

1

Introduction

This book is about the role of play and playfulness in creativity and innovation. We argue that play is an important form of behaviour that facilitates creativity, and hence innovation, in both the natural world and human society. Although the consequences of play are most obvious during the lifetime of each individual, play also affects biological evolution by enabling organisms to adapt rapidly to novel environments.

The essence of our argument is that playful behaviour and playful thought can generate radically new approaches to challenges set by the physical and social environment. While our approach grew out of observations of non-human animals by biologists, we argue that humans and organisations can exploit playfulness as a tool for fostering creativity and innovation.

‘Play’ evidently has many different meanings, some of which refer to aspects of behaviour and thinking that are very different from the playful mode of behaviour on which we shall focus. For example, rule-governed competitive sports are ‘played’, but they are rarely conducted playfully. Sports and many games are often treated as being deadly serious. Similarly, theatrical plays in which the actors are required to have learned their lines are not associated with the lightness of mood which we regard as being so important in playful creativity. Stage improvisation and ad libbing, however, may come closer to what we have in mind.

2 Introduction

PLAYFULNESS

Apart from its many different colloquial usages, ‘play’ – as used by biologists and psychologists – is a broad term denoting almost any activity that is not ‘serious’ or ‘work’. Play may also be defined more specifically, according to several criteria:

- the behaviour is spontaneous and rewarding to the individual
- it is intrinsically motivated and its performance is a goal in itself
- the behaviour occurs in a protected context when the player is neither ill nor stressed
- the behaviour is incomplete or exaggerated relative to non-playful behaviour in adults
- it is performed repeatedly.

While play is often regarded principally as an activity of young animals or children, it also occurs in adults of many species.

Part of our thesis in this book rests on the distinction we have drawn between observable play behaviour and an underlying mood state that we refer to as playfulness. Play behaviour may or may not be playful. ‘Playfulness’ is a particular positive mood state that may (or may not) be manifested in observable behaviour. Playfulness facilitates and accompanies ‘playful play’, a subset of broadly defined play, which is distinct from what happens in formal games, theatrical performances and so forth. Play and playfulness do overlap, but we believe the distinction is important because some aspects of play behaviour are not playful, particularly when they start to merge into overt competition or aggression. Aspects of what many biologists and psychologists would subsume under the general heading of ‘play’ may be driven by frustration or striving for social dominance. An encounter that starts off in a way that is described as playful may degenerate into overt aggression, when the lightness of mood associated with other aspects of play seems to be lacking. Conversely, playful individuals are not necessarily playing, even though they are in a playful mood. We shall consider in greater detail how play and playfulness are characterised in Chapter 2.

The notion of ‘playful play’ is our own and is not to be found in the academic literature. We suggest that this new category helps in the understanding of a motivational state that is important in creativity. Our restrictive use of the term is captured in Figure 1.1, which shows the incomplete overlap between this aspect of play and other aspects encompassed by less restrictive but widely accepted definitions of play. Both these domains overlap with an even larger one in which the loosest definitions of ‘play’ are more extensive and the variety of meanings is evident.

We recognise that play continues to be something of an enigma and much more needs to be discovered. In our final chapter we outline some of the many questions that remain to be answered through empirical research. Until they have a firmer basis in evidence, some of the widely believed theories about play must remain in the realm of conjecture.

CREATIVITY AND INNOVATION

In this book we draw a simple distinction between creativity and innovation. In human behaviour, creativity refers broadly to generating new ideas, whereas innovation refers to changing the way in which things are done. Although creativity and innovation are often treated as synonymous (e.g. Feist, 1998), we believe the terms can usefully be distinguished. Creativity is displayed when an individual develops a novel form of behaviour or a novel idea, regardless of its practical uptake and subsequent application. Innovation means implementing a novel form of behaviour or an idea in order to obtain a practical benefit which is then adopted by others. As Max Mckeown (2008) succinctly put it: ‘Innovation is new stuff that is made useful’. In many of the human examples that we consider later, creative people are not necessarily innovative, and innovative people may rely on the novel ideas or actions of other more creative people.

The distinction between creativity and innovation is harder to observe in other species. Even so, animals can be

4 Introduction

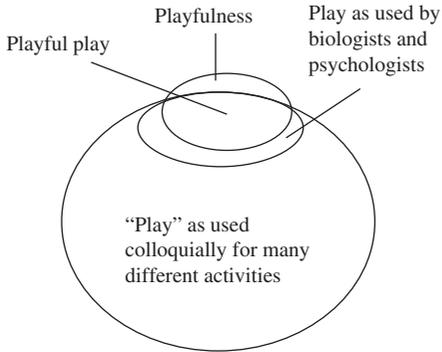


Figure 1.1. The relationship between playfulness and play as commonly described by biologists and psychologists. These overlap with the many different colloquial usages of 'play' for competitive games, theatrical events and so forth.

creative and they do innovate; for example, by discovering new ways of obtaining food. Considerable time can elapse between a creative act by one individual and a subsequent innovation in which other individuals adopt the new way of doing things. What is observed is often the end product of a long process.

THE THESIS

The core of our argument is that new forms of behaviour and new modes of thought frequently derive from play, and especially from playful play. Such activity is a driver of creativity and, less directly, of innovation, both in humans and in other species. Play generates novel ways of dealing with the environment, most of which lead nowhere but some of which turn out to be useful.

Much of animal and human behaviour involves trade-offs between conflicting requirements. In making those trade-offs, the individual may be trapped on the metaphorical equivalent of a false mountain summit – what engineers call a local optimum – with a higher peak beyond. When that happens, the individual needs a way of getting off the lower peak in order to discover the most satisfactory solution – the global optimum.

We shall argue that play is an evolved biological adaptation that enables the individual to escape from local optima and discover better solutions.

The concept of play applies to thoughts as well as visible actions. Humans can think playfully as well as act playfully, generating novel patterns of thought in a protected context. A large part of human play goes on in the mind and may not manifest itself in overt behaviour. When play is overt, it may be seen more often in children than in adults, but adult humans are perfectly capable of playing and, we shall argue, sometimes benefit from it. As George Bernard Shaw remarked: ‘We don’t stop playing because we grow old, we grow old because we stop playing’.

Play enables the individual to discover new approaches to dealing with the world. We distinguish this, as others have done, from exploration, whereby the individual systematically gathers new information about the world. Typically, exploratory behaviour in animals begins cautiously and, as the individual gathers confidence, becomes both more extensive and more intense. It is not immediately repeated unless the previously explored features of the environment change (Fagen, 1981). Play behaviour, on the other hand, is generally far from cautious: it is typically repeated many times and its very exuberance often leads the player into blind alleys. Who cares about blind alleys when you are having fun? But even though play and exploration are substantially different, they are not entirely unrelated, and humans may sometimes be regarded as exploring playfully.

A notable characteristic of play behaviour is that it generally does not appear to have an immediate practical goal or benefit. Indeed, some writers implicitly define play as anything that seems pointless. Play appears to provide its own reward, at least in the short term, by being intrinsically enjoyable. The general presumption has been that the more tangible biological benefits of play usually come later in the individual’s lifetime; for example, in the form of improved physical, cognitive or social skills. The gap in time between playing and making use

6 Introduction

of the experience acquired during play may be measured in months or even years.

This temporal disjunction between experience and later performance has proved important in interpreting apparently insightful solutions to problems, when the individual seemingly plumps instantly for the right answer without testing the alternatives. The experience that enabled it to respond promptly to the new challenge occurred earlier in its life, when playing. We discuss this important aspect of experience gained through play in Chapters 5 and 6. Even though a time gap often occurs between play experience and beneficial outcomes, the effect of play may in some cases be immediate. In such cases, the individual acquires skills that increase its current chances of survival or it solves a problem, with immediate benefit.

Among the biological benefits of play, we contend, are creativity and innovation. In Chapter 7 we discuss how play and playfulness may boost the creativity of adult humans, both as individuals and collectively through the activities of organisations. In Chapter 8 we consider the evidence that children's creativity can be enhanced by play. Playfulness in humans is often associated with humour, and we discuss this relationship in Chapter 9. States of consciousness that are different from the normal waking state are obvious enough in dreaming and daydreaming. The dreaming or daydreaming individual may be generating novel patterns of thought and, in some senses, does this in a protected context. Both are features of play. We discuss the parallels between play and altered states of consciousness in Chapter 10, and go on to consider how some drug-induced states can be associated with enhanced creativity. Finally, in Chapter 11, we attempt to pull the threads together and offer suggestions for future research.

HISTORY

Before going further, it is worth considering briefly the long history of debate over the nature of play and its role in the development of individual humans. The role of play in the

education of children has engaged numerous writers from a variety of backgrounds over many centuries. Plato, writing some 2,400 years ago in *The Laws*, argued that playful practice when young is important for the development of adult skills. Jean-Jacques Rousseau (1712–78) thought that play in a natural environment civilises the child. The philosopher Immanuel Kant (1724–1804) took a romantic view of play as liberating the spirit. So too did the poet Friedrich Schiller (1759–1805), who believed that play allows the release of pent-up energy. The psychologist Karl Groos (1861–1946) argued, like Plato, that adult skills are acquired during childhood play. The educational reformer John Dewey (1859–1952) was influenced by Rousseau and regarded play as crucially important in the development of the child. Sigmund Freud (1856–1939) wrote about its importance to an individual's subsequent behaviour, and many other psychoanalysts and psychotherapists have followed in his footsteps (e.g. Erikson, 1963). None of these authors explicitly linked play to creativity. Herbert Spencer did, however, and suggested that play is the source of artistic creativity (Spencer, 1872).

The historian Johan Huizinga (1955), taking a very broad view of play, argued that it is important in the development of all aspects of human culture. As he put it: 'Genuine, pure play is one of the main bases of civilisation'. The Russian psychologist Lev Vygotsky (1967), writing in the 1930s, took a more specific view: he believed that literacy and imagination derive from the actions involved in play. Another influential developmental psychologist, Jean Piaget (1952), initially believed that play is important for the development of a logical mind, but in a later book argued that play is important in the development of the child's imagination (Piaget, 1962). In more recent times, scholarly writing on play has proliferated.¹

Some writers, taking a similar line to Vygotsky, have argued that play is the precursor of imaginative writing (e.g. Smith, 1982). Brian Sutton-Smith (1986) suggested that the foundations for an aptitude for imaginative writing are established in babyhood when babies and their mothers play 'face

8 Introduction

games' with each other and, through incongruity, joy and laughter, establish the basis for expressive performances. He concluded, though without citing any empirical evidence: 'This is the most probable source of both later symbolic play and later story-telling'. In a more sceptical vein than in his earlier work, Sutton-Smith (1997) noted that while various theories disagree about the specific kinds of development instigated by play, they all assume that play experience does indeed transfer to other activities that are not in themselves forms of play. Sutton-Smith did use the term 'play' very broadly to cover many serious activities, and we suspect that much of what he referred to as 'the ambiguity of play' stems from the multifaceted use of the word and not the more specific sense in which we use it here.

An important milestone in the development of a scientific approach to play was Robert Fagen's (1981) book *Animal Play Behavior*. Fagen adopted an evolutionary approach and raised the question of why birds and mammals should spend time and energy on play, incurring risks as they do so. A number of other important books on play have appeared more recently.² None, however, has explored at length the link between playfulness and creativity.

CONCLUSIONS

Apart from its multifaceted usages, 'play' is a broad term denoting any activity that is not 'serious' or 'work' and is therefore generally associated with childhood rather than adult life. Biologists typically define play more specifically as intrinsically rewarding behaviour that occurs in a protected context in which players are largely insulated from the consequences of their behaviour, and uses behaviour patterns in unusual forms or combinations. The biological concept of play applies to thoughts as well as physical actions. 'Playfulness' is a positive mood state that facilitates and accompanies 'playful play', a subset of broadly defined play. Our thesis is that play, and especially playful play,

facilitates creativity - sometimes immediately and sometimes after a considerable delay. We distinguish creativity, the generation of novel actions or thoughts, from innovation, in which new ways of doing things are implemented and adopted by others.

2

The biology of play

The definition of play has been a recurrent bugbear in the biological literature, as Robert Fagen (1981) recognised in his groundbreaking book *Animal Play Behavior*. Part of the problem is that human observers are all too ready to interpret other species' behaviour in terms of their own experience. Their definitions are ostensive rather than operational – that is to say, they point to a real example of the behaviour and say: 'That is what we mean by play'. For those scientists who are not present to be shown what is meant, the definition may be supported by verbal descriptions, drawings or videos. Such descriptions of play are often accompanied by the statement that the behaviour is not serious, in the sense that it does not apparently satisfy an immediate biological need of the individual, such as obtaining food or winning a fight.

The label 'play', when applied to animal behaviour, draws attention to how readily humans project onto other animals the perceptions they have of themselves and their fellow human beings. Such projection was revealed in many people's reactions to a beautifully illustrated book called *Why Cats Paint* by Busch and Silver (1994), which caused a flurry of interest among art critics. The book contained paintings supposedly produced by cats. Like those by some captive chimpanzees, the cats' artistic creations were seen as 'joyous and full of life'. Moreover, the cats were not simply creating abstract pictures, they were said to be doing so playfully. The book attracted serious reviews in major newspapers, amazing though this may seem. The