
BOOK REVIEWS

The Genesis of Animal Play: Testing the Limits

Gordon M. Burghardt

Cambridge, MA: MIT Press, 2005.

Photographs, diagrams, tables, references, index. 501 pp. \$50.00 cloth. ISBN: 9780262025430.

In 2001 I wrote a paper titled “What is play for?” In it, I included a section with the subheading “What do we think we know about play?” After reading Gordon Burghardt’s splendid book, *The Genesis of Animal Play*, I have to admit that some of the things that I thought we knew about play were simply wrong and we knew others that I didn’t know we knew. Indeed, the only really negative comment I can make about the book is that Burghardt should have written it five years earlier so that I would have been better informed when writing my paper.

Burghardt claims that “the primary task . . . [of the book] is searching for play in animals that are rarely thought to play” (p. xiii). And this he does. But he does at least three other things that are as—or more—important than determining whether or not animals generally thought to be unlikely candidates for play actually do play. First, Burghardt provides a sympathetic but thorough review of the-

ories of play. I say sympathetic because he does not reject any theory in knee-jerk fashion but looks for grains of truth, wisdom, or value in each. Second, he does not redefine play but instead provides a set of five criteria by which we may judge activities and determine whether or not they are play. And, third, he advocates a particular explanation of play that he terms *surplus resource theory*.

Burghardt’s “working method for identifying play” (p. 68) is:

Play behavior is recognized by five criteria. Playful activities can be characterized as being (1) incompletely functional in the context expressed; (2) voluntary, pleasurable, or self-rewarding; (3) different structurally or temporally from related serious behavior systems; (4) expressed repeatedly during at least some part of an animal’s life span; and (5) initiated in relatively benign situations (p. 382).

Burghardt then notes that simple explanations of play are unlikely since it varies so much across species and even within them under varied conditions. Some species engage mostly in locomotor play, others in social play, and still others in object play. But, underlying all play, Burghardt claims, are four factors, some

of which may be necessary, although not sufficient for play to occur. First, animals must have sufficient energy resources. Second, animals must be buffered from stress and danger. Third, since animals can become bored, a need for stimulation through species-typical behavior patterns should be present. Fourth, the lifestyle of the animal should include complex behavior in varying environmental and social conditions.

To account for all this, Burghardt proposes his surplus resource theory, the claim that play will be most common when animals have “excess resources along with appropriate evolved motivational, physiological, and ecological systems. Play can evolve independently whenever physiological (including neural), life history, metabolic, ecological, and psychological conditions, in conjunction with a species’ behavioral repertoire, reach a threshold level” (p. 172). Burghardt then applies surplus resource theory, in addition to his five criteria for play, in reviewing evidence for play in animals ranging from mammals, including marsupials and monotremes, through birds, reptiles, amphibians, fish, and, finally, “at the margins” (p. 359) in invertebrates such as cephalopods, insects, and crustaceans. Much of this is bound to be controversial. But Burghardt does his best to apply his play criteria objectively, and maybe lobsters actually do play when circumstances are right.

Finding play in lobsters or other animals that do not immediately pass the play equivalent of U.S. Supreme Court Justice Potter Stewart’s pornography test (“I know it when I see it.”) rests on Burghardt’s five criteria. But, as one examines species ever more unlike us, or even unlike dogs or horses, recognizing these attributes be-

comes increasingly problematic. The second criterion seems especially difficult to apply to animals whose displays of, say, intent or pleasure, are unrecognizable.

As for surplus resource theory, my concern is that, while excess resources do appear to be necessary for play, they do not appear to be sufficient for it. In other words, why play and not something else? Or, is play a sort of residual category wherein we simply lump a bunch of disparate “something elses” because our evolved pattern recognition processes force us to do so? I do not think that’s true, but the question needs asking. In any case, Burghardt’s five criteria for play and surplus resource theory offer solid starting points, worthy of new research and refinement.

Finally, while Burghardt touches on human play, even ending the book with speculations about play’s role in cultural evolution, the book is really about the evolution of play in animals other than placental mammals. Nevertheless, everyone who is interested in human play should read *The Genesis of Animal Play* because, as Burghardt points out, play exists on a continuum, perhaps with lobsters or insects on one end but certainly with animals that inhabited our evolutionary past, including other mammals but also reptiles and fish. We cannot know where we are unless we know from where we came. Burghardt has written a masterful book, with about as much fairness as possible and with good humor throughout. It deserves the attention of everyone who wants to know what we think we know about play.

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