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MERGING "FLOORTIME" WITH MUSIC: Exploring an Affect-Based Approach that Employs Developmental and Musical Patterns

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Summary: This article describes salient features of "Floortime," an approach that is central to Greenspan and Wieder's comprehensive model (DIR™)* that supports patterns of human development and treats early social and communication disorders. Music — with its patterns, fluidity of response, and power of communication — is explored as a complementary avenue for use with the Floortime approach. Illustrations are made relevant to music practitioners who work with young children in education, therapy, early intervention, and other settings. Understanding and applying both Floortime and early childhood music models form a powerful unified path that supports optimal patterns of children's growth.

*DIR™ = Developmental, Individual-difference, Relationship-based approach formulated by Stanley I. Greenspan, M.D., and Serena Wieder, Ph.D.

From the enormously comprehensive body of information about Floortime formulated by Stanley I. Greenspan, Serena Wieder, and colleagues comes Greenspan's warm and colloquial expression that captures the essence of his work: "Now we've got the kid cookin'!"[1] As both a procedure and philosophy, Floortime espouses a highly engaging, systematic way of helping children climb the developmental ladder (See Figure 1).[2] Although widely used and associated with intervention for children with developmental and learning disorders,[3] the approach can be equally applied to promoting healthy growth among all children.[4] Greenspan's reference to "cookin'" suggests a key state in which children successfully negotiate developmental milestones through the actualization of personally meaningful high affect — the active internal ingredient which motivates, fosters, and solidifies their learning. Ideally, this state is co-created by the child and his/her adult Floortime partner within the context of their relationship and based on the child's unique profile.[5]

Music has been cited as a useful activity in various Floortime settings,[6] with music's specific benefits including:

- strengthening motor planning and sequencing abilities through rhythmic elements[7]
- developing shared (two-way) responses through singing and playing instruments[8]
- using musical vocalization and movement to bolster the child's multi-modal processing capacities,[9] and
- using the structural underpinnings of musical activities to heighten the child's sense of self and group.[10]

Conversely, Floortime practices have been shown to be beneficial to music-based activities.[11] The amount and detail of published accounts on these topics, however, are relatively scarce, especially given the high degree of support that each could yield to the other. Thus, a more detailed look at their complementary roles is timely.

FLOORTIME

"Floortime" has come to be known as the spontaneous interactions that occur when a caregiver follows a child's lead in a warm, flexible way so as to encourage that child's climb up the developmental ladder.

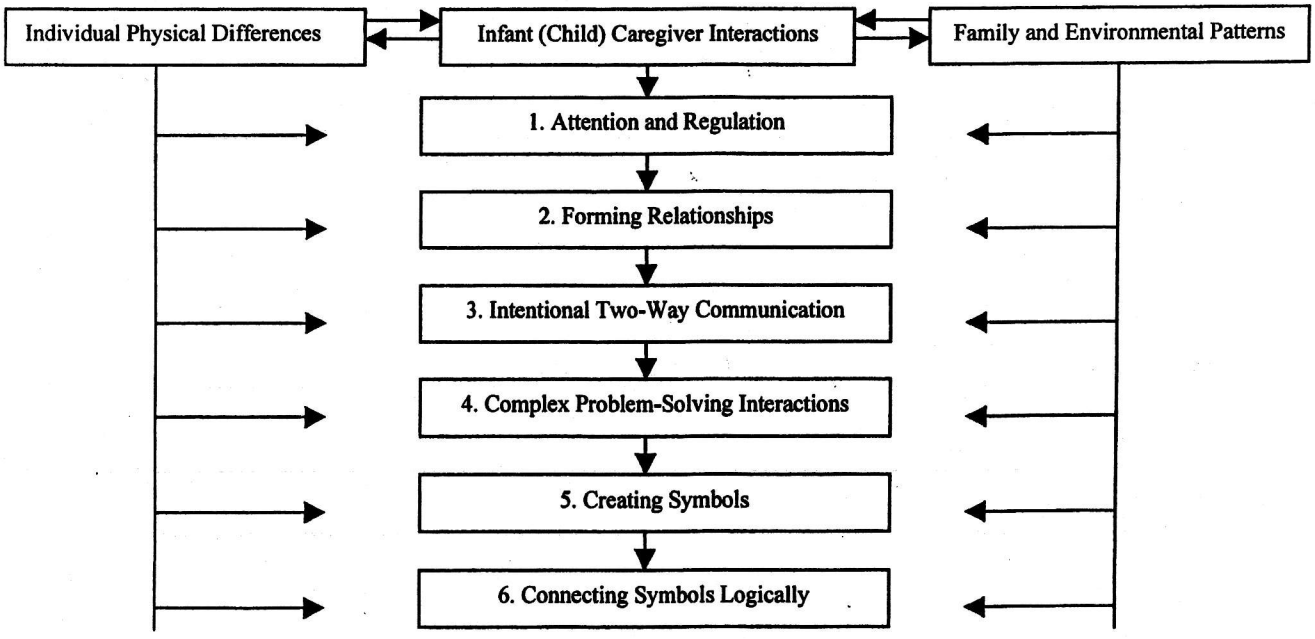
With young children, such interactions typically take place on the floor — where the children's toys are, where children are comfortable, and where they are on a more equal plane with the adult. Greenspan and Wieder state that while Floortime may resemble ordinary play, it is distinguished by the developmental role played by the adult Floortime partner.[12] Following the child's demonstrated interests (i.e., his/her lead) in a manner that *encourages interaction between the child and the partner* is paramount. Here, it is not an object or an activity or a skill per se, but the *human relationship* that captures, sustains, and expands the child's attention, and thereby motivates ensuing "circles of communication." Adults who venture into Floortime play with a child are reminded of Wieder's advice: "Think of yourself as your child's first toy."[13]

Each communication — whether in the form of a gesture, look, movement, sound, word, or even the inaction of being left alone — is taken as intentional and is contingently responded to. It is important that the child participate in, as Greenspan says, the "juicy" back-and-forth flow of communication while negotiating the particular dramas and challenges of each developmental stage. If the child gets stuck, the adult redirects him or her

Figure 1. **The Basic Developmental Model for DIR™**

The Basic Model for DIR™, as conceptualized by Stanley I. Greenspan and Serena Wieder, shows the "Individual Physical Differences" (constitutional-maturational patterns) on one side and "Family and Environmental Patterns" (including caregivers, family, community, and culture) on the other. Both operate through the infant-caregiver relationship, which is pictured in the middle. All of these factors with the infant-caregiver relationship contribute to the organization of experience at each of six developmental levels (sometimes referred to as "milestones" or the Functional Emotional Developmental Levels) which are shown in the Infant (Child) Caregiver Interactions column.

Details describing the Functional Emotional Developmental Levels can be found at www.floortime.org or in books such as Greenspan's *Building Healthy Minds: The Six Experiences that Create Intelligence and Emotional Growth in Babies and Young Children* or Greenspan and Wieder's *The Child with Special Needs*.



* Source for Figure: *The Assessment of Emotional Development in Infancy and Early Childhood: The Clinical and Research Applications of the FEAS* by G. DeGangi, S. I. Greenspan, and S. Wieder. Used with permission.

to a simpler level that can be tuned into and solidly sustained. The Floortime partner is ever mindful of the child's unique sensory, cognitive, and affective profile (see Figure 2) and can help the child through challenges by means of multiple paths. Consider 6-year old Kerry:

> Kerry has a winning combination in her use of visual and fine motor skills. She is a whiz at assembling 3-dimensional structures, fitting just the right peg into the right hole to replicate the house on the cover of the game box. She loves that she can second-guess which pick-up stick will cause the bunch to collapse better than each of her older brothers; and yet, Kerry still needs to learn how to articulate that same kind of cause-and-effect thinking verbally.

During Floortime, the adult is able to help the child negotiate developmental milestones in an integrative, sequential way so that levels are not skipped or replaced with "splinter skills." Beginning with fundamental shared interests, the adult works to enhance the child's capacities in ways that will eventually encompass representational thinking, build bridges between ideas, and generate more complex reflective and multi-causal thinking. [14]

FLOORTIME AND ITS LARGER MODEL

"Floortime" is a simple descriptor which, upon first hearing, belies the breadth and depth of its principles and applications. Of fundamental significance is the bedrock of clinical work, research, and collaboration out of which its primary architects, Stanley I. Greenspan and Serena Wieder,[15] have built a comprehensive and dynamic model.

The basis for their work takes into account multiple major perspectives from the last century, such as infant's emotional and social development, attachment, deprivation, environmental effects, psychoanalytic understandings, developmental psychopathology, constitutional-maturational influences, and temperament. Among the many theorists and clinicians represented by these perspectives are Donald Winnicott, John Bowlby, Margaret Mahler, Mary Main, Selma Fraiberg, Anna Freud, Sigmund Freud, T. Berry Brazelton, Daniel Stern, Jean Piaget, and Erik Erikson.[16] This model has also been moved forward with late 20th century and early 21st century insights, such as those from neurobiology,[17] neuropsychology,[18] and pharmacotherapy.[19]

Greenspan and Wieder's work, spanning decades, has consolidated a broad theoretical perspective of human development into an original formulation that accommodates both adaptive and disturbed emotional functioning, as well as cognitive, motor, and sensory capacities and environmental influences that impact the caregiver's support. This model

Figure 2

THE SENSORY SYSTEM AND ITS IMPACT

- **Visual** (Seeing)
- **Auditory** (Hearing)
- **Tactile** (Touching)
- **Olfactory** (Smelling)
- **Gustatory** (Tasting)
- **Proprioceptive** (Information through joints, ligaments, muscles)
- **Vestibular** (A complex information system connected to the inner ear, which provides information about balance, movement, and position in space).

Both the cognitive and affective processing systems rely on sensory input, while the motor system is what allows us to respond. Children with sensory-processing difficulties may be overwhelmed by incoming signals that skew their understanding and ability to relate. Developmental delays are often associated with difficulties in motor planning and sequencing of actions based on input and thought. These kinds of individual differences are recognized and responded to in the Floortime model.

Sources: Compiled from *Sensory Integration and the Child* by A. Jean Ayres (1979) and *The Child with Special Needs* by Stanley I. Greenspan & Serena Wieder (1998).

should be viewed as a whole, with its influences exerting a back-and-forth flow from within its various components[20] (See Figure 1). Floortime is the hub of this formulation and sets the stage for Greenspan and Wieder's basic developmental model — DIR™, characterized by them as a

Developmental
Individual-difference
Relationship-based model.

FLOORTIME/DIR™ AND ITS HOME BASE

To grasp the power of Floortime's being at the heart of DIR™, one need only look at the constituents who provide its underpinning. Broadly speaking, these groups are connected to and fostered by the Interdisciplinary Council for Developmental and Learning Disorders (ICDL).[21] It is through this Council that Greenspan and Wieder's work has been effectively linked — in theory and practice — with legions of professionals from a wide range of disciplines (including, for example, speech/language and occupational therapists, clinical mental-health professionals, vision specialists, physicians, neuroscientists, researchers, early interventionists, and educators). The fact that such diverse professions are actively collaborating and contributing to its dynamic growth attests to the adaptability of the Floortime/DIR™ model. Moreover, the ICDL also works with and serves an active network of parents. From these cross-fertilizations have emerged essential components, such as best practices for assessments, specific therapies, biomedical interventions, home programs, school programs, family support, and ongoing professional support and training.[22]

VIEWING A COMPLEX PICTURE — THE ROLE OF PATTERNS

The powerful role of patterns in development and caretaking and their application from theory to practice are infused in the DIR™/Floortime literature. The significance of patterns in this model is drawn from such multiple viewpoints[23] as:

1) Formation of patterns that arise from an individual's physical differences;
2) Formation of unstable patterns that may lead to maladaptive behavior (such as having strengths in some areas but major deficits in specific processing areas that impact how the whole system functions);
3) Children's expected ability to see and decipher patterns (including spatial patterns, motor-sequencing patterns, socio-emotional patterns, and the power of pattern predictability) early in life as part of their healthy growth and adaptive functioning;
4) The importance of recognizing unique, individual profiles based upon children's underlying developmental patterns (such profiles recognize differences, even when symptoms display themselves similarly to others with identical syndromes);
5) Uniquely-configured caretaking and/or intervention patterns based on the child's individual profile;
6) Realization of how children's individual profiles and patterns are transformed as they move through developmental stages and as caretaking and the larger environment exert their influence.

THE KEY ROLE OF AFFECT

The Floortime/DIR™ model is predicated on a seminal concept: affect is integral not only to a child's developing sense of self but also to intellectual growth.[24] In this view, it is affect which gives (connects) meaning to behavior and ideas; therefore, "it is through highly affective interactions, mobilized through the child's emerging developmental capacities, that emotional and cognitive growth is harnessed in the Floortime arena."[25] One can see why this approach is particularly important with children who have underlying biologically-based processing difficulties. The processing impairments may radically interfere with a child's ability to connect affective intent to motor planning or signaling, and thus derail relationships and emotional interactions while setting up self-perpetuating and damaging patterns.[26] Compelling new theories in the field of neuroscience also lend credence to the leading role of affect, including the impact of affect interchange in both adaptive and maladaptive relationships.[27]

INTERSECTION OF FLOORTIME AND MUSIC

Since Floortime is an approach vitally attentive to eliciting affective states and interactions, music presents a particularly well-suited and complementary partnership to Floortime practices. Evidence of music's affective and socially-binding role, in addition to being profusely observable, has been articulated by numerous researchers.[28] The earliest indications of music's emotive signal[29] are embedded in parent-infant communications, which hold a vast collection of wordless vocalizations, including cries, coos, clicks, glides, raspberries, gurgles, and babbles.[30] These earliest vocal sounds, superimposed exclusively on rate and type of breathing, inform the caregiver of changes in the infant's behavioral-emotional state.[31] As adults begin adapting infant sounds into their own vocalizations, they can expand and emphasize further communication by incorporating mutual gaze and rhythmic gestures into their dialogue;[32] ideally, a co-regulated attunement of affective states ensues.[33] It is to this musically and affectively fertile interactive prototype that we must often return when seeking to reach young children, particularly those whose core deficits have overwhelmed them.

With a child's climb up the developmental ladder, music avails itself in ever-expanding ways related to the Floortime model. For example, music's communicative potential may initially be as simple as two-way social signaling, while at later stages music's communicative potential (as during ensemble play) will become much more sophisticated (as in helping the child differentiate his/her own communicative needs/abilities from others or in reading multiple cues from others and then re-adjusting his/her own communication accordingly). Evolved from earliest co-regulated communication, music offers a much deeper and subtle form that relies on a growing synthesis of developmental and musical patterns.

FLOORTIME AS AN INTERVENTION

Children with special needs, including those who fall within a broad spectrum of developmental and learning disorders (e.g., autism spectrum disorders, regulatory disorders, sensory-processing and/or sensorimotor disorders, attentional disorders, and language disorders) require that Floortime be an intensive one-on-one intervention as part of an overall therapeutic plan.[34] It is preceded by assessment and is recommended along with two other developmentally appropriate daily activities (i.e., semi-structured, problem-solving interactions that work on particular objectives and specific therapies that focus on strengthening the processing capacities).

FLOORTIME FOR TYPICALLY-DEVELOPING CHILDREN

Since Floortime encourages interactive play in a developmentally appropriate manner, it is a healthy strategy to employ with all children and can be used by parents, teachers, child care providers, and others who come in regular contact with young children. Several publications have addressed this and related issues[35], with added impetus coming from a new web-based radio program with Dr. Greenspan as host. This broadcast includes a large segment that applies Floortime principles to typically-developing children.[36]

MUSICAL APPLICATIONS

Figures 3 (p. 42) and 4 (p. 44) offer vignettes which describe how Floortime has been incorporated into a music setting. Principles demonstrated in these musically interactive examples with children who have special needs can easily be adapted for groups (classes, studios, play, etc.) of typically developing children[37] or for inclusion programs[38] that have a more pronounced developmental and learning range. Carol Kranowitz,[39] author of several well-received books that incorporate sensory-integration issues into children's learning and play, offers particularly well-suited activities using music. On first learning about the Floortime

cont. on p. 43

Figure 3

VIGNETTE OF RYAN, A 4-1/2 YEAR OLD BOY WHO SHOWS EMERGING ABILITIES FOR SUSTAINED ATTENTION AND RELATING EMOTIONALLY TO OTHERS

The Alone and Preoccupied Zone... Ryan skirts continuously along the edge of a small room, running his finger intermittently along the textured wallpaper. While occasionally showing affection and interest in others, these "islands" appear and disappear. Upon entering the room, his erratic wordless utterances, irregular breathing spurts, and averted gaze from any focal point convey challenges ahead. Ryan and his mother have just arrived at his Interactive Musical Play session. It's clear that we will once again need to renegotiate the first level of the Functional Emotional Developmental Ladder — (Shared) Attention and Regulation.

Making the Connection... As Ryan approaches, Mom playfully intercepts his path, chanting "I'm gonna get you!" and then inserts a musical cue ("I'm gonna") in long chanted syllables. She moves toward him slowly so he can orient himself visually. Ryan locks his gaze upon her for an instant and then stumbles backwards, ending up on a bean bag which mom has pulled towards him to break his fall. I vocalize a silly, descending, staccato "kaa – ah- ah- ah" that synchronizes with his fall, saving the low-pitched "boom" for his moment of impact. Ryan doesn't cry; instead, he alerts to the sounds and movements. He shows some surprise, but then calmly and squarely eyes me in the face. It is possible that his solid contact with the bag was literally a "grounding" moment for this little fellow who seeks tactile contact. Ryan seems to enjoy the springy impact and possibly his connection to us.

Okay, I'll join in... The three of us begin to reenact his long circling prelude and subsequent fall ("boom") with gestures, sounds, body movements, and singing. We sing "Ta-da-da-BOOM-de-ay," thudding into the bag on "BOOM." Soon Ryan adds his own sound after "BOOM" and raises his arms to participate. Responding to his motions, we adapt and vary patterns in our singing and articulation. When I know from his delighted squeals that he's really with me, I tease him with a pregnant pause before "BOOM." Ryan throws his hands down impatiently, so mom and I oblige his "request" and fill in a long tremolo "BOOM" that we all imitate with hands on our knees. It's become a game, and Ryan is clearly engaged. We are still relying on musical elements in much the same way as in infant proto-conversations, but I'm patient and hold his experience in mind. I know that Ryan, who loves the springy bounce of a mallet impacting a drumhead as much as he enjoys his body meeting the beanbag, will soon have a good place to do this during a semi-structured part of the session.

Now with the Group... More structured music-making occurs when Ryan's nanny and sister come in to join us for a sing-in, play-along. Ryan is now more organized in his sensibilities and is clearly part of our ensemble around a large gathering drum. He initiates the playing for each song, setting the tempo and mood of the piece; sometimes when he stops, we all freeze our singing and look at him expectantly. This is his favorite part, and he giggles and starts up again, now commanding the group's continued participation. On "Sally Goes Round,"[50] we hold each other's gaze and he follows my lead when I pause and hold my mallet up high before the final "Boom." With the help of the musical foundation we've established and his ongoing engagement in the process, he is able to "tolerate" the wait. When his chance at resolution comes, it is delicious. Together, we seem to have paved the way for a remembered pattern of bodily sensation. With a huge bang and lit-up face, like a ball player making the basket, he scores the final "BOOM" as the remembered sound and affect kick back in. Ryan has not sung one word, but he has made music with us. We will have to go back to this pattern of working through and up the developmental ladder many times, but our use of progressive levels of engagement and communication with attuned musical play has transformed the music, as well as the child.

Figure 3/cont.

DEVELOPMENTAL AND MUSICAL ELEMENTS REPRESENTED IN VIGNETTE OF RYAN—

These support and build on each other, gaining strength as they interweave.

DEVELOPMENTAL ELEMENTS

- We met his initial state of disorganization and anxiety and helped him to regulate and focus.
- We used playful obstruction to insert ourselves into his circling action and to break his isolation.
- We stirred up his affect with simple, playful facial, vocal, and gestural interactions.
- We simultaneously engaged several sensory systems and paid heed to his tactile and proprioceptive needs.
- We deepened the family's role and gave a social context for play.
- We provided a forum that helped him form impressions of "himself versus others" and gauge his impact on the group.

MUSICAL ELEMENTS

- We met him musically with simple prosodic sound patterns of rhythm, articulation, and melodic contour that mirrored his movements.
- We transformed sound from chant to wordless melodic vocalization to songs with words. Each offered a mode for interacting (alerting, echoing sounds, playing along with instruments).
- We took into account his sensory issues when choosing body percussion and instrumental play.
- We improvised music to suit his highly individual needs and used repertoire that would help bind our group music-making culturally and inter-generationally.

approach, Kranowitz welcomed its many compatible principles to what she had already been doing as a long-time preschool music, movement, and drama teacher.[40] Her example shows how Floortime can simultaneously engage children at several levels, such as in musical storytelling that engages verbally-expressive youngsters who can connect ideas through language, as well as children who can focus on the musical elements and enjoy the sensory play of instruments. She tells of Susie, a youngster on the autism spectrum who was able to remain engaged and active throughout the musical aspects of a story.[41] In telling the "charming myth" of Haydn's mother, who used an unresolved descending scale to rouse the musical boy from bed,[42] Kranowitz was able to captivate Susie's attention by illustrating this tale with slowly falling scale tones on a xylophone that concluded with the auditory suspense of an unresolved tonic. Upon hearing this, Susie jumped up, grabbed the mallet from the teacher's hand, and finished the scale on the right note. The rest of the children were surprised and enervated by her participation, with Kranowitz's adding, "She was beaming and clearly reveling in her accomplishment." With the facilitation of an attuned teacher such as Kranowitz, Susie's initiation may be turned into a game that opens up new interpersonal levels for her, while also presenting opportunities for the other children to learn from her auditory and visual acuity.

Other examples of how music can be used with Floortime principles come from Kasi Peters, MT-BC, a clinic-based music therapist.[43] Peters, who started out as a Developmental Interventionist doing Floortime with children in their homes, notes: "Music therapy and Floortime work so nicely together. The goal areas are similar in that both can easily work on social-emotional development and parent-child relationships."[44] In working with the upper levels of the DIR™ developmental ladder, she uses the adaptability of music to generate communicative narratives that function much like spoken language. In Level Five (where ideas begin to represent intent and affect) and

cont. on p. 45

Figure 4

VIGNETTE OF ADDIE, A 2-YEAR-OLD BUNDLE OF ENERGY

Hey, what's this — slam, bang, again!... Addie zooms around spaces, picking up one thing of interest, only to discard it for another; one of the few things that slows her down is her desire (and need) to open and shut doors over and over again in a way that seems meaningless and driven. Clearly, it has meaning for her, but it is a "dead end."

Knockin' on your door... As her dad and I literally insert ourselves into her path, we use knocks, sound effects, instruments, and the song "Who's that, tapping at the window; who's that, knocking at the door?"[51] Addie slams the door shut and is poised to immediately open it, when dad knocks on the other side. I immediately sing only the "Who's that?" part, and Addie looks at me, then opens the door, and dad and I both chime in with "Daddy is knocking at the door." Dad intones "Oh, hello, Addie" with mock surprise and shakes his daughter's hand. We repeat this scenario as many times as Addie wants to open/shut.

This is fun — let me try!... We knock on the door with wooden rhythm sticks, strike chime bars, and ring pitched bells as doorbells. Addie becomes intrigued by the instruments and tries some out while we sing, "Addie is ringing at the door." We change the timbre of instruments, from tiny triangles to a mysterious-sounding gong to raspy guiros. Sometimes when Addie is set to open the door, I press myself against it and repeat, "Who's that?" She jiggle and whines at my blocking the door; but after another "Who's that?", with a big arm gesture she shouts "ah-eee" for "Daddy," and I finish by singing "is at the door" while she opens it.

Bringing it Home – New Doors... In a delightful variation, Dad reports that at home Addie has fun with (relatively) prolonged attention given to an animal flap book. Dad holds the flap down and sings, "Who's that mooing at the door?" as Addie wiggles and pulls on his hand to get it open, and the two of them make boisterous farm animal sounds for each hiding cow, pig, and sheep. For Addie, a new door has literally opened.

DEVELOPMENTAL AND MUSICAL ELEMENTS REPRESENTED IN VIGNETTE OF ADDIE—

These support and build on each other, gaining strength as they interweave.

DEVELOPMENTAL ELEMENTS

- We treated her perseverative door actions as intentional and incorporated them into our interactions.
- We helped extend her play from a simple open/shut to multiple parts, including sound signals and greetings.
- We encouraged engagement of multiple sensory processes (auditory, visual, proprioceptive, and tactile).
- Play at home was transferred to another modality (flap book) that used body and mind in different ways and was sustained with warm back-and-forth interactions.

MUSICAL ELEMENTS

- We acknowledged her door actions and found a song to support it. The rising contour of "Who's That?" (interval of a fifth) is an ideal prosodic match for a question, with the stress and duration on the significant word "Who?".
- We provided different instruments for sound signals, not only to vary the play but in consideration of her "let me try this one" tendency.
- While retaining the song, we also varied it (e.g., with different instrumental accompaniment, use of short motifs, change of timbre, and adaption of words and setting).

Level Six (where children begin employing symbols to build logical bridges between ideas and emotional thinking), Peters often uses dramatic play with music. Here, music allows children to become readily engaged by the great variety of instrumental sounds and musical patterns that can be changed about. Music also supports the children's affective involvement, interactions, and critical thinking skills.

CONCLUSIONS AND RECOMMENDATIONS

Music has the dual advantage of setting up an environment in which children's developmental patterns can be detected and of offering the means by which techniques can be creatively applied to serve young children's development. As musicians, we continuously work with the idea of patterns at a micro level whenever we use rhythmic and tonal motifs that aid children's music and language development. We also employ our larger understanding of patterns as we focus on metric relationships, structural form, and affective response patterns to music. Patterns in the musical medium are exceptionally malleable yet robust, as noted in Douglas Hofstater's Pulitzer-prize winning book, *Göedel, Escher, Bach: An Eternal Golden Braid*, a brilliant look at, among other things, the nature of musical pattern metamorphosis.[45] In a sense, a piece of music assumes its unique identity through the transformation of its patterns — what it's built upon, what changes, what stays the same. When working to support children's unique developmental patterns, we have at our disposal this remarkably fluid medium that can be responsive to a child's individual proclivities without losing its original form, thus lending stability and continuity even during change. Further, in a realm where *our* own (often rapid) adaptability matters, the myriad combinations that ensue from playing with musical elements in such transforming ways will help increase our own flexibility and likelihood of finding meaningful matches for the many unique processing styles, as well as emotional, cognitive, and social needs that children present us.

Continued partnerships between those involved with the Floortime approach and music fields are called for. Music professionals can learn from the Floortime perspective that is being applied by such fields as pediatric occupational therapy and speech/language therapy.[46] We can also benefit from clinical mental-health work, especially its understanding of how early attachment issues relate to developmental growth, as well as its general reflective stance about relationships and optimal support. At the same time, however, many Floortime clinicians who have learned about techniques and activities being applied from a musical vantage point quickly see how music relates to what they have already been doing and become eager to learn more about how music might facilitate their own work.

In addition, intra-music collaboration could make an enormous positive difference, particularly the improvisatory-based Nordoff-Robbins[47] music therapy; Gordon's Music Learning Theory,[48] which uses patterns in wordless vocalizations; Orff-based music education and therapy,[49] which creatively uses sensorimotor play; and early childhood music education, which offers playful repertoire that works so well with groups. Individual fields need not be abandoned here, but rather could collaborate and bring together insights from specialized channels to formulate a newly growing and valuable arena. The developmental model of Floortime/DIR™ is a dynamic, inclusive one and clearly has much to offer early-childhood practitioners, as well as early-childhood music educators and music therapists. These professionals also have much to offer those who work in clinical Floortime settings. The power of this complementary union may not only help each child find him- or herself through music, but may also help music's illuminating power and meaning shine through as a result of the child's journey.

The author wishes to thank Carol S. Kranowitz, M.A., and Kasi Peters, MT-BC, for their contributions and Griffin Doyle, Ph.D., for his helpful insights.

ENDNOTES

1. Greenspan, S. I. (2001, April 28). *Intervention: A Comprehensive Developmental Approach.* Infancy and Early Childhood Training Course, Arlington, VA.

2. Greenspan, S. I., & Wieder, S. (1998). *The Child with Special Needs: Encouraging Intellectual and Emotional Growth.* Reading, MA: Perseus Books.

3. Greenspan, S. I., & Wieder, S. (2000). Developmentally Appropriate Interactions and Practices. In *Interdisciplinary Council on Learning and Developmental Disorders (ICDL) Clinical Practice Guidelines: Redefining the Standards of Care for Infants, Children, and Families with Special Needs.* Bethesda, MD: Interdisciplinary Council on Learning and Developmental Disorders.

4. Greenspan, S. I., & Greenspan, N. T. (1985). *First Feelings: Milestones in the Emotional Development of Your Baby and Child.* New York: Penguin Viking.

Greenspan, S. I. (1999). *Building Healthy Minds: The Six Experiences that Create Intelligence and Emotional Growth in Babies and Young Children.* Reading, MA: Perseus Books.

5. Greenspan & Wieder, *Child with Special Needs,* 121-292.

6. Ibid., 143.

Wieder, S, & Kalmanson, B. (2000). Educational Guidelines for Preschool Children with Disorders in Relating and Communicating. In *ICDL Clinical Practice Guidelines: Redefining the Standards of Care for Infants, Children, and Families with Special Needs,* 308.

"Roadmap for Parents" on the Floortime Foundation website located at http://floortime.org.

7. Greenspan & Wieder, *Child with Special Needs,* 229.

Harnessing the impact of rhythm in a related clinical intervention is described in the following article. Results of this novel strategy may be of particular interest to music educators and therapists as they consider the power of a basic musical element in transforming behavior. Shaffer, R. I., Jacokes, L. E., Cassily, J. F., Greenspan, S. I., Tuchman, R. F., Stemmer, P. J. (2001). Effect of Interactive Metronome® training on children with ADHD. *The American Journal of Occupational Therapy,* 55 (2) 155-161.

The significance of "rhythmicity," including reciprocal back-and-forth signaling, affective and motor rhythm, and their role as they evolve from vulnerabilities into stable patterns has further been detailed in Greenspan, S. I., & Shankar, S. (2001). New Affective and Perceptual Motor Indicators of Autistic Spectrum Phenomenon in the First Year and Related Early Intervention Strategies. *The Best Practices Newsletter of The Interdisciplinary Council on Developmental and Learning Disorders,* 3 (2).

8. Greenspan & Wieder, *Child with Special Needs,* 143.

9. Wieder, S., & Kalmanson, B. (2000). Educational Guidelines for Preschool Children with Disorders in Relating and Communicating. In *ICDL Clinical Practice Guidelines: Redefining the Standards of Care for Infants, Children, and Families with Special Needs,* 320.

10. Greenspan & Wieder, *Child with Special Needs,* 229.

For an informative allied approach which applies music therapeutically in a developmentally-oriented milieu in North Wales, see Wimpory, D., Chadwick, P., & Nash, S. (1995). Musical Interaction Therapy for Children with Autism: An Evaluative Case Study with Two-year Follow-up. *Journal of Autism and Developmental Disorders,* 25 (5), 541-52.

11. Weeks, K. (2001). Interactive Musical Play: An Integrated approach to Music, Play, and Development. *Early Childhood Connections: Journal of Music- and Movement-Based Learning,* 7 (3), 43-51.

Denton, D. S. (2003). Group Music and Movement: Through the Looking Glass of Autism. *Early Childhood Connections: Journal of Music- and Movement-Based Learning,* 9 (4), 41-53.

12. Greenspan & Wieder, *Child with Special Needs,* 123.

13. Wieder, S. (2002). Pre-conference Workshop, "Floortime" at ICDL Sixth International Conference on Autism and Disorders of Relating and Communicating: Improving Long-Term Outcomes. Tysons Corner, VA.

14. Greenspan & Wieder, *Child with Special Needs.*

15. Stanley I. Greenspan, M.D., is Clinical Professor of Psychiatry and Pediatrics at George Washington University and Medical School, a practicing child psychiatrist, and Chair of the Interdisciplinary Council on Learning and Developmental Disorders. He was previously Director of the Mental Health Study Center and the Clinical Infant Development Program at the National Institute of Mental Health. Dr. Greenspan

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16. DeGangi, G. A., Greenspan, S. I., & Wieder (2001). *The Functional Emotional Assessment Scale (FEAS) for Infancy and Early Childhood: Clinical and Research Applications.* Bethesda, MD: Interdisciplinary Council on Learning and Developmental Disorders, 3-72.

17. Bauman, M. (2000). Autism: Clinical Features and Neurobiological Observations. In *ICDL Clinical Practice Guidelines: Redefining the Standards of Care for Infants, Children, and Families with Special Needs,* 689-703.

18. Black, L., & Stefanatos, D. (2000). Neuropsychological Assessment of Developmental and Learning Disorders. In *ICDL Clinical Practice Guidelines: Redefining the Standards of Care for Infants, Children, and Families with Special Needs,* 425-486.

19. Robinson, R. (2000). Medical Evaluations of the Child with Autistic Spectrum Disorders. In *ICDL Clinical Practice Guidelines: Redefining the Standards of Care for Infants, Children, and Families with Special Needs,* 411-423.

20. DeGangi, Greenspan, & Wieder, *Functional Emotional Assessment Scale,* p. 8.

21. For more information about the ICDL, see their website located at http://www.icdl.com.

22. Greenspan, S. I. (2000). Introduction. In *ICDL Clinical Practice Guidelines: Redefining the Standards of Care for Infants, Children, and Families with Special Needs,* 41.

23. Greenspan, S. I., & Wieder, S. (1997). Developmental Patterns and Outcomes in Infants and Children with Disorders in Relating and Communicating: A Chart Review of 200 Cases of Children with Autistic Spectrum Diagnoses. *Journal of Developmental and Learning Disorders,* 1, 87-141.

DeGangi, Greenspan, & Wieder, *Functional Emotional Assessment Scale,* 3-72.

Greenspan, *Building Healthy Minds.*

24. Greenspan, S. I. (1997). *The Growth of the Mind and the Endangered Origins of Intelligence.* Reading, MA: Perseus Books.

25. Greenspan & Wieder, Developmental Patterns and Outcomes, 107.

26. Ibid., 87-141.

27. Schore, A. N. (1994). *Affect Regulation and the Origin of the Self: The Neurobiology of Emotional Development.* Hillsdale, NJ: Lawrence Erlbaum Associates.

Porges, S. W. (2003). Social Engagement and Attachment: A Phylogenetic Perspective. In J. King, C. Ferris, & I. I. Lederhendler (Eds.) *Roots of Mental Illness in Children: Annals of the New York Academy of Sciences,* 1008, 31-47.

Kosslyn, S. M., & Koenig, O. (1995). *Wet Mind: The New Cognitive Neuroscience.* NY: The Free Press, 445-484. In the Epilogue of the 2nd edition, the authors address new neuroscientific revelations about the role of emotions, including their critical bearing on learning. The authors point out that their new findings emerged in a brief three-year time period since the book's first edition was published.

28. Trehub, S. E., & Nakata, T. (2001-2002). Emotion and Music in Infancy. *Musicae Scientiae.* Special Issue, 37-61.

Trehub, S. E. (2003). Toward a Developmental Psychology of Music. In G. Avanzini, C. Faienza, D. Minciacchi, L. Lopez, M. Majno (Eds.) *The Neurosciences and Music: Annals of the New York Academy of Sciences,* 999, 402-413.

Huron, D. (2001). Is Music an Evolutionary Adaptation? In R. J. Zatorre & I. Peretz (Eds.) *The Biological Foundations of Music: Annals of the New York Academy of Sciences,* 930, 43-61.

29. Trehub & Nakata, Emotion and Music in Infancy.

30. Papousek, M., & Papousek, H. (1981). Musical Elements in the Infant's Vocalization: Their significance for Communication, Cognition, and Creativity. *Advances in Infancy Research,* 1, 163-224.

31. Papousek, M., Papousek, H., Suomi, S. J., & Rahn, C. W. (1991). Preverbal Communication and Attachment: Comparative Views. In J. L. Gewirtz & W. M. Kurtines (Eds.) *Intersections with Attachment.* Hillsdale, NJ: Lawrence Erlbaum Associates, 97-121.

32. Fernald, A. (1990). Meaningful Melodies in Mothers' Speech to Infants. *Infant Mental Health Journal*, 11, 262-282.

Malloch, S. N. (1999-2000). Mothers and Infants and Communicative Musicality. *Musicae Scientiae*. Special Issue, 29-55.

33. Stern, D. N. (1985). *The Interpersonal World of the Infant: A View from Psychoanalysis and Developmental Psychology*. NY: Basic Books.

34. Greenspan & Wieder, Developmentally Appropriate Interactions and Practices, 261-281.

35. Greenspan, S. I. (1991). *Floortime: Tuning in to Each Child* [Video]. NY: Scholastic.

Greenspan, S. I., & Greenspan, N. T. (1989). *The Essential Partnership: How Parents and Children Can Meet the Emotional Challenges of Infancy and Childhood*. NY: Viking Press.

Greenspan & Greenspan, *First Feelings*.

Greenspan, *Building Healthy Minds*.

36. Floortime Foundation Website located at http://www.floortime.org.

37. Weeks, Interactive Musical Play.

38. Kranowitz, C. S. (2000). Music and Movement Bring Together Children of Differing Abilities. *Child Care Information Exchange*. May/June, 57-60.

39. Kranowitz, C. S. (1998). *The Out-of-Sync Child: Recognizing and Coping with Sensory Integration Dysfunction*. NY: Berkley Publishing.

Kranowitz, C. S. (2003). *The Out-of-Sync Child Has Fun: Activities for Kids with Sensory Integration Dysfunction*. NY: Berkley Publishing. Kranowitz's second book in this series holds a wealth of activities not only for children with sensory integration difficulties, but also for all children. There is a special section dedicated to activities related to the auditory system.

40. C. Kranowitz in personal communication with K. Weeks, February 2004.

41. Parents, teachers, and therapists are known to notice the powerful effect that music has on children with social and communication disorders, often describing it as "the child lighting up with music." Why music reaches children when speech does not is clearly a complex issue. Nonetheless, relevant topics such as neuroscientific investigations comparing music and speech processing in the brain are beginning to emerge. See, for example, an article which looks at the different processing time requirements of music versus speech in R. J. Zatorre, P. Belin, & V. Penhune (2002). Structure and Function of Auditory Cortex: Music and Speech. *Trends in Cognitive Sciences*, 6 (1).

42. Kranowitz, *Out-of-Sync Child Has Fun*, 164-165.

43. Kasi Peters, MT-BC, is a music therapist at the Pasadena (CA) Child Development Center, where she integrates Floortime principles into her clinical music work and where she trains other therapists in these techniques.

44. Kasi Peters in personal communication with K. Weeks, February 2004.

45. Hofstater, D. R. (1979). *Göedel, Escher, Bach: An Eternal Golden Braid*. NY: Vintage Books.

46. Greenspan, S. I., & Lewis, D. (2002). *The Affect-Based Language Curriculum (ABLC): An Intensive Program for Families, Therapists, and Teachers*. Bethesda, MD: Interdisciplinary Council on Learning and Developmental Disorders.

47. Aigen, K. (1998). *Paths of Development in Nordoff-Robbins Music Therapy*. Gilsum, NH: Barcelona Publishers.

48. Gordon, E. E. (1997). *A Music Learning Theory for Newborn and Young Children*. Chicago: GIA Publications.

49. Bitcon, C. H. (2000). *Alike and Different: The Clinical and Educational Uses of Orff-Schulwerk*. Gilsum, NH: Barcelona Publishers.

50. "Sally go 'round the Sun, Sally go 'round the moon, Sally go 'round the chimney pot every afternoon, Boom!" See J. Langstaff & N. Langstaff (1986). *Sally Go Round the Moon and other Revels Songs and Singing Games for Young Children*. Cambridge: Revels.

51. As with many regional American folksongs, "Who's That?" is wonderfully adaptable and appealing. See Seeger, R. C. (1948). *American Folk Songs for Children*. NY: Delacorte Press.

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