PLAY & CREATIVITY

IN PSYCHOTHERAPY

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Introduction

PSYCHOTHERAPY IS SERIOUS business. Our patients frequently face life-and-death issues on the opposite end of the spectrum from fun and games. Psychotherapists harbor a tremendous amount of responsibility when encountering deep unhappiness, trauma, and at times, unthinkable horrors within their patients. Given such a somber state of affairs, what does play and creativity have to do with psychotherapy? On the surface, one might think, "Very little!" Yet, as you dive into the chapters ahead, we hope you'll reach the opposite conclusion; for this book arose out of our conviction that play and creativity have everything to do with the deepest levels of healing, growth, and personal transformation within psychotherapy.

From an evolutionary perspective, play became highlighted in the mammalian brain in service of open growth and flexible adaptation to ever-changing environmental conditions. Through play, young children learn the roles, rules, and relationships of culture, while expanding their window of tolerance for a wide range of emotions—areas that overlap tremendously with the domain of psychotherapy. Through play, children push to their very edges of what is tolerable and understandable as they wrestle, spin, twirl, hurl, and leap into novel states of mind. Certainly, novel experiences are necessary for change within psychotherapy. Apart from other mammals, children's play is uniquely characterized by imagination—an important aspect of the psychotherapeutic process that has been historically overlooked and theoretically undervalued. When lost in the fun and pleasure of a moment in play, children explore novels forms of thought, speech, action, and social interaction. Meanwhile, novel response is the hallmark of full engagement and healthy adaptation within psychotherapy.

Both developmentally and within psychotherapy, play that engages creative imagination represents a safe way to experiment with people, objects,

concepts, and culture at the very edges of being and becoming. Carl Rogers (1954) was a pioneer of psychotherapy in the middle of the last century who recognized the need for open, flexible minds. In his pearl of an essay, "Toward a Theory of Creativity," Rogers asserts presciently,

> In a time when knowledge, constructive and destructive, is advancing by the most incredible leaps and bounds . . . , genuinely creative adaptation seems to represent the only possibility that man can keep abreast of the kaleidoscopic change in his world…Unless man can make new and original adaptations to his environment as rapidly as his science can change the environment, our culture will perish. Not only individual maladjustment and group tension, but international annihilation will be the price we pay for a lack of creativity. (p. 250)

Rogers defined the creative process (p. 251) as ". . . the emergence in action of a novel relational product, growing out of the uniqueness of the individual on the one hand, and the materials, events, people, or circumstances of his life on the other." By not restricting creativity to some particular content, Roger's definition includes ordinary activities like discovering new sauces in the kitchen, or finding a clever new technique to communicate in our offices or to students in the classroom. Scholars often distinguish between Creativity with a big "C" versus creativity with a little "c." The big "C" variety is reserved for geniuses and savants who make major discoveries in science or who usher in new forms in art. The little "c" variety involves the creativity of everyday life, which includes micro-acts of novelty, spontaneity, humor, and improvisation that help each moment to sparkle and each day to stand out from the last.

When patients enter psychotherapy for trauma, the therapeutic process frequently involves the reduction of negative symptoms, including crisis resolution. Psychotherapists privileged enough to extend treatment beyond the short-term often enter more positive realms of deep connection and personal growth, which is where new unfoldings of personality become possible. Perhaps the most important little "c" type of creativity involves the creation of one's self throughout the lifespan. Within psychotherapy, the task of self-creation and the co-construction of the self become emergent relational processes. A playful attitude in therapists promotes an atmosphere of safety, support, and nonjudgment for patients, which sets the foundation for novel response and creative shifts. Simultaneously, a playful attitude helps therapists to stay curious and engaged, which protects them from burnout and empathy fatigue.

In so many ways, play and creativity speak to the heart and soul of what all psychotherapists engage in—or perhaps should engage in doing!

In the Chapter 1, Mihály Csíkszentmihályi presents a panorama of nature's drive toward creativity. Through his "deer-flavored morality tale," Csíkszent-mihályi muses about how the young fawn must break away from its mother to eventually stand on its own wobbly legs in order to face life's novel challenges. The author's poetic image emphasizes those tiny, ongoing moments of creativity, with a little "c," as they parallel the existential human condition. Each of us must likewise move beyond the carefree play of childhood to flexibly face life's novel challenges with creative solutions.

Whereas the fawn deals with its immediate surroundings only, we humans face more open possibilities. Not only must we define *who we are*, but we must also define *who we want to become*. This creative mandate extends to how we view ourselves as psychotherapists. Each clinical moment, in turn, becomes an opportunity to practice the art of psychotherapy creatively, with a little "c," as we attend to the uniqueness of *this* patient in *this* moment with full presence and novel responses. In this way, we come to our work with a beginner's mind, an openness to be with whatever arises, as it unfolds in therapy.

In Chapter 2, Stuart Brown and Madelyn Eberle take a closer look at the nature of play itself, whose hallmark features include that it is inherently rewarding, voluntary, spontaneous and un-self-conscious. Play may seem frivolous on the surface, yet it serves an essential purpose in all mammals. Within animals, plays helps to socialize and develop adult skills. Within young children, play fosters creativity through imagination, while developing empathy through perspective-taking. Within adults, play helps to quiet the mind and bring pleasure to the player.

Alongside the capacity for positive emotions, intrinsic motivation, and rejuvenation throughout the lifespan, Brown and Eberle underscore the dark, potentially disastrous side of play's absence. Children chronically deprived of unstructured play in service of more "purposeful" activities can become excessively conformist on the surface, while struggling to manage rage and even murderous impulses underneath. The author's takeaway message is that play remains critical throughout the lifespan for everyone, for fostering adaptive minds, resilient emotions, and flexible bodies.

In Chapter 3, Aldrich Chan and Dan Siegel dive into brain processes underlying play, creativity, mindfulness, and other forms of meditation. The authors describe three interconnected neural circuits. The default mode network (DMN) is of primary interest in this chapter. The DMN remains highly active, even during resting states, such that it consumes a high percentage of the brain's metabolic energy. The DMN comes into play whenever we ponder

introspectively, project ourselves into the future, think about our relationships, or engage our moral compasses.

The DMN works hand in hand with the salience network (SN), which consists of neural circuitry that determines what we consider as most important for us to attend to on a moment-to-moment basis. The SN operates like a kind of switchboard, shifting back and forth between inner concerns of the DMN and outer concerns as regulated by the central executive network (CEN). Whereas the DMN involves conceptual issues arising during imaginative play, mind wandering, and creative endeavors, the CEN regulates external tasks and environmental changes, as cued by perceptual events related to the five senses. In this chapter, Chan and Siegel also indicate which neural structures underlie various kinds of meditation practices, including what shifts and grows with greater expertise, as well as clinical implications of this research.

In Chapter 4, Allan Schore and Terry Marks-Tarlow propose a two-person, relational model of how mutual love "leavens" both play and creativity. Within early development, maternal and mutual love serve as primary motivational forces to energetically jump start positive emotions, motivations, and behaviors. During the first two years of life, the capacity to love and play concretely as well as symbolically originate in the emotional and relational processing of the right brain.

When brains, bodies, and minds are optimally cared for from birth onward, children naturally open up to novel experiences and explore developmental edges through play and imaginative activities. The mutual exchange of love fuels a young child's desire to explore the environment, drink in novelty, and eventually fire up the imagination in service of creativity. As children grow and develop, this initial dose of love gets internalized and becomes transmuted into passionate engagements throughout life, including a love for life itself.

In Chapter 5, Pat Odgen addresses the somatic, or body, side of things. She suggests that to be creative, we must extend beyond our comfort zone in order to take risks and push past the confines of the familiar. Yet, as creatures of habit, we humans also love to sink into routine and thrive in the comfort of the familiar. In general, the more secure we feel in our bodies, minds, and relationships, the wider our window of affect tolerance, and the more inclined we will feel to stretch beyond our usual boundaries.

The author presents five basic movements which underlie more complex sequences: yielding, pushing, reaching, grasping, and pulling. We yield to let go—into each other, into gravity, and into the comfort of our beds. We yield to open up to playful promptings and creative products of the unconscious mind. We push upon solid foundations: the fetus pushes out of the womb; we

push to differentiate self from other and to push away that which offends, disgusts, or violates our boundaries. We reach to go beyond ourselves, often out of desire to connect with people or objects in the environment. Reaching manifests openness, interest, and curiosity—all ways to say "yes" to novel experience. We grasp to take hold of what we desire, gaining the opportunity to explore it further with multiple senses. Finally, we pull objects and people we desire closer, beginning in infancy with the nipple. Pulling epitomizes the positive, intrinsic motivation necessary for play and creativity. Ogden asserts that an extensive movement vocabulary provides the somatic foundation to support flexibility and variety in our physical actions.

In Chapter 6, Theresa Kestly examines play across cultures and disciplines, beginning with what she learned upon moving to the small Navajo village of Rough Rock, Arizona, where fire dances provided her first taste of how thoroughly play can be integrated into the sacred as well as ordinary spaces of indigenous peoples. Kestly became inspired to pursue a degree in psychology and then return to her growing fascination with play through sand tray therapy.

Kestly adopts the framework of interpersonal neurobiology to describe her cultural discoveries. She understands the sand tray to offer a right-brain language of touch and imagery that is developmentally more foundational than words. Sand tray is among many forms of play that enables a safe environment in which to experiment with novelty, as well as broaden positive emotions and motivations, while expanding behavioral repertoires. Kestly's chapter demonstrates increasing cultural attunement through her innovation of round sand trays to replace traditional rectangular ones, both with Navajo and Korean people, who naturally tend to "think in the round."

In Chapter 7, Lou Cozolino presents a personal look at play and creativity in the training of psychotherapists. He begins by contrasting early, idealistic images of what academia should be with his own rude awakening as a teacher within a "trade school" classroom. By recognizing how his preformed images stifled his creativity, Cozolino seized upon the opportunity to create his own philosophy and approach to teaching psychotherapy graduate students. Just as the author had to revamp his own expectations, so too must new therapists do the same in their clinical training, essentially by "starting from scratch." The creative challenge for any psychotherapy teacher then becomes cultivating an atmosphere of safety and trust that allows students to take emotional risks and play with new ideas. Cozolino accomplishes this by using humor, telling stories, and encouraging students to face their own demons. To be an effective psychotherapist requires that trainees take the heroic journey inwards,

in order to identify personal wounds, dark corners of the unconscious mind, and the accompanying vulnerabilities that inevitably come into play during clinical sessions.

Cozolino identifies his own set of learning principles by sharing personal stories that embody them. Readers learn the importance of embracing the unexpected; providing a caring, receptive audience; working with rather than trying to dispel personal demons; and recognizing how profoundly we are shaped by unconscious aspects of mind and body. By revealing his own demons and struggles, including the trials and tribulations of his clinical training, the author evinces a creative attitude, models risk-taking, employs humor, and adopts a playful style in an essay that serves as a powerful teaching tale to inspire other teachers.

In Chapter 8, Terry Marks-Tarlow underscores the importance of play and creativity in psychotherapists in the form of clinical intuition. Whereas preset techniques and manualized treatment may address generalized symptoms, only clinical intuition can attune to the particulars of *this* person, in *this* moment, with *this* personal history, and *this* particular therapist. Not only is each individual patient unique, but so is the interpersonal chemistry that arises within each dyad. Whereas cognitive therapies and prefabricated suggestions rely on verbal, explicit processes initiated in top-down fashion, clinical intuition draws upon perceptual and emotional processing as guided from the bottom-up by implicit processes.

To be fully present, authentic, and effective, therapists must continually tune into interpersonal novelty, to render psychotherapy an inherently creative enterprise. Only clinical intuition, and not clinical deliberation, is grounded enough within the full context and complexity of each moment to register this level of nuance. Clinical intuition supports an open stance that permits spontaneity and the emergence of safe surprises. Psychotherapists who model this level of internal grounding in turn inspire patients to do the same. When two people take the risk of being fully present and authentic with one another, this promotes a truly intersubjective, two-person clinical space. Even in the face of hardship or trauma, a playful attitude in therapists can cultivate safety, curiosity, and freedom for mutual exploration and growth.

In Chapter 9, Paula Thomson explores the relationship between unresolved attachment issues, trauma, and creativity. During ancient times, Plato suggested that when the muse visits a traumatized artist, this can unleash transient states of madness. Prior to Thomson's research, such ideas have had little empirical investigation. The author describes how optimal early family experiences promote creativity and creative achievement throughout the lifespan. Her studies found that dancers and actors tend to demonstrate greater

attachment security compared to nonclinical samples. Yet, Thomson's lab also found a higher distribution of unresolved mourning in artists compared to the general population. In addition, artists with PTSD demonstrated both more anxiety during the creative process as well as higher levels of shame, anxiety, depression, and dissociation. Dissociation is a common internal response to pain and trauma that allows children to disconnect from intolerable experiences and intensity of feeling.

Happily, participation in the arts appeared to promote positive states of mind including flow in all artists. This was the case despite the presence of unresolved trauma, as well as more negative states, such as anxiety, depression, dissociation, and shame. While various artists, like dancers, singers, musicians, actors, and comedians, may share similar career conditions, they also have unique stressors and needs; these differences must be understood and taken into account in order for psychotherapeutic treatment to be effective.

In Chapter 10, Victoria Stevens examines musical dimensions of psychotherapy, likening the ineffable quality of deep, relational healing to the experience of playing music. Both go beyond words; both involve the *feel* of things; both depend intimately on the art of timing. Stevens begins by discussing nonspecific aspects of treatment, asserting that technique is less important than the quality of connection. To create a strong therapeutic alliance depends intimately on the ability to read nonverbal, body-based, affective communications from moment-to-moment, both in ourselves and in others. Relevant cues include facial expression, posture, gesture, movement, and vocal prosody.

With relational skills so highly rhythmic, all psychotherapists are musicians at heart, as we move unconsciously in sync with breathing and postural changes in others, and flexibly adjust to tiny sensory and affective shifts. When analyzing musical dimensions of interpersonal neurobiology, Stevens identifies three important features: resonance, synchrony, and attunement. Resonating with the emotions and states of others enables patients to deeply "feel felt," as Daniel Siegel would say. Synchronizing with body movements and mental rhythms conveys empathy and understanding, while attunement to the inner worlds of our patients is how we convey safety and trust. By attending to all of the elements of music—rhythm, tempo, volume, pitch, timbre, melody, and harmony—therapists can enhance their own musical sensitivity in order to better read and respond to the nonverbal communications of patients.

In Chapter 11, Phyllis Booth, Dafna Lender, and Sandra Lindaman introduce the technique of Theraplay® as an engaging, play-based, and relationship-focused intervention that is interactive, physical, and fun. Within this system of psychotherapy, parents are included in sessions with their children, so that they may become more sensitively attuned and emotionally available. The aim

is to create warm, responsive engagement that builds trust, facilitates emotion and arousal regulation, amplifies interactive repair, and ultimately leads to secure attachment, in hopes of ensuring lifelong mental health within children.

The authors review the history of Theraplay as connected to John Bowlby's attachment theory. Four key dimensions of the system are identified—structure, engagement, nurture, and challenge—and amply illustrated with case examples. The Theraplay clinician models and then guides parents to attend to their child's cues, and to reflect on the meanings of their own and their child's experience. The system focuses naturally on the pre-verbal, brainstem, and limbic levels of development, where synchrony, rhythm, facial expression, vocal prosody, movement, and play are the primary modalities. The play-based action is multisensory, aimed to induce calming, nurturing touch, stimulating fun, and soothing care. Clinical histories, dialogue, and reflections bring the case material alive. Through play-filled experiences described here, children learn how to connect with others, to enjoy human company, to experience happiness, and to reconnect with the feeling that life is worth living.

In Chapter 12, Jaak Panksepp, founder of the field of affective neuroscience, identifies seven emotional-motivational-action circuits in the mammalian brain that are genetically driven, yet in need of stimulating social and physical environments for healthy development. Among these are the urge to PLAY—a natural mind-body-brain "tool" designed by Mother Nature to facilitate higher cortical brain development and social adaptation. In the United States, the diagnosis among children of attention deficit hyperactivity disorders (ADHD) has been increasing at an alarming rate, alongside the prescription of psychostimulants. The author suggests that one major reason for the increased incidence of ADHD may be the diminished availability of real social play among children.

While psychostimulants may "work" to help children inhibit impulsive urges and increase academic focus, their long-term effects on growing brains remain inadequately characterized. Research shows that psychostimulants reduce playfulness in young animals and humans alike. They also appear to increase vulnerability for depression, and for drug addiction and abuse later in life. Panksepp struggled to obtain funding for his research on play; he feared that natural solutions to the problem of ADHD may be unpopular among social policy makers under the influence of big pharmacological companies. Panksepp calls out for careful evaluation of whether intensive social play interventions can alleviate ADHD symptoms without any side effects in children. His other recommendations include regular physical play incorporated into early education, as well as the establishment of play "sanctuaries" for at-risk

children, in order to facilitate frontal lobe maturation and the healthy development of pro-social minds.

In Chapter 13, Marion Solomon extends the importance of a playful attitude into couple's psychotherapy. She notes that many, if not most, clients enter psychotherapy finger-pointing—identifying their partner as the source of the problem, and asking for help to change the other as the solution. Solomon resists this perspective, instead maintaining that each person needs tremendous support, love, and recognition, exactly as he or she is, in order to change within him/herself. As a way to cut under long-held defenses and help her clients recognize the incredibly vulnerable, need-filled core hidden deep within each person, Solomon introduces two sets of matryoshkas, or Russian nesting dolls, all of which possess the same shape, as encased each inside the other.

By encouraging clients to take the dolls apart and hold the tiniest ones in their palms, Solomon helps her clients to reconnect with the earliest developmental phases in themselves and in each other—times when they felt needy, vulnerable, and susceptible to relational ruptures and traumas. By reminding couples that this tiny childlike part remains perpetually alive inside, the author hopes to engender empathy and greater understanding of one another. Solomon emphasizes that we are all social beings with social brains that sync up and fire as well as wire together. Because we are built to thrive in company, the author suggests we resist cultural messages that pathologize our social needs and inadvertently promote loneliness by pointing toward individualistic achievement rather than relationships as the source of greatest meaning and fulfillment in life.

In Chapter 14, Jonathan Lynn transports us onto the theater stage, where through his extensive experience as a director, he serves partly as friend, parental figure, and boundary maker—not unlike leading a psychotherapy group. To facilitate high levels of creativity, Lynn wants his actors to feel safe in order to play and take risks. The task of creating emotional safety is akin to handling transference and countertransference issues, especially in learning how to distinguish everyone else's projections from the director's concerns. Meanwhile, the director must retain control over the group process, lest his cast and crew suddenly feel unsafe such that play becomes impossible.

Lynn specializes in comedies. He notes that laughter is clearly therapeutic, and we easily conceive of comedies as warm and fuzzy. Yet Lynn sees the underbelly of comedy as high in aggression, often in the form of ridicule. The dark side of humor is evident in language used by comedians of "killing" the audience or "knocking them dead." With ingredients of comedy fundamental to the human condition, the audience functions like a tribe, asked to identify

with circumstances portrayed, in order to laugh *at* the victim. Meanwhile, plays often take the moral high ground of warning about terrible things that can happen to whoever breaks society's rules or taboos. There are cultural trends in what is considered funny, which means that the line between good and bad taste is ever moving and rather thin. After working with hundreds of comedians and comedy writers, Lynn concludes most of them to be angry and depressed under the surface. Comedy can serve as a safe outlet to express underlying rage, but unfortunately is *not* a cure.

In Chapter 15, Rita Lynn, a psychoanalyst with decades of experience, extends the explorations of her husband. Lynn observes from her own clinical practice that patients deprived of play as children are more likely to use humor as a defense. These are often high achievers who struggle to experience joy, and who oscillate between comedy and darkness, while stating everything of significance only indirectly, as an aside. Lynn shares poignant case examples of patients who use humor as a cloak while relaying some aspect of personal history as a joke. With the patient as the butt of the joke, the therapist is invited into the laugh. Meanwhile, the horror of it all remains hidden in shame, under histories of accommodation, out of terrors of abandonment or fears of overwhelming the therapist with the rage and pain that lurk underneath.

Only by cutting underneath the humor and attending to what is missing from the narrative can therapists hope address underlying feelings and help to heal old wounds. Yet, in the very same chapter that Lynn explores multiple cases of humor used as a defense, she also cautions us against simplistically dismissing the utility of humor in psychotherapy. Lynn believes humor can be used as a skillful clinical intervention for accessing underlying rage or as a creative way to express a needed metaphor. In depressed or overly serious patients, sometimes to share a laugh becomes a signal of healing.

In Chapter 16, Zoe Galvez and Betsy Crouch address the therapeutic potential of theater improvisation as a clinical intervention for building resilience. Given that no one escapes loss or other devastating circumstances in life, the difference between success and failure comes down to maintaining a positive mindset. This chapter offers improvisational exercises as a clinical tool to build confidence, gain comfort with the unknown, and address self-conscious attitudes that inhibit creative expression.

The exercises apply as readily to individual, couples, or group work. The "intentional listening" exercise invites players to slow down, really hear, and respond precisely to each other's verbal communications. "Make your teammate look good" helps players shift from an inward focus and self-conscious worry to an outward focus of attending and supporting partners instead. "Resilient response" helps people work more comfortably with mistakes.

"Yes . . . and" challenges players to open up more fully to life by accepting whatever comes our way in contrast to the more common everyday "No . . . but" stance and response. "Voice your ideas" grants permission to believe in ourselves and risk sharing our ideas. By the end of this chapter, readers are left with an embodied feel for improvisation as a whole mind-body-brain vehicle to prompt change and spontaneity.

In Chapter 17, Bonnie Goldstein explores elements of play and creativity in the treatment of early attachment issues with children and adolescents. By working with younger patients, the author capitalizes on children's plasticity of mind, body, and brain, in order to intervene before their sense of self or patterns of behavior become too deeply ingrained. By utilizing a group therapy milieu, Goldstein helps youngsters explore triggers and experiences related to loss, social anxiety, oppositional behavior, and other relational traumas. As anger, fear, a sense of danger, and other defensive responses emerge naturalistically, novel responses become possible within a context of safety, support, curiosity, and respectful response. By promoting a safe environment, Goldstein helps group members take in social feedback, gain new insights, and expand social repertoires.

Goldstein employs a somatic focus, by harnessing mindfulness techniques with a sensorimotor approach. The author's creativity is evident in her clinical descriptions of thinking "on her feet," as well as "out of the box." When a new member, Danielle, sits in her car, frozen with social anxiety and unable to enter the building, the author meets her exactly where she is by conducting "roadside therapy." Outside the building, Goldstein shows the teen how to tune into her breath, calm down, and ground herself through focusing on minute-to-minute, body-based experience; eventually, Danielle becomes ready to join the group. Goldstein's playfulness is evident in a group "moment of meeting" between Danielle, an immigrant who struggles with shame, and Ian, a bully who regularly expresses intolerance of differences. In order for the teens to engage more safely, Goldstein employs two large medicine balls. Each is encouraged to communicate with the other while bouncing, swaying, and dynamically regulating the distance between them. In this way, through play, the author choreographs a shared experience of co-regulated arousal, enhanced mutual understanding, increased trust, and self-acceptance.

In Chapter 18, Steve Gross demonstrates resilience in action through his play with traumatized children. In the United States, relational traumas resulting from abuse, neglect, or household dysfunction present a leading health and mental health problem for children. Toxic stressors disrupt play while derailing healthy brain development. To address these problems. Gross and his team of Playmakers travel wherever there is need. Using humor and play,

Gross strives to "grow the good" back in children, with moments of fun and laughter becoming a salve against the pain of tragedy.

Rather than defining play as an activity, or something we do, Gross defines play in terms of *how* we do anything. He identifies four important domains addressed through play: 1) *Joyfulness* involves enduring positivity, or a deep, felt sense of appreciation and contentment regardless of circumstances; 2) *Social Connection* highlights humans as social beings whose quality of life is defined by community and relationship to others; 3) *Active Engagement* requires the capacity to "be here now," enthusiastically immersed in every activity; 4) *Internal Control* promotes agency and the sense of being worthwhile, competent, and special, which becomes possible only after basic safety needs are met. Gross's underlying mission is one of optimism, of choosing to see and focus on the good in one's self, the good in others, and the good in the world around us. In this complicated, often distressing world, we could all use a bit of this salve from time to time, especially in our role as caregivers.

References

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3

Play and the Default Mode Network: Interpersonal Neurobiology, Self, and Creativity

Aldrich Chan and Daniel J. Siegel

Introduction

Play has been observed in all mammals. Our class of animals has many unique features, two of them being our dependence on caregivers for our survival in something called "attachment," and the other being our fundamental social nature. As a human species of this mammalian class, our attachment relationships are quite extended in time and our social networks quite complex over a range of systems of interaction. Our development and interactions are deeply shaped by both our genetic and cultural evolutionary history (how we've learned, as a group, to communicate and connect with one another through time). Because these ways of developing and being have grown to be so intricate, the need for experiences that enable us to explore how to behave in the world are profoundly important to our well-being—not just in childhood, but throughout the lifespan.

As with other mammals, we are reinforced in our neural circuitry to seek pleasure, and as humans we find significant joy in play. Indeed, play is an activity to which we are drawn and a process that is intimately interwoven into the fabric of our existence. Although it has sometimes been thought of as a purposeless activity, play has been determined by researchers to be crucial for human development and survival. From an evolutionary vantage point at the

genetic and cultural levels, play is activity that enables individuals to engage creatively in novel situations, generating new, adaptive responses in potential future interactions or environments (Pellegrini, Dupuis, & Smith, 2007). Play has survival value for complex social creatures such as us.

Donald Winnicott (1989) emphasized the importance of play throughout the lifespan. He further described play as an experience where people act and feel genuine, free, filled with vitality, and fully absorbed in the moment. In this context, he viewed the process of play as integral to the discovery and maintenance of what he termed the *true self*. Living in such an authentic way may be something we discover only through the process of play, and may be important for a deep sense of well-being to emerge throughout our lives.

Human experience includes the ability to retrieve memories, evaluate present experiences, and construct imagined scenarios of the future—a form of "mental time travel" (see Endel Tulving, 2005). These capacities grow through time, providing humans with the opportunity to further the development of a self, while expanding their relationships with others and the world. Naturally, this increase in complexity is paralleled by the emergence of more complex forms of playing, from imaginary play with objects, to the composition of a romantic ballad, to the painting of a surreal landscape, to the writing of a chapter for a psychotherapy text.

Importantly, the ability to introspect provides us with a view into another aspect of the natural world: that is, the world as it is reflected in our minds. What is it, then, that allows humans to experience themselves as a subject of self-reflection? What makes it possible for a songwriter to engage the emotional experience of an audience? How does a poet evoke a deep sense of awakening? Or, at a more basic level, how does even an idea become expressed consciously and then into words? To explore these questions, we will focus in this chapter on some exciting contributions from the field of neuroscience.

The Default Mode Network

One of the contributing networks that social neuroscience has uncovered is the default mode network (DMN), a neural network popularized by Marcus Raichle and his research group (2001). Historically, research has focused primarily on neuroanatomical functioning in relation to specific tasks. However, the discovery of a *default mode* in brain functioning during its resting state has provided researchers with another lens into understanding human nature.

Although the DMN is known as a *task-negative network* (Jack, et al., 2013), for its tendency to become inhibited upon engagement with a task, recent findings have encountered several internally driven activities that activate the

DMN. Currently, the DMN has been correlated with autobiographical recall, prospection (Spreng, Mar, & Kim, 2009), self-referential processing (Lanius, Bluhm, & Frewen, 2011), social cognition (Mars, et al.. 2012), and moral sensitivity (Reniers, et al., 2012). Notably, there is a commonality underlying every function; namely, each serves self-related and social processes. Indeed, one way to remember it is as the OATS network, or a network dedicated to constructing energy and information patterns that deal with Others And The Self (See Siegel, 2017). In reference to the posteromedial cortices, structures housed within the DMN, Damasio (2010) eloquently stated that:

> It possibly reflects the background-foreground dance played by the self within the conscious mind. When we need to attend to external stimuli, our conscious mind brings the object under scrutiny into the foreground and lets the self retreat into the background. (p. 243)

Put simply, the same network involved with self-processes is also activated in social interactions. This correlation may advance contemporary understandings of the relationship between self-insight and social judgment (Alicke, Dunning, & Krueger, 2005), the importance of social relationships in the development of the self, and why our developmental experiences may influence the way we perceive others.

Given that DMN research is still in its infancy, discussion among researchers regarding its exact neuroanatomical correlates is still underway. Overall, areas that have been associated consistently with the DMN include the medial prefrontal cortex (mPFC), the precuneus, posterior cingulate cortex, bilateral inferior parietal and posterior temporal cortices around the temporoparietal junction (Mars, et al., 2012) and hippocampal formation (Buckner et. al., 2008).

Li, Mai, and Liu (2014) conducted a meta-analysis on the DMN, identifying three main subsystems: the ventral medial prefrontal cortex (vmPFC) in the medial temporal lobe (MTL) subsystem, critically involved with processing emotional features; the anterior mPFC and posterior cingulate cortex (PCC), responsible for the elaboration of the experiential feelings of self; and the dorsal mPFC and the temporoparietal junction (TPJ), central to theory of mind (mentalizing) and morality. The authors further highlighted two central nodes in the DMN, the PCC/precuneus and mPFC. The PCC/precuneus was found to be a central node involved with explicit emotional engagement (emotional word processing, face-perception), implicit emotional engagement (during self-directed attention or evaluation), and autobiographical memory. The mPFC was found to be critical in all of the reviewed studies, support-

ing simulation theory, which states that humans' social cognitive functions are contingent upon past experiences and their understanding of themselves, which serve as a platform for understanding others. They also indicated that mPFC activation increases with the complexity of tasks performed, with this complexity also manifesting in activations higher up in the frontal cortex. This pattern potentially reflects a bottom-up process by which nonconscious, effortless information processing emerges into effortful cognitive processing.

Table 1 summarizes relevant regions of the brain and associated functions.

Just as people do not live in isolation, neither do brain networks. More specifically, the DMN does not work in isolation; rather, it functions in relation to other neural networks: specifically, two closely related circuits are the salience network (SN) and central executive network (CEN). The SN is a neural network that determines the importance of internal and external stimuli (salience) as related to an individual's context, further orienting an individual to internal activity or the environment. It is composed of the ventrolateral

TABLE 1 Brain Areas Included in the Default Mode Network and Functions

Brain Regions	Functions
Medial prefrontal cortex (Mitchell, Banaji, & Macrae, 2005)	Information processing relevant to self and considering the minds of other people
Temporal lobes (Buccione, et al., 2008; Kapur, et al., 1992)	Role in memory for past events, affecting both autobiographical (i.e., episodic) and non-autobiographical (i.e., public events, general semantic knowledge) memory.
Temporoparietal Junction (Saxe, 2006)	Theory of mind, empathy
Parietal lobes (Beaumont, 2008)	Somatosensory perception, bodily perception, visual-spatial orientation, memory, symbolic synthesis, and cross-modal matching
Precuneus (Cavanna & Trible, 2006)	Mental imagery strategies related to the self, facilitation of successful episodic memory retrieval
Posterior Cingulate Cortex (Maddock, Garrett, & Buonocore, 2003)	Evaluative functions and mediation of interactions of emotional and memory-related processes
Hippocampal formation (Buckner, Andrews-Hanna, & Schacter 2008; Fair, et al., 2008)	Formation of new memories (both autobiographical and semantic), spatial coding, contextualization of memory

prefrontal cortex (vlPFC), anterior insula, anterior cingulate cortex (Sridharan, Levitin, & Menon, 2008), amygdala, and putamen (Patel, Spreng, Shin, & Girard, 2012). The distinct CEN is activated when the brain is engaged in a task, and its central nodes are the dorsolateral prefrontal cortex (dlPFC) and posterior parietal cortex (Sridharan, et al., 2008). The SN has been found to be responsible for transitioning between the DMN and the CEN (Goulden, et al., 2014). Anticevic and colleagues (2012) defined the DMN as a constellation of areas in the brain anti-correlated to frontoparietal regions such as the CEN, further labeling the DMN as a task-negative network (TNN) in contrast to a task-positive network (TPN), as the DMN deactivates when one is engaged in an external task. However, this notion has been found to be incorrect, as tasks involving self and social processes have also been found to activate the DMN (Mars, et al., 2012).

For the purposes of this chapter, the SN and CEN will only be discussed as they are related to the DMN. Figure 1 symbolically illustrates the relationship among these three neural networks.

How is the Default Mode Related to Play?

History has revealed that our main survival challenges in the past were related to hunting and foraging for food, placing us in danger of constant physical threats. Today, many of our battles are psychological in nature. Stress, anxiety, depression, and a whole host of mental disorders now afflict much of the world's population (World Health Organization, 2004). It has become increasingly difficult for us to remain present, spontaneous, and genuine in the face of such a chaotic world—our own intricate neural machinery can create disruptions to optimal functioning.

Sood and Jones (2013) distinguished between the perceptual (external reality perceived by five senses) and conceptual world (inner milieu built upon thoughts and emotions). The DMN helps us access the conceptual world, which consists of self-generated thoughts or contents of experience that arise from internal changes within an individual, rather than external changes cued by perceptual events (Smallwood & Schooler, 2015). Consciousness is the awareness of energy and information that is constantly flowing; sometimes we are aware of the flow, and at other times the flow unfolds without awareness. In this context, information processing can be divided broadly into two categories: focused and goal directed or undirected and spontaneous (Sood & Jones, 2013). In fact, it has been found that 46.9 percent of our time is spent engaged in spontaneous internal processes (Killingsworth & Gilbert, 2010). As will become clear, the way in which we regulate this flow determines our
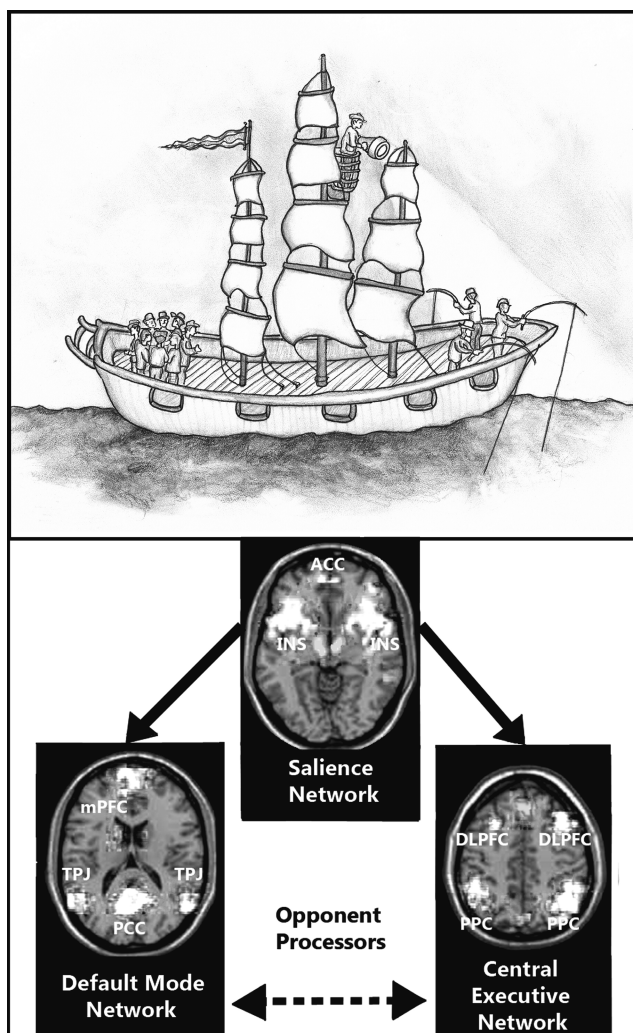
FIGURE 3.1

Symbolic relationship among DMN, SN, and CEN. (Courtesy of Terry Marks-Tarlow) Top left: Group of sailors in a huddle represents the social nature of the DMN. One individual is looking at where the ship has gone (autobiographical recall) and another is looking at where the ship is going (prospection). Top Center: The sailor on the mast represents the salience network. He may only direct the light to one side at a time, directing the focus of energy and information flow inwards or outwards. Top right: The men fishing represent the CEN—as they are engaged in an external task. Bottom: The three actual networks that are symbolized in the metaphorical boat. ACC: anterior cingulate cortex, mPFC: medial prefrontal cortex, TPJ: temporoparietal junction, INS: insula, dlPFC: dorsolateral prefrontal cortex, PPC: posterior parietal cortex. Note: not all regions of DMN, SN, and CEN are displayed in this diagram.

capacity to adopt an attitude receptive to play, as well as how we engage in the process of play.

So how does the DMN relate to play? The DMN is a network related to introspective processes as well as social engagement. As mentioned earlier, it is activated in the absence of an external demand or task. One activity that occurs when we leave our minds to idle without a goal is *mind-wandering*. The DMN has been associated with mind-wandering (Brewer, et al., 2011), or the tendency for our minds to *wander*, and this can occur with or without aware-ness. It is important to note however, that DMN activation is *not equivalent to* mind-wandering. In fact, Christoff, Gordon, Smallwood, Smith, and Schooler (2009) encountered neural recruitment in both DMN and CEN regions dur-ing mind-wandering. This finding was particularly prominent in "subjects that were unaware of their own mind wandering, suggesting that mind wandering is most pronounced when it lacks meta-awareness" (p. 8,719). Their findings suggest that mind-wandering may be a sort of intermezzo, facilitating a fluid transition from the internal world to the external.

Christoff, et al. (2009) found that regions of the DMN activated during mind-wandering include the ventral ACC, the precuneus, and the temporo-parietal junction, with two main executive regions, including the dorsal ACC and dlPFC. Outside the typical networks, they found activations in the tem-poropolar cortex, inferior and middle temporal gyri, anterior insula, and cau-date nucleus. Interestingly, mind-wandering with meta-awareness has been associated with similar but weaker activation in both networks. In the words of Sood and Jones (2013), "The DMN has a dark side to it . . . specific DMN activity can produce mind wandering. Inability to suppress DMN activity can lead to attentional lapses and impairs task performance" (p. 138).

One principle of particular relevance that has received empirical valida-tion is *perceptual decoupling*, which suggests that during periods of self-generated thought, attention is disengaged from perception. Other studies also sug-gest that emotional and episodic processes are involved with self-generation of mental content during mind-wandering. Moreover, there is evidence that executive control processes are important in the coordination of the mind-wandering state itself (Smallwood & Schooler, 2015).

From a positive perspective, Beaty, Benedek, Kaufmann, and Silvia (2015) found that both cognitive control and spontaneous thought were necessary for creativity. On a divergent thinking task, several core hubs were found to be activated in the default (PCC) and executive (dlPFC) circuitry. Increased coupling (bilateral insula) was found at the beginning and end of the task, suggesting a "focused internal attention and top-down control of spontaneous cognition during a creative idea production" (p. 1).

Thus, there are two sides to the utility of mind-wandering. Killingsworth and Gilbert (2010) suggested that the tendency for the mind to wander is a robust predictor of unhappiness; they concluded in their experiment that a wandering mind is not a happy one. Moreover, mind-wandering has also been documented to potentially interfere with learning (Sood & Jones, 2013). This is mind-wandering that happens without intention and interferes with the focus of attention on task-related cognition and behavior. On the other hand, Baird and colleagues (2012) found that mind-wandering during simple external tasks may facilitate creative problem solving. This can be an invited mind-wandering, distinct from the intrusive and un-invited mind-wandering associated with an unhappy mind. Similarly, Levinson, Smallwood, and Davidson's (2012) study found that individuals with higher working memory capacity also reported more mind-wandering during simple tasks, without hindering performance.

Our internal mental life is a rich source of who we are. We learn and develop an identity based on our memories, use our imaginations to play out future scenarios, self-reflect to gain insight into our challenges, and activate our social cognition to engage in relationships. The default mode has been associated with all of these important self-defining processes. However, the DMN has also been associated with mind-wandering, which, as noted, is a controversial topic in current science in that uninvited it can be unhelpful while invited it can be helpful. What truly distinguishes mind-wandering as a negative from when it is positive?

In a review by Smallwood and Schooler (2015), they delineated the benefits and disadvantages of mind-wandering. The disadvantages include (a) comprehension impairment during reading and (b) reduced performance in complex tasks (especially tasks involving executive control). For example, the tendency to mind-wander is predictive of SAT performance (with increases in mind-wandering associated with poorer performance), and 49 percent of the variance in general aptitude.

In contrast, the benefits of mind-wandering include:

1. Improved capacity for delayed gratification via future planning in self-generated thought, which itself has been predictive of positive attributes such as greater intelligence;
2. Creativity or the capacity to generate novel creative thoughts, especially during simple tasks or in daily life;
3. Enhanced meaning: Engaging in mental time travel, particularly thinking about specific remembered or anticipated events, can enhance

self-reported meaning in life. Meaning in personal experience fosters well-being and enhances health outcomes.

4. Mental breaks: Mind-wandering (particularly future-oriented thoughts) has been found to reduce undesirable mood states associated with engaging in a boring task (Baird, et al., 2010; Ruby, Smallwood, Engen, & Singer, 2013); and

5. The simulation of negative content promotes preparedness for potential threats.

Another interesting concept proposed by Djiksterhuis, Strick, Bos, and Nordgren (2014) supports the DMN's association with creativity. They proposed that the DMN partially contributes to what they call *Type 3 processing* in addition to Type 1 (unconscious, fast, associative, automatic, and effortless) and Type 2 (conscious, slow, logical, rule based, goal-directed, and effortful) processing. They view it as "conscious intermezzi" (p. 360): a form of processing that is largely unconscious, very slow, abstract, exploratory, goal dependent, and largely effortless. They specified that two conscious intrusions bring Type 3 processing to light: (a) the awareness of an unconscious goal when progress becomes difficult; and (b) when an answer to a challenging question arises while doing something completely different, also known as a *eureka moment*. They view Type 3 processing as necessary in creative problem solving and making important decisions. They do, however, specify that working memory involvement is necessary, and as such the DMN is not solely responsible for all Type 3 processing.

These findings relate to a study by Schooler, Gable, Hopper, and Mrazek (2014), who examined situations surrounding the generation of creative ideas by professional writers and physicists. Every evening for 2 weeks, participants responded to a questionnaire that asked them to indicate if they had any creative ideas that day and, if so, to indicate the situation where the inspiration occurred plus estimated quality of the idea. Over 40 percent of the participants' creative ideas occurred when engaged in a non-work-related activity and/or thinking about something unrelated to the topic. Moreover, although creative ideas that occurred during mind-wandering were not rated overall as more creative, they were more likely to be characterized as involving an *aha!* experience and contributing to overcoming an impasse.

With this information in mind, how can we sculpt our own brains in such a way that can maximize the utility of mind-wandering while diminishing its disadvantages? How is the DMN involved? Is it possible to alter DMN functioning to improve overall well-being?