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The Genesis of Animal Play

Testing the Limits

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Preface

Playing is the most engaging behavior performed by any animal or human being. Watching puppies wrestle and kittens “attack” anything from a wad of paper to a rubber catnip-scented mouse has amused countless children and adults. Parents love watching their offspring play, and look forward to romps with them. Millions of people spend their discretionary hours in fishing, tennis, golf, biking, and hobbies of all types; others watch people play games; engage in make-believe (plays, film, and theater); or sing, dance, and play musical instruments. But then isn’t all life really a game? Didn’t Shakespeare in *Macbeth* say everyone is but an actor on a stage? When trying to sort out the boundaries of play, one quickly gets tangled in a web of definitions, controversies, and elusive notions that slip away just when one thinks that they are grasped.

As a boy I spent many happy and frustrating hours trying to capture slimy salamanders and frogs that slithered or leapt free at the moment my hand signaled success. The study and analysis of play has many of the same satisfactions and frustrations as the undertakings of the child herpetologist. Indeed, I find myself wondering if the study of play is itself play. Committed herpetologists are only happy, in my experience, when they have the opportunity, or excuse, to get back to the field and personally collect at least some of their specimens. The dirt, water, sand, heat, muck, cold, thirst, ticks, leeches, wasps, bites, scratches, and foul-smelling feces all are part of the treasured experience—though not if all are encountered in the same expedition! By this point I may have lost readers who are not herpetologists, but I trust that any field biologist will understand what I mean. Returning to the issue at hand: Is playing, then, a completely arbitrary category?

Even eminent scholars have thrown up their hands and considered play more a mystery than a specifiable phenomenon that can be understood through scientific analysis. Others have used the problems of clearly characterizing play to declare that it doesn’t really exist. Still others claim that play is so obvious when you see it that it doesn’t need definition or careful analysis. It exists. Accept it and move on.

In child-rearing and educational circles, play has had an equally hard time. How should play be incorporated in school activities and curricula? Many educational theorists have stated that education should be made enjoyable and interesting through play; others seem troubled by the notion that a solid, academic preparation for life should or can be based on play, which is fun and thus not serious. Are such views the legacy of America's Puritan roots (Mergen, 1982)? Not really, because other cultures and times have shown similar ambiguity toward play (Burton, 1883). Play is indeed ambiguous, as our leading scholar on play has pointed out (Sutton-Smith, 1997) and as I indicate in chapter 1, while in chapter 2 I give an overview of several hundred years of trying to understand and explain play.

Is play in nonhuman animals on a continuum with play in human beings? Is play essential for their well-being? Could play in animals be an artifact of captivity and domestication? If all animals do not play, or play in different ways and to different extents, why is this so? What does play mean for understanding evolution, development, the brain, behavioral organization, psychology, and the meaning of life itself?

The problem of defining play and its role is one of the greatest challenges facing neuroscience, behavioral biology, psychology, education, and the social sciences generally. Alas, it is rarely recognized as such. Although it is not my aim to use new perspectives on play to understand and alleviate social problems or even to address human behavior, I do, on occasion, offer some grounded speculation on the ways in which playful tendencies invade and control many aspects of modern life. In a very real sense, only when we understand the nature of play will we be able to understand how to better shape the destinies of human societies in a mutually dependent world, the future of our species, and perhaps even the fate of the biosphere itself.

Human play is continuous with nonhuman animal play in many respects. To get at the roots of playfulness and the conditions in which it may have evolved, one must take other species seriously. For ease of reference, I will sometimes use terms such as *animal*, *mammal*, or *primate* when referring to nonhuman species in contrast to human beings, and at other times these terms will be meant to include our own species. The context should make the usage clear. This is a compromise between my strong stand on continuity of human and nonhuman existence and the need to avoid the cumbersome "nonhuman primate" or "nonhuman animal." Also, as a terminological aside, note that many of the authors quoted used the masculine pronoun to refer to both males and females, as is still true in many other languages today.

This book is not meant to be a thorough review of play research in animals or people on either a narrow or broad scale. Many writings on play often tell us more about the authors' agendas and perspectives on animals, behavior, psychology, and society than about play itself. A critical reading of any attempt at synthesis and integration, however limited, is always essential. This book is my reflection on the origins and nature of play, ideas emerging from a comparative perspective in ethology and psychology

that incorporates recent findings in ecology, evolution, physiology, and neuroscience. I have tried to synthesize diverse information to create a useful, integrative story. This story is based on the view that although playfulness may have been a driving force behind much of what we consider most distinctive about human behavior (and much mammalian behavior in general), playfulness itself could develop only under a special set of biological conditions that led to a most remarkable interaction among developmental, phylogenetic, ecological, and physiological processes.

While I attempt to accurately review our understanding of playfulness, I argue that despite what we may think or wish, much of what play entails may not be as it seems, and that the importance and/or origins of play may not lie in the future-oriented practice and “preparation for life” claims frequently made for it. The truth may lie in other directions, and be much more interesting and important.

While this book does not provide a thorough treatment of scientific studies on the ontogeny, function, and physiology of play, I have made interim statements elsewhere (Burghardt, 2001). Unfortunately, most of this work focuses on just a small number of species of eutherian (placental) mammals, including children. An extensive coverage here would overly enlarge this book, the primary task of which is searching for play in animals that are rarely thought to play. Much fascinating and important descriptive, theoretical, and experimental work on mammalian play is available (Bekoff & Byers, 1998; Power, 2000). If many other animals do play, however, work based only on a few, selected mammals is unnecessarily limiting, if not potentially misleading. The need to integrate the perspectives and methods of those studying play in mammals and the much more extensive literature on play in children is great, however, and so I have devoted some discussion to both literatures in part I.

How and why play has evolved, then, is the topic of this book. Although we need to know more about many aspects of play, I have narrowed my focus in part I to placing the study of play in an ethological context (chapter 1), characterizing how scholars and researchers have tried to explain play (chapter 2), developing a more comprehensive and objective way to define and recognize play (chapter 3), describing the diversity of play in the most playful species (chapter 4), summarizing some of the major research methods and findings on play (chapter 5), and outlining a provisional framework to explain how play could have originated (chapter 6).

In part II, after discussing limitations in the data available for most species of animals (chapter 7), the heart of the book is presented in seven chapters (chapters 8 through 14) based on a search throughout the animate world for play or playlike phenomena. I present these chapters, especially 12 through 14, with some trepidation because senior scientists I respect have told me I will suffer ridicule and highly critical reviews for seriously raising the issue of play in nontraditional animals, especially without strong evidence. Chapter 15 revisits the basic premises of chapter 6 and discusses the implications of the comparative diversity of play for future research on the most playful species, especially humans.

Although the book is meant to tie together many disparate approaches and findings, I hope those interested in the details of how diverse animals play, covered in part II, will at least skim chapters 2 through 6, especially reading chapter 1, the second half of chapter 3, and chapter 4. Similarly, I suggest that those most interested in conceptual and experimental issues in play, or just play in people, should not totally avoid the evolutionary trek in part II because many of the often little-known examples recounted there confront essential issues on the nature and ontology of play.

Finally, perhaps a book on play should not be serious; occasionally you might indeed conclude that I am not being serious. Note, however, that the term *serious* is one that can be opposed to the *trivial* as well as the *humorous* and *playful*. Sigmund Freud once expressed a profound insight evident to every observer of child and animal play: "Every playing child behaves like a poet, in that he creates a world of his own, or more accurately expressed, he transposes things into his own world according to a new arrangement which is to his liking. It would be unfair to believe that he does not take this world seriously; on the contrary, he takes his play very seriously, he spends large amounts of affect on it. The antithesis of play is reality, not seriousness" (Freud, 1959: 174). While this statement may be true for the player, it is not true of play. Play *is* a reality that we have not effectively confronted in science or society. Yet it may lie at the core of who we are and how we came to be.