

Special collection explores origin and evolution of play

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An adult Gelada monkey plays with a juvenile. A new special issue of *Adaptive Behavior* examines the evolution and origin of play via mathematical and computational approaches. Credit: Elisabetta Palagi

Research on the evolution and function of play at the National Institute

for Mathematical and Biological Synthesis (NIMBioS) has culminated in a special issue of the journal *Adaptive Behavior*. The papers represent the first systematic use of computational and mathematical models to investigate the theoretical and empirical origins of play.

In a series of meetings from 2011 to 2013, the NIMBioS Working Group on Play, Evolution and Sociality brought together mathematicians, anthropologists, zoologists, neuroscientists, ecologists, psychologists and other top experts to examine [play](#) as a window into cognitive evolution and the rules of sociality.

Until the Working Group was established, the field lacked a mathematical and computational approaches for understanding how play evolves. Using mathematical tools, the group aimed to uncover factors predicting the dynamics, occurrence and trajectory of play in the animal kingdom, as well as explore the ecological, psychological and life history factors that facilitate and maintain play.

The six papers in the special issue include:

- Modeling play: distinguishing between origins and current functions by Sergio M. Pellis, Gordon M. Burghardt, Elisabetta Palagi, and Marc Mangel
- The evolution of social play by learning to cooperate by Sabine Durand and Jeffrey C. Schank
- To play or not to play? That's a resource abundance question by Jeremy Auerbach, Andrew R Kanarek, and Gordon M Burghardt
- State-dependent behavioral theory and the [evolution](#) of play by Nicholas Grunloh and Marc Mangel
- Evolving the tactics of play fighting: insights from simulating the "keep away game" in rats by Heather C. Bell, Greg D. Bell, Jeffrey A. Schank, and Sergio M. Pellis
- Evolutionary models for the retention of adult-adult social play in

primates: The roles of diet and other factors associated with resource acquisition by Brian C. O'Meara, Kerrie Lewis Graham, Sergio M. Pellis, and Gordon M. Burghardt

More information: The full special issue can be found at adb.sagepub.com/content/23/6.toc

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