

MINDS, TECHNOLOGY, AND SOCIETY

Seminar Series

UC MERCED, Spring 2018

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“The Evolution of Sensitive Periods in a Model of Incremental Development”

Abstract: Sensitive periods, in which experience shapes phenotypic development to a larger extent than other periods, are widespread in nature. Despite a recent focus on neural-physiological explanation, few formal models have examined the evolutionary selection pressures that result in developmental mechanisms that produce sensitive periods. I'll present an evolutionary model of development I've been working on with colleagues. We model development as a specialization process during which individuals incrementally adapt to local environmental conditions, while receiving a constant stream of cost-free, imperfect cues to the environmental state. We compute optimal developmental programmes across a range of ecological conditions and use these programs to simulate developmental trajectories and obtain distributions of mature phenotypes. I'll discuss both the modeling framework and some of the results of the model.

Karthik Panchanathan received his PhD in anthropology at UCLA working with Rob Boyd. He is currently an assistant professor in the Department of Anthropology at the University of Missouri. His research interests include the evolution of cooperation, cultural evolution, and the evolution of development.



**Monday,
January 29, 2018**

3:30 PM

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Please contact Paul Smaldino (psmaldino@ucmerced.edu) for more information.