2004). Phonetic perceptual identification by native- and second-language speakers differentially activates brain regions involved with acoustic phonetic processing and those involved with articulatory-auditory/orosensory internal models. *NeuroImage* 22, 1182-1194.

Munhall, K. G., Jones, J., Callan, D., Kuratate, T. Vatikiotis-Bateson, E. (2004). Visual prosody and speech intelligibility: Head movement improves auditory speech perception. *Psychological Science* 15, 133-137.

Callan, D., Jones, J., Munhall, K., Kroos, C., Callan, A., Vatikiotis-Bateson, E. (2004). Multisensory-integration sites identified by perception of spatial wavelet filtered visual speech gesture information. *Journal of Cognitive Neuroscience* 16, 805-816.

Callan, D., Jones, J., Munhall, K., Callan, A., Kroos, C., Vatikiotis-Bateson, E. (2003). Neural processes underlying perceptual enhancement by visual speech gestures. *NeuroReport* 14, 2213-2218.

Callan, D., Tajima, K., Callan, A., Kubo, R., Masaki, S., Akahane-Yamada, R. (2003). Learning-induced neural plasticity associated with improved identification performance after training of a difficult second-language phonetic contrast. *NeuroImage* 19, 113-124.

Jones, J. Callan, D. (2003). Brain activity during audiovisual speech perception: An fMRI study of the McGurk effect. *NeuroReport* 14, 1129-1133.

Yamagishi, N., Callan, D., Goda, N., Anderson, S., Yoshida, Y., Kawato, M. (2003). Attentional modulation of oscillatory activity in human visual cortex. *NeuroImage* 20, 98-113.

Callan, D., Callan, A., Kroos, C., Vatikiotis-Bateson, E. (2001). Multimodal Contribution to Speech Perception Revealed by Independent Component Analysis: A Single-Sweep EEG Case Study. *Cognitive Brain Research* 10, 349-353.

Callan, D., Callan, A., Honda, K., Masaki, S. (2000). Single-sweep EEG analysis of neural processes underlying perception and production of vowels. *Cognitive Brain Research* 10, 173-176.

Callan, D., Kent, R., Guenther, F., Vorperian, H. (2000). An Auditory-Feedback-Based Neural Network Model of Speech Production that is robust to Developmental Changes in the Size and Shape of the Articulatory System. *Journal of Speech Language and Hearing Research* 43, 721-736.

Callan, D., Kent, R., Roy, N., Tasko, S. (1999). Self-organizing map for the classification of normal and disordered female voices. *Journal of Speech Language and Hearing Research* 42 (2), 355-366.

Callan, D., Lasky, R., Fowler, C. (1999). Neural Networks Applied to Retrocochlear Diagnosis. *Journal of Speech Language and Hearing Research* 42 (2), 287-299.

Clark, S., Hori, A., Callan, D. (1993). Forced-choice associative recognition: Implications for global-memory models. *Journal-of-Experimental-Psychology-Learning,-Memory,-and-Cognition* 19(4) 871-881.

Invited and Reviewed Book Chapters

Callan, D., Manto, M. (2012). Cerebellar control of speech and song. In Manto, M., Gruol, D., Schmahmann, J., Koibuchi, N., Rossi, F. (Eds.) *Handbook of the Cerebellum and Cerebellar Disorders*. Springer.

Callan, D. (2006). Neural processes underlying speech production of native and non-native phonetic contrasts. In Harrington & Tabain (Eds.) *Speech Production: Models, Phonetic Processes, and Techniques*. New York, Psychology Press, 55-67.

Callan, D., Kent, R., Roy, N., Tasko, S. (2000). The use of self-organizing maps for the classification of voice disorders. In R. D. Kent and M. J. Ball (Eds.) *The Handbook of Voice Quality Measurement*, Singular Publishing Group, San Diego, 103-116.

Dissertation/Technical Report

Callan, D. (1998). *An Auditory-Feedback-Based Model of Speech Production in the Developing Child*. Dissertation. University of Wisconsin - Madison.

Callan, D., Honda, K., Masaki, S., Kent, R., Guenther, F., Vorperian, H. (2001). Robustness of an Auditory-to-Articulatory Mapping for Vowel Production by the DIVA Model to Subsequent Developmental Changes in Vocal Tract Dimensions. ATR-HIP Technical Report TR-H-309 (2001.2.7).

Invited Scientific Presentations

Callan, D. (2013). Aviation Cerebral Experimental Sciences (ACES): Neuroergonomic approach to investigating of perceptual, motor, and cognitive processes. 10th Annual World Congress of the Society for Brain Mapping & Therapeutics. May 12-14. Baltimore, MD, United States.

Callan, D. (2012). Aviation cerebral experimental sciences ACES. The Swartz Center for Computational Neuroscience UCSD. August 10, San Diego, United States.

Callan, D. (2011). Aviation cerebral experimental sciences ACES. NASA Ames Research Center, Human – System Integration Division. June 7, 2011. Mountain View, United States.

Callan, D. (2011). Aviation cerebral experimental sciences ACES. The Neurosciences Institute. June 2, San Diego, United States.

Callan, D. (2010). Multimodal brain imaging of complex perceptual motor skills. Workshop on Brain Measurements. Universidade Fedreal de Minas Gerais. August 16, Belo Horizonte, Brazil.

Callan, D. (2009). Investigation of perceptual motor neural processing utilizing complex real-world tasks: Flight simulation. The Neurosciences Institute. November 19, 2009. San Diego, United States.

Callan, D. (2008). Brain regions involved with speech production mediate phonetic perceptual identification performance. Acoustical Society of Japan Psychological Phys. Acoustics Meeting, December 12-13, Kuratsu, Japan.

Callan, D. Jones, J. (2005). Brain regions differentially involved with multisensory audio visual and visual only speech gesture information. ATR Symposium on the Cross-modal Processing of Faces and Voices, January 17-19, 2005, Kyoto, Japan.

Callan, D. (2004). Neural processes involved with perception and learning of difficult second-language phonetic contrasts. Proceedings of The 28th International Congress on Psychology. August 8-13. Beijing, China.

Callan, D. (2004). Connectivity between functionally defined regions of interest: Determined by fMRI constrained MEG. CNS-BAIC Joint Seminar on "Non-invasive brain activity measuring methods "fMRI" and "MEG", June 10-11, Kyoto, Japan.

Callan, D. (2004). Cortical and cerebellar processes identified by fMRI involved with perception and learning of difficult phonetic contrasts. Proceedings of The 18th International Congress on Acoustics. April 4-9, p. 3559-3562. Kyoto, Japan.

Scientific Presentations and Proceedings Publications

Callan, D., Terzibas, C., Cassel, D., Callan, A., Kawato, M., Sato, M. (2012). Differential brain activation during observation of self and other's action in pilots and non-pilots on a complex landing task. Society for Neuroscience 42nd Annual Meeting. Oct 13-17, USA. New Orleans, Louisiana, United States.

Yoshioka, T., Yamashita, O., Takeda, Y., Callan, D., Sato, M. (2012). Multivariate analysis of space-time-frequency data extracted from brain activity. Neuroscience, Nagoya, Japan.

Callan, D., Gamez, M., Cassel, D., Kawato, M., Sato, M. (2011). Goal directed modulation of visual areas predicts direction of movement during a complex airplane piloting task. Neuroscience 2011. Yokohama, Japan.

Callan, D., Gamez, M., Cassel, D., Kawato, M., Sato, M. (2011). Brain Imaging Airplane Piloting Performance. 8th Annual World Congress of IBMISPS on Brain, Spinal cord Mapping and Image Guided Therapy. San Francisco, United States.

Goldhahn, D., Callan, D., Lohmann, G., Turner, R. (2011). Song and speech - perception and covert production: New findings using multi-voxel pattern analysis. Poster presented at 19th Scientific Meeting & Exhibition of the International Society for Magnetic Resonance in Medicine (ISMRM), Montreal, Quebec City, Canada.

Goldhahn, D., Callan, D., Stelzer, J., Lohmann, G., Turner, R. (2011). Perception and covert production of song and speech: New findings using multi-voxel pattern analysis. Poster presented at the 17th Annual Meeting of the Organization on Human Brain Mapping, Quebec City, Canada.

Callan, D., Gamez, M., Cassel, D., Kawato, M., Sato, M. (2011). Goal directed modulation of visual areas predicts direction of movement during a complex airplane piloting task. The 34th Annual Meeting of the Japan Neuroscience Society, Sept 14-17. Yokohama, Japan.

Yoshioka, T., Yamashita, O., Takeda, Y., Callan, D., Sato, M. (2011). Feature selection for brain activity data on cortex-time-frequency space. The 34th Annual Meeting of the Japan Neuroscience Society, Sept 14-17. Yokohama, Japan.

Callan, D., Schweighofer, N., Kawato, M., Sato, M. (2010). The cerebellum and premotor cortex are differentially implicated in error-feedback and exemplar based

training respectively on a temporal judgment task. Society for Neuroscience 40th Annual Meeting. Nov 13-17, USA. San Diego, California, United States.

Patel, A., Callan, D. (2010). Song-sensitive and song-selective regions of the human brain. Neurobiology of Language Conference. Nov 10-12, San Diego, California, United States.

Callan, D. (2010). Brain regions differentially involved with multisensory and visual only speech gesture information. Proceedings of the Audio Visual Speech Processing Conference. Hakone, Japan.

Callan, D., Gamez, M., Kawato, M., Sato, M. (2010). Right premotor cortex mediates representational transform for remote over egocentric perceptual-motor control of simulated Red Bull air race. The 33rd Annual Meeting of the Japan Neuroscience Society, Sept 2-4. Kobe, Japan.

Callan, D., Gamez, M., Hayashi, R., Callan, A., Sato, M., Kawato, M. (2010). Differential brain activity for egocentric and allocentric control of simulated Red Bull Air Race. 16th Annual International Meeting of the Organization of Human Brain Mapping. June. Barcelona, Spain.

Dohen, M., Loevenbruck, H., Callan, D., Baci, M., Pichat, C., Hill, H. (2010). Multimodal perception of whispered and voiced prosody in French: A preliminary fMRI study. 17th Annual Cognitive Neuroscience Society Meeting, Montreal, Canada.

Callan, A., Callan, D., Ando, M. (2010). Neural correlates of sound externalization and reverberation processing. 16th Annual International Meeting of the Organization of Human Brain Mapping. June. Barcelona, Spain.

Callan, D., Schweighofer, N., Sato, M., Kawato, M. (2009). Error feedback learning and exemplar learning of a temporal judgment task differentially activate cerebellum and premotor cortex. The 32nd Annual Meeting of the Japan Neuroscience Society, Sept 16-18. Nagoya, Japan.

Callan, D., Schweighofer, N., Sato, M., Kawato, M. (2009). Brain regions involved with internal temporal duration judgment. 15th Annual International Meeting of the Organization of Human Brain Mapping. June 18-23. San Francisco, United States.

Hubbard, McNealy, K. Scott, A., Callan, D., Depretto, M. (2009) Disordered neural processing of co-speech beat gesture in children with autism spectrum disorder. 15th Annual International Meeting of the Organization of Human Brain Mapping. June 18-23. San Francisco, United States.

Callan, D., Callan, A., Sato, M., Kawato, M. (2008). Speech perception performance is mediated by brain regions involved with speech production. Proceedings: Xth International Conference on Cognitive Neuroscience. p 435. Bodrum, Turkey.

Souza, A. Yehia, H., Callan, D. (2008). Brain activity underlying attention related auditory perceptual learning. Proceedings: Xth International Conference on Cognitive Neuroscience. Bodrum, Turkey.

Callan, D. Kawato, M. (2008). Mirror neuron system mediates perceptual performance. The 31st Annual Meeting of the Japan Neuroscience Society. Tokyo, Japan.

Hubbard, A., Wilson, S., Callan, D., Dapretto, M. (2007) Giving speech a hand: fMRI evidence of beat gesture/speech integration in non-primary auditory cortex. Talk presented in an invited symposium at the annual conference of the International Society of Gesture Studies. Chicago, United States.

Hubbard, A., Wilson, S., Callan, D., Dapretto, M. (2007). Speech-accompanying beat gesture modulates activity in auditory cortex. Talk presented in an invited symposium at the annual convention of the Jean Piaget Society. Amsterdam, Netherlands.

Hubbard, A., Wilson, S., Callan, D., Dapretto, M. (2007). Differences and similarities in processing speech-accompanying beat gesture in native and second-language English speakers. Talk presented at the 37th annual meeting of the Society for Neuroscience. San Diego, United States.

Callan, D., Yamashita, O., Tajima, K., Kawato, M. (2006). Classification of single-trial phonetic identification performance Using pre-stimulus MEG activity. Presented at the 12th International Conference on Functional Mapping of the Human Brain, June , 2006. Florence, Italy.

Callan, D., Yamashita, O., Yamagishi, N., Sato, M., Kawato, M. (2006). Brain regions involved with speech motor control mediate phonetic Perceptual identification performance to a greater extent than brain regions involved with auditory processing. International Seminar on Speech Production. Ubatuba, Brazil.

Callan, D., Yamashita, O., (2006). Classification of Single-Trial Pre-Stimulus Task-Related Brain Activity Using Independent Component Analysis. Winter Workshop on Brain and Mind. Rusutsu, Japan.

Hubbard, A., Callan, D., Depretto, M. (2006). How the brain sees what we say: A functional MRI study of speech and beat gesture. American Association of Applied Linguistics. Montreal, Canada.

Hubbard, A., Callan, D., Depretto, M. (2006). Do you see what I'm saying? Beat gestures during speech perception modulate activity in primary and secondary auditory cortices.. Presented at the 12th International Conference on Functional Mapping of the Human Brain, June, 2006. Florence, Italy.

Callan, D. (2005). Internal models differentially implicated in audiovisual perception of native vowel contrasts. Proceedings of the Audio-Visual Speech Processing International Conference, (Vatikiotis-Bateson, E., Burnham, D., Fels, S. Eds.) pp 53-54. Vancouver Island, Canada.

Callan, D., Schweighofer, N. (2004). Neural processes underlying the effects of rewards on learning of semantic declarative knowledge. Presented at the 10th International Conference on Functional Mapping of the Human Brain, June 13-17, 2004, Budapest, Hungary.

Callan, D., Jones, J., Callan, A., Akahane-Yamada, R. (2003). Neural processes underlying production of a difficult non-native phonetic contrast. Presented at the 6th International Seminar on Speech Production. Macquarie Centre for Cognitive Science. Sydney Australia.

Callan, D., Jones, J., Callan, A., Akahane-Yamada, R. (2003). Neural processes underlying native and second-language phonetic perception. Presented at the 9th International Conference on Functional Mapping of the Human Brain, June 18-22, 2003. Available on CD-Rom in NeuroImage, Vol. 19, No. 2. New York, United States.

Jones, J., Callan, D. (2003). Activation of visual cortex during perception of incongruent auditory and visual speech signals. Presented at the 9th International Conference on Functional Mapping of the Human Brain, June 18-22, 2003. Available on CD-Rom in NeuroImage, Vol. 19, No. 2. New York, United States.

Callan, D., Akahane-Yamada, R. (2003). Cerebro-cerebellar connectivity implicated with perceptual learning of the English /r-l/ phonetic contrast by native Japanese speakers. Proceedings of the XVth International Congress of Phonetic Sciences. 15th ICPhS Organizing Committee. Barcelona, Spain.

Jones, J., Callan, D. (2003). Brain activation when acoustic information is delayed during an audiovisual speech task. Proceedings of the XVth International Congress of Phonetic Sciences. 15th ICPhS Organizing Committee. Barcelona, Spain.

Jones, J., Callan, D. (2003). Integrating audiovisual speech information: an fMRI study. Presented at Fourth Annual Multisensory Research Conference, Hamilton, Canada.

Callan, D., Callan, A., Akahane-Yamada, R. (2003). Neural processes involved with perception of a difficult nonnative phonetic contrast. Proceeding of the Spring Meeting of the Acoustical Society of Japan, March 18-20, p. 479-480. Sendai, Japan.

Callan, D., Callan, A., Kubo, R., Masaki, S. (2002). Learning-induced neural plasticity associated with acquisition of a difficult second-language phonetic contrast. Poster presented at the First Pan-American/Iberian Meeting on Acoustics. Dec 2-6. Cancun, Mexico.

Callan, D., Tajima, K., Callan, A., Kubo, R., Masaki, S., Akahane-Yamada, R. (2002). Neural Plasticity of Perceptual-Motor Mappings Induced by Learning of a Difficult Second-Language Phonetic Contrast. Presented at the 8th International Conference on Functional Mapping of the Human Brain, June 2-6, 2002, Available on CD-Rom in NeuroImage, Vol. 16, No. 2. Sendai, Japan.

Callan, D., Jones, J., Munhall, K., Kroos, C., Callan, A., Vatikiotis-Bateson, E. (2002). Mirror Neuron System Activity and Audiovisual Speech Perception. Presented at

the 8th International Conference on Functional Mapping of the Human Brain, June 2-6, 2002, Available on CD-Rom in NeuroImage, Vol. 16, No. 2. Sendai, Japan.

Yamagishi, N., Goda, N., Callan, D., Anderson, S., Yoshida, Y., Kawato, M. (2002). Magnetoencephalographic (MEG) evidence for preparatory attention activity within the human primary visual cortex. Presented at the 8th International Conference on Functional Mapping of the Human Brain, June 2-6, 2002. Available on CD-Rom in NeuroImage, Vol. 16, No. 2. Sendai, Japan.

Cook, N., Callan, D., Callan, A. (2002). Frontal Areas Involved in the Perception of Harmony. Presented at the 8th International Conference on Functional Mapping of the Human Brain, June 2-6, 2002. Available on CD-Rom in NeuroImage, Vol. 16, No. 2. Sendai, Japan.

Jones, J., Callan, D., Munhall, K., Masuda, S., Callan, A., Vatikiotis-Bateson, E. (2002). Neural networks involved in learning novel vocal tract configurations. Presented at the 8th International Conference on Functional Mapping of the Human Brain, June 2-6, 2002. Available on CD-Rom in NeuroImage, Vol. 16, No. 2. Sendai, Japan.

Shimada, Y., Fujimoto, I., Callan, A., Callan, D., Masaki, S. (2002). Period of stabilization of EPI signal. Presented at the 8th International Conference on Functional Mapping of the Human Brain, June 2-6, 2002. Available on CD-Rom in NeuroImage, Vol. 16, No. 2. Sendai, Japan.

Callan, D., Callan, A., Bateson, E. (2001). Neural areas underlying the processing of visual speech information under conditions of degraded auditory information. In Massaro, D., Light, J., & Geraci, K. (Eds.) Proceedings of AVSP 2001: Auditory-Visual Speech Processing. Perceptual Science Laboratory, Santa Cruz, 45-49. Aalborg, Denmark.

Callan, D., Tajima, K., Callan, A., Akahane-Yamada, R., Masaki, S. (2001). Neural Processes Underlying Perceptual Learning of a Difficult Second Language Phonetic Contrast. Proceedings of the 7th European Conference on Speech Communication and Technology. September 3-7, p. 145-148. Aalborg, Denmark.

Callan, D., Akahane-Yamada, R., Tajima, K., Callan, A., Kubo, R., Masaki, S. (2001). Neural plasticity revealed in speech areas bilaterally during perceptual learning of the English /r-l/ contrast by native Japanese speakers. Trans, Tech. comm. Psychol. Physiol. Acoust., The Acoustical Society of Japan, Vol. 31, No. 7, H-2001-71, 535-541. Tokyo, Japan.

Callan, D., Tajima, K., Callan, A., Akahane-Yamada, R., Masaki, S., Masuda, S. (2001). Neural Processes Underlying Speech Production and Perception of a Learned Non-native Phonetic Contrast. Proceedings of the 4th International Speech Motor Conference: Speech Motor Control in Normal and Disordered Speech. June 13-16, p. 36-39. Nijmegen, Netherlands.

Callan, D., Tajima, K., Callan, A., Akahane-Yamada, R., Masaki, S. (2001). Neural reorganization associated with perceptual learning of the English /r-/l/ phonetic

contrast by native Japanese speakers. Proceedings of the 7th Annual Meeting of the Organization for Human Brain Mapping, June 10-14, p S512. Brighton, United Kingdom.

Yamagishi, N., Goda, N., Anderson, S., Callan, D., Kawato, M. (2001). Magnetoencephalographic (MEG) evidence for attentional modulation of activity within the human primary visual cortex. *Investigative Ophthalmology & Visual Science*, 42 (Suppl. 4), S945.

Yamagishi, N., Goda, N., Anderson, S., Callan, D., Kawato, M. (2001). Effects of spatial attention on early visual processing – MEG (magnetoencephalography) study. *Vision*, 13, p69.

Callan, D., Callan, A., Kroos, C., Vatikiotis-Bateson, E. (2000). Neural processes underlying perception of audio-visual speech production. Proceedings of the 5th Seminar on Speech Production: Models and Data. May 1st to 4th, 2000, 273-276. Kloster Seeon, Bavaria, Germany.

Callan, D., Callan, A., Masaki, S., Honda, K. (1999). Neural activation patterns evoked by vowels under preparing to speak and listening only conditions. In Proceedings of the Fall 1999 Meeting of the Acoustical Society of Japan, 337-338. Tokyo, Japan.

Callan, D., Callan, A., Masaki, S., Honda, K. (1999). Scalp recorded electrical brain activity underlying lexical processing. Technical Report of IEICE, TL99-16, 25-32.

Callan, D., Kent, R., Guenther, F., Vorperian, H. (1998). An auditory-feedback-based model of speech production in the developing child. Poster presented at the 136th Meeting of the Acoustical Society of America. JASA 104 (3 pt. 2), 1854 (October 12-16). Norfolk, Virginia, United States.

Callan, D., Kent, R., Guenther, F., Vorperian, H. (1998). A neural network model of vowel production development using auditory feedback as a training signal. Presented at the Hokkaido Workshop on Speech Production. August 3-5. Kutchan, Japan.

Callan, D., Kent, R., Guenther, F., Vorperian, H. (1997). A dynamic neural network model of speech production in the developing child. Poster presented at the 134th Meeting of the Acoustical Society of America. December. San Diego, California, United States.

Roy, N., Tasko, S., Callan, D. (1997). Documenting outcomes of voice treatment: Which acoustic measures matter? Poster presented at the American Speech-Language-Hearing Association Annual Convention. November. Boston, Massachusetts, United States.

Callan, D., Kent, R., Roy, N., Tasko, S. (1996). Self-organizing map for the classification of normal and disordered female voices. Poster presented at the Third Joint Meeting of the Acoustical Society of America and Acoustical Society of Japan. December. Honolulu, United States.

Lasky, R., Maier, M., Callan, D., van Drongelen, W., Luck, M., Laughlin, N., Hecox, K. (1999). Source localization of auditory evoked event related potentials in the rhesus monkey. Poster presented at the Midwinter Meeting of the Association for Research in Otolaryngology, February 13-18.

Marchman, V., Callan, D. (1995). Similarity effects and regularization in English speakers and connectionist networks. Poster presented at the Annual Meeting of the American Psychological Society (APS), June-July. New York, United States.

Marchman, V., Callan, D. (1995). Multiple determinants of the productive use of the regular past tense suffix. Proceedings of the 17th Annual Cognitive Science Society, 224-229, Hillsdale, N.J: Erlbaum.

Clark, S., Hori, A., Callan, D. (1992). Forced-choice associative recognition: Implications for global-memory models. Poster presented at the Meeting of the Psychonomics Society. November. Saint Louis, United States.

Clark, S., Callan, D. (1991). Forced-choice associative recognition: Implications for memory models. Poster presented at the Mathematical Psychology Meeting. July. New Orleans, United States.