



ABOUT BCS  
RESEARCH  
ACADEMICS  
PEOPLE

- Faculty
- Staff
- Researchers
- Postdocs
- Graduate Students
- Undergrad Students

NEWS & EVENTS  
DIVERSITY & OUTREACH  
GIVING

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[jm MIT Wide](#)

SEARCH

## People / Faculty



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### Computational Linguistics, Learning Theory

Professor Berwick and his research group investigate computational models of language acquisition, language processing, and language change, within the context of machine learning, modern grammatical theory, and mathematical models of dynamical systems. In the area of machine learning and language, the lab uses the minimum description length (MDL) proposal, updated to incorporate Vapnik's notion of both structural and empirical risk minimization, to induce models from naturalistic parent-child language examples such as the CHILDES corpus. They use this to test explicit hypotheses about the nature and rate of child language development within the context of current linguistic theories, and across multiple languages such as English, Dutch, French, and German.

By parameterizing Chomsky's current linguistic theory into a set of approximately two-dozen modules, the lab has implemented a Prolog system that can be rapidly switched among several dozen languages simply by substituting a new lexicon or dictionary. This computer model can be used to predict and test current linguistic theories with respect to their psycholinguistic fidelity and their logical adequacy. Further, this same model can be viewed as a formal account of both language change over time and language acquisition.

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