



When I was a child in the 1950s, my friends and I had two educations. We had school (which was not the big deal it is today), and we also had what I call a hunter-gather education. We played in mixed-age neighbourhood groups almost every day after school, often until dark. We played all weekend and all summer long. We had time to explore in all sorts of ways, and also time to become bored and figure out how to overcome boredom, time to get into trouble and find our way out of it, time to daydream, time to immerse ourselves in hobbies, and time to read comics and whatever else we wanted to read rather than the books assigned to us. What I learnt in my hunter-gatherer education has been far more valuable to my adult life than what I learnt in school, and I think others in my age group would say the same if they took time to think about it.

Children today are cossetted and pressured in

equal measure. Without the freedom to play they

will never grow up

For more than 50 years now, we in the United States have been gradually reducing children's opportunities to play, and the same is true in many other countries. In his book *Children at Play: An American History* (2007), Howard Chudacoff refers to the first half of the 20th century as the 'golden age' of children's free play. By about 1900, the need for child labour had declined, so children had a good deal of free time. But then, beginning around 1960 or a little before, adults began chipping away at that freedom by increasing the time

that children had to spend at schoolwork and, even more significantly, by reducing children's freedom to play on their own, even when they were out of school and not doing homework. Adult-directed sports for children began to replace 'pickup' games; adult-directed classes out of school began to replace hobbies; and parents' fears led them, ever more, to forbid children from going out to play with other kids, away from home, unsupervised. There are lots of reasons for these changes but the effect, over the decades, has been a continuous and ultimately dramatic decline in children's opportunities to play and explore in their own chosen ways.

Over the same decades that children's play has been declining, childhood mental disorders have been increasing. It's not just that we're seeing disorders that we overlooked before. Clinical questionnaires aimed at assessing anxiety and depression, for example, have been given in unchanged form to normative groups of schoolchildren in the US ever since the 1950s. Analyses of the results reveal a continuous, essentially linear, increase in anxiety and depression in young people over the decades, such that the rates of what today would be diagnosed as generalised anxiety disorder and major depression are five to eight times what they were in the 1950s. Over the same period, the suicide rate for young people aged 15 to 24 has more than doubled, and that for children under age 15 has quadrupled.

The decline in opportunity to play has also been accompanied by a decline in empathy and a rise in narcissism, both of which have been assessed since the late 1970s with standard questionnaires given to normative samples of college students. Empathy refers to the ability and tendency to see from another person's point of view and experience what that person experiences. Narcissism refers to inflated self-regard, coupled with a lack of concern for others and an inability to connect emotionally with others. A decline of empathy and a rise in narcissism are exactly what we would expect to see in children who have little opportunity to play socially. Children can't learn these social skills and values in school, because school is an authoritarian, not a democratic setting. School fosters competition, not co-operation; and children there are not free to quit when others fail to respect their needs and wishes.

In my book, *Free to Learn* (2013), I document these changes, and argue that the rise in mental disorders among children is largely the result of the decline in children's freedom. If we love our children and want them to thrive, we must allow them more time and opportunity to play, not less. Yet policymakers and powerful philanthropists are continuing to push us in the opposite direction — toward more schooling, more testing, more adult direction of children, and less opportunity for free play.

I recently took part in a radio debate with a woman representing an organisation called the National Center on Time and Learning, which campaigns for a longer school day and

school year for schoolchildren in the US (a recording of the debate can be found [here](http://radioboston.wbur.org/2013/06/19/will-a-longer-academic-year-improve-our-schools)). Her thesis — consistent with her organisation’s purpose and the urgings of President Barack Obama and the Education Secretary Arne Duncan — was that children need more time in school than currently required, to prepare them for today’s and tomorrow’s competitive world. I argued the opposite. The host introduced the debate with the words: ‘Do students need more time to learn, or do students need more time to play?’

Learning versus playing. That dichotomy seems natural to people such as my radio host, my debate opponent, my President, my Education Secretary — and maybe you. Learning, according to that almost automatic view, is what children do in school and, maybe, in other adult-directed activities. Playing is, at best, a refreshing break from learning. From that view, summer vacation is just a long recess, perhaps longer than necessary. But here’s an alternative view, which should be obvious but apparently is not: playing is learning. At play, children learn the most important of life’s lessons, the ones that cannot be taught in school. To learn these lessons well, children need lots of play — lots and lots of it, without interference from adults.

I’m an evolutionary psychologist, which means I’m interested in human nature, its relationship to the nature of other animals, and how that nature was shaped by natural selection. My special interest is play.

The young of all mammals play. Why? Why do they waste energy and risk life and limb playing, when they could just rest, tucked away safely in a burrow somewhere? That’s the kind of question that evolutionary psychologists ask. The first person to address that particular question from a Darwinian, evolutionary perspective was the German philosopher and naturalist Karl Groos. In a book called *The Play of Animals* (1898), Groos argued that play came about by natural selection as a means to ensure that animals would practise the skills they need in order to survive and reproduce.

This so-called ‘practice theory of play’ is well-accepted today by researchers. It explains why young animals play more than older ones (they have more to learn) and why those animals that depend least on rigid instincts for survival, and most on learning, play the most. To a considerable degree, you can predict how an animal will play by knowing what skills it must develop in order to survive and reproduce. Lion cubs and other young predators play at stalking and pouncing or chasing, while zebra colts and other prey species play at fleeing and dodging.

Do we need more people who are good at memorising answers to questions and feeding them back? Who dutifully do what they

are told, no questions asked?

Groos followed *The Play of Animals* with a second book, *The Play of Man* (1901), in which he extended his insights about animal play to humans. He pointed out that humans, having much more to learn than other species, are the most playful of all animals. Human children, unlike the young of other species, must learn different skills depending on the culture in which they are developing. Therefore, he argued, natural selection in humans favoured a strong drive for children to observe the activities of their elders and incorporate those activities into their play. He suggested that children in every culture, when allowed to play freely, play not only at the skills that are valuable to people everywhere (such as two-legged walking and running), but also at the skills that are specific to their culture (such as shooting bows and arrows or herding cattle).

My own research and ideas build on Groos's pioneering work. One branch of that research has been to examine children's lives in hunter-gatherer cultures. Prior to the development of agriculture, a mere 10,000 years ago or so, we were all hunter-gatherers. Some groups of people managed to survive as hunter-gatherers into recent times and have been studied by anthropologists. I have read all the writings I could find on hunter-gatherer childhoods, and a number of years ago I conducted a small survey of 10 anthropologists who, among them, had lived in seven different hunter-gatherer cultures on three different continents.

Hunter-gatherers have nothing akin to school. Adults believe that children learn by observing, exploring, and playing, and so they afford them unlimited time to do that. In response to my survey question, 'How much time did children in the culture you observed have for play?', the anthropologists unanimously said that the children were free to play nearly all of their waking hours, from the age of about four (when they were deemed responsible enough to go off, away from adults, with an age-mixed group of children) into their mid- or even late-teenage years (when they would begin, on their own initiatives, to take on some adult responsibilities). For example, Karen Endicott, who studied the Batek hunter-gatherers of Malaysia, reported: 'Children were free to play nearly all the time; no one expected children to do serious work until they were in their late teens.'

This is very much in line with Groos's theory about play as practice. The boys played endlessly at tracking and hunting, and both boys and girls played at finding and digging up edible roots. They played at tree climbing, cooking, building huts, and building other artefacts crucial to their culture, such as dugout canoes. They played at arguing and debating, sometimes mimicking their elders or trying to see if they could reason things out better than the adults had the night before around the fire. They playfully danced the traditional dances of their culture and sang the traditional songs, but they also made up

new ones. They made and played musical instruments similar to those that adults in their group made. Even little children played with dangerous things, such as knives and fire, and the adults let them do it, because ‘How else will they learn to use these things?’ They did all this, and more, not because any adult required or even encouraged them to, but because they wanted to. They did it because it was fun and because something deep inside them, the result of aeons of natural selection, urged them to play at culturally appropriate activities so they would become skilled and knowledgeable adults.

In another branch of my research I’ve studied how children learn at a radically alternative school, the Sudbury Valley School, not far from my home in Massachusetts. It’s called a school, but is as different from what we normally think of as ‘school’ as you can imagine. The students — who range in age from four to about 19 — are free all day to do whatever they want, as long as they don’t break any of the school rules. The rules have nothing to do with learning; they have to do with keeping peace and order.

To most people, this sounds crazy. How can they learn anything? Yet, the school has been in existence for 45 years now and has many hundreds of graduates, who are doing just fine in the real world, not because their school taught them anything, but because it allowed them to learn whatever they wanted. And, in line with Groos’s theory, what children in our culture want to learn when they are free turns out to be skills that are valued in our culture and that lead to good jobs and satisfying lives. When they play, these students learn to read, calculate, and use computers with the same playful passion with which hunter-gatherer kids learn to hunt and gather. They don’t necessarily think of themselves as learning. They think of themselves as just playing, or ‘doing things’, but in the process they *are* learning.

Even more important than specific skills are the attitudes that they learn. They learn to take responsibility for themselves and their community, and they learn that life is fun, even (maybe especially) when it involves doing things that are difficult. I should add that this is not an expensive school; it operates on less than half as much, per student, as the local state schools and far less than most private schools.

The Sudbury Valley School and a hunter-gatherer band are very different from one another in many ways, but they are similar in providing what I see as the essential conditions for optimising children’s natural abilities to educate themselves. They share the social expectation (and reality) that education is children’s responsibility, not something that adults do to them, and they provide unlimited freedom for children to play, explore, and pursue their own interests. They also provide ample opportunities to play with the tools of the culture; access to a variety of caring and knowledgeable adults, who are helpers, not judges; and free age-mixing among children and adolescents (age-mixed play is more conducive to learning than play among those who are all at the same level). Finally, in both

settings, children are immersed in a stable, moral community, so they acquire the values of the community and a sense of responsibility for others, not just for themselves.

I don't expect to convince most people, any time soon, that we should abolish schools as we know them today and replace them with centres for self-directed play and exploration. But I do think there is a chance of convincing most people that play outside of school is important. We have already taken too much of that away; we must not take away any more.

President Obama and his Education Secretary, Arne Duncan, along with other campaigners for more conventional schooling and more tests, want children to be better prepared for today's and tomorrow's world. But what preparation is needed? Do we need more people who are good at memorising answers to questions and feeding them back? Who dutifully do what they are told, no questions asked? Schools were designed to teach people to do those things, and they are pretty good at it. Or do we need more people who ask new questions and find new answers, think critically and creatively, innovate and take initiative, and know how to learn on the job, under their own steam? I bet Obama and Duncan would agree that all children need these skills today more than in the past. But schools are terrible at teaching these skills.

For more than two decades now, education leaders in the US, the UK and Australia have been urging us to emulate Asian schools — especially those of Japan, China, and South Korea. Children there spend more time at their studies than US children, and they score higher on standardised international tests. What US Education Secretary Duncan apparently doesn't realise, or acknowledge, is that educational leaders in those countries are now increasingly judging their educational system to be a failure. While their schools have been great at getting students to score well on tests, they have been terrible at producing graduates who are creative or have a real zest for learning.

In an article entitled 'The Test Chinese Schools Still Fail' in *The Wall Street Journal* in December 2010, Jiang Xueqin, a prominent Chinese educator, wrote: 'The failings of a rote-memorisation system are well known: lack of social and practical skills, absence of self-discipline and imagination, loss of curiosity and passion for learning.... One way we'll know we're succeeding in changing China's schools is when those scores [on standardised tests] come down.' Meanwhile, Yong Zhao, an American education professor who grew up in China and specialises in comparing the Chinese educational system with the system in the US, notes that a common term used in China to refer to graduates is *gaofen dineng*, meaning 'high scores but low ability'. Because students spend nearly all their time studying, they have little opportunity to be creative, take initiative, or develop physical and social skills: in short, they have little opportunity to play.

Unfortunately, as we move increasingly toward standardised curricula, and as we occupy ever more of our children's time with schoolwork, our educational results indeed are becoming more like those of the Asian countries. One line of evidence comes from the results of a battery of measures of creativity — called the Torrance Tests of Creative Thinking (TTCT) — collected from normative samples of US schoolchildren in kindergarten through to 12th grade (age 17-18) over several decades. Kyung-Hee Kim, an educational psychologist at the College of William and Mary in Virginia, has analysed those scores and reported that they began to decline in 1984 or shortly after, and have continued to decline ever since. As Kim puts it in her article 'The Creativity Crisis', published in 2011 in the *Creativity Research Journal*, the data indicate that 'children have become less emotionally expressive, less energetic, less talkative and verbally expressive, less humorous, less imaginative, less unconventional, less lively and passionate, less perceptive, less apt to connect seemingly irrelevant things, less synthesising, and less likely to see things from a different angle'.

You can't teach creativity; all you can do is let it blossom, and it blossoms in play

According to Kim's research, all aspects of creativity have declined, but the biggest decline is in the measure called 'creative elaboration', which assesses the ability to take a particular idea and expand on it in an interesting and novel way. Between 1984 and 2008, the average elaboration score on the TTCT, for every grade from kindergarten onwards, fell by more than one standard deviation. Stated differently, this means that more than 85 per cent of children in 2008 scored lower on this measure than did the average child in 1984. If education 'reformers' get their way, it will decline further still as children are deprived even more of play. Other research, by the psychologist Mark Runco and colleagues at the Torrance Creativity Center at the University of Georgia, shows that scores on the TTCT are the best childhood predictors we have of future real-world achievements. They are better predictors than IQ, high-school grades, or peer judgments of who will achieve the most.

You can't teach creativity; all you can do is let it blossom. Little children, before they start school, are naturally creative. Our greatest innovators, the ones we call geniuses, are those who somehow retain that childhood capacity, and build on it, right through adulthood. Albert Einstein, who apparently hated school, referred to his achievements in theoretical physics and mathematics as 'combinatorial play'. A great deal of research has shown that people are most creative when infused by the spirit of play, when they see themselves as engaged in a task just for fun. As the psychologist Teresa Amabile, professor at Harvard Business School, has shown in her book *Creativity in Context* (1996) and in many experiments, the attempt to increase creativity by rewarding people for it or by putting

them into contests to see who is most creative has the opposite effect. It's hard to be creative when you are worried about other people's judgments. In school, children's activities are constantly being judged. School is a good place for learning to do just what someone else wants you to do; it's a terrible place for practising creativity.

When Chanoff and I studied Sudbury Valley graduates for our paper 'Democratic Schooling: What Happens to Young People Who Have Charge of Their Own Education?', we asked about the activities they had played as students and about the careers they were pursuing since graduation. In many cases, there was a direct relationship between the two. Graduates were continuing to play the activities they had loved as students, with the same joy, passion, and creativity, but now they were making a living at it. There were professional musicians who had played intensively with music when they were students, and computer programmers who had spent most of their time as students playing with computers. One woman, who was the captain of a cruise ship, had spent much of her time as a student playing on the water, first with toy boats and then with real ones. A man who was a sought-after machinist and inventor had spent his childhood playfully building things and taking things apart to see how they worked.

None of these people would have discovered their passions in a standard school, where extensive, free play does not occur. In a standard school, everyone has to do the same things as everyone else. Even those who do develop an interest in something taught in school learn to tame it because, when the bell rings, they have to move on to something else. The curriculum and timetable constrain them from pursuing any interest in a creative and personally meaningful way. Years ago, children had time outside of school to pursue interests, but today they are so busy with schoolwork and other adult-directed activities that they rarely have time and opportunity to discover and immerse themselves deeply in activities they truly enjoy.

To have a happy marriage, or good friends, or helpful work partners, we need to know how to get along with other people: perhaps the most essential skill all children must learn for a satisfying life. In hunter-gatherer bands, at Sudbury Valley School, and everywhere that children have regular access to other children, most play is social play. Social play is the academy for learning social skills.

The reason why play is such a powerful way to impart social skills is that it is voluntary. Players are always free to quit, and if they are unhappy they will quit. Every player knows that, and so the goal, for every player who wants to keep the game going, is to satisfy his or her own needs and desires while also satisfying those of the other players, so they don't quit. Social play involves lots of negotiation and compromise. If bossy Betty tries to make all the rules and tell her playmates what to do without paying attention to their wishes, her

playmates will quit and leave her alone, starting their own game elsewhere. That's a powerful incentive for her to pay more attention to them next time. The playmates who quit might have learnt a lesson, too. If they want to play with Betty, who has some qualities they like, they will have to speak up more clearly next time, to make their desires plain, so she won't try to run the show and ruin their fun. To have fun in social play you have to be assertive but not domineering; that's true for all of social life.

Watch any group of children in play and you will see lots of negotiation and compromise. Preschoolers playing a game of 'house' spend more time figuring out how to play than actually playing. Everything has to be negotiated — who gets to be the mommy and who has to be the baby, who gets to use which props, and how the drama will unfold. The skilled players use tag questions to turn their assertions into requests: 'Let's pretend that the necklace is mine. OK?' If it's not OK, a discussion ensues.

We're not all equally strong, equally quick-witted, equally healthy; but we are all equally worthy of respect and of having our needs met

Or watch an age-mixed group of children playing a 'pickup' game of baseball. A pickup game is play, because it's directed by the players themselves, not by outside authorities (coaches and umpires) as a Little League game would be. The players have to choose sides, negotiate rules to fit the conditions, decide what's fair and foul. They have to co-operate not just with the players on their team, but also with those on the other team, and they have to be sensitive to the needs and abilities of all the players. Big Billy might be the best pitcher, but if others want a turn at pitching he'd better let them have it, so they don't quit. And when he pitches to tiny Timmy, who is just learning the game, he'd better toss the ball gently, right toward Timmy's bat, or even his own teammates will call him mean. When he pitches to walloping Wally, however, he'd better throw his best stuff, because Wally would feel insulted by anything less. In the pickup game, keeping the game going and fun for everyone is far more important than winning.

The golden rule of social play is not 'Do unto others as you would have them do unto you.' Rather, it's something much more difficult: 'Do unto others as *they* would have you do unto *them*.' To do that, you have to get into other people's minds and see from their points of view. Children practise that all the time in social play. The equality of play is not the equality of sameness. Rather, it is the equality that comes from respecting individual differences and treating each person's needs and wishes as equally important. That's also, I think, the best interpretation of Thomas Jefferson's line that all men are created equal. We're not all equally strong, equally quick-witted, equally healthy; but we are all equally worthy of respect and of

having our needs met.

I don't want to over-idealise children. Not all children learn these lessons easily; bullies exist. But social play is by far the most effective venue for learning such lessons, and I suspect that children's strong drive for such play came about, in evolution, primarily for that purpose. Anthropologists report an almost complete lack of bullying or domineering behaviour in hunter-gatherer bands. In fact, another label regularly used for such band societies is *egalitarian societies*. The bands have no chiefs, no hierarchical structure of authority; they share everything and co-operate intensively in order to survive; and they make decisions that affect the whole band through long discussions aimed at consensus. A major reason why they are able to do all that, I think, lies in the extraordinary amount of social play that they enjoy in childhood. The skills and values practised in such play are precisely those that are essential to life in a hunter-gatherer band. Today you might survive without those skills and values, but, I think, not happily.

So, play teaches social skills without which life would be miserable. But it also teaches how to manage intense, negative emotions such as fear and anger. Researchers who study animal play argue that one of play's major purposes is to help the young learn how to cope emotionally (as well as physically) with emergencies. Juvenile mammals of many species deliberately and repeatedly put themselves into moderately dangerous, moderately frightening situations in their play. Depending on the species, they might leap awkwardly into the air making it difficult to land, run along the edges of cliffs, swing from tree branch to tree branch high enough that a fall would hurt, or play-fight in such a way that they take turns getting into vulnerable positions from which they must then escape.

Tantrums might work with parents, but they never work with playmates

Human children, when free, do the same thing, which makes their mothers nervous. They are dosing themselves with fear, aimed at reaching the highest level they can tolerate, and learning to cope with it. Such play must always be self-directed, never forced or even encouraged by an authority figure. It's cruel to force children to experience fears they aren't ready for, as gym teachers do when they require all children in a class to climb ropes to the rafters or swing from one stand to another. In those cases the results can be panic, embarrassment, and shame, which reduce rather than increase future tolerance for fear.

Children also experience anger in their play. Anger can arise from an accidental or deliberate push, or a tease, or from failure to get one's way in a dispute. But children who want to continue playing know they have to control that anger, use it constructively in self-

assertion, and not lash out. Tantrums might work with parents, but they never work with playmates. There is evidence that the young of other species also learn to regulate their anger and aggressiveness through social play.

In school, and in other settings where adults are in charge, they make decisions for children and solve children's problems. In play, children make their own decisions and solve their own problems. In adult-directed settings, children are weak and vulnerable. In play, they are strong and powerful. The play world is the child's practice world for being an adult. We think of play as childish, but to the child, play is the experience of being like an adult: being self-controlled and responsible. To the degree that we take away play, we deprive children of the ability to practise adulthood, and we create people who will go through life with a sense of dependence and victimisation, a sense that there is some authority out there who is supposed to tell them what to do and solve their problems. That is not a healthy way to live.

Researchers have developed ways to raise young rats and monkeys in such a way that they experience other forms of social interaction but not play. The result is that the play-deprived animals are emotionally crippled when tested as young adults. When placed in a moderately frightening novel environment, they freeze in terror and fail to overcome that fear and explore the novel area, as a normal rat or monkey would do. When placed with an unfamiliar peer they might cower in fear or lash out with inappropriate and ineffective aggression, or both.

In recent decades we as a society have been conducting a play-deprivation experiment with our children. Today's children are not absolutely deprived of play as the rats and monkeys are in the animal experiments, but they are much more deprived than children were 60 years ago and much, much more than children were in hunter-gatherer societies. The results, I think, are in. Play deprivation is bad for children. Among other things, it promotes anxiety, depression, suicide, narcissism, and loss of creativity. It's time to end the experiment.