

## 業績目録（平井真洋）

自治医科大学医学部 先端医療技術開発センター 脳機能研究部門

a. 外国語による論文・著書（分担執筆を含む）

※39. **Hirai, M.** & Kanakogi, Y. (in press). Communicative Hand-Waving Gestures Facilitate Object Learning in Preverbal Infants. *Developmental Science*.

38. Sakurada, T., **Hirai, M.**, Watanabe, E. (in press). Individual optimal attentional strategy during implicit motor learning boosts frontoparietal neural processing efficiency: A functional near-infrared spectroscopy study. *Brain and Behavior*.

※37. **Hirai, M.**, Muramatsu, Y., Nakamura, M., (in press). Role of the embodied cognition process in perspective-taking ability during childhood, *Child Development*.

36. **Hirai, M.**, Sakurada T., Muramatsu S (2018). Face-to-trait inferences in patients with Parkinson's disease. *Journal of Clinical and Experimental Neuropsychology*, 10, 1-9.

35. Ikeda, T., **Hirai, M.**, Sakurada, T., Monden, Y., Tokuda, T., Nagashima, M., Shimoizumi, H., Dan, I., Yamagata, T., (2018). Atypical neural modulation in the right prefrontal cortex in autism spectrum disorder revealed by functional near-infrared spectroscopy, *Neurophotonics*, 5 (3), 035008.  
<https://doi.org/10.1117/1.NPh.5.3.035008>

34. Ikeda, T, Tokuda, T, Monden, Y, **Hirai, M.**, Mizushima, S, Nagashima, M, Kyutoku, Y, Tanighichi, T, Shimoizumi, H, Dan, I, Yamagata, T, (2018). Hypoactivation of the Right Prefrontal Cortex Underlying Motor Related Inhibitory Deficits in Children with Autism Spectrum Disorder. *Japanese Psychological Research*, 60 (4), 251-264.

33. Sakurada, T., Knoblich, G., Sebanz, N., Muramatsu, S, **Hirai, M.** (2018). Probing links between action perception and action production in Parkinson's disease using Fitts' law. *Neuropsychologia*, 111, 201-208

32. **Hirai, M.**, Muramatsu, Y., Mizuno, S., Kurahashi, N., Kurahashi, H., Nakamura, M. (2017). Preserved search asymmetry in the detection of fearful faces among neutral faces in individuals with Williams syndrome revealed by measurement of both manual responses and eye tracking, *Journal of Neurodevelopmental Disorders*. 9:8  
<https://doi.org/10.1186/s11689-017-9190-0>

31. Sakurada, T., Nakajima, T., Morita, M., **Hirai, M.**, & Watanabe, E. (2017). Improved motor performance in patients with acute stroke using the optimal individual attentional strategy. *Scientific Reports*, 7, 40592.

※30. **Hirai, M.**, Muramatsu, Y., Mizuno, S., Kurahashi, N., Kurahashi, H., & Nakamura, M. (2016). Typical visual search performance and atypical gaze behaviors in response to faces in Williams syndrome. *Journal of Neurodevelopmental Disorders*,8:38.  
<https://doi.org/10.1186/s11689-016-9172-7>

29. **Hirai, M.**, Muramatsu, Y., Mizuno, S., Kurahashi, N., Kurahashi, H., & Nakamura, M. (2016). Intact attentional orienting toward inverted faces revealed by both manual responses and eye-movement measurement in individuals with Williams syndrome. *Journal of Intellectual Disability Research*, 60 (10), 969-981.

28. Watanabe, E., Satoh, M., Konno, T., **Hirai, M.**, & Yamaguchi, T. (2016). The Trans-Visible Navigator: a see-through neuronavigation system using augmented reality. *World Neurosurgery*, 87, 399-405.

27. Sakurada, T., **Hirai, M.**, & Watanabe, E. (2016). Optimization of a motor learning attention-directing strategy based on an individual's motor imagery ability. *Experimental Brain Research*, 234 (1), 301-311.

26. Hashimoto, N., Toyomaki, A., **Hirai, M.**, Miyamoto, T., Narita, H., Okubo, R., & Kusumi, I. (2014). Absent activation in MPFC and TPJ but not STS during the perception of biological motion in schizophrenia: A functional MRI study. *Neuropsychiatric Disease and Treatment*, 10, 2221–2230.

25. **Hirai, M.**, Gunji, A., Inoue, Y., Kita, Y., Hayashi, T., Nishimaki, K., Nakamura, M., Kakigi, R., & Inagaki, M. (2014). Differential electrophysiological responses to biological motion in children and adults with and without autism spectrum disorders. *Research in Autism Spectrum Disorders*, 8 (12), 1623-1634.

※24. **Hirai, M.**, Muramatsu, Y., Mizuno, S., Kurahashi, N., Kurahashi, H., & Nakamura, M. (2013). Developmental changes in mental rotation ability and visual perspective-taking in children and adults with Williams Syndrome. *Frontiers in Human Neuroscience*, 11;7:856. doi: 10.3389/fnhum.2013.00856.

23. Nakamura, M., Watanabe, S., Inagaki, M., **Hirai, M.**, Miki, K., Honda, Y., & Kakigi, R. (2013). Electrophysiological study of face inversion effects in Williams syndrome. *Brain Development*, 35 (4),323-330.

22. **Hirai, M.**, Watanabe, S., Honda, Y., & Kakigi, R. (2013). Developmental changes in point-light walker processing during childhood: a two-year follow-up ERP study. *Developmental Cognitive Neuroscience*, 5, 51-62.

※21. **Hirai, M.**, Chang, D. H. F., Saunders, D. R., & Troje, N. F. (2011). Body configuration modulates the usage of local cues to direction in biological motion perception. *Psychological Science*, 22 (12), 1543-1549.

20. **Hirai, M.**, Saunders, D.R., & Troje, N.F. (2011). Allocation of attention to biological motion: local motion dominates global shape. *Journal of Vision*, 11(3), 4. doi: 10.1167/11.3.4.

19. Miki, K., Watanabe, S., Teruya, M., Takeshima, Y., Urakawa, T., **Hirai, M.**, Honda, Y., & Kakigi, R. (2011). The development of the perception of facial emotional change examined using ERPs. *Clinical Neurophysiology*, 122 (3), 530-538.

18. Fukushima, H., Hirata, S., Ueno, A., Matsuda, G., Fuwa, K., Sugama, K., Kusunoki, K., **Hirai, M.**, Hiraki, K, Tomonaga, M., & Hasegawa, T. (2010). Neural correlates of

face and object perception in an awake chimpanzee (*Pan troglodytes*) examined by scalp-surface event-related potentials. *PLoS One*, 5 (10), e13366.

17. Watanabe, M., **Hirai, M.**, Marino, R.A., & Cameron, I.G. (2010). Occipital-parietal network prepares reflexive saccades. *Journal of Neuroscience*, 30 (42), 13917-13918.

16. **Hirai, M.**, Nakamura, M., Kaneoke, Y., & Kakigi, R. (2009). Intact point-light walker processing in Williams syndrome: a magnetoencephalography study. *NeuroReport*, 20 (3), 267-272.

15. **Hirai, M.**, Watanabe, S., Honda, Y., & Kakigi, R. (2009). Developmental changes in point-light walker processing during childhood and adolescence: an event-related potential study. *Neuroscience*, 161 (1), 311-325.

14. **Hirai, M.**, & Kakigi, R. (2009). Differential orientation effect in the neural response to interacting biological motion of two agents. *BMC Neuroscience*, 10, 39.

13. Kaneoke, Y., Urakawa, T., **Hirai, M.**, Kakigi, R., & Murakami, I. (2009). Neural basis of stable perception of an ambiguous apparent motion stimulus. *Neuroscience*, 159 (1), 150-160.

12. **Hirai, M.**, & Kakigi, R. (2008). Differential cortical processing of local and global motion information in biological motion: an event-related potential study. *Journal of Vision*, 8 (16), 2.1-17.

11. **Hirai, M.**, Kaneoke, Y., Nakata, H., & Kakigi, R. (2008). Neural responses related to point-light walker perception: a magnetoencephalographic study. *Clinical Neurophysiology*, 119 (12), 2775-2784.

10. **Hirai, M.**, Watanabe, S., Honda, Y., Miki, K., & Kakigi, R. (2008). Emotional object and scene stimuli modulate subsequent face processing: an event-related potential study. *Brain Research Bulletin*, 77 (5), 264-273.

9. Nakata, H., Tamura, Y., Sakamoto, K., Akatsuka, K., **Hirai, M.**, Inui, K., Hoshiyama, M., Saitoh, Y., Yamamoto, T., Katayama, Y., & Kakigi, R. (2008). Evoked magnetic fields following noxious laser stimulation of the thigh in humans. *Neuroimage*, 42 (2), 858-68.
8. **Hirai, M.**, & Hiraki, K. (2007). Differential neural responses to humans vs. robots: an event-related potential study. *Brain Research*, 1165, 105-115.
7. **Hirai, M.**, & Hiraki, K. (2006). Visual search for biological motion: an event-related potential study. *Neuroscience Letters*, 403 (3), 299-304.
6. **Hirai, M.** & Hiraki, K. (2006). Neural Dynamics for Biological Motion Perception. In: Trends in Brain Mapping Research (Chen, F.J. ed). pp.85-116. Nova Science Publishers, Inc. New York, USA.
5. **Hirai, M.**, & Hiraki, K. (2006). The relative importance of spatial versus temporal structure in the perception of biological motion: an event-related potential study. *Cognition*, 99 (1), B15-B29.
4. **Hirai, M.**, Senju, A., Fukushima, H., & Hiraki, K. (2005). Active processing of biological motion perception: an ERP study. *Cognitive Brain Research*, 23 (2-3), 387-396.
3. **Hirai, M.**, & Hiraki, K. (2005). An event-related potentials study of biological motion perception in human infants. *Cognitive Brain Research*, 22 (2), 301-304.
2. Fukushima, H., **Hirai, M.**, Arita, A., Kamewari, K., & Hiraki, K. (2004). Neural dynamics in human imitation revealed by ERP surface topography. *Neuroreport*, 15 (13), 2129-2132.
1. **Hirai, M.**, Fukushima, H., & Hiraki, K. (2003). An event-related potentials study of biological motion perception in humans. *Neuroscience Letters*, 344 (1), 41-44.

b. 国際学会・海外学会での発表・講演等

20. **Hirai, M.**, & Kanakogi (2019). Communicative Hand-Waving Gestures Facilitate Object Learning in infancy, *Budapest CEU Conference on Cognitive Development*, Budapest, Hungary.

19. **Hirai, M.**, Kaneko, N., Nakajima, T., Mizutani, T., & Watanabe, E. (2014). Functional connectivity analysis in patients with dysfunction of the corpus callosum: A preliminary study. *fNIRS2014*, Montreal, Canada.

18. **Hirai, M.** (2012). The temporal aspect of neural activities underlying the perception of biological motion in infants, children, adults and patients with developmental disorders. *The 8<sup>th</sup> Asia-Pacific Conference on Vision*, Inchon, Korea.

17. **Hirai, M.**, Saunders, D. R., & Troje, N. F. (2010). Local motion versus global shape in biological motion: A reflexive orientation task. *Vision Science Society meeting*, Florida, USA.

16. Miki, K., Watanabe, S., Teruya, M., Takeshima, Y., Urakawa, T., **Hirai, M.**, Honda, Y., & Kakigi, R. (2010). The development in the perception of facial emotion change using ERPs. *26th Symposium on Clinical Neurophysiology of Vision and on Eye Movements*, Ljubljana, Slovenia.

15. Miki, K., Watanabe, S., Teruya, M., Takeshima, Y., Urakawa, T., **Hirai, M.**, Honda, Y., & Kakigi, R. (2010). The development in the perception of facial emotion change using ERPs. *29th International Congress of Clinical Neurophysiology*, Kobe, Japan.

14. **Hirai, M.** (2010). The perception of biological motion –its neural mechanisms and clinical application. *29th International Congress of Clinical Neurophysiology*, Kobe, Japan.

13. Miki, K., Watanabe, S., Teruya, M., Takeshima, Y., Urakawa, T., **Hirai, M.**, Honda,

Y., & Kakigi, R. (2009). The developmental change in the perception of dynamic facial emotion using ERPs. *18th International Society for Brain Electromagnetic Topography*, Kyoto, Japan.

12. Miki, K., Watanabe, S., Teruya, M., Takeshima, Y., Urakawa, T., **Hirai, M.**, Honda, Y., & Kakigi, R. (2009). The Developmental Change in the Perception of Dynamic Facial Emotion Using ERPs. *Asian and Oceanian Congress of Clinical Neurophysiology*, Seoul, Korea.

11. **Hirai, M.**, & Kakigi, R. (2008). Enhanced neuromagnetic response to self-triggered point-light walker stimulus in the human visual cortex. *The 16th International Conference on Biomagnetism*, Sapporo, Japan.

10. Nakata, H., Tamura, Y., Sakamoto, K., **Hirai, M.**, Inui, K., Hoshiyama, M., & Kakigi, R. (2008). Laser-evoked magnetic fields following noxious stimulation of the thigh. *The 16th International Conference on Biomagnetism*, Sapporo, Japan.

9. Dan, N., Hiraki, K., Shimada, S., & **Hirai, M.** (2006). Can 10-month-olds utilize information from TV in a real-world task? Poster presentation at Proceedings of the XVth Biennial International Conference on Infant Studies, Kyoto Japan.

8. **Hirai, M.**, & Hiraki, K. (2006). Processing of biological motion perception in visual search: an ERP study. Poster presentation at Society for Neuroscience 2006, Atlanta, USA.

7. **Hirai, M.**, & Hiraki, K. (2006). Disappearance of inversion effect for walking animation with robotic appearance. *The 5th international conference of the Cognitive Science*, Vancouver, Canada.

6. **Hirai, M.**, & Hiraki, K. (2006). Inversion effect of human, robot, point-light motion. *Cognitive Neuroscience Society Annual meeting 2006*, Sanfrancisco, USA.

5. Senju, A., **Hirai, M.**, Yamamoto, Y., Hiraki, K., Hasegawa, T., Yaguchi, K., & Tojo, Y. (2004). Effect of head orientation on the perception of gaze shift in the adults and children with and without autism: An ERP study. *Cognitive Neuroscience Society Annual Meeting 2004*, San Francisco, USA.
4. **Hirai, M.**, Senju, A., Fukushima, H., & Hiraki, K. (2004). Attentional modulation of human event-related potentials associated with biological motion perception. *Cognitive Neuroscience Society Annual Meeting 2004*, San Francisco, USA.
3. Fukushima, H., **Hirai, M.**, Arita, A., Kamewari, K., & Hiraki, K. (2004). Brain activity in an imitative reaction time task: An ERP study. *Cognitive Neuroscience Society Annual Meeting 2004*, San Francisco, USA.
2. Fukushima, H., **Hirai, M.**, & Hiraki, K. (2003). Interval timing and time to contact estimation: Neural activities in the two kinds of sensory anticipation in time domain were directly compared in human ERPs. *ICCS/ASCS-2003 Joint International Conference on Cognitive Science*, Sydney, Australia.
1. Mugitani, R., **Hirai, M.**, Shimada, S., & Hiraki, K. (2002). The audiovisual speech perception of consonants in infants. *International Conference on Infant Studies 2002*, Barcelona, Spain.



## c. その他の国際的な業績

### 1. 役職

- Review editor, *Frontiers in Psychology* (2015年5月~)
- 31st International Congress of Psychology (ICP2016)プログラム委員

### 2. 国際雑誌査読

- *Attention, Perception & Psychophysics*
- *Behavioral Brain Research*
- *Brain*
- *Brain and Development*
- *Cognition*
- *Cognition and Emotion*
- *Developmental Cognitive Neuroscience*
- *Developmental Science*
- *Developmental Psychology*
- *Experimental Brain Research*
- *Frontiers in Human Neuroscience*
- *Frontiers in Psychopathology*
- *International Journal of Psychophysiology*
- *Japanese Psychological Research*
- *Journal of Autism and Developmental Disorders*
- *Journal of Intellectual Disability Research*
- *Journal of Neuroscience*
- *Journal of Vision*
- *Neuroscience Letters*
- *Neuroscience Research*
- *NeuroImage*
- *Neurophotonics*
- *Psychological Science*
- *Pediatrics*
- *Perception*
- *Philosophical Transactions of the Royal Society B: Biological Sciences*

- PloS One
- Royal Society Open Science
- Research in Autism Spectrum Disorders
- Research in Developmental Disabilities
- Scientific Reports

3. 国際学会における受賞歴

*The 16th International Conference on Biomagnetism, BIOMAG 2008 YOUNG INVESTIGATOR AWARD* (2008年8月)

4. 国際シンポジウム・セミナー・ワークショップ等での発表

12. **Hirai, M.** (2018). Embodied cognition from insideout in atypical development. *Bilateral Joint Seminar (2018). Take the perspective of others: social cognition from healthy neurons to neurodegenerative brains.* Nara, Japan.

11. **Hirai, M.** (2018). Embodied cognition in atypical development and patients with neurological disorders. *Séminaire du département Parole et Cognition, Greboble, France.* [招待講演]

10. **Hirai, M.** (2015). Embodied cognition from the inside out in atypical development. *Tohoku Forum for Creativity, Sendai, Japan.* [招待講演]

9. **Hirai, M.** (2015). Hierarchical processing of biological motion and its development. *North East Autism Research Group meeting, Newcastle University, Newcastle, UK.* [招待講演]

8. **Hirai, M.** (2012). Action from dots: Neural mechanisms underlying biomotion perception. *20years after the discovery Symposium : Mirror neuron, Kyoto University, Kyoto, Japan.* [招待講演]

7. **Hirai, M.** (2009). The developmental aspect of neural activities underlying the perception biological motion. *ESF-JSPS Frontier presentation at Science Conference Series for Young Researchers, Social Cognitive Neuroscience, Maratea, Italy.*

6. **Hirai, M.** (2007). When and how do we perceive the biological motion? Oral presentation at Global COE symposium on Perception of Biological Motion, Keio University, Tokyo, Japan. [招待講演]
5. **Hirai, M.** (2006). Biological motion detection in infancy. *Fourth International Workshop on Evolutionary Cognitive Sciences, Physical and Psychological Reasoning in Infancy*, The University of Tokyo, Tokyo, Japan. [招待講演]
4. Dan, N., Hiraki, K., **Hirai, M.**, & Arita, A. (2006). Infants' recognition of spatial discontinuity between TV and real worlds. *Third International Workshop on Evolutionary Cognitive Science, Social Cognition: Evolution, Development, and Mechanism*, The University of Tokyo, Tokyo, Japan.
3. **Hirai, M.**, & Hiraki, K. (2006). Disappearance of inversion effect for robotic appearance: An ERP study. *Third International Workshop on Evolutionary Cognitive Science: "Social Cognition: Evolution, Development, and Mechanism"*, The University of Tokyo, Tokyo, Japan.
2. Takemura, H., **Hirai, M.**, & Hasegawa, T. (2006). The Relationship Between Performance of Biological Motion Detection and Autism-Spectrum Quotient Score, *Third International Workshop on Evolutionary Cognitive Science: "Social Cognition: Evolution, Development, and Mechanism"*, The University of Tokyo, Tokyo, Japan.
1. **Hirai, M.** (2004). When and how do we perceive the biological motion? : An event-related potentials approach. *21st Century COE program center for evolutionary cognitive sciences at The University of Tokyo First international workshop: "Exploring social brain"*, Tokyo, Japan.