Symbolic Play Language During Sensory Integration Treatment

Laura A. Cross, Wendy J. Coster

Key Words: play and playthings (therapeutic) • professional–patient relations • rapport

Objective. Clinical writings on sensory integration treatment and theory have long professed that play serves as an important means of implementing treatment goals. However, to date, there has been little research that examines this aspect of the intervention. With the use of play language as an indicator for the occurrence of play, this study examined the frequency and characteristics associated with symbolic play language that therapists and children use during sensory integration therapy. This study is part of an ongoing research program designed to examine therapist–child interactions.

Method. The frequency of symbolic play language observed in 41 videotaped treatment sessions of therapist–child dyads (21 children, 12 therapists) was recorded with the Challenge Coding System. The presence of symbolic play language was recorded if the child or therapist used language that incorporated the child, therapist, equipment, or activity into a symbolic or pretend play theme. The frequency of symbolic play language and percentage of time spent using play language were calculated. Associations among frequency of play language, child age, and behavior during the session (e.g., seeking assistance, cooperation) were also examined.

Results. Symbolic play language proved to be a major feature of sensory integration treatment sessions. It also correlated with child age and with some features associated with therapeutic interactions (i.e., child tries hard, child seeks assistance, therapist assists child, therapist modifies activity, therapist structures activity).

Conclusion. The results suggest that these therapists used play language frequently and that this usage may support children in sensory integrative therapy to successfully accomplish activities.

Ayres (1979) developed sensory integration theory to explain an observed relationship between difficulty integrating sensations and academic as well as motoric learning. She postulated that during development, children take in internal and environmental sensations, integrate them within the central nervous system, and use this sensory information to plan and organize behavior. Difficulties with this process may result in perceptual and motor learning deficits.

People fall along a spectrum in their ability to integrate sensory information. Ayres (1972a) believed that those who are better at integrating sensory information were more coordinated and socially adjusted, whereas those with poor sensory integration abilities usually experienced less success with greater effort. Children and adults with sensory integration problems may be de-
scribed as clumsy, socially awkward, irritable, distractible, or hyperactive.

Sensory integration treatment proposes to counter this sensory processing difficulty and improve sensory integration by providing controlled sensory experiences within the context of a meaningful activity that elicits adaptive behaviors. Adaptive behaviors are "varied adjustments, perceptual, orientational, manual, and verbal which reflect the child's capacity to initiate new experiences and to profit by past experiences" (Gesell, 1940, p. 108). Adaptive behaviors both promote and reflect organization of brain mechanisms. Consequently, a child's learning capabilities will also be strengthened by guided sensory and motor experiences or therapy (Fisher & Murray, 1991).

Successful sensory integration treatment often depends on the therapeutic relationship between the child and the therapist. The therapist must skillfully match the environmental demands with the child's capabilities in order to elicit an adaptive response (Ayres, 1979; Coster, Tickle-Degne, & Armenta, 1995). The complexity of the treatment activity is tailored to the needs of the individual child in an effort to create the just-right challenge (Ayres, 1972a; Koomar & Bundy, 1991; Tickle-Degne & Coster, 1995). When the child meets the just-right challenge successfully, his or her sense of self-confidence, self-control, and mastery is enhanced. This mastery experience increases the likelihood that the child will explore the environment in search of further opportunities for challenge, directing his or her own therapeutic process and thereby initiating the spiraling process of self-actualization.

Ayres (1972a) described the therapist and child's joint management of the therapeutic process as providing "freedom within structure" (p. 259). The therapist structures the environment such that the child has the ideal degree of freedom to safely explore his or her potential. To be successful, the balance between structure and freedom must vary, depending on the child's emotional state and motor action. This process is similar to that described by Rogoff (1990) as a guided participation process. The child's activities are guided by a more experienced member of the culture who manipulates the environment, indirectly or directly, to match the child's emerging capabilities (Tickle-Degne & Coster, 1995).

Vygotsky, a Russian psychologist, has also been a proponent of social context learning. He proposed that the skills or processes being taught in a social context are eventually taken over and internalized by the child to become individual skills and processes (Lyons, 1984; Vygotsky, 1962, 1978; Wertsch, Minick, & Arns, 1984). Rogoff (1990) referred to this process as a "transference of responsibility" (p. 100) where children actually inform the adult of how much they want to be guided. As children internalize or learn the skill, they seek less assistance from the adult.

Play is a tool often used by occupational therapists as a means to create environments where children feel safe to explore their potential (Bundy, 1991). Rubin, Fein, and Vandenberg (1983) described six characteristics of play. The first characteristic is that of intrinsic motivation: Play is pleasurable in itself and is not done because it must be done.

Second, play involves attention to means rather than ends. The players concentrate on the process of play rather than on the outcome or product (Sylva, Bruner, & Gelova, 1976).

Third, play involves acting on an object or idea rather than exploring it. Exploration is when a child asks, "What can this toy do?" Play, on the other hand, is when a child believes that he or she can do anything desired (Bundy, 1991; Weisler & McCall, 1976).

Fourth, play is nonliteral, simulative behavior. Bateson (1976) described play as a paradox: When a person is within the frame of fantasy play, the pretend activities become real and meaningful when, by definition, such play is intentionally not real. Within this play frame, children are able to create and manipulate any situation. Here, they can learn about activities and relationships around them, including situations that may not actually be a part of their real-life experience (Forbes, Katz, & Paul, 1986; Giffin, 1984). An important aspect of the use of play in therapy is the ability to suspend reality so that the child feels safe enough to attempt activities he or she ordinarily would not attempt (Bundy, 1991).

Fifth, play involves freedom from externally imposed rules. It is an activity that is controlled by the player, not by adults or other children.

Finally, play requires active participation from the player. Sylva et al. (1976) stated that play is always self-initiated; thus, one cannot force a child to play. When the play activity is carefully chosen and the challenge is just right, the child will be completely engrossed. Bundy (1991) argued that this absorption in play will produce adaptive behaviors and thereby fulfill therapeutic goals.

The literature describes play as a process (internal) through which change and development occur (Cotton, 1984; Forbes et al., 1986) and as a context (external) in which development transpires (Anderson, Hinojosa, & Strauch, 1987; Fiese, 1990; Schaffer & Crook, 1979). In symbolic play, children develop competencies through the opportunity to practice their skills in a safe environment; they develop coping strategies to deal with real-life situations; their egos are strengthened in the sense that fantasy play allows for the expression and integration of contradictory realities by providing an alternative channel for...
expressing needs and emotions; and symbolic play is gratifying (Cotton, 1984). Positive experiences create eager and optimistic responses to future experiences, ultimately widening the range of possibilities. This is not unlike the spiraling process of self-actualization proposed in the sensory integration literature (Fisher & Murray, 1991).

Play is also used in occupational therapy, including sensory integration treatment, as a context in which to elicit change. Rast (1986) stated that play was not meant to be used as a distracter from therapy or as a reward but as a context in which to create therapeutic interaction and meaningful experiences for the child. However, Bundy (1991) cautioned that when using play as such a context, the therapist must know exactly how much stimulation to provide to elicit adaptive behaviors and how to fine-tune the activities to provide the just-right challenge.

Although the clinical literature in occupational therapy proposes a central role for play in intervention, few studies have examined how and to what extent play is used in treatment. The present study was designed as an initial investigation of this issue. As a first step, it examined the actual rate of occurrence of play behavior as measured by child and therapist symbolic play language during sensory integration therapy sessions. Symbolic play language was used to represent symbolic play because although play can appear to be an obvious behavior, its many nonverbal and subtle features make it difficult to define operationally. On the other hand, symbolic play language is a clearly observable behavior. For this study, symbolic play language was defined as any verbalization by the therapist or child about an activity that was considered pretend, make-believe, or suggestive of reality suspension. If symbolic play language was used, there were perceptible and quantifiable play behaviors taking place at that moment. For example, a girl lying on a mat may not look like she is playing, but once she says, “I have to get up early in the morning for my trip to the moon, so I will take a nap now,” it becomes clear that she is playing. Although play language does not capture all types of play, it does highlight whether and when play is happening.

A second focus of this study was to examine the association among frequency of symbolic play language, age of the child, and features of the therapeutic interaction and the management of challenge (Tickle-Degnen & Coster, 1995). It was expected that play might be negatively correlated with age, given developmental trends toward more games with rules and decreased fantasy play with increasing age (Hughes, 1995). The frequency of play language was expected to be negatively associated with the degree of anxiety, given that play is used as a tool to put children at ease by suspending reality and its consequences. The literature has described play as context in which to create the just-right challenge. Accordingly, it was also predicted that use of play language would be positively correlated with therapist modification of activities, giving encouragement, child confidence level, and self-direction. On the basis of Tickle-Degnen and Coster’s (1995) findings, the frequency of play language was expected to be positively correlated with ratings of rapport.

Method

Design

This is a descriptive study that analyzed 41 videotapes of therapist-child dyads during their regularly scheduled, approximately 45-min sensory integration treatment sessions. This study was part of an ongoing research program conducted at Boston University, which was designed to examine therapist-child interactions (see Coster et al., 1995; Tickle-Degnen & Coster, 1995).

Subjects

Twenty-one children (17 boys, 4 girls) participated in this study after parental consent and child verbal assent. The children were between the ages of 4 years, 0 months, and 9 years, 9 months (M = 6 years). All had sensorimotor difficulties associated with learning disability or attention deficit disorder and had been in sensory integration treatment between 5 weeks and 2 years (M = 9 months). The children were chosen through convenience sampling.

The areas of sensory integration difficulty for each child were determined by using existing chart data. All the children had been evaluated with the Southern California Sensory Integration Tests (SCSIT) (Ayres, 1972b), the Sensory Integration and Praxis Tests (SIPT) (Ayres, 1989), or the Miller Assessment for Preschoolers (MAP) (Miller, 1988).

Three categories of difficulty were selected, using the SCSIT format for the motor performance, somatosensory, and visual perception sections. When the SIPT or MAP was used, scores on similar subtests or items were substituted. To be classified as having difficulty in a particular area, the children had to receive a score on the SCSIT or the SIPT lower than 2 standard deviations below the mean on any one subtest in a category or lower than 1 standard deviation below the mean on two or more subtests in a category. On the MAP, the children had to score in the red (5th percentile) on one relevant item or in the yellow (10th percentile) on two or more relevant items in a category. A somatosensory classification was not given to the children tested with the MAP because it does not assess this area in a clear category comparable to that of the SCSIT or SIPT (see Table 1). Tactile defensiveness and gravitational insecurity difficulties were identified on the basis of the clinical observations documented by the
Table 1
Characteristics for Children Who Had Difficulties in Each Category

<table>
<thead>
<tr>
<th>Category</th>
<th>n</th>
<th>Age Range</th>
<th>Test Used To Determine Category</th>
</tr>
</thead>
<tbody>
<tr>
<td>Semisensory</td>
<td>13</td>
<td>5 years 0 months–9 years 3 months</td>
<td>Subtests from the SCSIT and SIPT</td>
</tr>
<tr>
<td>Motor performance</td>
<td>19</td>
<td>4 years, 6 months–9 years, 3 months</td>
<td>Subtests from the SCSIT, SIPT, and MAP</td>
</tr>
<tr>
<td>Visual perception</td>
<td>17</td>
<td>4 years, 7 months–7 years, 7 months</td>
<td>Subtests from the SCSIT, SIPT, and MAP</td>
</tr>
<tr>
<td>Gravitational insecurity</td>
<td>16</td>
<td>5 years, 0 months–9 years, 9 months</td>
<td>Clinical observations</td>
</tr>
<tr>
<td>Tactile defensiveness</td>
<td>17</td>
<td>4 years, 4 months–7 years, 7 months</td>
<td>Clinical observations</td>
</tr>
</tbody>
</table>

Note. MAP = Miller Assessment for Preschoolers; SCSIT = Southern California Sensory Integration Tests; SIPT = Sensory Integration and Praxis Tests.

children’s therapists.

Twelve female occupational therapists from a private practice clinic voluntarily participated in this study. All were master’s educated, were certified in the evaluation of sensory integration dysfunction, and had at least 4 year’s experience in sensory integration treatment.

Instrument

The Challenge Coding System (CCS) was used to quantitatively examine therapist–child interactions on the basis of the presence or absence of several actions: symbolic play language, manipulation of the environment, decision making, help seeking, use of directives, requests for clarification, positive feedback, and reactions (Coster et al., 1995). The CCS was created specifically for the ongoing research conducted at Boston University to examine therapist–child interactions. In Coster et al.’s (1995) study, intercoder reliability was reported to be the highest on the therapist’s (88%–94.7% agreement,  \( r = .68-.93 \)) and child’s (88%–97.2% agreement,  \( r = .39-.83 \)) use of play language. The present study coded only child and therapist symbolic play language.

Procedure

Videotape. Twenty children were videotaped with their therapists during two treatment sessions, approximately 1 week apart. One therapist–child dyad was taped only once. Thus, 41 videotaped treatment sessions were available for coding. The therapists were requested to proceed with treatment as usual. The principal investigators viewed the videotapes and consulted with the therapists to ensure that the videotaping had not affected the normal therapeutic interaction. The children’s attention to the video-camera was minimal presumably because they are frequently videotaped for clinical purposes.

CCS coding. Play language was recorded as present or absent if the child or therapist used language that incorporated the child, therapist, equipment, or activity into a symbolic play theme. It did not matter who initiated the play theme. Play was not recorded if the therapist or child used the ordinary name for a piece of equipment or activity that incorporated such language unless they expanded on or developed the relevant symbolic play theme. For example, if the therapist referred to the “space trolley,” it was recorded as no because “space trolley” is the ordinary name for the equipment. However, if the therapist asked, “Would you like to be Rocket Man in the space trolley,” a yes was recorded because the name of the equipment had been incorporated into a play theme.

The presence or absence of play language was recorded by one person throughout each 45-min treatment session, using the CCS in 1-min intervals. Play language was coded as (a) yes, it occurred during this 1-min interval, or (b) no, it did not occur during this 1-min interval. Coder reliability was examined, using a second person (an occupational therapy student) to code the first four 1-min segments of each 45-min tape, approximately 10% of the total sample.

Qualities of therapist–child interactions. Data from a concurrent study (Dunkerley, Tickle-Degnen, & Coster, 1997) were used to explore the association between play language and specific qualities of the therapist–child interactions thought to be important in the management of challenge. These data consisted of averaged judges’ ratings with the Challenge Management Rating Scales (CMRS) (Tickle-Degnen & Coster, 1995) made on 1-min clips of the same videotaped treatment sessions.

Data Analysis

Coder reliability was determined with intraclass correlation (ICC equation 2, 1) (Shrout & Fleiss, 1979) and Cohen’s kappa (Cohen, 1960). Frequency of the use of play language and percentage of time spent using play language were compared, using the ratio of intervals with play language present to total number of intervals. Pearson product-moment correlations were computed to examine the relation between frequency of play language and child age as well as judges’ rating of qualities of therapist–child interaction. Two different play language frequencies were used in calculations: (a) across the entire session and (b) during the session segment from which the 1-min clips were taken (i.e., the middle third).

For correlations between the frequency of play language and child’s age, the average frequency across the
two sessions was used because the intent was to capture the relation between characteristics of the individual dyads. The rest of the analyses were computed by using the frequency within each session to capture the therapist–child play language characteristics across sessions. In this case, session was considered the unit of analysis, not the dyad. No gender analyses were performed because of the small number of girls \((n = 4)\) participating in the study.

Results

Intercoder reliability was very good \((r = .99\) for therapist and .98 for child), indicating high agreement for the occurrence of symbolic play language. Play language was found to occur very frequently during treatment sessions (child: \(M = .35, SD = .20\); therapist: \(M = .50, SD = .22\)), and there was a moderately strong association between the therapist's and child's use of play language \((r = .66)\). In other words, if one member of the dyad used symbolic play language during treatment, the other was much more likely to also use play language.

There was a moderate negative relationship between therapist and child play language and child age \((r = -.54\) for therapist language, \(r = -.52\) for child language). Thus, the younger the child, the more often symbolic play language was used during treatment by both the therapist and the child.

In contrast to expectations, correlations between frequency of play language and qualities of therapist–child interaction were generally small and not significant. This pattern held when both total session frequency and frequency during the middle segment from which the 1-min clips were drawn was used (see Table 2). Because the primary purpose of the analyses illustrated in Table 2 was to identify patterns of relationships, magnitude of relationships rather than significance testing was emphasized. Cohen’s (1988) criteria for determining the magnitude of a relationship were used, where a .10 or -.10 correlation was considered a small magnitude; .30 or -.30, a moderate magnitude; and .50 or -.50, a large magnitude. There was a moderate positive correlation \((r = .35)\) between the therapist's use of play language and degree of modification of the activity by the therapist.

There was little to no correlation between the other variables. To check whether this absence of correlation occurred because the CCS coding of play language was done on each entire videotape and the CMRS ratings were based on a 1-min clip of each of the 41 videotapes, post hoc analyses were done to examine the relationship between the play frequencies during the time from which the clips were taken (from minute 17 to minute 33) for the judges' ratings. However, there were even weaker relationships between the frequency of symbolic play language during these segments and the variables rated with the CMRS. Although this finding is possibly meaningful, there may not have been enough sensitivity in the scoring system to detect meaningful variation because each minute was only coded with either a yes or a no.

Discussion

This study documents that symbolic play language is used frequently by the child and therapist during sensory integration treatment. The children used symbolic play language an average of 29% of the time, and the therapists used it 42% of the time. These figures may underrepresent the richness of play exchanges because play language was coded dichotomously (yes or no) and did not identify when play language occurred more than once within an interval.

Therapist frequency of symbolic play language positively related to therapist activity modification. The judges who rated this variable may have been responding to some therapists’ tendency to modify activities by using symbolic play language. For example, during a superhero play theme, the therapist modified the activity within the theme by telling the child that a dragon needed rescuing from a burning building, urging the child, reported to have gravitational insecurity, to climb a ladder. The therapist again modified the activity by telling the child that one of the characters was captured by a bad guy and needed help, enticing the child to climb into a stack of tires. This approach is consistent with what Tickle-Degnen and Coster (1995) described as a work pattern or instructional scaffolding. The activity modification using play language forms a supportive mechanism to entice or enable the child to engage in a challenging activity (Tickle-Degnen & Coster, 1995; Wood, Bruner, & Ross, 1976).

The absence of a relationship between other variables that were expected to correlate was intriguing, especially the lack of relation between the frequency of play language and .98 for child), indicating high agreement for the occurrence of symbolic play language. Play language was found to occur very frequently during treatment sessions (child: \(M = .35, SD = .20\); therapist: \(M = .50, SD = .22\)), and there was a moderately strong association between the therapist's and child's use of play language \((r = .66)\). In other words, if one member of the dyad used symbolic play language during treatment, the other was much more likely to also use play language.

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The absence of a relationship between other variables that were expected to correlate was intriguing, especially the lack of relation between the frequency of play

Table 2

<table>
<thead>
<tr>
<th>Variable</th>
<th>Frequency of Play Language</th>
</tr>
</thead>
<tbody>
<tr>
<td>Therapist</td>
<td>Child</td>
</tr>
<tr>
<td>Playful</td>
<td>.10</td>
</tr>
<tr>
<td>Anxious</td>
<td>.06</td>
</tr>
<tr>
<td>Self-directed</td>
<td>-.09</td>
</tr>
<tr>
<td>Confident</td>
<td>-.11</td>
</tr>
<tr>
<td>Therapist action</td>
<td></td>
</tr>
<tr>
<td>Playful</td>
<td>.16</td>
</tr>
<tr>
<td>Givens encouragement</td>
<td>.14</td>
</tr>
<tr>
<td>Modification of activity</td>
<td>.35*</td>
</tr>
<tr>
<td>Therapist–child interaction</td>
<td></td>
</tr>
<tr>
<td>Rapport</td>
<td>.20</td>
</tr>
</tbody>
</table>

Note. CMRS = Challenge Management Rating Scales. 
*Correlation > .20, \(p < .05\).
language in our study and the rating of playfulness in Dunkerley et al.'s (1997) study. All correlations were near .00, suggesting that the CMRS and the CCS were measuring different aspects of the interaction. A couple of explanations could account for these unexpected results.

First, the 1-min clips used for the CMRS ratings may not have been long enough to capture the occurring symbolic play language and themes. The use of 1-min clips was based on Ambady and Rosenthal's (1992) findings that ratings of behavior samples are just as accurate when judges watch 30-sec clips as when they watch longer clips. Judgment ratings reflect gestalt impressions of interactions and, thus, are based on the aggregation of many complex behaviors, such as affect and body language (Tickle-Degnen & Coster, 1995). Ambady and Rosenthal also reported that the studies used for their meta-analysis have found that judges were more accurate when they watched the face and body alone. The presence of speech in the clips actually decreased the accuracy of the ratings. The authors suggested that this effect resulted because the clips contained too much information and were confusing or distracting to the judges. Thus, more information does not necessarily correspond to greater accuracy but may actually be counterproductive, especially in short clips. When behavioral observations are longer, cues from verbal interactions might be more informative (Ambady & Rosenthal, 1992). Possible future studies in this area should include an examination of the frequency of symbolic play language in relation to the same CMRS variables rated during a longer behavioral observation. Another approach would be to have speech-language specialists rate the CMRS variables to see whether such judges, who are more oriented to speech, would emphasize this aspect more in their gestalt impressions of play behaviors.

A second explanation may be that these variables reflect two different types of measures. Symbolic play language, coded with the CCS, had a specific operational definition, whereas judges using the CMRS were not given definitions but were told to rate on the basis of their intuition. The results suggest that the raters did not base their rating of variables such as playfulness on the presence or absence of play language alone but must have been considering other, perhaps nonverbal qualities of the interaction.

Further studies are needed to explore what shapes judges’ ratings. The finding that the CMRS ratings of playfulness and rapport were not associated with overt behaviors of play (play language) suggests strongly that therapists may judge behavior during therapy sessions in unique ways. For example, in a therapist’s eyes, play language may be perceived as more than just an indicator of enjoyment or playfulness. It may be viewed as a frame in which the "work" of therapy is supported (Dunkerley et al., 1997; Tickle-Degnen & Coster, 1995). One way to approach this issue would be to look at the use of play language and perceived playfulness as rated by nontherapists.

Fazio (1992) described the use of metaphors or symbolic play language as a meaningful tool for education and motivation, with the potential to even reach children who are the most fearful and rigid. The results from this initial study have shown that symbolic play language is a major feature of one form of occupational therapy intervention—sensory integration treatment—especially with younger children. The correlation of play language usage between therapist and child in this study depicts play language as a delicate endeavor of mutual negotiation and action. As the guiding hand of occupational therapy, therapists bear the responsibility of understanding, further adapting or defining, and ultimately using play to beneficial ends. An important next step in research will be to examine in closer detail how play is used in occupational therapy. Specifically, it will be important to differentiate between playful, teasing speech and instructional or supportive play language because these forms may be associated differentially with the work and playfulness patterns of treatment as discussed by Tickle-Degnen and Coster (1995) and Dunkerley et al. (1997). A deeper understanding of play and playfulness will enable therapists to use play in the most meaningful and beneficial manner possible.

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