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It is with pleasure that we inaugurate the reprint of the entire seven volumes of The Quarterly Journal of Music Teaching and Learning. The journal began in 1990 as The Quarterly. In 1992, with volume 3, the name changed to The Quarterly Journal of Music Teaching and Learning and continued until 1997. The journal contained articles on issues that were timely when they appeared and are now important for their historical relevance. For many authors, it was their first major publication. Visions of Research in Music Education will publish facsimiles of each issue as it originally appeared. Each article will be a separate pdf file. Jason D. Vodicka has accepted my invitation to serve as guest editor for the reprint project and will compose a new editorial to introduce each volume. Chad Keilman is the production manager. I express deepest thanks to Richard Colwell for granting VRME permission to re-publish The Quarterly in online format. He has graciously prepared an introduction to the reprint series.

The Role Of The Adult In The Child's Early Musical Socialization: A Vygotskian Perspective

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Childhood is a period of socialization through which children learn traditions, morals, and culturally expected behaviors by interacting with adults and older peers (Garbarino, 1989; Zigler, Lamb, & Child, 1982; Zigler & Seitz, 1978). Understanding cultural norms and acquiring culturally relevant skills involve changing ways of perceiving objects and actions in a given situation (Vygotsky, 1981b, 1981c; Wertsch, 1984; Wertsch, McNamee, Gillian, McLane, & Budwig, 1980; Saxe, Gearhart, & Guberman, 1984; Griffin & Cole, 1984; Wood, Bruner, & Ross, 1976). Thus, children's socialization is linked to social interaction in which culturally bound thought processes are shaped.

Day, French, and Hall (1985) summarized the social origins of this shaping process in the following manner. First, adults and older peers transmit culture-specific knowledge and skills to children. Second, children practice new skills with adults and older peers. Third, children are socially encouraged to use acquired skills. Finally, interaction with adults and older peers provides opportunities for children to employ knowledge and skills that cannot be used when they are alone. This view of socialization is congruent with Vygotsky's theory of cognitive development.

According to Vygotsky (1962, 1978), there are two parallel lines of development in

children's thought processes: spontaneous and nonspontaneous. Spontaneous development signifies the level of current development determined through children's independent problem solving. Nonspontaneous development signifies the level of potential development, achieved through problem solving under the supervision of adults or older peers who can guide children toward culturally accepted ways of thinking. These two levels of development imply deviation between children's spontaneous and nonspontaneous thought. Vygotsky claims that this deviation will be bridged through children's learning of nonspontaneous thought from senior members of their culture.

Research demonstrates that the potential level of the child's thought processes is determined by the adult's perceptions of the child's conceptual level. Saxe, et al. (1984) investigated how the child's spontaneous thought processes and the mother's thought processes interact with each other in a problem-solving activity. The activity involved counting the number of Cookie Monsters (the number varied) and matching the number of pennies to Cookie Monsters. They found that when the child had difficulty in perceiving the superordinate goal structure from the mother's verbal directives (e.g., "Get just the same number of pennies as Cookie Monsters"), the mother changed her directives to set up subordinate goal structures (e.g., "Count the Cookie Monsters" and/or "Go get nine pennies for the Cookie Monsters"). In this study, children's initial behavior represented their actual level of goal per-

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ception. For instance, some children could understand the entire goal structure and carry out appropriate action sequences, whereas some children could not understand the original goal structure and chose action patterns which would not lead to the desired goal state. In any case, the mother's directives did not necessarily correspond to the optimal level of goal perception, but reflected her perception of her child's conceptual level. In other words, nonspontaneous thought processes introduced by the adult are not fixed but co-constructed through the adult-child interaction.

Wertsch (1984) described the co-construction process of nonspontaneous development. Usually, children and adults tend to have different *situation definitions*, that is, different views of what they should do in a situation, including how they represent objects in the situation and how they construct action patterns with them. When a child and an adult are sharing the same situation, they tend to function based upon two different situation definitions: the child's definition and the adult's. If they are to operate together, they need to establish the third situation definition, an *intersubjective situation definition*, in which both social agents can share the same way of perceiving objects and constructing action patterns.

The intersubjective situation definition is established with a cultural *sign* or *psychological tool* (Vygotsky, 1981a, 1981b; Wertsch, 1985). The cultural sign is conceptually equivalent to means used by members of a certain culture, such as an indicative gesture (Vygotsky, 1981b), verbal directives (Saxe, et al., 1984), eye gazes (Wertsch, et al., 1980), counting (Saxe, 1979, 1977), and an external object as a reminder (Vygotsky, 1981c). The sign is a mediator between people, or between an object and a person, which activates an action pattern in a given context. As children learn a new sign, their action patterns

will change because the new sign establishes a new response to their environment.

The most important concept underlying Vygotsky's notion of cultural signs is that they are first introduced and practiced on an *interpsychological* plane, and will later be internalized and used on an *intrapsychological* plane (Vygotsky, 1981b, 1981c; Wertsch, 1981). Wertsch (1981) illustrates how this happens in the development of speech:

For young children, speech exists only on the interpsychological plane; adults direct

children's activities through interpsychological speech. Such speech is capable of helping the children direct their attention to certain aspects of the environment, formulate and execute plans of behavior, and organize perception. Later, children begin to use speech on the interpsychological plane to announce their plans and intentions in a task situation. ...After a period of relying on interpersonal speech as a tool in carrying out activity..., children begin to develop the ability to perform activities based on their own speech ... (p. 30).

Thus from a Vygotskian perspective, the adult-child interaction is the origin of the child's cultural functioning.

Vygotsky's theory of the social foundations of thought processes has been investigated empirically by Wertsch, et al. (1980) and Saxe, et al. (1984). Findings in these studies shed light on the kind of cultural signs transmitted by mothers to establish socially workable goal structures for both children and themselves. These studies clarified that the mother (or the adult) plays a role as a transmitter of cultural signs in a social process with the child.

Although the adult's role as a transmitter of musical culture has been addressed (Kelly & Sutton-Smith, 1987), there are at least two other roles the adult plays in musical interactions with the child. Umezawa (1990) reports that the adult may become a co-player in the duet, and my observations of adult-

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child musical interactions reveal the adult role as a practice partner of the child's learned musical signs. The purpose of this article is to illustrate the adult roles of transmitter, practice partner, and co-player, and to discuss how these adult roles facilitate the musical socialization of the child. In particular, I will describe my observations of the adult as a practice partner that I made while living with the family of a preschool child.

The Adult Role as a Transmitter of Musical Signs to the Child

Kelly and Sutton-Smith (1987) observed the musical productivity of three female children in their homes from birth to the age of 2. One child's (Child A's) family consisted of professional musicians. The second child (Child B) was raised in a musical environment, although the family members were not professional musicians. The third child (Child C) was not raised in a musically oriented home. In Child C's home, musical interaction between the child and any family member was not observed throughout the study, whereas in the other homes musical interactions were observed. Lack of musical interaction in Child C's home was not related to the child's production of standard songs, but was related to her lack of production of spontaneous songs. The two other children produced spontaneous songs before standard songs, and the traits of spontaneous songs showed similar patterns in development: descending glissando, three-note contour (without specific pitch), and alternating third intervals. By the end of two years, Child A and Child B became able to produce sung pitch in their singing, while Child C's singing was more spoken than sung. Thus, through early musical interaction with the adult in the family, a sung pitch was transmitted to the children as a musical sign to be used for singing.

In the Kelly and Sutton-Smith study (1987), there were qualitative differences in musical interactions conducted by the two musically-oriented families. The mother and the grandmother in Child A's home expanded the child's singing productions into "singing conversations," while neither the mother nor the father in Child B's home did so. Through the mother-child singing conversations, the mother in Child A's home introduced a descending

fourth interval to the child. Later, this interval was observed as an alternating fourth in the child's singing, which was not observed in the other child's singing repertoire. This implies that the interval transmitted by the mother, who was a professional musician, became internalized as a new musical sign.

The adult-child musical interaction in Child A's home included an instruction component. The mother corrected songs and sang with the child on difficult passages. When the child was having trouble with singing an octave jump, the grandmother told her that she could sing that note if she "breathed in a great big breath with lots of air, opened her throat as if she yawned a great big yawn, and then sang the note" (Kelly & Sutton-Smith, 1987 p. 39). Once the child followed this instruction, she could easily sing the note. The correction of pitches, taught by the mother and the grandmother, was reflected in the child's subsequent self-correction of her sung pitches, and in her achievement of producing accurate pitches by the age of 2. The skill to self-correct pitches is essential to music making. The case of the child described above exemplifies that this musical skill can be transmitted from adults to the child through musical interactions. Having this means for pitch production apparently made a difference between the children raised in the two different musically-oriented homes, because the child who did not receive explicit adult direction in correcting sung pitch could not produce pitches as accurately as the child who did.

Differences in these three children's musical behaviors as reported by Kelly and Sutton-Smith appear to support Vygotsky's claim that "the key to the mastery of behavior can be found in the mastery of ... signs that have the power to direct behavior" (Vygotsky, 1981c, p. 195). Musical signs — sung pitches, sung intervals, and correction of pitches — were first transmitted from the adult to the child through social interaction, and were later observed in the child's independent production of music. This transfer of musical skills from an interpsychological to intrapsychological plane illuminates the social origin of the acquisition of musical signs. One of the keys for the child to be-

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The Adult Role as a Practice Partner

The adult's transmission of musical signs does not automatically lead to the child's internalization of them. According to Vygotsky (1981b), "all higher mental functions are internalized social relationships" (p. 146). Children do not learn cultural signs as separate entities from the social interaction, but learn them as a part of the social process. Thus, the process of internalizing cultural signs inevitably involves the process of internalizing the social process in which these signs are originally introduced to children.

The interaction between adult and child explored previously and its effect on the child's social internalization process was demonstrated in my study of Mary. Through my experience of living with a preschool child (Mary, 4 years old) and her family, I observed and participated in many instances of Mary's reconstructions of the entire social processes through which certain musical signs were originally transmitted to her. Each adult involved in her reconstructions of musical interactions appeared to play a role not as a transmitter of musical signs but as a practice partner. The adult implicitly contributed to Mary's internalization of not only the musical interactions per se, but also musical signs embedded in the social process. Instances reported below are extracted from my journals and/or audio tapes of Mary's musical activities during a three month period.

Mary and I had a half-hour "music time" every morning during the week. We engaged in various activities such as singing, chanting, body movements, playing instruments, listening games, and music reading. I also gave her a weekly music (pre-piano) lesson with other preschool children. Music time was largely a spontaneous event, whereas the music lesson was conducted within an instructional framework. Through

the music time and music lesson, I transmitted various musical signs (i.e., means of music making, music listening, and music reading). These signs were subsequently transmitted from Mary to her parents, her nanny, and her friend. For instance, Mary played a story of "Rain Drops, Thunder, and Rainbow" on the piano with her nanny after she and I had played it during music time (April 27 & June 4).¹ One afternoon, I realized that my hat case had been moved, and I found mallets around it (July 6). The nanny told me that Mary had been drumming on my hat case with her friend. This drumming activity originated from her interaction with me during our music time (June 29 & July 2).

While examining instances, I discovered that the scenarios of musical interactions through which Mary transmitted learned musical signs to others were not simple replications of what she had done with me. Previously, I had cared for Mary for five afternoons during which "music and dancing" were almost an everyday occurrence. In this activity, I was to dance to the music Mary played on her xylophone sticks. Some time later, I observed Mary's "music and dancing" activity with her friend, in which Mary asked her friend to play the music on xylophone sticks while she danced (March 30). In this context, she abandoned her familiar musician role and played the role of dancer. Thus, when Mary did the same activity with a different social agent, she switched her role to the adult's role that she had perceived in an original interactive process.

Mary's tendency to switch her role to the adult's role was also observed when she brought back songs, rhythms, and movements that she learned at her preschool and shared with me. In those instances, she usually gave me verbal instructions that sounded like a copy of what her teacher had said to her. Apparently, she was playing the school teacher's role.

One evening, Mary called the dinner time "low-middle-high dinner," and asked me to

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sing "low, middle, high" (which represent the first three pitches of a major scale) and to shape them into a melody with her. This was the activity which I had introduced previously as a game for music reading and listening. After she repeated this activity with me twice, she asked if her father was interested in this activity:

Mary: Daddy, would you like to do "low, middle, high"?

Father: Okay.

Mary: You have to put your hand like this.

Father: Like this? [His palm was faced up.]

Mary: No, like this! [Her palm was faced down. He imitated her.]

Mary: Okay. Now, "low, midd ..." No, Daddy! You have to touch there. [Her father had not placed his hand at the level of his throat for "middle," so she demonstrated it. He imitated her.]

Mary: Okay, from the beginning. "Low, middle high." [She sang and laughed.] This is fun. (May 3)

When Mary first engaged in the "low, middle, high" activity, she was simply an initiator of the activity and gave no directives to me. When she transmitted the activity to her father, however, she imitated my role as a teacher, which she had perceived through her interaction with me during music lessons. The change in Mary's perception of her role in this example happened so naturally, which implied her understanding of whom she could and could not communicate with using this particular musical sign (i.e., "low, middle, high"). It appears that Mary's perception of her father, a new learner of this "low, middle, high," encouraged her to reconstruct the social process which took place when she was first introduced to this musical sign.

Mary's verbal directions for instructing her father imply discrepancy between her perception of the "low, middle, high" activity and my perception of it. When I presented this activity during the music lesson, my intention was to visualize directions and intervallic relationships of three pitches through the activity, and neither the side of a palm nor the position of a hand mattered. In

Mary's mind, however, the target musical concepts were completely fused into the entire activity. She appeared to perceive musical significance of the "low, middle, high" as a part of the activity in which she was supposed to place her hand at three specific levels of her body with her palm faced down while singing "low, middle, high." Consequently, for Mary, the positions of the palm and the hand became integral elements of the activity, as important as the three pitch relationships.

Mary's unique perception of the musical activity implies that she learned the three pitch relationships as a part of the musical activity. This enactive learning is considered to be the primary mode of learning new things for a young child (Bruner, 1966; Andress, 1989; Scott, 1989). Mary's imitation of a particular adult's role when teaching her father, for example, reflects her reconstruction of a musical interaction. This reconstruction process inevitably required her to remember what she and the adult did, as well as how they used objects and signs to construct musical activities in the original interaction. In this sense, Mary's reconstruction of musical interaction with a different social agent let her practice informally what she had learned enactively from a previous social process.

This implicit practice session is similar to ways children practice social rules and behaviors in symbolic play, in that both activities are reconstructions of reality perceived by children (Vygotsky, 1978). In general, symbolic play is considered to be an activity in which adults can facilitate children's socialization if adults do not neglect but respect children's definitions of objects and actions (Vygotsky, 1978; Griffin & Cole, 1984; Garbarino, 1989; Paley, 1990). In the case of Mary's interaction with her father, Mary perceived the concepts of "low, middle, high" and the associated activity as a whole, and every action pattern embedded in the learned activity appeared to be ritualized in her mind. Her father (and I as an observer of the interaction) accepted the way Mary

initiated the situation and did not interfere. Acceptance of and involvement in this reconstructed social process gave Mary opportunities to recall and practice learned musical signs in the interpsychological plane, which is a prerequisite for the child's independent functioning (Vygotsky, 1981b, 1981c; Wertsch, 1981). The reconstruction of the social process appears to be a legitimate part of Mary's internalization process for what she learned previously. In this sense, the adult's role as a practice partner should be considered as important as transmitting new cultural signs.

The Adult as a Co-Player in the Adult-Child Duet

The third role that the adult plays in the adult-child musical interaction is best demonstrated in Umezawa's study (1990). She reports two instances of the adult-child musical duet, observed in a mother and her female preschool child, in which each contributed equally to their improvisatory music making.

In the first instance, the mother and the child created 18 versions of a Japanese children's song, "Bee Song," which consists of 12 measures in 2/4 meter with an A-B-A form. Each variation was created by the mother and the child such that they took turns filling in phrases, or the child added humorous phrases while the mother sang her variation. This episode began as follows: the mother was soothing the child's younger sister and started to sing the original song while the child was playing with a toy car. After the first verse, the mother started to change lyrics, which the child immediately noticed. While the child was telling her mother that she was wrong, the child joined in making up variations. In this singing rally, the mother's motif and the child's motif were influencing each other's as if they had been "playing catch" in music (Umezawa, 1990). In one variation the mother started to sing with nonsense syllables, and the child started to use different nonsense syllables, which sounded like a frog. The mother closed this variation with a melodic phrase from another children's song called "Frog Song."

In the other instance, the mother and the child played in an ensemble rather than "playing catch" musically. The child was playing with some toys and placed a toy

container which had four wheels on the bottom upside down. The mother was holding the child's younger sister and talking to her. After a while, the child started to spin the wheels of the toy container and said to the mother, "Look, Mom. ... Look, I wanna do. ... 'Cause these are wheels. Oops, they stopped. [tried to keep them spinning]. ... I'll spin a spinning wheel" (Umezawa, p. 8, trans. by Adachi). Then, the mother began to sing "Summer Tree," one of the child's favorite songs. The child started to accompany her by using the four wheels on the toy container as a musical instrument. This song is rather complex for a preschool child; however, because the child and her mother had often sung this song together, the child could anticipate the melodic and rhythmic structures of the song. Consequently, the child could create different accompaniment patterns by spinning the four wheels in different ways as well as by inserting some rests. Moreover, at the end of the song, the child's rhythm pattern changed from a beat-like pattern to a longer duration which indicates closure. During this co-playing process, the child made eye contact with the mother, highlighting the ensemble nature of this interaction.

The above examples of the mother-child musical interactions represent neither the process of the mother's transmission of musical signs to the child nor reflection of the child's construction of previous musical interactions. Rather, these musical interactions are examples of the adult-child duet, in which improvisatory music is created by both the adult and the child with musical signs shared between them. Their roles in music making were not fixed, but changed depending on the goals co-constructed between the two players. In the first case described above, the goal of the mother-child duet was to compete with each other in the process of creating variations. Their roles were almost as rivals. In the second case, the goal was to make an ensemble. Their roles were as partners.

Such context-bound players' roles are similar to intersubjectively defined speakers' roles found in argument structure (Leadbeater, 1988), one speaker's goal structure is his or her perception of the other speaker's goal structure. That is, if one speaker constructs a

competitive argument against the other speaker, the other speaker will respond with a counterargument. If one speaker constructs a cooperative argument (i.e., integrative argument rather than a rebuttal), then the other speaker will also construct a cooperative argument. The two speakers' situation definitions stimulate each other and result in one coherent argument structure between them.

The importance of the intersubjective situation definition in the adult-child dyads has been identified in problem-solving situations (Saxe, et al., 1984; Wertsch, et al., 1980; Wood, et al., 1976) as well as in storybook reading (Knight, Bryant, & Cross, 1994). Knight, et al. (1994) report a close relationship between the mother-child behavioral synchrony and the child's engagement in the activity of storybook reading. Children in the dyads that demonstrated concordant interactions rarely engaged in off-task behaviors during storybook reading, while those in the other dyads did.

The co-construction of the intersubjectivity also appears to have been the key to the child's engagement in the musical duet described above. In the first case, the mother's playful behavior attracted the child's playful mind. The mother's free manipulation of lyrics opened up an avenue for the child's manipulation of a song. In the second case, the child's desire for spinning wheels was captured by the mother. By singing the child's favorite song, the mother enhanced the child's spinning wheels and provided musical inspiration. If the mother had not perceived the child's desire, she might not have started to sing. If the mother had not started to sing, the child's spinning wheels might have ended up as mere physical manipulation of a toy. On the other hand, even though the mother started to sing, if the child had not responded to the mother's musical prompting, their musical duet would not have happened. Thus, in this mother-child duet, the intersubjective situation definition was established by both players' perceptions and acceptance of, as well as their cooperative responses to, the other's intention.

In the mother-child duet, establishment of the intersubjective situation definition took place spontaneously during the child's free

play. The child's stimulus seeking and interest-driven engagement observed during the duet reveal that the mother-child duet was an extension of the child's play activity (Gump, 1989; Garvey, 1990). As described above, prior to either incident the child was playing with toy objects and was not originally engaged in musical play. The transition from nonmusical play to musical play occurred in relation to the mother's singing. In the first incident, according to Umezawa's report, the child did not join the mother's musical activity until she started to change lyrics. The mother's modification of lyrics transformed an ordinary children's song into a manipulable object. In the second incident, the child was already manipulating a toy container as a play object with which she could make sounds. However, the child's realization of the possible use of the toy container as a musical instrument was elicited by the mother's singing. The mother contributed to changes in the child's perception of objects in the situation which subsequently led her to musical play. The mother's contribution stimulated the child's exploration of new music-making strategies, thus facilitating her informal music learning through musical play.

Activation of children's cultural potential takes place in different types of social activities in the course of socialization, such that certain social activities can lead children's cultural learning more significantly than others at each stage of development (Griffin & Cole, 1984). For preschool children, such leading activities are nested in play (also, Vygotsky, 1978). In Umezawa's study, the mother's timely and stimulating intervention to the child's play appears to be the key to her informal music learning through musical play. Thus, the mother's role in the musical duet was not only as a co-player in the child's music making at a particular time, but also as a facilitator of her musical socialization.

General Discussion

Vygotsky's theory suggests that a child will not become able to function independently in a culture without learning to do so from other social agents. The applicability of this theory to the child's development in a musical culture is well-illustrated in Kelly and Sutton-Smith's 1987 study. The child who

did not have musical interactions with her parents demonstrated no independent music making or performance, unlike the children who had musical interactions with their parents. Apparently, the child's musical experiences through the social process appear to be the origin of his or her independent musical functioning.

In most theories of socialization, parents are considered to be the primary sources of influence on the child's socialization process, in that they are the most immediate social agents for the child (Garbarino, 1989; Zigler & Seiz, 1978). This micro-level social influence is also found in the musical socialization described above. Parents, or adults close to the child, transmit musical signs to the child through musical interactions. When the child brings his or her learned musical signs to them, they become practice partners of the child. Moreover, adults can participate in the child's free exploration and manipulation of musical signs as a co-player. All three of the adult's roles contribute to children's internalization of musical signs through social processes, which are, according to Vygotsky, the foundations of children's cultural thinking.

From the literature on the adult-child musical interaction and my observations described in this article, two aspects of the adult's involvement appear to be common across the cases. These are the ability to perceive the child's developmental level, and the ability to perceive the child's intention at a given time.

In Kelly and Sutton-Smith's study, the mother who was a professional musician used simple musical motives in singing conversations with the child, and created "high-pitched, lyrical, soft melodies without words to accompany rocking for lullabys [sic]" (Kelly & Sutton-Smith, 1987, p. 37). Characteristics that underlie the mother's musical interactions with the child highlight the infant-directed nature of the mother's singing (Trehub, Unyk, & Trainor, 1993). In Umezawa's study the mother was a musician, and she *could* have used more sophisticated musical strategies to create song variations. Her strategies, however, primarily involved word changes, which the child was competent to manipulate, rather than involving

purely musical changes. In my observations of Mary's home environment, her parents were very child-oriented. They appreciated Mary's own ideas and creations. Also, they were highly aware of her cognitive, physical, and emotional abilities. Thus, the adults who participated in the child's musical activities in these cases demonstrated their abilities to perceive and adapt to the child's level of development.

In my observations, Mary's parents were also sensitive to Mary's intentions. When she wanted to sing and/or dance with them, they were willing to do so. When she appeared to be engaged in private music making, they did not disturb her but paid attention to what she was doing. This kind of sensitivity was also displayed by the adult in Umezawa's study. When the child started to create a song variation about the toy, the mother noticed the change from "playing catch with song" to the child's independent creation. Consequently, the mother did not involve herself in this particular variation.

The child's intentions tend to change frequently even within one musical activity. Through my observation of Mary and her family, she often changed her role from a pretend teacher to a co-player in one musical play episode, or from a co-player to a solo player within one situation. The adult's role in such cases changed accordingly from a student to a co-player, or from a co-player to a listener. Catching the child's implicit signal of his or her desire appears to be crucial for the adult to sustain his or her participation in the current musical activity.

The adult's continual monitoring of the child's ability and intention leads to an appropriate adjustment of the adult's role in a particular moment. This adult's effort itself, however, does not automatically establish an intersubjective situation definition. Rogoff (1990) and Wertsch (1984) argue that a successful joint task performance between the adult and the child can be achieved only through bilateral efforts. That is, the adult continually adjusts support for the child, and the child continually responds to the adult's support. These bilateral efforts lead to negotiation between the adult's and child's minds. This negotiation is the critical social process

that will lead the child's spontaneous thought to a higher level of cultural thinking (Vygotsky, 1978).

Conclusion

In this article, I focused on the adult's role in the young child's musical interactions in the home environment. The adult's investment in the child's musical activities, however, is also found outside the home environment. Spontaneous musical interactions were observed in a preschool classroom, in which two children were playing musical instruments set up by the preschool teacher (Umezawa, 1990). Miller (1987) reports various musical behaviors observed among children from age 3 to 5 who were exposed to musical materials (e.g., musical instruments and musical records) during free play at day-care of kindergarten. She found musical interactions between children as well as their independent engagement in musical activities. Thus, the teacher can contribute to young children's musical activities at school — both musical interactions and solo activities — by providing a musically stimulating environment.

Although play is considered to be the best leading activity for preschool children's socialization (Griffin & Cole, 1984; Vygotsky, 1978; Paley, 1990), formal instruction can facilitate their musical socialization by transmitting musical signs. Ohata (cited in Fukui & Yamada, 1989) reports that exposure to a certain instructional method influenced preschool children's melody production. Adachi (1992) reports preschool children's conceptual changes from nonmusical to musical in reading musical notes through a course of instruction. Thus, young children's musical socialization can be facilitated through formal learning. Other questions need to be investigated to better understand the nature of musical socialization. How do musical play and formal instruction interact with each other in the course of children's musical socialization? How can the adult integrate instruction with musical play to facilitate children's socialization?

The adult's roles in the adult-child musical interactions discussed in this article are based upon those observed in natural settings. In other areas, the mother's role as a transmitter of cultural signs and her perception of the

child's conceptual level have been investigated in the laboratory through a problem-solving task (Saxe, et.al., 1984; Wertsch, et al., 1980). To my knowledge, no systematic investigation of this kind has been completed in the area of music. If the mother and the child are given a musical problem-solving task, for example, creating new birthday music for the father by using musical instruments, how will they interact toward this goal? What kind of musical signs will be transmitted from the mother to the child, or vice versa? How will the mother's goal setting be related to the child's current level of musical independence? These questions may lead to a systematic investigation of the adult's role in musical interactions.

Finally, additional longitudinal naturalistic investigations are needed to examine how the child's musical functioning develops from interpsychological to intrapsychological by tracing changes in the child's use of a certain musical sign transmitted by the adult. Questions that may guide future studies include:

- Is the musical sign practiced in social contexts?
- If so, will it be practiced by reconstructing the original social process with other social agents, by manipulating the sign in musical play, or by using it in another type of social process? Are there individual differences in the process of internalizing musical signs?
- Are parents' sensitivities to the child's conceptual level and intentions related to this internalization process?
- Are there cross-cultural differences?

Answering these questions may lead to the development of a theoretical framework on the role of social processes in the child's musical socialization.

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Note

1. The dates indicated in this section refer to notes in the author's unpublished journal. The journal was kept from March 26 to July 26, 1990.

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