

THE EVOLUTION OF PLAY

MY KINGDOM FOR A STRAW

“Daddy, I need a straw, ’cause the only thing anybody ever drinks on Atecopia is coconut water. Atecopia, that’s our island, Daddy, and we always drink coconut water here. It has to be a purple straw. And I’m Princess of Atecopia, so will you be the king, Daddy? ... No, you can’t be the prince, ’cause there *is* no prince on Atecopia, so you can only be King. Now you have to sit on that chair – that’s *your* throne. And the chair next to it is *my* throne. So we can sit right here and drink coconut water. And let’s pretend Eva’s our dog! She’s too little to be a princess like me.”

This is the older of my two daughters having fun. Every day she and her sister – they were five and two when she said this – make me a front-row spectator to some of the countless types of play children come up with. When she carefully arranges Atecopia’s sparkling treasures, she is quiet as a mouse. When she invades the neighbouring kingdom, foam sword held high, the whole house shakes.

As she hosts a royal party, filling her throne room with song and dance, she is rhythm from head to toe. When

she describes the marvellous creatures she can see from her castle turret, her imagination is in overdrive. If she plays with friends at our house as the Princess of Atecopia, with her faithful, playdough-munching dog in tow, she might throw a royal tea party for her guests. But she can also play alone, addressing her invisible subjects from the top bunk bed like an empress.

The term 'play' refers to a huge variety of different activities. **When we play, we develop trust and intimacy, solve problems and explore.** We train motor skills, decode symbols, think creatively and perform complex social interactions. Even so, children and adults across the globe instinctively recognise playful behaviour as soon as they see it, and every known culture in the world has a word for this peculiar type of behaviour.

THE GORDIAN KNOT OF EVOLUTIONARY BIOLOGY

Ever since the English naturalist Charles Darwin published his groundbreaking work *On the Origin of Species* in 1859, scientists and researchers have used natural and sexual selection to explain all sorts of physical characteristics and behaviours in humans and other animals. Darwin demonstrated how, through evolution, species have adapted in various ways to promote their survival and procreation.

The hippopotamus, for instance, is so aggressive that even crocodiles stay away, while the hare has developed reaction patterns that make it dash off at the faintest hint

of danger. These are two very different ways of getting by in the world, yet both are extremely effective.

Now consider peacocks, which for eons have adapted so as to attract the opposite sex more effectively. Because of peahens' age-old preference for big, gorgeous tails, peacocks have developed disproportionately large show-stopping, shimmering, greenish-blue fans twice their body length. This is impractical when hungry predators are on the prowl, yet peafowl have survived, so their showy-tail strategy obviously worked.

When it comes to play, evolutionary biologists have struggled since Darwin's day, for play is an odd behaviour, expending energy but serving no obvious function for survival or reproduction. Why do lion cubs opt for a scuffle in the heat instead of napping under a shady tree? Why do young elephants love to chase birds and other small animals when they could spend their time foraging? Why do young bonobos dangle high in the treetops, gripped firmly by older ape-clan members but still risking injury or death if they plummet to the forest floor?

Despite this apparent lack of purpose, most biologists assume that play – a high-energy, high-risk behaviour – must serve some crucial function. If not, it is hard to explain why so many intelligent species have developed play as part of their behavioural repertoire. But how, then, does play increase the chances of survival or reproduction? How do baby rats benefit from play-fighting? And what do young Hawaiian crows get out of picking up twigs in their beaks, shaking them and tossing them around?

Most scientists believe that while its value is not always immediately evident, play enables humans and other animals to learn and master routines that will be important in their later lives. It can strengthen physical or social skills, for example, or help creatures explore and learn about their environment. In short, play helps young individuals become better adults.

NO FOOD AND NO PLAY MAKES KNUT A DULL BEAR

In their 2013 book entitled *Play, Playfulness, Creativity and Innovation*, the British biologists Patrick Bateson and Paul Martin present five characteristics of play.

First, play is inherently fun and rewarding. This sets it apart from other types of human and animal behaviour that are mainly aimed at obtaining some form of reward *afterwards*. People go to work because they want to get paid. Lions hunt gazelles because they are hungry and want to eat. Stags spar because they want to mate with a herd of hinds. Not so with play, which animals and humans spontaneously engage in simply because it is fun. Evidently, the act of playing is a reward in itself.

Second, play is not serious. When dogs, rats or elephants play-fight, they are not trying to hurt their opponent. And when children pretend to throw a scoop of ice cream, eggs and pasta into a frying pan in their toy kitchen, they are not really trying to make something to eat. Play appears to have no immediate practical purpose, which is also why humans and animals often take great

pains to signal ‘now we are just playing’. This prevents playmates from misunderstanding the situation. A dog, for instance, will often invite other dogs to play by stretching its forelegs to the ground, leaning on its elbows and lifting its rear end and tail. This way its playfellows know that their boisterous play will all be in good fun – no hard biting allowed.

Third, play is innovative and a generator of novelty. Just think of how small children, often to their parents’ dismay, investigate a multitude of ways to use porridge – besides eating it, of course. Or think of a mature, responsible father who suddenly, willingly, finds himself obeying the every whim of a five-year-old self-proclaimed princess of Atecopia.

Fourth, play looks different. This is why animals and people so easily recognise play when they see it. Play is often repetitive, with minor variations in each repetition. Anyone who has played peekaboo with a child knows that to keep the child’s interest, the game must balance repetitiveness with gradual developments. New twists and surprises must slowly be introduced, such as changes to voice inflection or props.

Play is also recognisable because it often borrows actions and thoughts from daily life and distorts or exaggerates them, or leaves out certain things. Rats fighting in earnest usually bite their opponent’s flanks, whereas play-fighting rats just nose and push at each other’s necks and shoulders.



Fifth and finally, **play is a sign of well-being and only occurs in the absence of illness, hunger and stress.** In December 2017, many were riveted by the media coverage of a starving polar bear on Baffin Island in Canada, half-dead and desperate to find food. A polar bear in that condition would never play – but might after its basic needs had been met. Animals that are cold, hungry, sick or frightened do not play. A continent away, at the Berlin Zoo, the delightful hand-raised polar bear Knut (2006–2011, RIP) would often play with his ball or wrestle with his keeper. We play when we feel good.

SPECIALISED HENS AND VERSATILE CROWS

Play is not for everyone. On the contrary, it is primarily observed in intelligent, warm-blooded creatures. Mammals like monkeys, dogs, pigs, cats, elephants, horses, bears, otters and humans play, and so do whales and dolphins, as well as parrots and crows. Simply put, animals with a relatively long childhood play the most, and these particular species often have larger brains than other animals and are better at learning. This is one of the reasons why most play scientists and scholars believe play and learning are intimately linked. The academic consensus is that play is a behaviour that enables young animals to explore and learn about their physical and social environment.

And young animals take their play seriously. A scientific experiment conducted in 1990 by the South African biologist and geneticist David Wood-Gush and