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# THE POWER OF PLAY

LOSING AND FINDING OURSELVES  
THROUGH EVERYDAY PLAY

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# FOREWORD: MAKING PLAY A VITAL PRESENCE

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I had the good fortune to grow up in times very different from today. I was raised on the southwest side of Chicago during an era when free, unstructured play was the norm. Some of my best memories include after-school sandlot pickup games and family road trips.

Particularly poignant memories surround a family trip west when I was 8 years old. Witnessing the Pacific Ocean's endless horizons, seeing the sequoia and redwoods' majesty, considering Half Dome's glacial origins, and taking in Lake Tahoe's clarity provoked a sense of awe and wonder that is still vivid to me today. The joyful pleasure of mutual family adventure reverberates, having shaped my love of exploration in nature and belief in the possible.

Years later, I learned that awe and wonder are related to the state of play, but I still thought play was a learned behavior. Studying the neuroscience of play behavior and contact with animal play researchers taught me that play is not learned—instead it is innate in each of us. Play is a behavior already embedded subcortically within our brains. This means **we don't need to learn how to play, we just need to find ways to activate it**. And when we do, our lives change for the better in surprising and far-reaching ways, as that childhood trip exemplifies.

After attending medical school at Baylor in Houston, Texas, and active duty as a Navy doctor, I took an internal medicine fellowship at the Mayo Clinic to improve my diagnostic skills. I then returned to Baylor as Assistant Dean in the College of Medicine and took a residency in psychiatry.

In 1966, a tragic event occurred in Texas that would shape my life's trajectory. Charles Whitman killed his wife and mother then—from the top of the University of Texas tower—shot and killed fourteen people and injured thirty-one, our country's largest mass shooting at that time. Texas Governor Connally sought explanation in order to prevent another such tragedy. I became a consulting psychiatrist to his Tower

Commission. What could have motivated Whitman, an otherwise charming, bright, 25-year-old Eagle Scout, U.S. Marine, and engineering student with no criminal history to commit such a devastating crime? The multidisciplinary group examined and reconstructed every possible facet of Whitman's life. Throughout those discussions, eminent child psychiatrist Robert Stubblefield, another member of the commission team, sighed again and again, "If only he had played." Ultimately the commission unanimously agreed Whitman's inability to control his violent but hidden impulses was related to the incessant suppression of play by his overbearing, sadistic father.

I went on to study young males who had committed murder and found repetitive stories of play deprivation with tragic consequences. Over the course of my career as a clinician and psychiatrist, I took over 6,000 play histories and interviews and learned that people with play in their lives were usually competent and successful. In contrast, major play deprivation often had seriously negative, long-term consequences.

Upon leaving my clinical practice, and with the support of the National Geographic Society and Jane Goodall, I had the opportunity to study play throughout the animal kingdom. Through my observations and in collaboration with animal play experts from around the world, I realized play is an evolved behavior in animals and our species, necessary not only for survival but also for healthy development and long-term mental health.

In an attempt to bring the scientific benefits of play into public consciousness, I founded the National Institute for Play (NIFP), a nonprofit organization focused on increasing, organizing and circulating scientific knowledge about play. To that end, I produced the three-part PBS series *The Promise of Play*, coproduced the BBC-PBS series *Soul of the Universe*, then published *Play: How It Shapes the Brain, Opens the Imagination, and Invigorates the Soul*. The book addresses the significance of play in the lives of animals and humans, including

how free play develops the social, emotional, cognitive and physical skills in children necessary for resiliency and creative thinking. I have also enjoyed co-teaching *From Play to Innovation* at Stanford's d.school since 2010.

**At the National Institute for Play, we maintain that play is an *urgent public health necessity*.** The pandemic and its aftermath, our nation's extreme political polarization, global geopolitical conflicts, and the climate crisis contribute to unprecedented, widespread levels of anxiety, depression, addiction, and hopelessness. Play is part of the solution. As NIFP identifies the latest advances in neuroscience, biology, social science and psychology to better understand and explain the role of play in brain development and social integration—we are optimistic. It is satisfying to see play science appearing regularly in mainstream media, touting the benefits of play at all life stages. I see this progression as parallel to the early stages of sleep science in the late 1970s, when the value of sleep in our lives was not yet recognized. Our current challenges demand an immediate future where scientific research into human play becomes a broadly recognized, credentialed discipline like sleep research is today.

This paper is a step toward that realization. It is an honor to collaborate on and present this work. My wish is that each reader is motivated to embrace play as an integral part of their daily world. We will be better individually and communally for including its vital presence during these extraordinarily challenging and uncertain times.

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# INTRODUCTION

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Of all the paths we follow to find our places in the world—in our occupations, our social circles, and the daily or deep rituals we observe—play is the most pleasurable. When we set aside time and space for play, we suspend time for the moment, and we encircle a place that is special and set apart from an intruding world. When deepest in play, a poised feeling of timelessness and immersion will overtake us.

And it is within that playful circle, set apart in place and time, that play rewards us with pleasure, companionship, and friendship as well as respite, renewal, and resilience. In considering our other life pathways, play makes us more innovative at work, more solidly bonded to our friends and families, and more lighthearted and productive in our daily routines.

At play we both lose ourselves and find ourselves.

Aiming to explore the dividends and varieties of play, this paper identifies the key questions—the why, the what, the when, the where, the who, and the how of play—that tell us what play is and help us understand why play is important. This discussion will also probe to find what play is not, examining the unhappy consequences of suffering a deficit in play that threatens impoverishment of mind, muscles, and spirit.

So, on to answering the basic questions of importance, definition, origins, styles and preferences, benefits of, and opportunity for play. The work of scholars in a broad range of fields inform the explorations of play that we examine here—among them neuroscientists, evolutionary psychologists, biologists, business psychologists, early childhood specialists, developmental psychologists, pediatricians, educationalists, physicians and psychiatrists, clinical psychologists, historians, anthropologists, and sociologists. They help answer the why, the what, the where, the who, and the how of play.



# WHY IS PLAY IMPORTANT?

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Play, throughout the course of our lifetimes, often proves essential in developing and enhancing human capabilities that lie in diverse neurological, social, physical, emotional, and mental realms. Among those, and noted below, play proves crucial in:

- **Building Brains.** The science of the study of play and playing is rapidly advancing as fields as diverse as molecular biology, comparative embryology, comparative neurochemistry, and neuroarchitecture have begun to yield insights into this phenomenon that is as basic to our nature as sleeping and dreaming. To take just one aspect of this emerging science into account—at the most fundamental level, researchers have begun to understand how play builds brains by encouraging new neural connections to form.

In studies on the brains of rats (their brain stem is similar subcortically to ours), neuroscientists have found that play stimulates the branching that they term “arborization.” Crucially, among its other benefits, play stimulates the production of a protein, a neurohormone called “brain-derived neurotrophic factor” (BDNF), that spurs the growth and differentiation of nerve cells or neurons (Gordon 2003; Yogman, et al. 2018). BDNF also stimulates the growth in synapses, expanding the circuitry that transmits the electrical impulses of our nervous system. Extensive animal play research demonstrates that normal, adequate play correlates with increased brain size (Diamond, Krech, and Rosenzweig 1964), and further, play helps craft what scientists call the “social brain.” In addition to the effect play has on promoting social adaptation, another dividend includes a heightened ability to manage stress (Garner 2012; Yogman, et al. 2018). In the last two decades, scientists who study play have also begun to understand the brain’s reward circuits and the neurochemistry of reward itself.

Reward, a key component of fun, is conveyed within the brain by dopamine, a neurotransmitter that has many functions depending on where and when it is secreted. Dopamine is made by cells in the brain’s core, in the substantia nigra and the ventral tegmental area. In rats, dopamine and play are linked (Vanderschuren, Niesink, and Van Pee 1997). Neuroscientist Jaak Panksepp (2007) concluded

that friendly, physical-social play, mainly consisting of the games that young children themselves design, may facilitate the growth of pro-social brains.

- **Enabling Attunement and Securing Attachment.**

Starting at about six weeks of age, babies begin to respond to the gentle, music-like rhythmic talk known officially as prosody and also called “motherese,” a playful back-and-forth that naturally occurs between infant and mother or caretaker. This social play is hardwired in both of their brains. The play is triggered by the infant seeing the face of the mother, the subsequent eye contact that evokes the instinctive social smile of the infant, and the spontaneous joy produced simultaneously between the two. Electroencephalography (EEG), or functional magnetic resonance imagery, of mothers and babies interacting in this manner reveals their right brain areas light up together in tune as they respond emotionally to each other. These first playful, nurturing exchanges (a basic element of secure attachment) set the stage for a lifetime of trust. They also set the stage for lifelong play (Schoore 2015).

The eruption of *mutual joy* through attunement establishes the foundation of play itself in the infant. It provides a foundation to support a lifetime of pleasurable, playful experiences. As children grow and connect with others, and even as they become adults connecting with friends and partners, the attunement dynamic—with its playfulness component—underlies these more complex interactions. Our capacity to connect, or attune, is integral to our capacity to play and to be playful with others.



A 4-year old and her grandfather attuned to one another. Photo courtesy of PlayCore, Inc.

## WHY IS PLAY IMPORTANT? *continued*

*The core of healthy adult personality is the ability to make continuous, stable and cooperative relationships with other people, especially love objects, and that the satisfactory development of this ability in the adult is dependent on its healthy development in childhood, especially in the first three to five years of life, especially when the child is making his first social relationships—those with his parents. (Bowlby 1956, 211)*

- **Developing Self-Awareness.** Infants move beyond self-stimulation to playful exchanges as they recognize and imitate facial expressions of adults. This is the beginning of understanding that they, themselves, are separate from, yet a part of, the world. And this revelation, that there is a world out there beyond themselves waiting to be discovered, is a milestone for the developing child and a condition for optimal development. These play-enhanced experiences help create our authentic selves, because play urges are intrinsic. The pre-eminent sociologist of play Thomas Henricks (2015) noted that **“play is not an escape; it is a cultivation, refinement, and fulfillment of who we are”** (296).
- **Learning and Learning to Love Language.** Perhaps the most complex skill that humans learn at any point in their lives is language. Not just acquiring a vocabulary, which is a remarkable feat that children accrue mostly through playful, intergenerational exchanges with fluent speakers, but through rapid and playful learning, children master language itself. This is a tricky, twisting journey—a game filled with detours and puzzles that we master little by little then volume by volume, playfully. That which begins as playing with sound in babbling children ends in clever adults as wordplay—puns and alliteration, rhymes, spoonerisms and malapropisms, palindromes and acronyms, metaphors and oxymorons. The playful family experiences of sharing this wordplay trigger the creation of lifetime memories. Gray (2013a) details how play helps children navigate the increasing complexity of learning language, a pursuit that lasts a lifetime: “When language play is carried into adulthood, we call it poetry” (123).

- **Enhancing Executive Function and Encouraging Self-Regulation.** Play aids thinking and furthers self-control. Because play is so absorbing and pleasurable, young children learn how to concentrate and filter out distractions to better focus their attention (Bodrova, Germeroth, and Leong 2013). In the process, children learn elementary lessons about controlling stray impulses. Games that encourage thinking, in rough developmental chronology, include peek-a-boo, hiding and finding games, imitation and role-playing games, finger-play games (like the itsy-bitsy spider), games that recruit movement to songs and chants, and before long, jump-rope rhymes. Early on, playful trial and error at sorting and stacking blocks, for example, encourages young children to concentrate more confidently and to explore ways to manipulate space. This process aids in later imaginative abilities to think in three-dimensional terms without the blocks (Wilson 1999). They learn something about sequencing at this stage, too, as they sort and match colors and shapes. Crucially, cognitive psychologists who have tested young children for their mastery of various skills that govern behavior and contribute to resilience called “executive functioning”—for example, their ability to regulate strong emotion on their own, their ability to stay on task, and their ease in social situations—have found that those children who have been encouraged to play freely score higher on these measures. And correlational studies reveal that young children who have more time for free play score higher than others on tests of (a) executive functioning, (b) emotional control, (c) social ability, and (d) self-regulation (Gray et al. 2023).

And play does not train only one skill at a time. Remarkably, because playing with blocks demands and encourages abstract thinking, construction-block play also appears to help children develop their language abilities. Later, and more straightforwardly, while learning the rules of games, older children learn essential lessons about taking turns and patience that help them begin to expand their appreciation for the value of fairness and cooperation. This evolving grasp of social trust forms the basis of ethical understanding and moral development that lasts a lifetime (Kohlberg 2008).



Child development researcher Elena Bodrova and her colleagues (2013), note that play helps children learn to delay gratification. “Engaging in self-regulated behaviors in play becomes possible because an inherent relationship exists between the roles children play and the rules they need to follow when playing these roles. For preschoolers play becomes the first activity in which children are driven not by the need for instant gratification—prevalent at this age—but instead by the need to suppress their immediate impulses” (113). The joyful engagement in a playful activity allows the desire for the intrinsic play-driven mastery to transcend distracting impulses. This benefit allows more focused concentration and is a step toward mollifying mild ADHD (Panksepp 2007, 60).

- **Sharpening Social Skills.** Psychologists point to the ways that play enhances the “social brain” that allows us to make connections and the “prosocial brain” that promotes friendship and builds social stability. Play teaches and trains give-and-take and therefore empathy. And play often demands, and enjoyably practices, teamwork, cooperation, and collaboration. To play is to learn (Singer, Golinkoff, and Hirsh-Pasek 2006).
- **Reducing Stress.** Play blows off steam, and we are beginning to understand how. Play triggers the release of chemicals called endorphins that operate on the brain’s opioid receptors to produce a calming effect. Unsurprisingly, we are noticeably more fidgety and edgier when we cannot find the time for play. Brown (Brown and Vaughan 2009) concluded that “consummate players can more easily meet challenges with grace. Play allows us to embrace and even sculpt the contours of our fates with an ironic humor and a sense of sharing” (174).
- **Training Physical Skills and Building Physical Strength.** When we think of strength and skill among adult players, it is easy to call to mind the bulging muscles and astonishing athleticism of professional athletes. But consider the interval between crawling and toddling as very young children move around unceasingly. In quick

succession they will slither and squirm, roll and rock, wriggle on all fours, stand up and fall down, tumble, then scramble toward a toy or the family pet. Try replicating the movements of a crawler on the brink of toddling and you will have trouble keeping up. Karl Groos (1898), one of the pioneers of the study of play among both animals and humans, believed the most basic function of play was preparation for later life. He noted that “animals cannot be said to play because they are young and frolicsome, but rather that they have a period of youth in order to play” (75).

- **Boosting Courage and Increasing Stamina.** Coaches who like to say, “When the going gets tough, the tough get going,” and philosophers who observe that “action becomes character” are driving at the same idea about strength and virtue. Because play challenges us and stretches our sense of what we can accomplish intellectually and physically, we become more secure, and self-reliance becomes second nature (Ratey and Hagerman 2008).

The essential characteristics of play and important effects of playing are not hard to discover and to list. Scholars generally agree that the attributes and characteristics of play include that play is *voluntary* and freely chosen, is often *set apart* in time and place, *rewarding* in varied ways, *engaged in for itself*—a property that philosophers call “autotelic”—*furthered by rule-making* (Gray 2013b), and extended and negotiated by rule-breaking!

But defining play—saying what play is despite its enormous variety and list of attributes—has challenged scholars, often eluding them. Defining play takes some doing.

**So, the big question: What is play anyway?**

# WHAT IS PLAY ANYWAY?

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Play is fun and may come to us easily and naturally. But thinking about play can be complicated and vexing. When play is seen as a thing or regarded as a whole list of separate traits (and it is tempting to see play that way), it is difficult or nearly impossible to define.

*But.* Play is not a thing or a list of things. Instead, play is a biological phenomena that enables a set of feelings and play-triggered intrinsic motivations to emerge and then play out in our experiences. Of course experience varies from situation to situation. And then too, the experience of play varies from individual to individual. A chess player and a martial artist can both be playing, but their experiences are vastly different.

*The characteristics of play all have to do with motivation and mental attitude, not with the ... behavior. Two people might be throwing a ball ... or typing words on a computer, and one might be playing while the other is not. To tell which one is playing and which one is not, you have to infer from their expressions and the details of their actions ... why they are doing [it] and their attitude toward it. (Gray 2013a, 138)*

So, what do these players share? Thanks to the research of Panksepp (2004) and colleagues, we have begun to understand what players share at the most basic microscopic and chemical levels. He discovered that neurons firing in the lower areas of mammal brains light up neurons in the higher regions (24–40). Playful experiences and playful attitudes also form and establish neural pathways in the brains of mammals. For convenience, Panksepp termed these pathways PLAY circuits.

In the case of us humans, the circuits form early on and grow over our lifetime, conferring a variety of benefits that include managing stress, easing navigation of social situations in ways that contribute to a sense of belonging, and fostering attitudes that promote curiosity and encourage learning. Paraphrasing (Brown and Vaughan 2009), play is a very primal drive that is in us as preverbal infants and still with us as adults, though often much suppressed. Play can happen without a conscious decision such as, “I’m going to play now.” Like

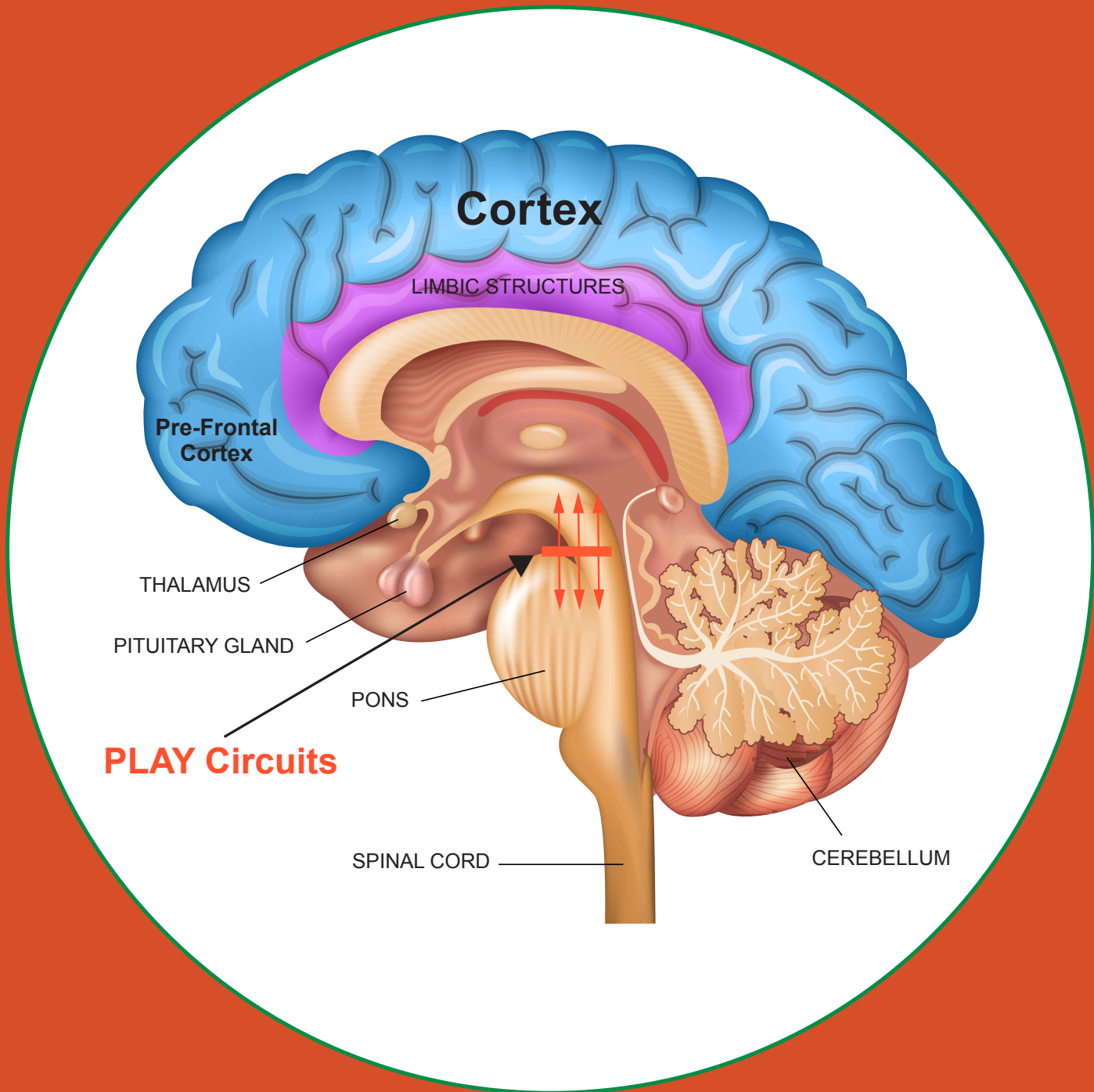
digestion and sleep, play in its most basic form proceeds without a complex intellectual framework. When we play, our brains light up, and the neural pathways formed from repeated playful times (whether early or later in life) shape how alive we feel, how well we learn, how cleverly we create/innovate, and how we relate from that point forward (15).



The activation of those varied pathways creates a series of pleasurable experiences. The series begins with a sliding scale that emphasizes the experiences of joy, curiosity, and wonder, progressing through surprises that range from appreciation to thrill, moving on to pleasures that range from satisfaction to glee, proceeding to enhance methods of understanding that range from tolerance to mastery, bolstering strengths that lie between stamina and creativity, and ultimately—when we are lucky—ending in poise, a suite of emotional states that range from grace to fulfillment.

So, to settle on a definition. Play is an ancient, voluntary, pleasurable episode or set of events that we (and other species) engage in for its own sake that meanwhile strengthens our muscles, instructs our social skills, tempers aggression, releases stress, deepens our positive emotions, and enables balance (Eberle 2014).

Discovering why we play is just as fascinating.



# WHY DO WE PLAY?

The simple answer? We play because it's fun. Pleasure anchors play. (Again, those PLAY circuits, embedded deep within the brain, enable and create positive feelings.) We play because play is rewarding and fulfilling from the outset, and the rewards unfold as a process. And, despite play increasing risks (in us and also in our animal cousins) of predation or physical injury, nonetheless this process has been preserved and increases in intricacy the more

complex and intelligent the species. The process spans six key Elements of Play—states of play that roll forward and double back. Scott Eberle, historian and play theorist, noted that in play, *anticipation* leads to *surprise*, and *surprise* triggers *pleasure*. *Pleasure* keeps you playing, helping you to learn and understand. *Understanding* builds strength of mind, body, and character. *Strength* of character grants you *poise* in life and readies you to play some more.

	ANTICIPATION	SURPRISE	PLEASURE	UNDERSTANDING	STRENGTH	POISE
Interest	Appreciation	Satisfaction	Tolerance	Stamina	Dignity	
Openness	Awakening	Buoyancy	Empathy	Vitality	Grace	
Readiness	Stimulation	Gratification	Knowledge	Devotion	Composure	
Expectation	Excitement	Joy	Skill	Ingenuity	Ease	
Curiosity	Discovery	Happiness	Insight	Wit	Contentment	
Desire	Arousal	Delight	Mutuality	Drive	Fulfillment	
Exuberance	Thrill	Glee	Sensitivity	Passion	Spontaneity	
Wonderment	Astonishment	Fun	Mastery	Creativity	Balance	
<b>To infinity and beyond!</b> <i>Buzz Lightyear</i>	Playfully challenging the limitations of a science, an art, or a technology just to see what happens is one of the most common ways in which novel ideas are born. <small>Robert and Michele Root-Bernstein Contemporary American physiologist and historian, respectively</small>	<b>Men do not quit playing because they grow old; they grow old because they quit playing.</b> <small>Oliver Wendell Holmes American physician 1809–1894</small>	Learning through play means trying things this way and that, staying loose, changing your perspective, and trying the intuitive instead of the logical. <small>Stuart Brown, M.D. Contemporary American psychiatrist</small>	<b>A child loves his play, not because it's easy, but because it's hard.</b> <small>Benjamin Spock American pediatrician 1903–1998</small>	Play grows from our sense of freedom, it produces strength and skill for the players, stimulates the imagination, and encourages agility and self-confidence. <small>Joseph W. Meeker Contemporary American human ecologist</small>	

# PLAY ELEMENTS

Elements of Play chart by The Strong National Museum of Play, Rochester, New York.



## WHY DO WE PLAY? *continued*

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Read downward to see how the Elements grow more powerful as you play. Scan across the rows to see how play unfolds as you go. Note how each Element of Play is in itself a reward. Think about how you play and how experiential variations of these Elements fit with how you feel when you are at play.

Players find pleasure in each state of play, in all six states of mind, being, and emotion. Here are the six Elements of Play:

- **Anticipation.** We start playing by thinking about playing. Anticipating play is itself pleasurable and rewarding from the onset. In this way, play begins in pleasant *anticipation*. Starting in September, skiers will begin to muse about hitting the slopes, and in California, it is never too soon to start thinking about taking the golf clubs out of storage or waxing the surfboard. Or more instantly, kids who line up for a footrace will yell, “Ready, set, GO!” At the track, the starter will say, “Ladies and gentlemen, start your engines,” or horse racing fans will hear, “Post time!” Football players assemble for the kickoff as spectators lean forward expectantly, both keenly and enjoyably wondering what will happen next. And wonder gives way to *surprise*.
- **Surprise.** Play rewards us with surprises. Roller coaster riders perched at the top before the first plunge are tinged with anticipation deepened by the impending thrill. Teenagers at the first school dance may initially hold back, reluctant to join the dancing, but they soon relent and boogie, tap, spin, swing, moonwalk, samba, or slide together electrically. Inspired dancers surprise themselves when they bust out an original graceful and athletic move. But play demands creativity, enhancing it even when following strict rules. Composers search for the memorable, innovative chord progression, and sopranos and trumpet players hit the impossibly high notes. Designers play with space and technology to give us something new. Other artists, painters, and poets find startling perspectives and astounding expressions. Kids experimenting with crayons recreate bucolic scenes that show us the pretty brown horse, the beaming yellow sun, the trusty blue truck, and the sturdy red barn. Moviemakers

and their audiences hold their breaths for the electrifying plot turn. Joke-tellers make us wait for the punchline. April Fool’s pranksters hide the whoopie cushion or rig the kitchen faucet to squirt, anticipating our delight *gleefully*. All of these are distinct from shock because they are pleasant surprises that are harmless (or mostly so).

- **Pleasure.** Pleasure anchors play, invites play, and keeps play going—even when the going gets tough. Pleasure also guarantees that players can reap the rewards of playing. Play rewards us with enough fun so that we can master difficult ways of playing. Pleasure sustains the efforts we extend to play with more grace or skill and allows us to play with more empathy (Gray 2013a, 174).
- **Understanding.** Play trains our *understanding* in this way—it requires understanding, in fact—sometimes in the sense of mastery and sometimes in the feeling of sympathy, mutuality, and friendship. Playing together requires understanding but also trains understanding as we learn teamwork and our place on the team, our role at the dinner party, or further out, our function in the operating room and our place in the workplace. Organizational behavior researcher Charalampos Mainemelis and Sarah Ronson (2006) observed that “although on the surface the reality of play seems to contradict the very idea of work, play in fact creates new work for the future” (86). Accordingly, some of the most innovative corporations in the information sector build play into work experiences. And naturally so. We learn to communicate at play, we learn to compete playfully, and at play we learn to smooth over conflict. We learn to form up and perform. Play strengthens our bonds and augments our performance.
- **Strength.** Play makes us stronger and fitter socially (Vanderschuren, Niesink, and Van Pee 1997). Play also strengthens our muscles, quickens our reflexes, and bolsters our equilibrium.
- **Poise.** Players reap social benefits of play with increased resilience and confident spontaneity. But the benefits of play stretch to the physical as well, particularly in regard to the sense of balance. Brown

(Brown and Vaughan 2009) noted poetically that while at play “the body remembers what the mind has forgotten” as we play automatically, unthinkingly on muscle memory (151). At play we draw on the feedback mechanisms that orient us and allow us to climb and jump. Play also trains the oculomotor sense, the dynamic eye-hand-foot coordination that we draw upon in racket sports, mountain climbing, and ballroom dancing. And play trains the vestibular system of our inner ears, keeps us upright, and aids gymnasts’ awareness of their position even as they twist and tumble through space (Eberle 2014, 226).

When the luckiest players are most deeply immersed and poised, individually or when playing together, and get lost “in a play state” where they are carried along and harmonize in a state of “flow,” they may experience a sense of timelessness (Csikszentmihalyi 2020, 40). And in this pleasurable suspension of the awareness of the passage of time, the player and the play, the action and the awareness, may become one. As the Irish poet William Butler Yeats wisely asked, “How can we know the dancer from the dance?” (Yeats and Watts 2000, 183).

At play we lose ourselves, but at play we also find ourselves.



# WHAT'S NOT PLAY?

Play swirls forward on waves of positive emotion and self-discovery. Once we are safe and secure, we look forward to playing. We relish its surprises. We revel in its fun. We benefit from the skills that we learn and the trust that we develop. We are strengthened in mind, body, and in our social lives when we play. And when play grants us

satisfaction, grace, dignity, and balance, we are renewed, de-stressed, and poised to play again.

One way to better understand play is to probe what play is not. The “Impediments to Play” chart (below) notes a series of negative emotions, opposites of the Elements of Play—feelings that stand in the way of play and frustrate its benefits.

	FEAR	SHOCK	PAIN	INTOLERANCE	WEAKNESS	ANXIETY
Apprehension	Passivity	Dissatisfaction	Prejudice	Frailty	Shame	
Indifference	Suspicion	Dismay	Detachment	Lethargy	Mistrust	
Trepidation	Tedium	Disappointment	Ignorance	Cowardice	Worry	
Impatience	Alarm	Despondency	Artlessness	Clumsiness	Diffidence	
Apathy	Obduracy	Unhappiness	Ineptitude	Obtuseness	Dismay	
Boredom	Numbness	Disgust	Selfishness	Lassitude	Frustration	
Lethargy	Panic	Gloom	Insensitivity	Recalcitrant	Rigidity	
Scorn	Fright	Exhaustion	Fecklessness	Negativity	Frenzy/Torpor	

Read this Play Impediments chart across and you will see the antithesis of the Elements of Play: fear, shock, pain, intolerance, weakness, and anxiety. Read the columns downward to find increasingly dark emotions antagonistic to friendly, rewarding play.

**IMPEDIMENTS TO PLAY**

*Impediments to Play chart, 2020, courtesy of Scott G. Eberle. Used with permission.*





Reading across the chart reveals a kind of antithesis of play as *apprehension* feeds passivity, which courts *dissatisfaction*, which encourages *prejudice*, which results in *frailty* and *shame*. And for intensifying negative emotions, read downward. Fear in the downward column may be understood in darkening shades of *apprehension*, *trepidation*, *apathy*, and *scorn*. Notice that *shock* may begin in *suspicion* and end in *fright*. And if pain can be recognized in *dissatisfaction* and *dismay*, it may be seen more starkly in *gloom* and *exhaustion*. *Intolerance*, *weakness*, and *anxiety* can be perceived in *insensitivity*, *recalcitrance*, and *rigidity*. When we are pinioned by *shame*, *mistrust*, *worry*, and *diffidence*, we are unlikely to be ready to play, and we slip toward a loss of playfulness.

So grief, violence, fear, suspicion, resentment, bitterness, deceit, humorlessness, threat, depression, and grief cannot give rise to play. And play's opposites

help us see play more clearly. Competitive sports qualify as play and may well also be playful, but bullying is not play because it violates tenets of fairness and empathy. A roller coaster ride is thrilling but a hostage-taking is terrifying. A card trick is funny and mystifying, but internet scamming is criminal, no matter how ingenious. Eberle (2015a) concluded, somewhat wryly: "We may play at sudoku, but we toil at double-entry bookkeeping; competitive marksmanship counts as play, but the same cannot be said of a firing squad without courting perversity."

The Impediments to Play charted left comprise modern phenomena and states of discontent. But play had been around on the planet for many, many millions of years before magicians invented card tricks and computer scientists brainstormed the idea for the World Wide Web.

**So it makes sense to wonder and ask:  
Wherever did play come from?**

# WHEREVER DID PLAY COME FROM?

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Play rewards us with fun, but fun is extraordinarily complicated and sometimes puzzling. For example, biologists note that natural selection will, over time, wipe out any nonadaptive behavior that carries risk. That is, unless the risk-reward equation favors taking the risk, and much of play demonstrates the risk-reward equation favors savvy play. Of course, mountain climbers, roller skaters, free divers, motocross riders, riders on horseback, and devotees of a dozen sports—from established to edgy, from football to free-climbing—all court plenty of risks. So do toddlers and poker players, in fact, however different the risks.

So even though play is risky, the basic question is: Why did our species, like nearly all other mammals, some birds, octopuses, and perhaps a reptile or two, preserve play over millions of years of evolution? Why, as a fundamental expression of our human nature and behavior, do we still court playful risk—and even danger—to play?

Probably one of many answers, outside of the rewarding, playful developmental process noted previously, is that play makes us more interesting and more attractive to mates. Good players are generally good reproductive candidates. Recall the (sometimes injurious) mock battles that deer and elk engage in during mating season. The defeated and disappointed lurk at the lonely fringe. Play that demonstrates fitness—an individual's capability and mastery—increases the chance that individuals will pass along their genes. Social scientists note similar, though much more complex, contests among humans and other primates, where play demonstrates courage, cleverness, strength, stamina, agility, companionability, fertility, and responsibility.

Furthermore, animal play researchers maintain that “play serves the function of enhancing kinematic and emotional responses when control is lost due to unexpected events such as loss of balance and emotional shocks. This play is viewed as a training exercise to enhance the animal's response in unexpected situations” (Spinka, Newberry, and Bekoff 2001). In short, one of the ways play helps us survive is by preparing us for the unanticipated. It is also interesting and important to note that Brown (Brown and Vaughan 2009) and these same researchers maintain that in order to play well, a species must have a sense of safety and a full belly (42, 81, 159).

It is thus a good guess that play, one of nature's greatest inventions, arose and then expanded in breadth. We now see its vestiges in invertebrates (octopuses, shrimp, Nile soft-shelled turtles, and Komodo dragons) and in clearer forms throughout mammalian species.

We clever humans may assume that we have a corner on mirth. But evolutionary biologists, most notably Panksepp and Jeffrey Burgdorf (1999), discovered that juvenile rats laugh while they play rough. The researchers needed a bat-detector to shift their



delighted ultrasonic chirps down to our human hearing range. In the recordings of rats' laughter during rough-and-tumble play, we hear the distant evolutionary reverberations of the creation of our human play.

So, like all other mammals, we humans reserve a place for play in our development. And for most mammals, play diminishes sharply toward adulthood. (Apart from dogs, river otters, dolphins, squirrels, and a few others that play at full tilt throughout their lives.) But the most obvious difference between humans and the rest is that **we retain the ability and need to play throughout our lives**. We are designed by our biology to possess the quality that biologists call “neoteny”—the retention of juvenile qualities throughout a long childhood and even into old age. This is thanks to neuroplasticity, the extraordinary ability of our brains to grow and organize new connections, that lasts a lifetime (Brown and Vaughan 2009).

Compared to our distant relations among mammals, we are unique, and it bears repeating that all humans experience a very long childhood supplemented by lifelong neuroplasticity. Thus we as a species are primed to play throughout our lifetimes, and we experience less than the fulfillment of our overall design if play gets suppressed or lost in our task-dominated adulthoods. Of course, play becomes more complex for us as we deal a hand of cards, trade quips, ski the moguls, paint a picture, or keep a bowling score. (Even our primate cousins can't play those games.) But we humans retain the strong and keen impulse to play. The luckiest among us continue to give in to the built-in impulse to play throughout our lives.

Note that Maria Montessori said play is the work of the child. And let us not forget that work can be the play of the adult. As Ashley Montagu (1989) says, “The description of their work as play is no mere metaphor, but a genuine statement of what they feel about their work--it is *interesting, fun, challenging, exciting*...it

is a characteristic of the child, and, surely, this is not something we are designed to grow out of?” (104).

And adult play itself has led biologists to discover what is perhaps its most important function: building and maintaining healthy relationships. How? It promotes inclusivity, cooperation, creativity, adaptivity, and egalitarianism (Dingfelder 2024, 22).

*Our biology designed us for play throughout the life cycle. We play when we're young, and we're still able to play when we're old. Most animals stop playing when they pass through their juvenile stage. As they reach sexual maturity, they vie for mates and try to extend their dominance. And their mature nervous systems are more fixed and less flexible. But we retain the capacity to generate new neurons throughout our lives. We are neotenuous—we retain that juvenile ability to play. (Gould 1985)*

The evidence emphasizes “that we are designed to grow young with the years, ... to retain the qualities of youthfulness that are characteristic of the child” (Montagu 1989, 204). In addition to the joy, there is that delightful earnestness that children exhibit in play, a seriousness that in no way diminishes their pleasure. Much earlier Nietzsche (2002) remarked that to become mature is to recover the sense of earnestness that we had as a child in play (95).

# HOW HAVE WE BEEN WIRED TO PLAY?

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Stunning advances in brain science and recent discoveries that detail the neurochemistry, neurocircuitry, and neuroarchitecture of play help us understand why play is both essential and enjoyable—why play is at the same time required and rewarding.

These studies begin at the very beginning, with embryology that has revealed, in detail, the close family resemblances among the animal world—we humans included. Though species' bodies and life cycles diverge and vary amazingly around the planet, our brains share remarkably similar form, chemistry, wiring, and function.

Studies strongly suggest that our common origins stretch back as far as 500 million years. As a result, we share basic behaviors and experiences with a dizzying variety of Earth's species—among the most remarkable, sleep, dreaming, and, of course, play. The specifics of human neurophysiology and neuroarchitecture and their relationship to play over the human life cycle allows play to be seen as a fundamental aspect of human nature. We, like other animals, are built to play (and built by play). By design we are among the most playful species.

Through objectively controlled experiments, play scientists, including researchers such as Jaak Panksepp, Jeffrey Burgdorf, Vivian Pellis, Sergio Pellis, Louk Vanderschuren, and Stephen Siviy, have discovered the pathways of play in the brain along with the behaviors that we hold in common.

We last shared a common ancestor with rats 65 million years ago. But in their laboratories, Panksepp and Burgdorf discovered that rats laugh when tickled and when they wrestle, their own form of rough-and-tumble play (Panksepp and Bergdorf 1999). The discovery was stunning, and a bit funny, but perhaps not so surprising in the end because our human subcortical brain stems and upper spinal cords are near duplicates of the rats' brain architecture. In these very old, very deep and shared brain structures, scientists have found the origins and mechanisms of play. We humans also cackle from friendly tickling and laugh when we roughhouse.

We also share neurochemistry. An array of behavior-modifying, signaling molecules called neurotransmitters—dopamine, serotonin, endocannabinoids, norepinephrine, acetylcholine, GABA, BDNF, IGF-1, endorphins, and more—enable, encourage, extend, and modify play behavior in the lives of playful animals. Play scientists are also beginning to understand the interactions and effects of various hormones connected with play, like those that reward us with pleasure, including the bonding hormone oxytocin and the various cannabinoids, that are yielding to new research. We are on the verge of discovering the instruments that orchestrate the symphony of play.

And looking for the seat of play, the area that stimulates and organizes play, scientists are now exploring the anatomy of a deep and ancient brain region called the periaqueductal gray that lies within the midbrains of all mammals. Stimulating or suppressing this region results in increased or decreased play behavior (Gloveli 2023). This is a promising, potentially earth-shaking discovery. We are beginning to understand pleasure and reward; these ancient mysteries that puzzled philosophers for millennia are giving way to understanding.

As these discoveries gain steam, we become increasingly aware of the necessity of healthy play. It seems that we basically need to play as part of our natures, different from but parallel to the pervasive multispecies' need to sleep. Both sleep and play reside within the most ancient areas of the brain that have helped ensure our survival over the long evolutionary haul. Sleep frees us to experience soaring dreams. Play frees us to leap literally and imaginatively. And here we begin to see why play is essential to our physical and emotional well-being.

When humans and other animals are deprived of play, they suffer a variety of deficits. Smaller, less neurally well-connected brains, when subjected to early, serious and prolonged sleep deprivation, suffer broad cognitive and emotional symptoms that range from lethargy and withdrawal to hostility. This is quantifiable when objective studies compare play sufficiency with play deprivation (Pellis et al. 2023). Ominously these

play-deprivation symptoms persist from childhood into adulthood (Brown, F. and Webb 2005, 143).

Happily, though, we are beginning to see how play furthers our physical, social, mental, and

emotional development. In effect, regular and sufficient play vaccinates us against isolation and torpor, timidity and melancholy. Again, play energizes all of us from infancy to old age.



*The easiest way to induce primal laughter and joy in young children is through tickling. This response conditions rapidly. After a few tickles, one can provoke social engagement and peals of laughter by provocative cues such as wiggling a finger. We have now found that chirping at around 50 kHz is increased markedly in young rats by manual tickling, and converging evidence suggests the response has more than a passing resemblance to human laughter. (Panksepp and Bergdorf 1999, 233)*

# WHAT ARE COMMON STYLES OF PLAY?

Even as infants and young children, we move toward the kind of play that we most enjoy. As we mature, we develop preferred, comfortable styles of playing. Brown, founder of the National Institute of Play, has drawn from thousands of interviews he conducted and observations he made to identify and categorize eight “play personalities.” Most people, he observed, are a mix of several of these, but usually one tends to predominate from one player to the next. Here are examples of famous players who personify these styles:

**The Players:** Jay Leno (Collector), Tom Brady (Competitor), Steve Jobs (Creator/Artist), Oprah Winfrey (Director), Margaret Cho (Joker), Jonas Salk (Explorer), Serena Williams (Mover/Kinesthete), and Greta Gerwig (Storyteller).



## THE COLLECTOR

Collecting is play. The Collector thrills at finding, acquiring, cataloging, and holding interesting objects and in recalling the experiences that they evoke. There seems to be no limit to the variety that Collectors will collect familiar things like: autographs, baseball cards, beer bottles, coins, dolls, fossils, *netsuke*, piggy banks, campaign buttons, stamps, vinyl records, vintage clothing, wine, and so on. Or a Collector may collect experiences: cosplay, wine tasting, learning new languages, roller coaster riding, scaling 14,000-foot peaks, skinny dipping, viewing solar equinoxes, or retiring. Or Collectors may revel in collecting unlikely things: airsickness bags, barbed wire, lobster dioramas, matchbooks, schnauzer memorabilia, or toothbrushes. (Yes, believe it or not, *toothbrushes*.) Because the Collector is in search of a joyful play-state, a collection can never be too goofy or too exhaustive. Collectors may enjoy their hobby alone or in company, as a solitary or shared passion.

If you enjoy building a collection and are never quite finished with the task, you may be a Collector.

### The Player: Jay Leno

*Clearly Jay Leno is a funny guy. He makes his living making jokes. But he also delights in locating interesting cars—buying, restoring, and displaying them, showcasing them on his television show, and driving them for fun. His exuberance overflows when showing off his large collection that includes an amazing range, from his favorite car, a ‘55 Buick Roadmaster, to a sleek Duesenberg Model X that is pushing 90. He says he buys autos for their stories and for the quirky enthusiasts he meets.*



*“One great thing about being a car guy with a TV show and a website is that I hear from lots of people who want to sell me cars. Most are Ford Granadas—those really rare ones with the fake hubcaps—but now and then something really interesting comes my way.” —Jay Leno (Leno 2013)*

Jay Leno takes pure joy in his car collection. Photo courtesy of Sharon L. Chapman, Wikipedia Creative Commons.

## THE COMPETITOR

Play often turns on competition, and Competitors search for the fastest start, the funniest retort, the perfect opening gambit, or the highest score. Competitors are in it to win it. As they sort themselves out and discover their strengths, they sample glee and inspiration. They may play alone or on a team. They may play with or play against. By themselves with a crossword puzzle or together, remotely, in a massive multiplayer online game. Competitors may play by rules or improvise. Or they may play vicariously, as spectators, straining along in the stands as the outfielder catches the fly or quarterbacking on Monday morning.

If winning is your top priority, and if games and keeping score are your thing, you may be a Competitor.

## The Player: Tom Brady

Over a 23-season NFL career (21 of them winning and 10 Super Bowl starts), quarterback Tom Brady proved himself a fierce, enduring competitor. He thrived on deep challenges and coolly passed the ball in the face of rushing linemen and a ticking time clock.



*“Hell, I know how to compete ... Nobody ever gave me anything. You want competition, okay, great, let’s compete. Competition brought out the best in me ... Compete hard. Get injured. Go to the doctor. Possible surgery. Rehab. Back to the doctor. Repeat. Repeat.” –Tom Brady (Brady 2017, 212–4)*

*Tom Brady loved dominating his sport, and fans loved him for his competitive spirit. Photo courtesy of Joe Glorioso | All-Pro Reels, Wikipedia Creative Commons.*

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## THE CREATOR/ARTIST

The Creator/Artist finds joy in making things that lure the viewer. The work of painters, printmakers, woodworkers, potters, sculptors, videographers, novelists, and other fine artists delight museum-goers and fill our libraries. But closer to home, the same creative, problem-solving impulses drive architects, furniture-makers, welders, knitters, decorators, car restorers, cooks, and gardeners. They manipulate space, materials, and imagery in novel, striking, and memorable ways. Their inspirations may be beautiful, functional, original, or even goofy—but their works are artifacts of playful thoughts made solid.

If you are driven to create, your play personality may lean toward the Creator/Artist.

## The Player: Steve Jobs

Steve Jobs was the very model of the Creator/Artist; he stood out in the technology industry because he created innovative, useful products packaged in beautiful designs.



*“Creativity comes from random meetings, spontaneous discussion. You run into someone. You ask what they’re doing, you say “Wow!” and soon you’re cooking up all sorts of ideas.” –Steve Jobs (Issacson 2011, 431)*

*Steve Jobs’ relentless pursuit of beauty and function in technology indicates his Creator/Artist play personality. Photo courtesy of Library of Congress: P&P, Wikipedia Creative Commons.*

## THE DIRECTOR

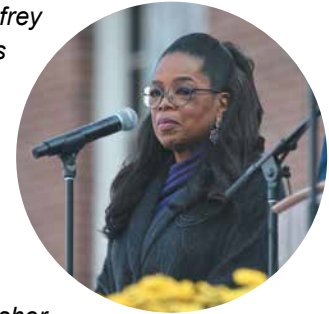
Directors play by artful planning; they enjoy designing and executing scenes and events. They are born organizers of creative energy. Though their impulses and style of operating may be instinctive and unselfconscious, they prize their capacity to deliver. Alas, play like this can slide into something else—manipulators and micromanagers who gather players for a focused Director's game. But at their best, Directors are the party planners, the strategizers of great excursions, the organizers of ingenious scenarios, or the leaders of pathbreaking enterprises. These Directors make space for the playful imagination to thrive when they become conductors and facilitators at the dynamic centers of their social and organizational worlds.

If you love making things happen, your play personality may incline toward a Director.

### The Player: Oprah Winfrey

*Oprah Winfrey's remarkable story began in humble, challenging circumstances. Born in rural Mississippi to a single teenage mother and a victim of sexual abuse, she became a mother herself at fourteen. Four years later, ambitious and armed with a winning, upbeat,*

*and playful demeanor, Winfrey became the youngest news anchor and the first Black woman at the news desk at a Nashville television station. Her subsequent meteoric rise spanned directing and performing roles as diverse as talk show host, magazine publisher, political influencer, actress, author, and owner of her own media production company. Hers is a prime example of the Director personality.*



*"You can become the boss of your own life, not an observer. You can choose how you react to negative circumstances and select emotions that make you happier even when you [are dealt] a bad hand. You can focus your energy not on trivial distractions but on the basic pillars of happiness that bring you enduring satisfaction and meaning."*  
—Oprah Winfrey (Brooks and Winfrey 2023, xxv)

*Oprah Winfrey excels at planning, organizing, and directing people to achieve great things, but she also clearly revels in her own creative ventures—this is classic Director play behavior. Photo courtesy of Maryland Gov Pics, Wikipedia Creative Commons.*

## THE EXPLORER

At the beginning of our lives, play and exploration are hard to separate. In our early explorations, we are driven to discover textures, grasp spatial relationships, assemble sequences, differentiate colors, and savor tastes. Early on, play drives us to explore new places, search for new feelings, encounter new faces, and listen to new sounds. Explorations can be mental excursions, too, as curious players search out new points of view. Play drives us to find new ways of looking at things. Thus the greatest discoveries take root in playful searching. Some never lose enthusiasm for provoking their imagination. In their particular play state, they never cease from exploring.

If you are driven to investigate, your play personality may trend toward the Explorer.

### The Player: Jonas Salk

*At its higher reaches, play need not be playful; such is the case with Explorers. And here is an illustrative story: Every fall in the mid-1950s, outbreaks of the paralyzing infection, polio, continued to stalk children and adults. That terrifying recurrence, with fatality rates that ran as high as 75%, was to end, astonishingly, with the introduction of a killed-virus vaccine that researcher Jonas Salk and his colleagues boldly introduced in*

*1955. Twenty years later, Salk's national vaccination campaign had eradicated the disease in the U.S. A searching mind and a hunger for asking original questions spurred that giant leap. At the infectious disease research institute he founded in La Jolla, Salk championed the value of intuition that lies at the heart of play, "Do what makes your heart leap rather than simply follow some style" (American Academy of Achievement 2023).*



*"One of Man's greatest strivings is to reach into the unknown. The as yet unseen drives him ... The prospect of an entirely new approach to the future could provide a greater measure of incentive and hope ... Hope lies in dreams, in imagination, and in the courage of those who dare to make dreams into reality."* —Jonas Salk (Salk 1973, 57, 112)

*Stuart Brown notes that he established a friendship with Salk and often encountered him while he was running on a beach near La Jolla. Salk had a remarkable talent and could visualize the molecular structure of a virus and turn it in three dimensions to explore the imagined space. Knowing how the molecule looked proved crucial to understanding how it acted. He "understood the contours of an infectious entity like a mapmaker understands the coast of California," Brown says. "He was an Explorer play personality," who was "driven to discover new things." Photo courtesy of Centers for Disease Control Public Health Image Library, #7356.*



## THE JOKER

A horse walks into a tavern and sits down. The bartender says, “Why the long face?” At sixteen words, that’s a very short, short story. In short, it’s a joke. But Jokers don’t need to be jokesters. The deadpan Hollywood actor, Ed Wynne, once wisely observed, “Comics say funny things, comedians say things funny.” Jokers bring ease to our days with wit and gentle, edgy mischief. They probe for play. They say things funny. They de-stress the stressed. We might be able to do without Jokers, but we’d be unhappier, and life would be duller.

If you’re the one who always lightens the situation, you could be a Joker.

### The Player: **Margaret Cho**

*We have always laughed, but the things that we find funny change. Public comedy now substitutes disbelief for surprise. Take Margaret Cho, for example, the edgy Los Angeles—area, gay Korean American rascal who transgresses on the taboo territories of racism,*

*religion, and body decoration.*

*In an instant, she makes these subjects **formerly unmentionable**. Standup, for her, she says, is a coping mechanism. Meanwhile, audiences hold their sides. Their cheeks ache. See her act at a comedy club or on YouTube and you’ll think, “Can you believe she just said that?” (Eberle 2015b).*



*“I taught Sunday School for two years. And I got fired. I abused my authority. I used to teach class like this: ‘OK, if one more person talks, everybody is going to hell!’” —Margaret Cho*

Margaret Cho performing stand-up comedy. Photo courtesy of Charlie Nguyen, Wikipedia Creative Commons.

## THE MOVER/KINESTHETE

Cheerleaders, rock climbers, toddlers, golfers, tai chi devotees, pickleball enthusiasts, magicians, and skateboarders are all people who like to move. With virtually no end to the ways in which these movers can find to channel their play, you’ll often find them inventing their own ways to incorporate their kinesthetic awareness into their everyday lives. These are the kind of players who enjoy pushing their bodies to master complex moves, and they feel their best when they are physically unleashed.

If you groove to playful, clever movement, you’re probably a Mover.

### The Player: **Serena Williams**

*Serena Williams, widely regarded as the greatest female tennis player of all time, holds a record-breaking 23 Grand Slam titles. Tennis players*

*must fine-tune their hand-eye coordination, balance, strength, endurance, quickness, agility, anticipation, and touch. Serena has proven her mastery again and again, dominating the field for years, with a palpable love of the game extending way beyond the court.*



*She is ... “the best athlete by far to ever hold the racquet. Speed, power, quickness, size, strength all wrapped into one mobile, agile, nimble, fiery GOAT.” —Rick Macci, Serena’s childhood coach (Mesic 2023)*

Serena Williams competing in the U.S. Open. A world-class mover, she has highly developed kinesthetic abilities, including a sense of equilibrioception. Photo courtesy of Edwin Martinez, Wikipedia Creative Commons.

## WHAT ARE COMMON STYLES OF PLAY? *continued*

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### THE STORYTELLER

For the storyteller, imagination is key to unlocking the joys of play. Storytellers may be novelists, playwrights, poets, screenwriters, lecturers, feature reporters—or even cartoonists and graphic-novel artists. Storytellers immerse themselves in their stories, experiencing the thoughts and emotions of their characters. Performers of all sorts become storytellers when they create an imaginative world through acting, dance, stand-up comedy, fireside tales, mime, or puppetry.

#### The Player: **Greta Gerwig**

*Greta Gerwig, the director and co-screenwriter for Barbie, the mischievous, bubbly, sentimental, and serious feminist-fantasy, musical-comedy smash-hit from the summer of 2023, described her film as “heightened theatricality that allows [audiences] to deal with big ideas in the midst of anarchic play.”*

*Those big ideas—gender inequality, commercialized play, diversity, fairness, identity formation, self-discovery, mother-daughter relationships, aging, and mortality—came packaged sweetly and playfully as a hero’s journey that delighted millions worldwide.*



*“I try to get into a state where I’m allowing the characters to talk to me and talk to each other, because in the beginning of the writing process, I don’t know who they are yet. And this is the most pleasurable part of writing. They’ll often say things I had no idea they were going to say, and so much of the plot is built off of me consciously going through the dialogue that’s jumping out at me.” —Greta Gerwig (Bloomenthal 2017)*

*Greta Gerwig began her screenwriting career in the imaginative independent film genre called “mumblecore” that prizes improvisation. Her kind of creativity is a strong indicator of a Storyteller play personality. Photo courtesy of Carrie Dorean, Wikipedia Creative Commons.*

# HOW DO WE PLAY?

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To observe play is to spy a dizzyingly vast and accommodating landscape, though we must keep in mind that the activities that trigger a play state are unique to each individual. Peek-a-boo is play for infants and their adults. A pickup game of basketball is play. So is bug collecting. Body surfing is play. So is contract bridge. Skateboarding is play. So is sudoku. Mountain biking is play. So is thumb wrestling. Groups find play in quilting bees, rock-climbing expeditions, raves, marching teams, pickleball, poker, costume parties, and beach volleyball. We pretend with store-bought dolls or improvise sticks as lightsabers. We play by rules or make play up as we go along. So yes, chess is play, and so is improv; golf is play, and so is a snowball fight.

This short list does not even begin to recognize the breadth and variety of play, nor does it encompass varying styles. Brown has found in his research that preferences for play often reveal where a person's intrinsic talents lie. The opportunities to discern what provides us with glee are varied, but intrinsic preferences tend to remain from infancy to adulthood. We play nice, and we play rough—a tea party is play, and tickling is play. We play in orderly and disorderly ways (Henricks 2009). Play can be bound by rules or free. A codex of rules governs soccer, but there aren't any rules to making mud pies. Sometimes we play vicariously or virtually, playing along on an air guitar at a concert, for instance, or donning virtual reality headsets to engage in swordplay with animated monsters. And we play intricately, as in organized football or tricky games of Simon Says. Play can be solitary. Play can be social. Play can be spontaneous or planned, meditative or action-packed.

Play is all over the place. But we usually gravitate to those patterns that evoke a “state of play” within us. Yet, despite this multiplicity, it is possible and useful to spot individual patterns of play that bring this enormous territory into focus.

## ***Attunement Play: Two-Part Harmony throughout Life***

As discussed previously, but it's worth echoing again here, the onset of attunement is most heralded when a mother/caregiver and infant lock eyes. This engagement is simultaneously associated with the mother beginning to engage in baby talk (prosody). Prosody is the grounding base of play, as it establishes a sense of safety and trust. Its continuity through life persists. As relationships become more complex over time, attunement remains a resource for empathy and joy.

Through this joyful attunement, the child's brain creates the neural pathways that build the foundation for trust and anchor all future playfulness. Los Angeles-based clinical psychologist Terry Marks-Tarlow (2017), who specializes in developmental neurobiology, notes that strong and secure early play experience “serves to crystalize later identity” (170). She concludes that “with healthy beginnings, human adults retain the capability to tune into the body-based signals of our present-centered experience. We feel our faces blush; we take pleasure in acts of mastery, we cry when something is sad, and we laugh when something is funny” (178). We can also have attunement with nature. The awe produced in this connection is similar to the brain function between mother and infant. For many of us, attunement with nature requires traveling away from our daily routes and stepping into a fresh environment.

## ***Bodily Movement Play: Getting Your Groove On***

Very early on, humans begin moving playfully. In fact, wriggling and moving the arms, embryonic forms of play, begin in the womb. Soon after birth, babies will begin rocking their bodies rhythmically and regularly. And not long after, as they begin to develop enough muscle control and strength, they will start to crawl. Crawling marks a milestone in discovering and appreciating their unfolding world. Toddlers delight in the unpredictability and cackle at their growing mastery; their explorations coincide with rapid growth of the cerebellum, which integrates movement and is interconnected with the

rest of the developing brain, even assisting in the early development of language (Koziol et al. 2014). Naturally, toddlers work their way up to walking (really a complicated, quirky choreography of falling forward and catching themselves). Impelled by curiosity and play, the intrinsic motivation to explore, learn, and draw pleasure from developing new skills drives us all along a playful and pleasurable learning path that begins in squirming and ends with running. Throughout our lives, playful movement—twisting, twirling, tumbling, skipping, sliding, swinging, dancing, and rolling—activates areas of the brain connected to learning, innovation, adaptability, and resilience (Sheets-Johnstone 2011).

### **Object Play: Setting Things in Motion**

We humans share an enthusiasm for object play with many mammals. Anyone who has tossed a Frisbee to a dog or thrown a ball of yarn for a cat knows that pets love to play with toys. Bears at the zoo will smash around a bowling ball. Wild ravens—birds, not mammals—will break off a twig and bat it about, or they will flip a shiny bottle cap that has caught their attention. In mainstream society today, car/boat enthusiasts, electronic gadget geeks, foodies, beer crafters, and fashionistas are all pinnacle object players.

Human infants will slurp on teething rings and pacifiers, and young children delight in opening the kitchen cupboard to find spoons to bang on pots and pans. All parents know that children will play with their food. When they practice manipulating objects, circuits in their brains develop richer, more complex connections.

Working with our hands during adolescent and teen years (e.g., building models, fixing things, doing crafts, etc.) leads to understanding complex systems and troubleshooting skills as adults. Frank Wilson's (1999) research identified hand-brain co-evolution dynamics that explain why fiddling with objects in our youth results in engineering skills as adults (3–4, 63–64). The famous Jet Propulsion Laboratory hired top students from the best engineering schools but only some of them became

effective engineers; they learned that those who had played with objects early in life became more capable engineers ((Brown and Vaughan 2009–10).

Players find pleasure in the physical movement associated with object play—putting together a puzzle, dicing a potato, plating an entree, balancing on a surfboard, lofting a football, unwinding a yo-yo, flying a kite, or tossing a paper wad into a wastebasket. Sometimes we humans even use one object to play with another. Think of a chef's knife, baseball bat, golf club, pickleball racket, hockey stick, or Ping-Pong paddle. Or we use objects to interact playfully with the natural world as skiers, snowboarders, kitesurfers, and scuba divers do.

Some play objects invite and train high-order problem-solving. A jigsaw puzzle is a case in point, as it draws on visual and spatial intelligences for solving, as are LEGO bricks, stacking and sorting toys, Russian dolls, pick-up sticks, and Lincoln Logs. Playing with objects like these helps us learn and practice manipulating objects in three-dimensional space while sampling cause and effect.

As it happens, the natural world affords us plenty of objects to play with—a stone for skipping, for example, or a snowball for tossing, a stick for hurling, palm fronds for weaving, and sand for building castles. These are not toys, as such, but by playing with them, we turn them into toys.

### **Imaginative Play: Inspiration, Invention, and Innovation**

Pretend play that spurs innovation and nourishes creativity begins very early in life. Child-development scholars note that as early as 18 months, children will pretend to feed their stuffed animals. The noted play therapist Dorothy Singer and Jerome Singer (2013) observed that “through play, a baby begins to copy more complex movements that s/he sees adults do. S/he can imitate objects, can imitate things like his pet dog or cat, and can imitate objects that are not present” (5). She also points out that Jean Piaget, the Swiss cognitive scientist, explained that as babies progress from reflex to purposeful action, they will begin to recognize their hands and feet and soon after to imitate the movement of others (4).



And it is the imagination of *things not present* that impels the inventive, storytelling impulses that span from the gleeful play narratives of monster trucks and doll adventures 3- and 4-year olds begin to spin to the multi-activity vacation plans a parent imagines and the multilayered stories of novelists.

Storytelling, like other forms of deep play that entertain and engage others, is a testing ground for imagined roles and a form of self-discovery. At play we lose ourselves and find ourselves.

Fiction also inspires innovation in the real world. Think of the architects who first conceived spatial relationships by playing with blocks. Frank Lloyd Wright trained early with wooden Fröbel “play gifts.” Evolutionary biologists like E.O. Wilson began as bug observers—Charles Darwin not being the least or the last of them. Rocket scientists and cosmologists, like Robert Goddard and Stephen Hawking, fueled their inventiveness with tales of space exploration. And mathematicians like Erwin Schrödinger conducted “thought experiments”—sharp short stories that had the flavor of mischievous jokes—to spur their deepest explorations. Sometimes imaginative body or object play can inspire discovery. It is said that while trying to picture the bizarre behavior of electrons, which invite thinking in a fourth dimension, the Nobel Prize-winning Caltech theoretical physicist Richard Feynman flopped himself between his bed and his bedroom wall and wriggled in the confined space. Einstein mastered the violin and reportedly thought about science in terms of images and intuitions,

often drawn directly from experiences as a musician. He only later converted these into logic, words, and mathematics. He is quoted as saying, “I live my daydreams in music...I see my life in terms of music” (Viney 2016). Dig for the root of new ideas, and you will find play alongside imagination.

Imaginative play can also be triggered upon seeing new sights and trying to imagine how they were formed. **Contact with new environments can wake up curiosity and imagination. Why is the ocean salty? Why do grapes grow so well in California? Why is the soil different in different places? These triggers can feed our brains and expand our thinking.**

### ***Social Play: Preparing for the Unexpected, Establishing Competency***

Humans are social animals. For most of human history, until about 12,000 years ago, all humans lived in small groups of a few score individuals. Our survival depended upon finding ways to get along. Our ancestors cooperated to find food and shelter—to hunt and forage and fish and build temporary dwellings. We banded together to survive predators’ attacks and threats from other human bands. And we formed close family bonds, cultivated friendships, and entertained ourselves through the long nights.

Sustaining harmony is no easy task in any group, no less so then than now. And here, play is key.

## HOW DO WE PLAY? *continued*

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So, as hunter-gatherers, we played games and sang songs, danced and wrestled, competed in martial skills, passed along craft skills like weaving, hair-dressing, and flint knapping, and made wisecracks and told stories in the flickering firelight. These ephemeral joys in the misty past are lost to history now and survive only in forms much altered by contact with settled society.

But we hear their echoes, and they can be renewed in the playful ways that sustain our social circles today. Think of poker nights and church choirs, discos and bowling leagues, scout campfires and vacationing with friends. From the simplest game of peek-a-boo and the formal dinner party to traveling with friends and family, social play speeds child development, strengthens adult bonds, and bolsters our greater society.

At about the 2- or 2½-year mark, kids first learn to play in “parallel,” sitting side-by-side, perhaps drawing with crayons or stacking blocks. These parallel players do not interact directly; they may even face in opposite

directions. Children who spend time observing soon recognize and experience the contagion of play in others and then reach out to join the fun. Later, as children discover ways to play together, they begin to share and to trust. And that is a milestone.

Players young and old also learn a more complex social skill: how to defuse tensions that might otherwise explode. They devise strategies to succeed and learn how to take failing or exclusion in stride, two lessons that pay long-term dividends. Then, too, over the course of a lifetime, players also discover and strengthen friendships. Henricks (2008) put it: “In play, group boundaries are established and enacted, values are clarified and reaffirmed, processes of intergroup negotiation are explored, hierarchies of skill and position are made public, and qualities of leadership are developed” (166).

Play, Henricks points out, is a basic pathway to the social self. Even competitive play knits us together and moves us forward. Peter LaFrenière (2011), a professor of developmental psychology, notes that “the positive emotions [social] play invokes encourage children to courageously explore the environment, to try out new behaviors, and to learn with more flexibility—all of which helps prepare them for the unexpected” (464). Neuroscientist Stephen Sivy (2016) concurred. “Playful social experiences as juveniles may provide an opportunity to develop flexible behavioral strategies when novel and uncertain situations arise as an adult” (819).

### ***Mixed-Aged Play: Play across and between the Generations***

On school playgrounds lucky enough to have preserved recess, we are accustomed to seeing groups of kids who are roughly the same age and from the same grade playing together. Taking a step way back in primate evolution helps us see how unusual this scene is. The anthropologist Melvin Konner (2010) notes that “the social group among higher primates



is a kind of extended family, so most juveniles in a play group will be cousins of various ages” (85). Similar age mixing still remains in hunter-gatherer societies. Gray (2011a) observed that “a typical group playing together in a hunter-gatherer band might consist of half a dozen kids ranging in age from two to twelve or seven to seventeen.” And that experience, Gray notes, held for 99% of our human past (Gray 2011b).

We do not have to reach so far back or travel so far away in human society to observe a similar scenario. Baby Boomers will remember that the unfenced backyards typical of the budding suburbs in the 1950s and 60s afforded motley groups of friends space to cooperate and collaborate at play.

Younger kids who played with older kids learned by example as the age-mixed groups provided incentives to run faster and jump higher. Diverse gatherings afforded opportunities to absorb the folklore that children hand down and embellish in their ephemeral generations. To keep play going, older kids devised ways to “self-handicap” in a positive way, by choosing balanced sides in a pickup baseball game, for example, or by giving littler kids a head start in a footrace. Crucially, these miscellaneous groups also afforded younger children protection as older kids taught them the ropes and rules and stepped between them and the occasional bully.

Children and adults—parents, grandparents, neighbors, and caregivers—also derive similar benefits of learning and socializing when they play together freely and spontaneously, as they do when reading aloud back and forth to each other, for example, or when building sandcastles at the beach, skiing, picnicking, playing miniature golf, spotting license plates together on a car trip, and by tossing a football at halftime, trading turns with a hula hoop, or playing charades. A vast number of intergenerational games provide mutually rewarding, fun, and surprising play.

Of course, adults find many games to play that lie on a sliding scale from the challenging to the hilarious and from the cooperative to the mischievous. Think of a sliding scale of chess, contract bridge, Scrabble, Stratego, Pictionary, Words with Friends,

and truth or dare. And then there are group and individual games meant to keep us sharp and practice memory as we play: crossword puzzles and sudoku, trivia and solitaire, Simon Says and bingo.

### ***Rough-and-Tumble Play: Competing while Learning Empathy, Solidifying Friendships***

Lion cubs mouth and mock-fight. Kangaroos spar like kickboxers. Otters slither and splash. And human kids play rough-and-tumble games, piling on and chasing each other in enjoyable social play. Adults do not entirely leave rough-and-tumble games behind as contact sports keep it alive, though with one crucial difference: Adult play fighting, which might reasonably include the contests of the Los Angeles Rams and the San Francisco 49ers, tends to be increasingly rule-bound and refereed to manage violent contact. It is interesting to note that players from rival teams often strike up and maintain lifelong friendships.

How can we tell the difference between real fighting and play fighting? Adults should strenuously make the effort to understand the difference, because rough-and-tumble play bolsters strength, mutual understanding, and courage.

Most plainly, play fighting is friendly. Although rough-and-tumble play can be intense, the fighters remain friends, not combatants. Fighting is hostile, thoughtless, injurious, humorless, and aggressive. Children know the difference; adults, regrettably, often cannot distinguish between play fighting and fighting. But this doesn’t mean that rough-and-tumble play is not competitive. Kids train and test their capabilities while they struggle playfully. They sort themselves out, learning how to attack and defend themselves, finding who’s strongest, quickest, nimblest, or cleverest. But during rough-and-tumble play, competitive kids balance competition with kindness and cooperation. This balance keeps play events going. If play gets too rough, of course, play comes to an end. So players have a vested interest in keeping play fair, and they routinely compensate for differences in size, speed, and strength. After all, if it’s not fair, it’s not play. If play does get too rough, players will normally comfort the player whose body or feelings are bruised.

## HOW DO WE PLAY? *continued*

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Brown (Brown and Vaughan 2009) observes that rough-and-tumble play is “necessary for development and maintenance of social awareness, cooperation, fairness, and altruism” (88). Depriving youngsters of rough-and-tumble play hampers their ability to learn the normal give-and-take necessary for social mastery and has been linked to poor control of violent impulses in later life. Not incidentally, Brown notes, bullies and other narcissists do not understand rough-and-tumble play.

Ethologists who research animal societies have consistently found that rough-and-tumble play is a crucial and important foundation for developing cooperative socialization (Bekoff 2001, 81–90). Neuroscientists who have studied brain development in laboratory rats have found that those who have been deprived of rough-and-tumble play as juveniles show underdevelopment of the prefrontal cortex—the area of the brain that regulates social judgment (Panksepp 2004, 81–90). Vivian Pellis and Sergio Pellis (2013), professors of neuroscience who observe how play trains the “social brain,” found that juvenile rats deprived of play were starkly lacking in reciprocity, and as adults, they showed “deficits in a variety of cognitive and social skills.”

If we restrict opportunities for rough-and-tumble play in human children, as is the growing national trend, we risk that they will grow up similarly hampered.

### **Celebratory Play: Proudly Playing Together**

Holidays punctuate the calendar year. These secular celebrations take us away from the everyday, and include celebrations as diverse as St. Patrick’s Day, Earth Day, and Super Bowl Sunday. Vacation holidays are very much a means of celebrating new environments and the freedom from schedules. Californians gather at Lobster Day, they commemorate Susan B. Anthony Day and Harvey Milk Day, and they attend The Mariposa Art and Wine Festival. In March at Dana Point, visitors welcome a whale migration. On San Francisco’s Pier 39, thousands enjoy the Tulipmania Tulip Festival. Tens of thousands of Californians make the 17-mile drive along

Pebble Beach to marvel at the ocean’s beauty.

Whether these celebrations are lighthearted or solemn, formulaic or free-form, reverent or mildly transgressive, widely shared or narrowly observed, holidays provide us with rich *occasions for* and *permissions to play* (and each provides our deep-seated play instincts an outlet). On holidays we play along. And as always, families and friends gather for jubilant wedding receptions, birthday parties, and vacations.

Though celebration is not play itself, for those who enjoy the celebration, their *celebratory play* ranges from the exhilarating to the satisfying and from roguery to reaffirmation. Most importantly, celebratory play brings us together. As Henricks (2019) put it memorably, “communal play turns into playful communion.”



### **Storytelling, Story Listening, and Narrative Play: The Long and Short of It**

Storytelling also brings us together. Humans learned to tell stories many thousands of years before they learned to write. We know this early form of entertainment and play only indirectly, inferred from the neolithic murals daubed deep inside cave dwellings where animated hunting scenes once shimmered and danced in flickering firelight.

We have good reason to presume that spellbinding storytellers narrated the daring and dangerous deeds pictured while story listeners shared a



brew or dandled a baby. (Today, ghost stories told inside the campfire's circle echo this ancient, communal rite.) Elaborate mythologies and folktales still circulating sink their roots into long-forgotten storytelling. And from this folklore, hearers formed notions of sacrifice and nobility, mischief and nurture, responsibility and risk, loyalty and betrayal, fate and luck, and warring and peacemaking.

In a similar way, children tell stories before they can read, along the way making sense of the world and better understanding their place in it. Playful imagination and a child's stream of consciousness blend together to form early, imaginative stories that are the foundation of the self. Continued imaginative fuel for this flourishes in an environment that allows freedom of thought and fosters curiosity. Storytelling is a consequential talent. Vivian Gussin Paley (2009), the child educator and writer, concluded:

In play, children begin with their own set of premises and learn to follow through, step-by-step, scene by scene in the complex process of creating a logical and literary dramatic project of their own. In each episode, one can intuit a child's individual approach to the principles underlying fairness, friendship, fear, storytelling, and personal history. In each episode one can study the development of a community of learners in a hands-on, face-to-face, authentic manner. (123)

Adult storytellers, folklorists tell us, draw from well-tested formulas, following the "rule of three," for example—the genie grants three wishes, the trespasser tests three beds for comfort, and three men walk into a bar. And so a million stories and jokes were born and passed down. Stories remain central to human mutual understanding well after childhood. When people make judgments about right and wrong, even in politics or the jury box, they often do so as a result of a story they have constructed about events. Nations and generations draw wisdom from their stories.

Storytelling, which requires a suspension of disbelief, can also produce a sense of timelessness in the storytellers and an altered state of vicarious

involvement in the story listeners. Stories tug tellers and listeners along as they mutually bond. We know this process best in the form of the bedtime story that parents read or improvise. Caregivers find a practical reward in the bedtime story as children drift off into a liminal state between waking and dreaming.

*Researchers and theorists describe additional happy side effects of this variety of pretend play, the receiving end of storytelling. Let's call it "storylistening." Far from a passive experience, it delivers benefits that include practicing patience and turn-taking (skills arising from the "executive function" that cognitive psychologists describe), training memory, furthering language development, and building vocabulary. (Eberle 2021)*

### **Spectator Play: Vicarious Extension of Playful Identity**

The sports teams and collectives we support say something about *who we are*. Many of us become linked emotionally to the teams who play on "our side." But why do we care so much about individual players or games? Ideally, sporting events provoke our best communal, competitive, and celebratory instincts. Brown recalls his neighborhood boyhood major league team, the Chicago White Sox, struggling and winning no pennants. Still, they were "his team." When watching them at home or on the road, that feeling remained intact, win or lose. When a star emerged (Luke Appling), the intrinsic play aspects of being a player fan plus a team fan somehow added *emotional substance* to life and a heightened sense of identity that would not have occurred without a star and a hustling team with whom to identify. Furthermore, spectator play offers a prime intergenerational bonding opportunity. Brown recalls some of his best boyhood memories, like meeting his dad at Comiskey Park for an evening summer game. He notes this playful process of father-son spectator bonding continued into later life, when they witnessed Tony Gwynn get his first hit for the San Diego Padres. And importantly, spectating is not just for fathers and sons—or just for sports. Millions of people regularly experience mutual joy in sharing spectator experiences with others.

# HOW DOES PLAY PAY OFF?

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## *Play Pays Us Emotional, Mental, Social, and Physical Dividends*

Playing rewards us by encouraging our most basic emotional, mental, physical, and social skills to grow and flourish. Among these talents, play improves and trains our linguistic skills, our mathematical sense, our spatial and visual perception, our musical appreciation, our balance, and our understanding and grasp of the natural world. Play, at its essence a voluntary activity, lets us learn in a pleasurable way.



As toddlers we begin to master not just vocabulary but language itself in playful back-and-forth with older, smoother talkers. (We learn no more complex or important human skill.) For young and old, wordplay helps us build our vocabulary. We train our memories with playful mnemonics— like “righty tighty, lefty loosey” and “‘i’ before ‘e’ except after ‘c.’” Games also help us explore numbers and sequences.

We hone our musical sense with chants, raps, and rhymes, sometimes embodied with skipping or jumping rope, and more often spontaneously with expressive and creative dancing. Play also sharpens our proprioceptive sense of where our bodies are located in space (St. John 2015,

333–48). And play trains another extrasensory perception, our “equilibrioception,” or our sense of balance, used every time we climb a jungle gym, swing on a swing, dribble a basketball, finesse a soccer ball, or step on the deck of a skateboard.

At play we encounter the outdoors—meanwhile learning to explore, recognize, classify, and understand our environs. When we puff on a dandelion, catch a wave, follow an ant with a magnifying glass, build a sandcastle, or collect seashells, we are at play feeding our curiosity.

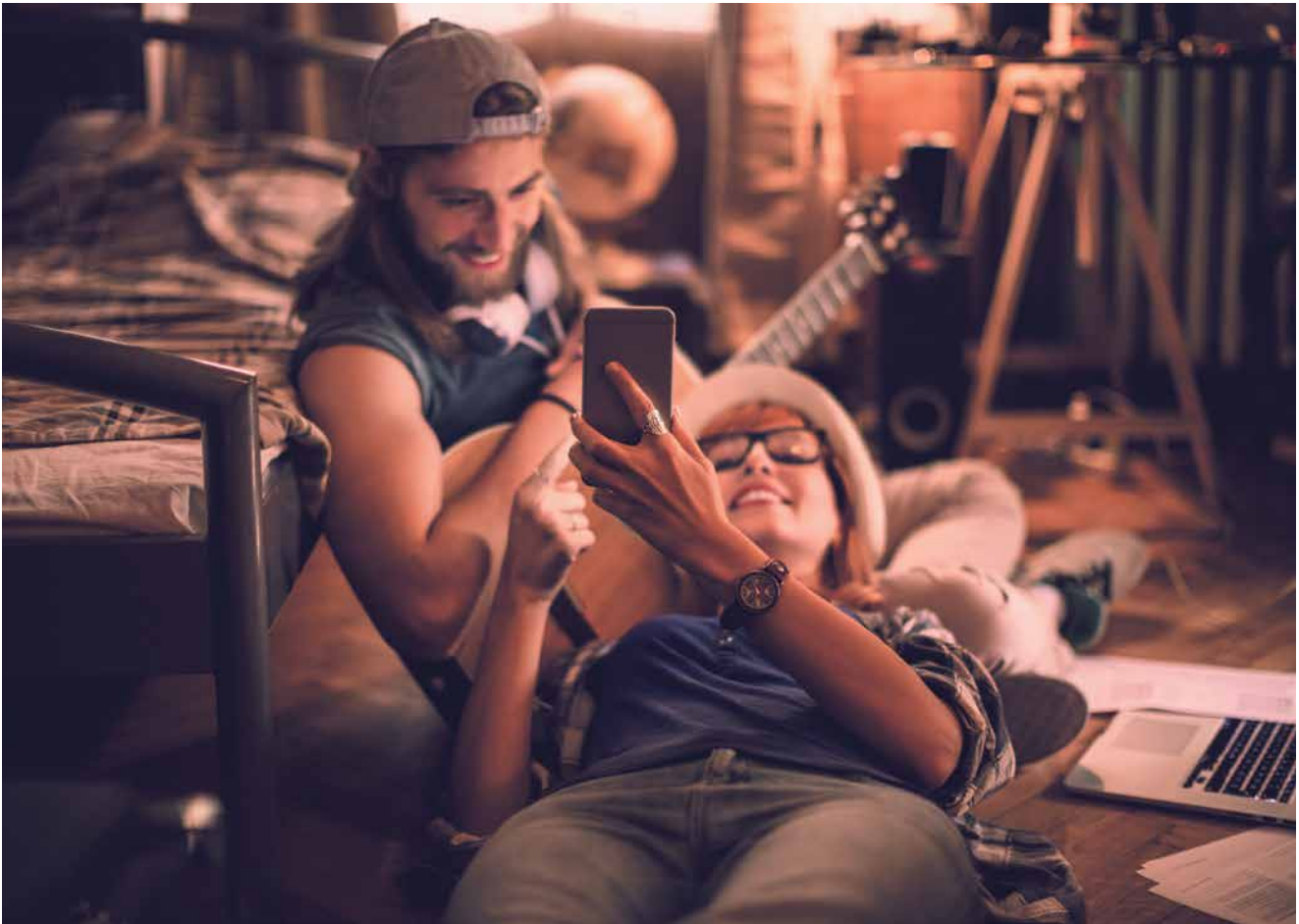
We explore all these developing talents pleurably, since play pays us an additional bonus by lifting our mood. When we play with others, informally at first, later in face-to-face or virtual teams, we learn elemental but essential social skills, such as turn taking and rule following. We also learn to bargain and improvise while looking for creative solutions, first as children, and usually at the top of our lungs, in pickup games. And we begin to learn to value trust, a complicated emotion, as playing imparts and depends upon a sense of fairness and give-and-take. Of course, these skills ramify in realms beyond play, in relationships and at work, for example. Finally, the union of intrinsic play-driven *engagement* with physical movement establishes sustainable motivational patterns that combat obesity and foster physical well-being.

As Eberle (2011) put it, “Rarely do we deliberately set out to learn by playing. Yet play educates us broadly and deeply early on and throughout our lives. ... at play with others we negotiate our place in the world and sort out our sense of our *selves* as we take stock of our capabilities” (19).

Alas, rewarding and basic as play is, obstacles stand in the way of play.

**And so the question: What keeps us from playing?**





# WHAT KEEPS US FROM PLAYING?

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A number of factors—historical, social, economic, technological, and institutional—conspire to constrict the time available for play and to diminish the quality of play.

First, we should not forget that this country was founded by inspired strivers bound in a holy errand to tame the wilderness and seize the continent. For those first generations, work demonstrated saintliness—and the founders’ effect hangs on still. Then we see modern trends that have increased both workloads and time spent working. Vacation time, at a high point a half century ago, has since eroded.

Alongside this trend, American life has become more private and individual; the decline in neighborliness has interfered with opportunities to play together and contributed to what the sociologist Philip Slater called “the pursuit of loneliness” and the spread of “stranger danger,” which, in turn, curtailed children’s free play.

Technological advancements, particularly in entertainment and social media, have augmented this trend by replacing play with more passive entertainment. Kids may actually play more now, but that gain is mainly in the wide adoption of portable electronic games, and smartphones have reduced

the time available for physical play. Rising economic expectations for consumer products and the rising cost of living has often necessitated that both parents work, and this has cut into family play time. And here electronic media plays a role, too, as we are now continually within reach of the workplace via laptops and phones and continuously in touch with colleagues and friends. Playtime shrinks as work and schoolwork also expands. And notably, recess has withered across the nation as schools teach to the test. Some of these trends are diminishing, as the benefits of recess regain appreciation and No Child Left Behind fades.

And finally, observers note a new edge to our play. Anthropologist Garry Chick concluded, “we still play, but much of it seems to lack a playful quality.” He observed that “Playfulness has been replaced by aggressiveness and the feeling that more needs to be crammed into less time” (Marano 2020). High school sports have also professionalized over this interval, causing play to be more often managed and coached by adults and leaving less time for self-generated free play among kids themselves. **When play is no longer freely chosen, the benefits of play weaken.** This trend entails unfortunate consequences for individuals and our society.



# WHAT HAPPENS WHEN WE DON'T OR CAN'T PLAY?

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## *Play Deprivation Harms Infants, Adolescents, and Adults*

Because evolution and our neotenous heritage have designed us to play, we find ourselves at risk if we don't. Those with serious play deficiencies can exhibit signs of mild to moderate depression.

To exclude play is to risk limiting overall personal and social competency and to risk isolation and loneliness. A dearth of play leads to physical inactivity, and inactivity leads to weight gain and muscle loss. Play promotes enthusiastic engagement that is self-motivated, and it promotes increasing personal mastery. When the incentives for engagement are disconnected from the intrinsic desires of the potential player (instead residing in parents, teachers, or cultural anti-play norms), life habits risk the lack of emotional connection to the triggers that foster an authentic self.

In extreme instances, play deprivation, particularly during early childhood, leads to the emergence of depression and anger. The unhappy effects can be read in experiences of play-deprived infants, adolescents, and adults.

## *A Lack of Playfulness Arrests Optimal Child Development*

A heartrending example of the harmful effects of depriving infants of play came to light in the discovery of the systematic neglect of institutionalized orphans in Romania during the final years of the brutal Ceausescu era. A state program to increase the population left the country with an unintended consequence—many abandoned and orphaned children. The outcome amounted to a cruel and inadvertent human experiment on the effects of play deprivation when the regime warehoused orphaned infants in wards so understaffed that they were attended to only for diaper changing, feeding, and the like. They were not held, sung to, cooed at, or played with. They were locked in cribs and tied up at night. Suffering such stark neglect, unsurprisingly,

left the children stunted in mind and spirit—deficits that left them delayed, impaired, physically weak, and unresponsive emotionally (Glasper 2020, 81–7).

## *Shrinking Free Play for Adolescents*

No less alarming, even though harder to see and correlate, are the consequences of shrinking free play for American adolescents. The social historian Howard Chudacoff (2007), who examined trends of play, concluded that the first half of the 20<sup>th</sup> century was the “golden age of unstructured play in America” (126). Children, mostly on their own, were freer to run, chase, race, climb, leap, swing, slide, and twirl than they were subsequently. And from that peak, free, unsupervised play has declined steeply.

Several factors account for this trend. In growing suburban neighborhoods, children at the preceding mid-century could take advantage of still unfenced back yards to run freely with playmates of various ages. That is largely how they learned to get along with each other; how they learned to fit in while asserting their individuality; how they gathered self-control and restraint; and how they discovered ways to stretch their social capabilities and mental resilience.

Though the perception of stranger danger has increased and limits free neighborhood play and independent play freedom for kids, the actual prevalence of this is not matched by evidence of danger (Gray, Lancy, and Bjorklund 2023, 1). The evidence supports that, little by little from the 1970s onward, play became more managed by adults. More and more, play also retreated indoors, costing children their latitude, divesting them of their support groups and social learning experiences, and depriving them of pleasurable, voluntary, strenuous, and confidence-building outdoor exercise. Furthermore, well-meaning but overcontrolling parents—and perhaps concerns about resumé building to gain college acceptance—can lead to “free play time” viewed as wasted frivolity. Outcome preoccupation has too often prevented true playtime from occurring.

### ***Play Time Has Dwindled***

Time available for elementary school play shrunk dramatically in the second half of the twentieth century. From 1981 to 2003 time in school plus homework (once rare or nonexistent in elementary school, is now common even in kindergarten) increased by nearly 12 hours per week for children 6–8 years old—over two hours per day of lost play time. School recess time also declined during this period, reducing youngsters’ opportunities to playfully blow off steam during their jam-packed school days (Gray, Lancy, and Bjorklund 2023, 2).

Olga Jarrett (2002), an education specialist who has studied the nosedive in time devoted to recess during the school day, lamented that “many classrooms allow very little interaction.” She wrote, “Recess may be the only opportunity for some children to engage in social interactions with other children” (3). Furthermore, screen time, an entertaining but largely isolating and passive experience, concurrently soared.

*Much of what children do during recess, including the sharing of folk culture, making choices, and developing rules for play, involves the development of social skills. According to observations during elementary school recess, children organize their own games, deciding on the rules and determining which team goes first or who is “it.” Game playing can occur in the classroom as well as on the playground; however... game-playing in the classroom is typically in a “closed setting” where the children cannot withdraw from the game. Recess provides a more “open setting” where children are free to leave the play situation. In open settings, children must learn to resolve conflicts to keep the game going, resulting in low levels of aggression on the playground. (3)*

The recent leadership of highly acclaimed play activist Jill VIALET (2021), author of *Why Play Works*:

*Big Changes Start Small*, documents how 25 years of Playworks, her nonprofit organization operating in extremely challenging inner-city, public-school settings, has organized and implemented successful recesses in over 500 elementary schools. Her data demonstrate how recess done right measurably improves physical, academic, and personal performance and resiliency in students. Playworks’s recesses have also been demonstrated to improve teacher morale and the larger parent and school communities. Her stories reinforce the mounting evidence that play is broadly needed and highly effective, particularly in inner-city communities.

### ***As Play Time Shrinks, Psychopathology Rises***

Taking this a step further, Gray (2011a) notes the strong, inverse correlation between the decline in play and the rise of various psychopathologies during recent decades. Citing a study conducted at San Diego State University, Gray notes that among adolescents anxiety and incidence of depression has risen dramatically since 1952. “Approximately 85 percent of young people in the most recent samples,” Gray writes, “have anxiety and depression scores greater than the average scores for the same age group in the 1950s.” During this interval, measures of narcissism increased alongside rising rates of anxiety and depression. Accordingly—and shockingly—between 1950 and 2005, incidences of adolescent suicide *quadrupled*. Various studies of college students during that period and after have noted a correspondingly soaring growth in the sense of loss of personal control and a rise in feelings of helplessness. Gray concludes that “restoring children’s free play is not only the best gift we could give our children; it is also an essential gift if we want them to grow up to be psychologically healthy and emotionally competent adults” (448–59).

For people of all ages, emotional health depends on satisfying four basic emotional needs: the need to establish autonomous selfhood; the need for

## WHAT HAPPENS WHEN WE DON'T OR CAN'T PLAY *continued*

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freedom to choose one's own activities; the need to establish competence and hone skills; and the need to forge connections and make friends. For young children, free play with other children is the primary means of satisfying these needs.

As children have lost opportunities to control their own activities and their own play, their internal locus of control has weakened. Gray concluded that among people of all ages, a strong sense of control and a keen ability to solve problems as they arise protects against anxiety and depression.

*“Once people understand what play does for them, they can learn to bring a sense of excitement and adventure back into their lives, make work an extension of their play lives, and engage fully with the world.” (Maguire 2022)*

### **Adult Play Has Also Declined in Recent Decades**

The decline in leisure time for adults is one of the most surprising stories in recent American social history. Work weeks had steadily contracted until about 1950—as wages rose and the cost of leisure products declined, time for recreation increased. Americans made time for the neighborhood barbecue, the cocktail party, the trout stream, the book club, the quilting bee, and the bowling league. But in the next twenty years, the trend began to reverse, so that by 1970, Americans were putting in the equivalent of about *one extra month of work per year*. For men, leisure time has shrunk to slightly over five hours per day. And women fared even more poorly, finding time for only slightly more than four hours per day. Economists have called this trend “time poverty” (Kalenkoski, Hamrick, and Andrews 2011).





# WHY SHOULD WE MAKE MORE ROOM FOR PLAY?

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## *Why Should We Make More Room for Play?*

Preceding pages listed some of the harms of the decline and deficits in play ranging from mild irritations and annoyances to life-threatening mental and physical health conditions.

But listing the benefits of play puts the issue more positively. When play deprivation is the specific disease, play is the prescription.

Brown likens a lifetime of play to keeping immunizations up to date. **A health and wellness imperative, play has a protective effect against frailty in mind, body, and society, countering mental inflexibility and boredom, muscle weakness and weight gain, and isolation and loneliness.** Play is contagious, but in a good way.

Brown believes that the time we spend playing is more like an investment than an expenditure. As a doubles tennis player until his late 80s and a current daily swimmer, Brown practices what he preaches. He tosses a Frisbee to his favorite canines, a greyhound-mix and a retriever (speed plus goofiness) on Carmel's famed dog-friendly beach. He rides his electric bike up semiwilderness trails. And he plays board games with the neighbors.

And so Brown lists a number of other beneficial effects of play. Playfulness encourages us toward more creativity and so makes us more able. Play increases our self-worth and so makes us fitter for work. Play reinforces trust and invigorates communal belonging and so grows our social intelligence. Play promotes mutual attunement and empathy and so boosts our emotional intelligence. Play encourages adaptability and increases resilience and so increases our stamina. Play spurs optimism, lightening our burdens. And play motivates the drive toward excellence and the desire to earn mastery.

As we lose ourselves and find ourselves, play gives us reason for hope.

*"Your play circuits are unique—a combination of the wiring that you were born with and the neural pathways that developed in your brain during your childhood. Even if it's been years since you were in a play state, you can get back to that joy. It only takes a little self-awareness and the willingness to 'just do it!'" (Brown 2022)*



# CONCLUDING THOUGHTS: PLAY IS THE PLACE WHERE WE FIND OURSELVES

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We understand who we are in several different and basic ways. We perceive our bodies. We size up the spaces we occupy. We learn to express ourselves. We navigate our social circles. We hearken to the feelings that we savor. We cherish the values that we hold. And we frame and evaluate our experiences while balancing them against our hopes and dreams.

Play is with us, intensely, in these modes of self-understanding. It may not have been a conscious part of our daily lives, but, once its presence or absence is recognized, we are more able to consciously include more of it in our lives.

As Henricks (2014) put it, “when people play, they realize themselves through activity in the world ... play is an exploration of powers and predicaments” (10).

Thus, at play we locate an often forgotten aspect of ourselves, moving at the borderline of control and impetuosity, discovering our limits and feeling for mental and physical strengths that we never suspected we possessed. At play we revel in our intrinsic capacity for joy. We can find pleasure in both competition and collaboration. And there, in our own individual “states of play,” we find ourselves while basking in accomplishment and mastery.

When we're luckiest, we also lose ourselves while at play. On the dance floor, at the pool table, along the hiking trail, in the seat of a roller coaster, or at the writing desk, we lose ourselves in deep immersion.

Ironically, while lost in that time-suspended state of play, we may find the place where we belong.



# AFTERWORD: A NOTE ON TRAVEL AS PLAY

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## Scott G. Eberle

Travel always begins in anticipation—the keen feeling of “What’s next?” The expectation may be well-grounded for the well-traveled who head for familiar retreats tailored to their preferences. Or travel may be tinged with wandering and rewarded with wonder for those seeking spontaneous discovery in those places that are special and set apart.

The particular kind of play that travel entails begins with planning. While thinking about the destination, future travelers find themselves already at play. The journey need not be merely a means to an end. Getting there may not turn out to be half the fun, but it is part and parcel to the experience. Traveling, moving from here to there, can be as diverting or entertaining and as profound or pleasurable as the destination itself. So when first mounting the bicycle, pulling out of the driveway, or boarding the airplane, travelers are already at play.

Preparation can be minimal or elaborate—from packing the backpack to renting the recreational vehicle. And travelers may travel on a budget or mean to splurge. Their aim may range from respite to adventure, and the play experience from exuberance to reverence.

Travel, like play, is all over the place.

It has been said, to the point of cliché, that travel broadens the mind. The mind is surely the most essential vehicle for the traveler. But travel at its best and most complete also deepens the emotions, fuels the imagination, sharpens the perspective, enlarges the social understanding, and inspires the heart. Travelers take home these rewards as souvenirs and the “destination experience” moves beyond leisure and toward play.

The intention of travel is routinely framed as “leisure” and “recreation”—experiences that happen *to* the traveler. But travelers may seek the occasion for a deeper, rounder, more active, more personal, and tailored reward—*play*. Travel gives travelers permission to play their own way.

The lucky ones will find that play itself is the destination.



# ABOUT THE AUTHORS

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## Scott G. Eberle, Ph.D.

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Scott G. Eberle holds a doctorate in American intellectual history and is former editor of The Strong National Museum of Play's *American Journal of Play*. At The Strong, Scott executed scores of museum exhibits, including *America at Play* (2017); *Robots, Rockets, and Rayguns* (2016); *National Toy Hall of Fame* (2015); *American Comic Book Heroes and the Battle of Good vs. Evil* (2009); and *Child's Play on the Crabgrass Frontier* (2007). Scott authored *Classic Toys of the National Toy Hall of Fame* and was co-editor of *The Handbook of Study of Play*. On the topic of play, he has written numerous essays, conducted extensive interviews, and is a regular contributor to *Psychology Today*. In his spare time, Scott is an avid downhill skier and biker.

## Stuart Brown, M.D.

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Stuart Brown is the founder of the National Institute for Play (NIFP), where he speaks, consults, and educates organizations, corporations, universities, and public policymakers about the importance of play in our lives and the unexpected, serious consequences of neglecting play. Stuart received his M.D. from Baylor College of Medicine. After graduating he was trained in internal medicine at Mayo Clinic and later in psychiatry and clinical research at Baylor. Stuart's unusual journey to understand human and animal play began at Baylor when he was an assistant professor of psychiatry researching homicidal, violent, and antisocial behaviors. He found linkages between those behaviors and play deprivation in childhood that led him to research the possibility that free play could prevent antisocial behavior and help people develop healthy social-emotional skills. His work eventually led him to establish NIFP and publish *Play: How It Shapes the Brain, Opens the Imagination, and Invigorates the Soul*.

## Anthony Christopher, Contributing Editor

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Tony has a deep, passionate belief that play is important in every stage of life. He has often been playful as he led teams in developing virtual communities, knowledge management and other online services for Fujitsu, Apple Computer, Cisco, NASA, the FAA, and Stanford University. Early in the personal computer era, he was the founding product manager for AppleLink, Apple Computer's visionary extranet service that connected its employees with its dealers and developers. He retired from salaried work to devote his time to the role of Executive Director of the National Institute for Play. Tony has a BA from Columbia University and an MBA from Stanford University.

### **Lauren Sundstrom, Contributing Editor**

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Lauren Sundstrom is proud to be Dr. Stuart Brown's youngest daughter and is honored to support the National Institute for Play as a Board Member and Strategic Advisor. Lauren attended Colorado College and St. Peter's College, Oxford University, then spent nearly a decade in Washington, D.C., first as a legislative aide to U.S. Senator Ted Stevens of Alaska, then as a lobbyist for Holland & Hart. Lauren later joined Western Land Group in Denver, where she became a partner specializing in public-private collaborations. Lauren has served as a Strategic Advisor to Rickaroons and a host of community and sports initiatives. Lauren and her husband Steve enjoyed raising their two kids, Mia and Leo, in Boulder, where they attended a renown play-based preschool and a K–8 charter based on self-directed, playful learning with very limited tests, grades, or homework. Lauren is a social kinesthete committed to making play a daily habit.

### **Bowen F. White, M.D., Contributor**

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Bowen White combines the talents and expertise of a physician, consultant, speaker, and author. He travels the world conducting seminars, consulting, and speaking to public and private organizations. In 1983, Bowen founded the Department of Preventive and Stress Medicine for the Baptist Medical Center in Kansas City, Missouri, and the Department of Wellness and Health Promotion before leaving to pursue private practice and a career as a consultant and speaker. He is the author of two books: *Why Normal Isn't Healthy* and *A Clinician's Guide to Spirituality* with John MacDougal. In addition, he created two audio series: "The Cry of the Heart" and "Dr. White's Complete Stress Management Kit."

### **Tom Norquist, Contributor**

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Tom Norquist is SVP of Innovation & Business Development at PlayCore, having begun as Director of Sales & Marketing in 1993. He is Professor of Practice at Auburn University's School of Industrial and Graphic Design and has been recognized with multiple Distinguished Service Awards over his 18 years there. Tom has been deeply involved in the play industry for over 30 years. He is a founding board member and past president of the International Play Equipment Manufacturer's Association (IPEMA); under his leadership, IPEMA launched the Voice of Play, which has delivered the message of the importance of play to millions. He has served on the boards of directors or advisory boards of the National Institute for Play (NIFP), National Program for Playground Safety (NPPS), Recreation Access Advisory Committee, and the International Playground Contractors Association (NPCAI) and is a founding leader of the U.S. Play Coalition. Tom holds a BS in Finance, Law, and Marketing from Portland State University.



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