

# Neuroscience Helps Play Therapists Go Low So Children Can Aim High

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*"Traumatic experiences create alterations in key neural networks in the brain. These stress-related networks span multiple areas of the brain - from the brainstem to the neocortex, and, therefore, 'getting at' these systems in order to provide therapeutic 'activations' to create positive change is difficult using our conventional cognitive-heavy approaches. The beauty of play is that it engages these widespread networks in controllable, predictable, and moderate ways. Play engages sensory, motor, emotional, and cognitive systems. These play therapy 'experiences,' therefore, are a recipe for effective therapeutics and resilience building."*



Bruce Perry, MD, PhD

**T**his issue of *Play Therapy*™ Magazine provides an extraordinary review of historically significant play therapy theories, techniques, and approaches. Incredibly, we began just 100 years ago, when Sigmund Freud conducted the first psychotherapy session with “Little Hans.” After many adaptations, we have developed a wide assortment of models, theories, techniques, and associated expressive approaches. Today, play therapy is an evidence-based treatment modality. It has been a long journey, but it is not over.

The next century promises continued evolution of play therapy due in part to neuroscience. In the 1990s, known as the “Decade of the Brain” (Goldstein, 1994), neuroscience began exploring the development of the human brain through advanced imaging techniques. Through this research, science began creating structural and functional maps of neural connections in the human brain by age and diagnostic categories. Neuroscientific findings provide empirical support for and validation of many of play therapy’s philosophical underpinnings and treatment models. Perry (2008) listed six core elements of positive neurodevelopmental experience, clearly illustrating support for play therapy: relevant, repetitive, relational, rhythm, rewarding, and respectful.

### Relevant

To be relevant, the neural network one intends to change must be the target of activation (Perry, 2008). Systems that fail to be activated fail to change. Low-brain areas regulate homeostatic life support functions and are frequently disorganized by trauma, producing somatic symptomatology. Until these regions achieve stasis, higher-brain areas (cortex) cannot function well. This foreshadows academic failure with traumatized children. Consequently, treatment of regulatory functions must precede cognitive functions. The low brain lacks rational, logical thought and does not understand language; therefore, somatosensory activities and movement activities are generally recommended.

Play therapists are very sensitive and supportive of a child’s need to play in the sand, pour water, to rock, swing, or simply to spin on a chair as regulatory processes. To adapt to older children, play therapists have developed an extensive array of expressive play activities, such as art, dance, yoga, and dramatic play. Children often choose these low-brain activities in the playroom or in their home as a way to regulate themselves. These activities supply repetitive somatic experiences, known as bottom-up therapy, and are neurologically critical to the treatment process. Neuroscience supports the notion that trauma heals from the bottom up. These activities often are more impactful if they are repeated at heart rate (60 to 80 bpm) and in a sensory modality the child finds pleasurable.

### Repetitive

Long-term memories and learning are formed by repetitive experiences over time, consciously or unconsciously (LeDoux, 2015). Trauma is often associated with the lack of predictability, increased chaos, or the loss of

### CLINICAL EDITOR’S COMMENTS:

The author explains how play therapy facilitates positive neurodevelopment experiences.

control; the absence of positive, consistent, or repetitive experiences can trigger powerful reactions (Blaustein & Kinniburgh, 2010). Routines and predictability are critical to security, promoting a sense of safety, and learning. The low brain requires many repetitions to develop regulatory capacity.

Play therapists from all theoretical orientations promote structure and predictability for children. Keeping the play therapy room organized the same way, following the same routine in the therapy session, or honoring the child’s playful rituals are methods supporting routine, repetition, and a sense of safety in the relationship and the environment. Repetition of rituals communicates unity in relationships, and that connectedness has not changed (Gaskill & Perry, 2017). Neuroscience clearly affirms repetition and routines increase learning and are calming to the brain (unconscious arousal regions). Rituals are the glue that holds relationships together. Further, neuroscience supports play therapists’ use of limit setting, boundaries, positive relational experiences, and esteem building (Kinniburgh, Blaustein, Spinazzola, & van der Kolk, 2005).

### Relational

Neurologically, we are born to love (Szalavitz & Perry, 2010). Our health and ultimate survival depend on close relational ties with others. Neuroscience declares that human beings are interdependent creatures. Researchers suggest warm positive emotions contribute to ideal neural functioning and child development, while frowning and negative emotions suppress neurogenesis (Gaskill & Perry, 2017). Positive relational interactions regulate the brain’s stress response systems and help create positive and healing neurophysiological states, promoting health and healing (Ludy-Dobson & Perry, 2010). Early experiences with caregivers become the organizing network through which children will view the world, make decisions, and relate to their community (Perry, 2001).

Play therapists have voiced the importance of attachment and relationships. Additionally, play therapists are well aware that the child-therapist relationship is pivotal to play therapy process outcomes (Landreth, 2012), as we communicate “I am here, I hear you, I understand, and I care” (Landreth & Bratton, 2006).

### Rhythm

The ability to enter into an attuned state with the child is the quintessential driver/change agent of healthy development and the foundational aspect for all other core elements in play therapy (Gaskill & Perry, 2017). This attuned relationship is central to teaching children to self-regulate; thus, it is a key issue in treating poorly regulated children. Children lacking this experience have difficulty forming healthy attachments later in life.

Neuroscience posits that self-regulation is the culmination of a remarkable process of organizing and integrating profoundly complex neural networks. The attunement process creates a synchronous relationship between child and play therapist largely accomplished through face-to-face gaze, eye-to-eye contact, and suspension of one's own thoughts and feelings so as to "enter the world of the child" through his/her eyes, feelings, and thoughts (Landreth, 2012). All play therapy theories and modalities emphasize the importance of this relationship between the child and the therapist (O'Connor, 2000). Teaching these skills is a fundamental part of play therapist training (Landreth, 2012).

## Rewarding

All children and all people need to experience reward. Dopamine, a neural chemical, is responsible for the pleasant feeling we experience in relationships with primary caregivers and the desire to repeat the experience with others. If we do not have sufficient injections of dopamine in our system, we become depressed and seek dopamine producing events in our lives. Human beings seek dopamine release in healthy ways (e.g., warm human relationships, spirituality, moral behavior, music, rhythm, dance, etc.) or in other ways (e.g., through drugs, alcohol, destructive sexual behavior, salt, sugar, fat, cutting, burning, etc.). Neuroscience informs us that as arousal goes up there is less activation of the reward network. Seriously traumatized children may perceive even subtle power differentials (threat), can experience greater autonomic arousal and a diminished sense of reward; they can feel paralyzed or defensive and explore the world less and withdraw (Gaskill & Perry, 2017). Play therapists have always understood that children come to the playroom and interact with us because it is fun, pleasurable, and safe (Landreth, 2012).

## Respectful

Finally, a major component of creating a sense of safety, warm relationships, and a sense of relational pleasure is respect for the child's racial, cultural, ethnic, religious, spiritual, and socioeconomic background (e.g., Gil & Drewes, 2005; Gil & Pfeifer, 2016). This has always been of utmost importance to play therapists and fundamental to their training.

## Conclusion

Undoubtedly, play therapy theory and practice will be required to evolve and adapt to new scientific information about the human brain. Future research and practice likely will enhance understanding of cognitive versus somatic treatment modalities, the number of positive repetitions required, and the adequate adult-to-child social ratios necessary to promote neurogenesis. Still, it is clear that play therapy approaches from all theoretical perspectives are compatible with much of the current neurological research.

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