EMERGENCE OF COLLABORATIVE MUSICAL EXPRESSION AND PERFORMANCE COORDINATION IN AN AMATEUR ORCHESTRA

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ABSTRACT

In this study we explored the mutually emergent process of musical expression during daily rehearsals among amateur orchestra members. The overall rehearsal activities of symphony orchestra members were video taped, and their actual discourse and rehearsal activities were analyzed. During these daily rehearsals, orchestra members frequently discussed how to express each sound over very small sections of the score and aimed to construct their entrances and exits, and adjust their rhythm, tempos and harmony. The physical activity and movements required to produce musical sounds also served as cues for coordinating the mutual ensemble within each orchestral section and by the individual members of the orchestra. They coordinated these efforts toward harmonious performance, both by actual play during rehearsals and by mutual discussions regarding how to play, produce musical sounds and time their pauses. The wide range of collaboration suggests that creative activity within an orchestral setting is dynamically driven by a collaboration that is fundamentally socially based.

Key Words: collaborative orchestration, emergence of creativity, physical activity

Within the psychological tradition, creativity and creative development have long been studied from the perspective of individual abilities or competence and their nurture. In contrast, subscribers to Vygotskian socio-cultural ideas have dealt with the emergence of creativity as a result of collaborative enterprise. For example, John-Steiner (2000) and Sawyer (2003a, 2003b) have stressed the mutual interaction of partners and group members in the creation of new concepts and ideas in science and in art. Vygotsky stressed the significance of socio-historical tradition for individual creative endeavors in his early work, "The psychology of art" (1925). There, he formulated his principle that creative endeavor is a profoundly social activity.

In this study we explore the mutually emergent processes of musical expression and performance among members of an amateur orchestra, as socially collaborative, creative activities. From the performance of professional orchestra members at rehearsal to the

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daily practice of amateur orchestra members, musical performance is viewed here as overall a collaborative and mutually inspired artistic endeavor. To develop their own way of expression, orchestra members frequently discussed methods of interpreting the overall musical score, along with the individual tones and structures, by which the composer expressed his ideas throughout each section of his symphony. The creative act of musical performance was also supported by the actual physical activity of playing, which served as visual cues for mutually coordinating the ensemble, by orchestral section and by the individual members of the orchestra. The above brief glimpse into orchestral practice suggests that musical performance and creative development by an orchestra are really social activities. We must state that, within such a setting, creative activity and its development are not individual processes undertaken alone or in isolation.

OUR FEELINGS AND EXPERIENCES IN ART ARE BASICALLY SOCIETAL

The central idea of Vygotsky's, "The psychology of art", is the recognition that art is a technique for the social expression of emotion. In this early work, he viewed creative acts and processes as being socially based and driven. Art is the expression of the social within us, and even if its activity is performed and implemented by a single individual, this does not mean that its essence derives from the individual.

In Vygotsky's view, "Experience and feeling in art do not occur via the theory of contamination (where a feeling born in one person infects and contaminates everybody and becomes social), but exactly the other way around. The consensus of feelings that seem outside us is actually created by the strength of underlying social interactions, which are then objectified, materialized, and projected outside of us, and fixed onto external objects and manifestations of art, which may then become the tools or icons of society. A fundamental characteristic of man, one that distinguishes him from animals, is that he endures and separates from his body both the apparatus of technology and that of scientific knowledge, which then become the tools of society. Art is the social technique of emotion, a tool of society which brings the most intimate and personal aspects of our being into the circle of social life" (p.249).

So, Vygotsky also emphasized that all individual artists recognize and pass on the immense heritage of historical tradition that exists within each artistic domain.

ACTION AND EXPRESSION IN ART

The traditional socio-cultural approach emphasizes human action as a basic unit of analysis. Based on Marx's philosophy of action, particularly in its critical view of Feuerbach's thesis, Vygotsky emphasized collaborative activity as creating and revolutionizing our culture and environment.

In each domain of artistic endeavor, artists must also engage with the proper tools and historical heritages in order to pursue their daily creative activities. In John Dewey's influential book, "Art as experience" (1934), he noted that all art employs some material or medium, the body, or use of tools, with the intent to produce some physical thing or item (Ch.3). He also claims that art becomes fine when it draws upon the material of experience and expresses that material in a medium (Ch.10).

Kitaro Nishida, one of the most famous philosophers of Japan, stressed human activity

as the basic source for recreating the world anew, as the dialectical expression of human existence. He also interpreted human activity as the dialectical relation between individuals and the external world, in common with the philosophical basis of the Marxian dialectic. Nishida mentioned in his middle work, "Fundamental problems of philosophy" (1933), that in artistic activity we neither pre-structure things conceptually nor imitate things merely passively. Things beckon and move us. Things become the self and vice versa. Moreover, this occurs as an infinite process of self-determination, the continuous activity of unifying subject and object. So, our individual consciousness does not in fact exist in any way apart from the world at large, as solipsists may presume.

We are active beings. In order to act, our actions must employ techniques and tools as the active expression of the underlying unity of subject and object. Both tools and techniques are essential to the active self. Techniques and tools also have socio-historical significance. We create external things through action. In other words, action is poiesis.

On this basis, we may instantiate or embody our artistic activities only through the use of tools and mediational means. To convert our activity into an act of artistic expression, it is necessary to alter something about our environment to act as a means or media. Without such external embodiment, our experience remains incomplete. "Only where material is employed as media is there expression and art, as similarly that tone becomes music only when ordered within a melody" (Dewey, 1934).

PURPOSE OF THE STUDY

The mutually emergent processes of collaborative musical expression in an amateur symphony orchestra (Hokkaido University Student Symphony Orchestra) were explored.

The following questions were pursued in detail:.

1. In order to produce and coordinate musical sounds in a collaborative setting, what kinds of information were employed and exchanged, while engaged in narrative activities during the practice sessions? In particular, what sorts of verbal expression were used?
2. How were these sounds mutually coordinated by the orchestra members, and in what kinds of activity did they engage, for the purpose of executing the orchestration?

METHOD

The discourse processes and actual activities of the orchestra members were video-recorded, and analyzed micro-genetically during each rehearsal of the Sibelius Symphony No.1 for a period of 3 months. In particular, the following two phases of daily rehearsal were tracked and analyzed in detail. The first phase consisted of a practice session among the basso members (bass players). These were guided by a professional bass player. The second phase consisted of sessions to coordinate the overall musical expression. This coordination was negotiated via discussions among the principal players from each section of the orchestra.

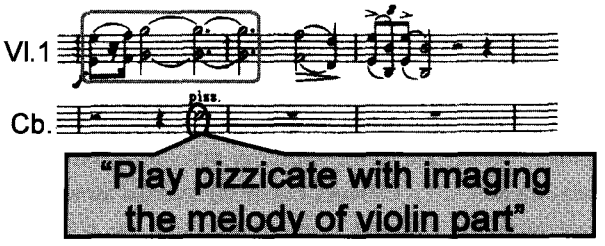
RESULTS AND DISCUSSION

1. Need for listening to other orchestra sections: from the practice sessions of bass players

In the bass section's daily practice, there were frequent discussions about how to

nuance sounds over very small portions of the score and how to adjust the rhythm, timing and harmony.

Especially during special lessons given by the professional bass player, it was stressed that each player must play their own part, while also listening closely to and responding to the sounds issued from other sections of the orchestra. His advice may come from long experience, the so-called "etiquette of ensemble". For example, in the score of the first Movement, members of the first violin section playthe melody line before the basses pizzicato their own counter-melody, in concert with the melody bowed by the first violins.



Of course, the basses could hear only their own sounds during their own separate rehearsal sessions. Therefore, the professional bass player strongly reminded the student players that they must play the pizzicato line while also imagining the melody line of the first violins within their own minds. The professional bass player frequently advised the student members to listen to the melody and sounds of other sections of the orchestra. According to his advice, listening to the individual sounds of other section members is the first step toward melding and integrating the melody and supporting elements of the score into one harmonious sound. Thus, the basic ability and attitude required to become a skilled orchestral player may be an acquired sense of the need to interconnect actively with other members and sections rather than a mere passive dependence upon each other for cues.

2. Maintaining rhythm and intonation through physical activity

The professional bassist stressed the significance of preparing the next set of notes, following a rest mark, by maintaining one's rhythm through breathing and physical movement.

> Illustration 1: "You must continue to count by using physical movement or embodied imagery, even while not playing any notes. The written rest stop does not really mean a rest from activity. The pause or rest never means no sound in the sense of aural imagery. During the rest you must prepare for the next set of notes through continued physical activity."

This comment is regarded as equivalent to "the prolepsis", taken by Weizsacker (1940) to mean assuming the proper pose anticipatory to the following action.

Illustration 2: Piano Lesson of Maria Joao Pires at the Conservatoire National Superieur de Musique (Pairs, recorded by NHK BS-2in 2004)

Pires stressed the importance of expressing one's self musically through physical movement and breathing. She sometimes employed the metaphor of the natural motions of objects (water streaming or air currents) to describe how to produce sounds. For example, in explaining the nuance of Schubert's staccato, she dropped an object on the floor. "His staccato is like an object not jumping back up from the floor". "To produce a light staccato sound you must relax your body". "However, you must readjust your posture (decline your head) to create a heavy staccato".

Illustration 3: Music lessons by Hideo Saito

Professor Saito founded the modern Japanese symphony orchestra, post World War 2, and was an excellent theoretician of music education. Professor Saito was also a professional cellist. So, his method of music education was based on practical experience as a performing cellist. Prof. Saito often pointed out the significance of breathing and body movements for maintaining rhythm and timing during play.

From "The lecture notes of Hideo Saito" (1999). Prof. Saito, "To control the speed and movement of the bow as it vibrates the string you can use body movement and breathing to adjust your diaphragm". He said, "The end of the bow motion is used to express the emotional quality of this melody, so making the accent at this point is vital".

In relation to these illustrations from pianist Pires and Prof. Saito, Dewey (1934) noted this significant thought. A dancer, painter, or violin-player, in short, an expert in a specific domain has at hand and under their command certain motor sets of the body. Without them, no complex skilled act can be performed. —— The motor skills that are available from prior experience render their perception of the situation more acute and intense and incorporate into it meanings that give it depth, while they also cause what is perceived to fall into appropriate rhythms (ch.5, p.97-98).

Apparently, inexpert or amateur artists, which of course includes musicians among them, cannot access such effective sets of motor responses, ready and waiting to be invoked.

3. Practice of the principal players in each orchestra section

In this student orchestra there were certain kinds of practice and lesson programs used to prepare for an upcoming concert; for example, rehearsals involving the whole orchestra, section rehearsals for just the strings or winds, individual lessons for each member of the orchestra guided by the professional bassist, and so on. The following describes the practice sessions led by the section leaders and the special lessons for the strings, guided by the professional bassist. The aim of the former practice is mainly to coordinate and adjust the ensemble, in order to create their own interpretation and expression of the works on the concert program.

They discussed and played through the parts repeatedly in order to coordinate the sound and musical expression. They also conferred on score interpretation while rehears-

ing each section of the score. In daily practice, they frequently explored how to express the sound and adjust their rhythm, timing, harmony and intonation.

Illustration 4: Direction from the concert master

Concert Master: "The strings are with the melody. You are waiting for (cues from) each other". "The brass must cue the strings by starting the phrase earlier at this point in the score(⑧)". (To brass) "It's better to launch your phrase earlier".

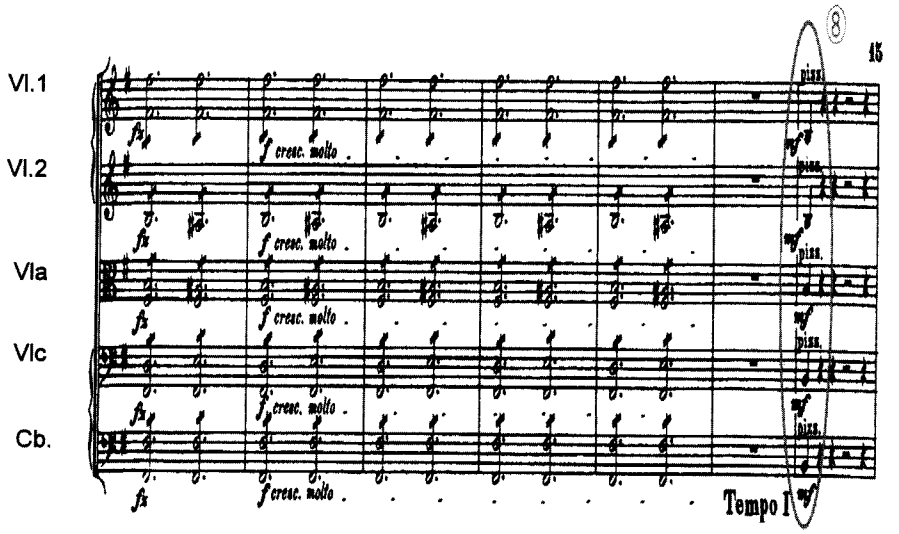
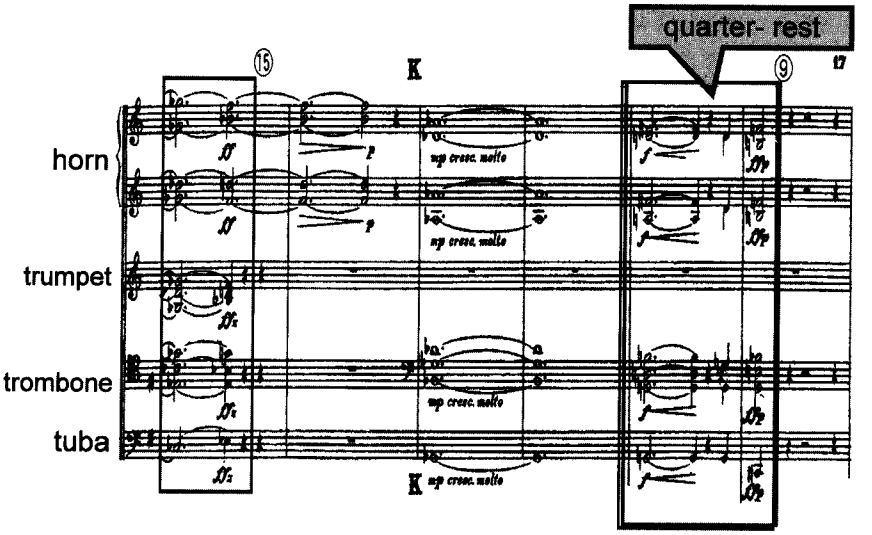


Illustration 5: Discussion between the concert master and other members

The concert master pointed out that the section entrances and tempi do not match up and that the overall tempo was too slow from letters I to W in first movement. Concert Master" (to brass) It's my impression that you're late by about a quarter of a



beat. After discussion, he said, "Please don't delay your entrance as though you're saving your energy".

Regarding the problem of mismatched timing between sections, one member of the second violins pointed out that the main source of confusion was the delayed entrance of the brass section.

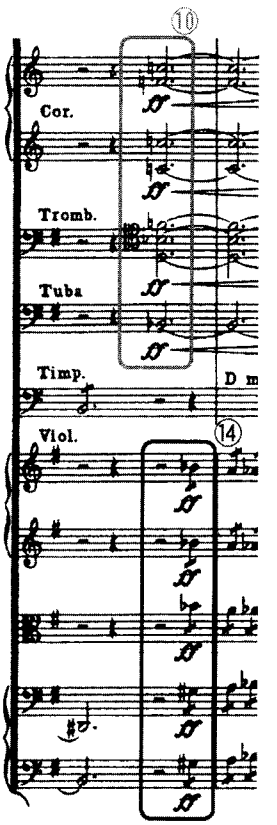
Second violin(Vl.2): "Our tempos don't match up. The violins enter at (⑭) only when they hear the cue from the brass at (⑩). But the brass may be starting too late".

Tympani: "I heard the sound between ⑩ and ⑭ as being slightly clipped, as if it were cut cleanly by a sword".

They sometimes described their sounds using body movements and metaphors regarding one's physical condition, like those that Pires and Professor Saito had used to explain how to express particular sounds and melodies.

They repeatedly discussed and rehearsed their sounds and melodies to grasp the intent of the orchestration and refine their ensemble. It may be said that the orchestra's activity involved collaborative problem-solving during a mutually creative artistic endeavor, even if they were not professional musicians.

As suggested from those episodes, they often described sounds using metaphors from body movements or physical states. This is the one additional significant point, which we must discuss in more detail in the next section.



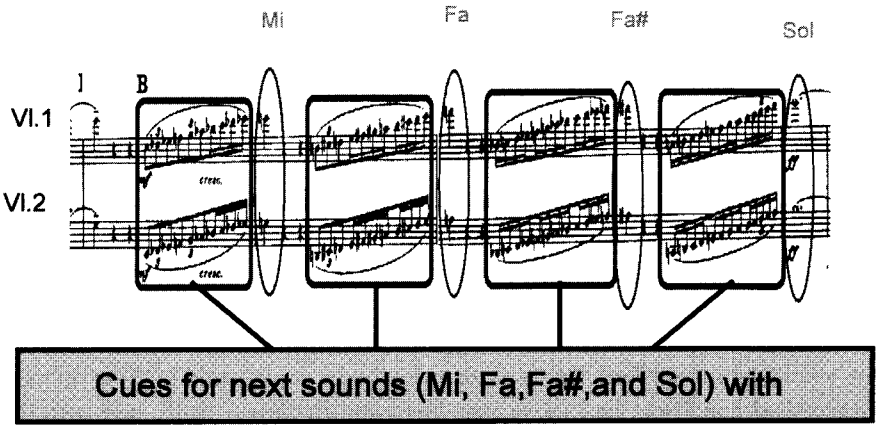
4. Using the metaphor of body action to explain melody and sound: Suggestions from the professional player

In this section, we will discuss the metaphorical significance of physical gestures as cues useful for communicating and sharing the intent of musical expression among the participants. Musical expressions can almost be embodied as concrete sounds and melodies through physical actions such as playing the strings, wind, and percussion instruments. Playing the instruments actualizes the concept of musical expression. It also offers external cues for collaborative musical performance, both for one's own activity and for the sake of others.

Illustration 6: An ascending melody line directs the quality of the sound.

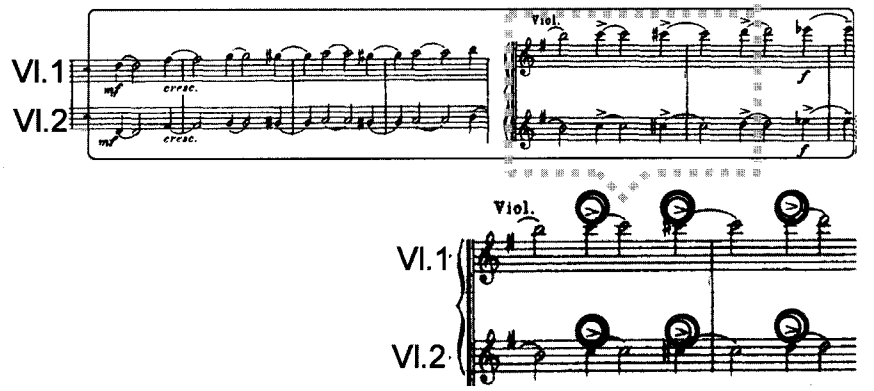
The notes from the melody line in the first Movement from letters I to W, especially from the C to the G themselves suggest a gradual crescendo (growing sound volume). To play this musically, each subsequent tone from C, to F, F sharp, and finally to G serves to cue the phrase naturally, so that one tends to play the phrase with a gradual heightening of tension.

The adviser a professional musician, told the first and second violins that they must



play with gradually heightened tension from the C to the G.
He said, "You can follow the melody line which proceeds from E,to F, F Sharp, and G to make the music".
"These rising notes play a significant role in producing a high tension sound. They are like a bridge between the preceding melody line and the subsequent descending notes". He used the metaphor of a physical "bridge" to explain the link between two kinds of melodies and sounds more concretely.

Illustration 7: Need for bowing with accents



According to Sibelius' instructions in the first Movement from letters A to B, the first and second violins must play before the other string sections enter. The bow markings indicate accents for the first and second violin parts marked ○. These stress marks convey that these notes are to be played with greater emphasis, and thus the melody becomes deeper, richer, and more penetrating to the ear.
Musical adviser: "You must play the stresses on these notes. Stressed notes on the score lend the impression of a more expressive and expansive melody, a kind of streaming of air in a more leisurely, stately manner.

CONCLUSIONS

Members of the bass section and principals from each section of the student orchestra discussed how to interpret and perform short, specific portions of the musical score in order to assemble and perform the symphony as a more harmonious whole. These group musical efforts suggest that such creative activities are really both social and collaborative. As Vygotsky (1925) suggested, art is the social within us, and the central idea of the psychology of art is that we recognize it as the socialized expression of emotion.

During actual orchestra rehearsals, the physical activity of playing one's instrument and the body movements involved were frequently used as narrative elements during verbal discussions. Professional musicians have also stressed the necessity of active physical movements, coordinated with the breath, to refine their own rhythm and expression. It is through concrete expression that we make thought our own, and as Vygotsky said (1930), "Like all functions of consciousness, imagination arises originally from action".

To represent and make one's own musical meaning there is but one means, which is to practice and perform the music, just as all artists have only one means of representing the work in which they are engaged —— by making it. Music itself is a system imbued with cultural meaning, but the meaning embedded in the musical score is only embodied (actualized) as real musical expression by the activity of actual performance. In this regard, Merleau-Ponty (1945) pointed out the significance of the act of expression as the "phenomenology of perception": The musical meaning of a sonata is inseparable from the sounds which are its vehicle: before we have heard it, no amount of analysis enables us to anticipate it; once the performance is over, we shall, in our intellectual analyses, be unable to do anything but carry ourselves back to the moment of experiencing it. During the performance, the notes are not only the 'signs' of the sonata, but it is there through them; it enters into them (p.182-183). Any aesthetic effect must be associated with a definite physical state or physiological condition because we create things external to us through action. McNeill (1992, 2005), and Lakoff and Johnson (1999) have stressed the significance of gestures during cognitive endeavors. Thus, we must deal with physical activity authentically, as a basis, which is inseparable from our natural, daily mental life.

The physical movements of each orchestral player, involved in their own musical performance, also serve as narrative cues for the mutual coordination of sound among players during musical performances. One could say that gesture delineates its own meaning. Thus, in contrast with those gestures standardized by cultural consensus, musicians commonly use their own gestures or emotional pantomimes as natural personal signs that serve to express their own musical meaning or expression. Such gestures are helpful for sharing and communicating musical expression and meaning among participants, and also for developing narratively significant signs and indications of how to perform collaboratively. "Communication is the process of creating participation and of making common what had been isolated and singular. It also achieves, within that being communicated, a conveyance of meaning, which gives body and definition to the experience of the one who utters as well as to that of those who listen" (Dewey, 1934, p.244).

Of course, verbal expressions also play a significant role in explaining and developing ideas for sound production. Verbal messages were accompanied by physical movements regarding how to play each instrument and express different types of sound. This synthe-

sis of word and gesture creates a powerful system of cues for coordinating the orchestral ensemble.

Verbal representations are seen as a meta-cognitive or monitoring function for understanding the cognitive process. For example, from Weinert and Kluwe (1987), language is seen as a representational medium, and a system of internal representations may be needed in order to reflect on one's own activities.

Recently Barsalou has argued that sensory-motor systems, such as body movements can affect the cognitive process (Barsalou, 1999; Prinz and Barsalou, 2000). Artists' gestures and body movements may be necessary, not only for developing images and ideas in their own minds, but also for actualizing them during the process of artistic creation.

It is necessary to investigate the dynamical, co-constructive relationship between verbal representation and the actual physical playing of musical instruments. As illustrated in Figure 1, three different modes of expression or representation are interconnected as cues for collaborative musical creation.

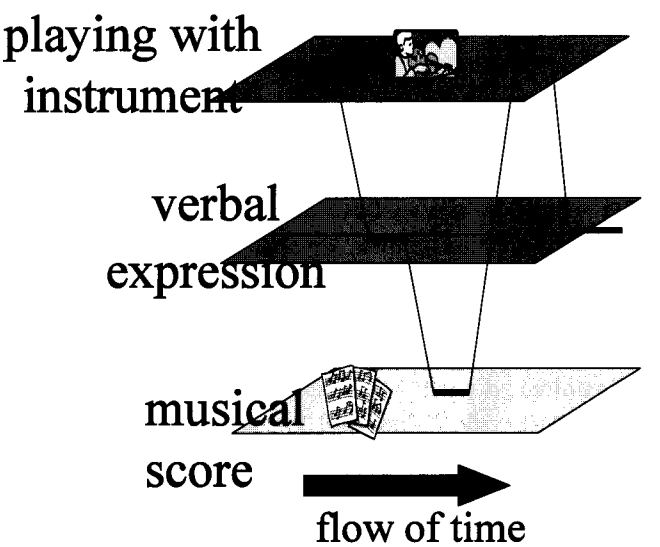


Figure 1 Interconnecting among elements concerning the musical activity

Concerning the problem of the interdependent relationship between word and action Vygotsky (1930) postulated the following significant idea — that words are needed to liberate action from the bounds of the immediate, concrete situation. Vygotsky pointed out that human action is a genetically older formation than verbal expression. He said that instrumental thinking occurs prior to speech. "Practical intellect is genetically older than verbal expression; action precedes the word, and even mental action precedes the mental world" (1930, p.65). At the same time, he stressed the significance of dialectical and interdependent relationships between words and action. We must reject the notion that speech and action are logically parallel and independent processes. As Vygotsky pointed out, the use of signs and symbols, as exemplified by verbal expression, denotes a qualitatively new interweaving and level of development within the system of human consciousness.

As final arguments in his book, "Tool and sign in the development of the child" (1930), Vygotsky said, "We tried to show how the word, itself being intellectualized and developed on the basis of action, raises action to a higher level, subordinates it to the will of the child and places the stamp of the will on action. —— if the act, independent of the word, stands at the beginning of development, then at its end stands the word becoming the act. The word makes the action of man free" (p.68). Of course, in this book Vygotsky's arguments were focused mainly on the role of signs and tools on the development of children's higher mental functioning. However, his statements are applicable to the general architecture of the dialectical relationship between signs and action in human mental functioning.

As our final conclusion, we mention the message of Merleau-Ponty (1945), "The word, far from being the mere sign of objects and meanings, inhabits things and is the vehicle of meaning. Thus speech, in the speaker, does not translate ready-made thought, but accomplishes it. —— Every language conveys its own teaching, and carries its meaning into the listener's mind" (p.178-179).

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