# Shohei Hidaka

School of Knowledge Science
Japan Advanced Institute of Science and Technology
1-1 Nomi, Asahidai, Ishikawa,
Ishikawa 923-1292, USA

Phone: (+81) 761-51-1717
Fax: (+81) 761-51-1775
shhidaka@jaist.ac.jp
http://www.jaist.ac.jp/~shhidaka/

## Education

Ph.D. Informatics, Kyoto University, 2007
Thesis: "A Geometric Model of Categorization Space for Lexical Acquisition".

M.A. Informatics, Kyoto University, 2004
Thesis: "The Linguistic Category Influence on the Children's Bias of Word Acquisition".

B.A. Biology, Kyushu University, 2002
Thesis: "Mathematical Analysis of Geological Heterogeneity Effects on the Distribution of Species".

## Research Experience

Assistant professor                                            2010–present
Japan Advanced Institute of Science and                      Ishikawa, Japan
Technology
Mathematical modelling and psychological experiment of language development.

Post-Doctoral Research Fellow                                   2008–2010
National Institutes of Health                               Indiana University
Mathematical modelling and psychological experiment of language development.

Research Fellow                                                 2006–2008
Japanese Society for the Promotion of Science               Kyoto University
Mathematical modelling of language development and object recognition.

## Teaching Experience

Supervising three graduate students (on the research projects on brain imaging), Spring, Summer, and Fall 2010.

Research assistant (Introductory class of knowledge science), Spring 2010.

Supervising four research assistants (on the research projects of cognitive development), Indiana University, Spring, Summer, Fall 2009, and Spring 2010.

Teaching Assistant, Advanced Informatics (Basic Neural Network Modeling), Kyoto University, Spring 2004.

## Social contributions

Volunteer activity for non-typical developing children since May 2010 (Komatsu Municipal Hospital).

## Membership

Membership in Japanese Cognitive Science Society (since April 2004).
Membership in Cognitive Science Society (since August 2006).

**Publication**

## Peer Reviewed Journal Articles

Hidaka, S. & Smith, L. B. (in press). Packing: A Geometric Analysis of Feature Selection and Fast-Mapping in Children ' s Category Formation., Cognitive System Research.

Hidaka, S. & Smith, L. B. (in press) Acquisition of a Single Word to a Population of Words., Language Learning and Development.

Maouene, J. , Hidaka, S. & Smith, L. B. (2008) Body parts and early-learned verbs., Cognitive Science, 32, 1200-1216.

, , & . (2006) ., , 13, 484-487.

& . (2005). ., , 12, 235-251. (In English: Hidaka, S. & Saiki, S. (2005). A model study of infants ' novel word categorization., Cognitive Studies, 12, 235-251.)

## Peer Reviewed Conference Papers

Hidaka, S. and Saiki, J. A mechanism of ontological boundary shifting. In *The Twenty Sixth Annual Meeting of the Cognitive Science Society*, pp. 565–570, 2004.

Hidaka, S. & Saiki, J. A connectionist account of ontological boundary shifting. In N.R. et al. Pal, editor, *ICONIP 2004, Lecture Note in Computer Science 3316*, pp. 22–25, Berlin, 2004. Springer-Verlag.

Hidaka, S. & Saiki, J. Prototype-specific learning for children's vocabulary. In *Proceedings of The Fourth IEEE International Conference on Development and Learning*, p. 201, 2005.

Hidaka, S. & Saiki, J. Feature discovery in object individuation. In *Proceedings of The Fifth International Conference on Development and Learning*, 2006.

Maouene, J. , Hidaka, S. & Smith, L. B. , (2006). Children and adults rely on body parts for early-acquired verbs., In *Proceedings of The Fifth International Conference on Development and Learning*, 2006.

Hidaka, S. & Saiki, J. A solution to current limitations in the analysis of developmental data. In *The Fifteenth Biennial International Conference on Infant Studies*, 2006.

Hidaka, S., Saiki, J., & Smith, L. B. Semantic packing as a core mechanism of category coherence, fast mapping and basic level categories. In *Proceedings of The Twenty Eighth Annual Conference of Cognitive Society*, pp. 1500–1505, 2006.

Maouene, J. , Hidaka, S. & Smith, L. B. , (2006). Body parts and the first 100 verbs., In *Proceedings of The Twenty Eighth Annual Conference of Cognitive Society*, pp. 555–560, 2006.

Hidaka, S., Saiki, J., & Smith, L. B. Semantic packing: an account for category coherence. In *Proceedings of The Seventh International Conference on Cognitive Modelling*, pp. 130–135, 2006.

Hidaka, S. & Smith, L. B. Why natural categories are natural?: Categories packed on a curved surface. In *Proceedings of The Twenty Fourth Annual Conference of Japanese Cognitive Science Society*, pp. 16–21, 2007. (In Japanese)

Maouene, J., Hidaka, S., & Smith, L. B. Body-Part Categories of Early-Learned Verbs: Different Granularities at Different Points in Development In *Proceedings of The Seventh International Conference on Development and Learning*, 2008.

Hidaka, S. & Smith, L. B. How Features Create Knowledge of Kinds. In *Proceedings of The Thirtyth Annual Meeting of Cognitive Science Society*, pp. 1029–1035, 2008.

Hidaka, S. & Smith, L. B. Kind-Specific Novel Word Generalization on Natural Objects In *Proceedings of The Twenty Fifth Annual Conference of Japanese Cognitive Science Society*, 2008. (In Japanese)

Hidaka, S., Maouene, J. & Smith, L. B. Different Word Classes are Learned in Different Ways: Evidence from Vocabulary Growth. In *Proceedings of International Cognitive Linguistics Conference 11*, 2009.

Hidaka, S. (2009). Different Classes of Words are Learned in Different Ways. In *Proceedings of The Thirty First Annual Meeting of Cognitive Science Society*, oral presentation.

Hidaka, S. (2009) A Sample-size-invariant Estimation of Lexical Diversity. In *Proceedings of The Thirty First Annual Meeting of Cognitive Science Society*, poster presentation.


## Book Chapters

Smith, L. B. Maouene, J. & Hidaka, S. *The Body and Children's Word Learning*, pp. 168–192. Oxford University Press, Oxford, 2007.


### Honors and Awards

Travel Grant for International Conference, Kyoto University Foundation, 2006.

Travel Grant for Short term International Research, Kyoto University, 2006.

Travel Grand for Short term International Research, Kyoto University, 2005.

Research grand for young scientists, Kyoto University, 2005.

Outstanding Paper Award, 22th Annual Conference of the Japanese Cognive Science Society, 2005.


### Computer Skills

Expert: Matlab

Intermediate: R, Perl, LaTeX, HTML, ActionScript, C

Basic: C++ , Ruby, SQL, Mathematica, Linux, SPSS


### Computatioinal Modeling Skill

Datamining/Machine Learning techniques for a large scale cognitive and psychological database.
Applied Statistics, Complex Network, Neural Networks, Corpus Linguistics, and Bayesian Modelling.


### Languages

Japanese (mother tongue)

English (good knowledge)