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ABSTRACT

The view of musical creativity as spanning a continuum from the noises of the unschooled young child to the artistry of the trained professional fails to account for fundamental, developmental differences in the creators' perspectives. This paper seeks to distinguish two ways in which the creative functioning of the child or novice differ from that of the knowledgeable creative musician. One can approach musical creation either with a process or a product orientation. The question is whether it is the creator's intent to produce a product or engage in the creative process for its own sake. A young child will explore sounds for his own pleasure rather than a product that benefits an audience. Evidence exists for proposing a developmental progression from process to product orientation. Intentionality also enters into the equation. When a student creates music, it may not reflect the intent of the creator. The variables of creative ability, orientation to process or product, and the use of time in creating music are elements of intentionality. Given the concepts of orientation and intentionality, creative musical activity can be divided into: (1) exploration, (2) improvisation as a process, (3) improvisation as a product, and (4) composition. Researchers should examine the processes of children's musical activities, rather than the products. Instructors can help students move from process to product orientation. (SG)

Orientation and Intentionality as Components of Creative Musical Activity

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Vignette No. 1

The 3-year-old boy sits cross-legged on the floor in front of a wooden xylophone. Clutching a mallet in his small fingers, he hits the longest bar at the end of the instrument. He likes the sound, so he hits the bar again, this time with more gusto. The effect is even better, and he would like to hit it again, but there are all those other bars to attend to. So many choices! He aims the mallet at the next bar in line and the next, until he arrives at the smallest bar. Then he carefully begins to reverse his actions, moving down to the largest bar again. The entire sequence of actions is repeated several times in a mechanical process not unlike counting numbers or saying the alphabet. Suddenly he begins to bash at the instrument, hitting all the bars as fast as he can. All the sounds seem to be happening at once -- what wonderful music!

In the next room, the boy's mother, a professional composer, is putting the finishing touches on a new string quartet. As is her habit, she works quietly, away from a piano, letting the swirling sounds of the quartet fill her mind. She imagines an ascending chromatic passage in the viola, which unites the melodies she has previously written for the cello and the first violin. At first she struggles to hear inwardly the clashing chords that the viola would create with the other instruments. The passage plays in her head several times as she considers the merit of the new line. She decides that the musical effect is glorious, and she smiles to herself as she writes the part. As she writes, she allows herself to focus on the sounds coming from the next room. "Are these percussive sounds the first sparks of musical genius or are they simply noise?" she wonders.

Introduction

Both the young child exploring sounds on a xylophone and the adult composer writing a string quartet are engaged in creative musical activities. In fact, we might speculate that the child's and adult's acts represent two ends of a continuum of creative musical activity. To move from novice to expert on such a continuum might require musical knowledge, aptitude, and experience.

I believe that this view is flawed, however, because it does not account for fundamental, developmental differences in the perspectives of the creators. Developmental psychologists have shown that the difference between child and adult cognitive functioning is not simply a matter of adults knowing more than children. Child thought differs from adult thought in qualitatively different ways. Piaget and other developmental psychologists have shown that children's logic is different from adults'. I propose that similar developmental differences exist for musical creativity. The child and the adult in Vignette Number 1 are not engaged in different levels of the same activity. There are qualitative differences in their approach to creative musical activity.

The aim of this paper is to discuss two ways in which the creative functioning of the child or novice musician differs from that of the knowledgeable creative musician. This discussion will be limited to creativity as it relates to production of new and original music, and will not include reference to creativity as it occurs in the performance of music composed by others or creativity as it occurs in creative listening. Specifically, I will consider two assumptions about musical creativity that I believe are inappropriately applied to all creative musical work. The first assumption is that one engages in musical creativity to create something. The second is that the way music created on an instrument sounds is the way that its creator intended for it to sound. Based on my discussion of these two assumptions, I will propose four types of creative musical activities and will conclude the paper with implications for research and teaching.

An examination of the perspective of the child or novice musician is necessary, because the few models we have for musical creativity (Lerdahl, 1988; Pressing, 1988; Webster, 1987) are derived from creative activities as engaged in by knowledgeable musicians. These models are certainly useful as researchers begin to examine musical creativity in greater depth. But I believe that researchers and educators must also consider the ways in which children's approach to creative activities differ from these models if we are to successfully understand children's musical creativity and appropriately educate children through creative musical activities.

Vignette No. 2

The bemused parent stands behind the young child painting at an easel and asks, "What is it?" Before answering, the child hesitates for a moment and looks with a puzzled expression at the painting. 'How cute,' the adult thinks, wondering whether these blobs of green, orange and blue are a car or a dog or a boat in the child's mind. After a few flickering seconds, the child mumbles a response, leaving the adult to marvel at the green chimney on a blue horse.

Process Orientation and Product Orientation

If we examine the moments of indecisiveness between the adult's question and the child's response, we might be led to hypothesize about the nature of the child's creativity. Could it be that the child pauses when asked "What is it?" because the answer to the question is "nothing"? By "nothing" I do not only mean that the child is not painting a representation of objects in the real world. I suggest that when most young children engage in creative artistic work, they are creating "nothing" in the sense that they intend to create no thing. Adult observers of children commonly take the view that a child engages in creativity to create something (i.e., a product). Adult reactions to children's creative work are usually focused on the created product. But I think that for many, if not most, children, creativity is an end unto itself, not a means to create a product. Certainly, products arise from creative work, but for children who simply wish to engage in the creative process, the product is incidental, a byproduct of the process.

Consider an analogy between musical creativity and bicycle riding. For some people, a bicycle is considered transportation, and riding a bicycle is a means to reach a desired outcome, i.e., arriving at a specific destination. For others, though, bicycle riding is an end unto itself, and the joy of riding with no particular destination is a sufficient outcome. Both types of riders can derive pleasure from the activity, but the first type uses the process of

riding to achieve the product of arrival, whereas the second type engages in the process for its own sake. The former rider can be referred to as having a product orientation, and the latter as having process orientation.

I do not mean to imply that persons approaching a task with a process orientation are not goal-directed. They are. But the goal for process oriented persons is the experience of travel, not the pleasure of arrival.

Similarly, one can approach musical creation with a product orientation or a process orientation. The question an observer must ask is: Is the creator's intent to produce a product (i.e., a composition or an improvisation), or is the creator interested in engaging in the process for its own sake? The difficulty for teachers and researchers is that they typically assume a product orientation in children, when, in fact, a process orientation may be more common. For example, if a teacher asks a child to compose a song on a xylophone, the teacher assumes that the child will work to produce a unique, fixed set of pitches and durations. The child, instead, may create music with pitches and durations that are not fixed, so that each time the child is asked to perform the song, the "song" is different. In such a case, the product is not a product at all, in that it does not exist as a fixed entity; rather, the child's music could be considered a continuation of the creative process.

What are the standards for a product orientation resulting in a created product? Music exists as a created product when the creator means to share it with others and structures the music in such a way that it can be shared. Therefore, a product orientation results from an awareness of an audience for a finished created product. The creator with a process orientation does not mean to share the music or is unable to share it. Furthermore, a product orientation results in closure on a single, perceivable musical entity, whereas a process orientation does not result in a single entity, but in many possible entities.

If a musical composition is notated, then it certainly exists as a product. Pitches and durations are fixed by the notational system, and a single, perceivable entity results. But, what if a person unable to notate music says that he has composed a piece? The test for whether such a composition is the result of a process or product orientation is to ask the composer to perform and then repeat the composition. A composition as a product exists in the composer's mind as a fixed sequence of pitches and durations, and if a composition cannot be repeated by its composer, then it cannot be defined as a product.

As for improvisation, one can improvise without creating an improvisation, "an" being the operative word. Improvisation can be a process oriented or product oriented behavior. For improvisation to exist as an improvisation, i.e., a product that can potentially be shared with others, it must conform to some external standard. This standard may be provided by the limitations imposed by the musical materials. For example, if one improvises variations on the song "When the Saints Come Marching In," the chord changes in the melody provide the external standard. Similarly, if a student is asked by a teacher to improvise a rhythmic ostinato to "This Old Man" while the class sings the song, the tempo, meter, and length of the song impose an external standard.

Music created as a result of the creator's process orientation has no external restrictions. A musician with a process orientation can create music idiosyncratically without tailoring it to share with others. When one creates music in such a way, one need not be concerned with making music that is understandable to anyone else, because a creator with a process orientation has an audience of one. For example, the young boy in the opening vignette of this paper explored the sounds of the xylophone for his own pleasure, not for the enjoyment of his mother. When a musician "doodles" at a piano or explores timbres on a synthesizer, he or she does so for the pleasure of the process, rather than for the purpose of sharing the music with an audience. If the fragments of melody that derive from this "doodling" are not cohesive or make little sense to an outside listener, it does not matter to the creator. When listening to music created by one with a process orientation, it is possible to listen to the resulting music as a product, but it is inappropriate to do so, because creating a product is not the creator's intent.

Perhaps children learn to value their created products only because adults seem to value them so. If a child returns home after an afternoon of sledding, a parent would be more likely to ask, "Did you have fun?" rather than "Did you get to the bottom of the hill?" The first question asks about the process of sledding, while the second asks about the product. But when the activity is creative, we adults tend to focus on the product instead of the process. If the same child said that she had painted in art class, the parent would be more likely to ask to see the painting rather than ask if the child had fun. As children learn through experience that adults value the created product over the creative process, children may come to value the product as well. As a result, the act of creating evolves into the act of creating something.

Evidence exists for proposing a developmental progression from process orientation to product orientation. Data on children's ability to replicate original songs were collected in two developmental studies of children's musical compositions. The first study (Kratus, 1986) was an analysis of the musical characteristics of songs composed by 80 children aged 5 to 13. The second study (Kratus, 1989) was an examination of the musical processes used by 60 children aged 7 to 11 in composing songs. The tasks given subjects in both studies were nearly identical. Children with no previous compositional experience were given ten minutes to compose short songs on a small electronic keyboard. They were then asked to play their finished songs twice, and the performances were audio taped. There were two slight differences between the studies in terms of the task given subjects. In the first study subjects were not told in advance that they would be asked to perform their songs twice, whereas in the second study this was made clear to the subjects before they began composing. And in the first study subjects took between eight and eleven minutes to compose their songs, but a time limit of ten minutes was strictly enforced in the second study.

In both studies two independent judges evaluated the degree of correspondence between the first and second performances of the subjects' songs. Judges used a 5-point rating scale in the first study to evaluate subjects' replication of their songs, and correlation between the judges' ratings was .87. A rating of 4 indicated that the two versions of the song differed on only an occasional pitch or duration, and a rating of 5 indicated perfect replication of the song. In the second study two different judges rated subjects' replication of their songs using a 3-point rating scale, in which a rating of 3 indicated that the replication was the same or almost the same as the original. Interjudge correlation for the second study was .71. Given the levels of the rating scales, a rating of 4 or

5 in the first study was analogous to a rating of 3 in the second study. Despite differences in subjects, task instructions, judges, and rating scales, there was great similarity between the two studies in the percentage of 7-, 9-, and 11-year-old subjects able to compose replicable songs, as shown in Table 1. I suggest that these results imply that as children grow through the elementary years, their orientation to creative musical activity changes from a process orientation to a product orientation.

TABLE 1

Percentage of subjects able to replicate an original song

*1986 study**		*1989 study***
% of S's w/mean replication ratings of 4+		% of S's w/replication ratings of 3 by both judges
Age (n = 80)		(n = 60)
5 years	0.00	---
7 years	6.25	10.00
9 years	25.00	35.00
11 years	50.00	55.00
13 years	43.75	---

* Rating of 4 = two versions of the song differed on only an occasional pitch or duration, rating of 5 = perfect replication of the song.

** Rating of 3 = replication was the same or almost the same as the original.

One may argue that differences in one's ability to replicate original songs reflect differences in musical memory, rather than differences in orientation to creative activity. However, it is interesting to note that the older subjects placed greater constraints on their musical materials than did the younger subjects, enabling the older subjects to create products within the limitations of their memories. Eleven-year-old subjects composed significantly ($p.<05$) shorter songs than did 7-year-olds (median of 27 notes per song for the 11-year-olds compared to 56 notes for the 7-year-olds). In addition, the 11-year-olds imposed significantly ($p.<05$) greater restrictions on the pitch range of their songs (mean range of less than an octave) than did the 7-year-olds (mean range of an 11th) (Kratus, 1986). These self-imposed limitations in song length and pitch range indicate that the 11-year-olds understood what musical requirements were necessary to produce replicable songs. The 7-year-old subjects, even those in the second study (Kratus, 1989) who were told in advance that they would be asked to repeat their songs, did not place similar limitations on their musical materials and most 7-year-olds were unable to replicate their songs (see Table 1). Although memory may play a part in producing replicable original music, orientation to creating a product accounts for differences in the selection of musical material used by the 11-year-olds as compared to those used by the 7-year-olds.

Vignette No. 3

The trumpet player waits nervously for her solo with her high school jazz band. Any moment now she will have to stand up in front of all these people and play her improvised solo. Actually her solo was carefully prepared in advance; she didn't want to make a mistake and look foolish in front of the whole school. The director gives her her cue, she stands to perform, and for a moment she freezes. She recovers quickly, but the band is already two measures into her solo. The trumpeter plays her prepared solo with the band two measures ahead of her. To her, the solo sounds all wrong with the clashing harmonies of the band. But the director gives her a smile. He didn't realize this student was capable of such a harmonically adventuresome improvisation.

Intentionality

In many human actions there are differences between the conscious intentions of the actor and the resulting action itself. For example, I may introduce myself to someone and, in retrospect, feel that I acted more formally than I had intended. The more conscious one is of the action, the greater the possibility for the actor to perceive a difference between the act and the intent. I would be unlikely, for example, to feel a difference between the action of my walking down a hall and my intent to walk down the hall, because I do not bring much conscious thought to the action. If I had a broken leg, however, and was forced to be conscious of my walking behavior, I might feel frustration at the difference between my intent and my resulting action. When an act corresponds to the conscious intent of the actor, the act is said to have intentionality. The degree of intentionality in an act is the degree of correspondence between the intent of the actor and the resulting action.

Educators use student behaviors as indicators of student learning. However, this system works only if educators can assume the intentionality of the behaviors. When a student's actions do not correspond to his or her intent, a teacher may be led into making an incorrect assessment of the student's achievement or ability. For example, if a beginning violin student plays a piece with an unsteady tempo, a teacher may infer that the student has difficulty keeping a steady beat. The teacher in this case would be assuming the intentionality of the music played. In fact, the student's problem may be difficulty in moving the fingers fast enough to produce the music the student intends to perform. In other words, the tempo of the music performed does not reflect the intent of the student, and the tempo as performed can be said to have little intentionality.

Similarly, when a student creates music, especially on an instrument, the music may not reflect the intent of the creator. Three variables would seem to determine the degree of correspondence between the creator's intent and the resulting created music: 1) the creator's ability to audiate the music played prior to performance, 2) the creator's orientation to process or product, and 3) the creator's use of time in creating the music.

Gordon wrote that audiation occurs "when one hears music through recall or creation, the sound not being physically present (except, of course, when one is engaging in performance) and derives musical meaning" (1980, p. 2). Audiation allows a creator to anticipate the effect of a creative decision. For example, a child who is able to audiate melodic patterns will be able to anticipate the effect of playing a certain combination of notes as the next

pattern in a melody. This anticipation is not perfect in that a creator cannot predict exactly what musical effect a particular combination of sounds will have. The greater one's ability to audiate sounds while creating, the greater the potential for intentionality in the resulting music.

Persons who are unable to audiate sounds while creating can still explore possibilities on an instrument, but this exploration is not guided by meaningful, musical decision making. Such exploration is not meaningless, however. Through this kind of creative activity the creator gains experience with the materials of music and learns through repetition to audiate patterns and combinations of patterns.

The creator's orientation to process or product is a second factor affecting intentionality. When one creates with a product orientation, one is conscious of an audience. This consciousness is greater than when one creates with a process orientation and no sense of audience is felt. The increased consciousness requires a creator to pay attention to the intentionality of the created music, so that the music heard by an audience corresponds more accurately to what the creator intended. Therefore, music created as a result of a product orientation generally has higher intentionality than music created as a result of a process orientation.

A third factor affecting the intentionality of created music is the use of time during the creation process. Both improvisation and composition can be created products. Composition, though, is more intentional than improvisation, because the process of composition allows the creator time to try new combinations of sounds, revise the sounds, and test the validity of the sounds, allowing a greater correspondence between the creator's intent and the resulting music. When a musician creates an improvisation, he or she may be able to audiate the sounds, and form some predictions about the effect of certain musical patterns. But the predictions are not perfect, and the improvisor cannot erase or modify sounds, unlike a composer who can change the sounds over time to more accurately match his or her intentions.

Furthermore, within the composing process the composer's use of time affects intentionality of the finished product. The more a composer refines a piece and tests its validity through repetition, the greater the intentionality of the piece. As a composer refines the work, greater consciousness is brought to bear on the music, thus allowing for greater correspondence between the conscious intent of the composer and the resulting music.

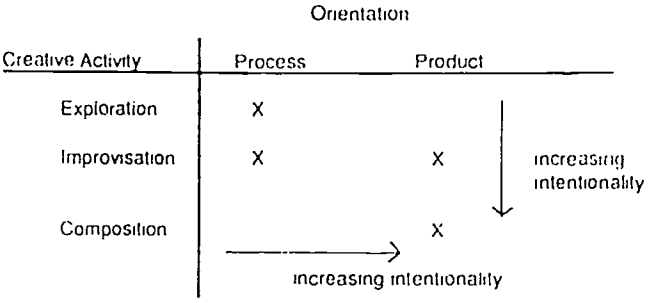
The data from the two studies described earlier (Kratus 1986, 1989) provide evidence for proposing a developmental progression toward increasing intentionality. The process of composition for the 11-year-old subjects was quite different than that for the 7-year-old subjects. It was found that the 11-year olds spent significantly ($p.<05$) more time repeating their musical ideas and revising their musical ideas while composing than did the 7-year olds, who spent significantly ($p.<05$) more time exploring new ideas while composing (Kratus, 1989). As a result of the additional time spent revising and repeating, the songs composed by the 11-year-old subjects were likely to be more intentional than the songs composed by the 7-year-olds.

Four Types of Creative Musical Activities

Given the concepts of orientation and intentionality, creative musical activities can be divided into four types, as shown in Figure 1. They are (a) exploration, (b) improvisation as a process, (c) improvisation as a product, and (d) composition. Two types of creativity are the result of a process orientation, and two are the result of a product orientation.

FIGURE 1

Orientation and intentionality in creative musical activities



Note: An "X" indicates existence of a type of creative musical activity.

Exploration can be considered to be a pre-improvisational creative activity. It is the result of a process orientation. The creator's inability to audiate the sounds before performing them leads to little intentionality over the resulting music. Such activity is not only for young children or novice musicians. For example, an experienced composer can engage in exploration of the timbre settings on a new synthesizer.

Improvisation differs from exploration in that an improvisor can audiate the sounds while creating, and an explorer cannot do so. Audiation enables an improvisor to choose sounds with meaning, but he or she cannot revise the sounds once they are made. Improvisation can result from either a process or product orientation. Improvisation as a process occurs when the creator is conscious of no external constraints on musical materials and does not intend to create for an audience. Improvisation as a product occurs when the creator consciously conforms the musical materials to external restrictions and intends to create for an audience.

Composition is also the result of a product orientation. The main difference between composition and improvisation as a product is that in composition the creator has time to revise musical ideas, allowing for greater intentionality than in improvisation, in which no revision is possible.

Research Implications

This paper suggests that the perspective of the child or notive musician engaged in creative activities differs from that of an experienced musician. Children's approach to composition may be more process oriented than product oriented. For researchers, it may be inappropriate to analyze the created products of process oriented children as products. Instead, analysis and description of children's creative processes may be more appropriate.

In addition, younger children and persons with minimal experience on a particular instrument will have only limited success in creating on that instrument products that match their intentions. This suggests that researchers determine the intentionality of the music created by their subjects. One way in which this could be done is to ask subjects to sing and then play the patterns in their improvisations and compositions.

Curriculum Implications

The ideas outlined in this paper also suggest implications for the scope and sequence of creative activities for music instruction. Specifically, implications can be drawn for writing objectives and sequencing instruction.

Instructional objectives, as they are usually written, specify the intended results of learning in terms of product outcomes. For example, the objectives, "to identify by name the sections of the orchestra," and "to play a C major scale on the flute", specify unique outcomes. Teachers can measure student attainment of these objectives by matching the students' responses (i.e., their products) with the predetermined outcomes specified by the objectives. Instructional objectives of this type, however, require a student to have a product orientation while engaging in the musical activity. As I have suggested in this paper, the assumption that students engaging in creative activities have product orientations may be unjustified.

Creative activities require a different type of instructional objective which describes the nature of the educational activity in which the child engages but not the nature of the outcome. Eisner (1974) referred to such an objective as an expressive objective, and he described it as follows:

> An expressive objective does not specify the behavior that the student is to acquire after having engaged in one or more learning activities. An expressive objective describes an educational encounter: It identifies a situation in which children are to work, a problem with which they are to cope, a task in which they are to engage; but it does not specify what from that encounter,situation, problem, or task they are to learn (p. 51).

Eisner provided examples of expressive objectives, such as "To interpret the meaning of Paradise Lost" and "To visit the zoo and discuss what was of interest there" (1974, p. 51). Objectives of this type do not specify product outcomes, and instead focus on the students' engagement in the process. Although the use of expressive objectives result in the creation of products by students, such products should not be considered the outcome of the instruction. Instead, the educational focus of the activity should be on students' interaction with the musical materials and creative process.

Expressive objectives can be used to plan creative musical activities with a process orientation. Elements that can be varied in such expressive objectives are: timbre, available pitches, and length of student involvement in the process. An example of an expressive objective for exploration is: "To explore combinations of sounds on a 5-bar pentatonic xylophone for five minutes."

Expressive objectives can also be used to plan instruction resulting from a product orientation. These objectives can be used to place restrictions on the product outcomes by specifying musical materials to be used in the finished product. For example, an expressive objective for composition is: "To compose a four-phrase song with a phrase structure of a-b-b-a."

The four types of creative musical activities (exploration, improvisation with process orientation, improvisation with product orientation, and composition) form a logical sequence of instruction. For initial creative experiences, students should explore sounds with little overt guidance from the teacher. Through free exploration students become familiar with the sound possibilities of an instrument and learn to associate patterns of movement on an instrument with patterns of sound produced. Gradually, students begin to audiate the sounds prior to performance, and musical choices made while exploring become less random and more intentional. Teachers can help to guide the process first by limiting the musical materials at the student's disposal, then by increasing the available materials. For example, a teacher may limit a student's exploration on a xylophone by removing all but three bars. As the child begins to audiate music produced by the three bars, additional bars can be added.

Improvisation should be taught as a process first, then as a product. Initial improvisation activities for students are similar to exploration activities, because both activities are the result of students' process orientation. The difference between the two is in the nature of the performed music. Improvisations sound more pattern-dominated, because the child's increasing ability to audiate what is performed allows him to organize the music through the use of repeated patterns. As students become more adept at improvising, they develop strategies for producing and developing musical patterns. These strategies enable students to conform their improvisations to external restrictions, and students can being to improvise products.

To compose with meaning, students must have an ability to audiate sounds produced on an instrument, which is learned through exploration, and a knowledge of strategies for producing patterns, which is learned through improvisation. Teachers can encourage students to compose with greater intentionality by showing students how to develop and test musical ideas. This can be accomplished by leading students through group composition activities. As a group composes together, the teacher can ask questions such as, "What sounds should come next?" or "Which ending do you prefer?" In effect, through group composition, the teacher can model the process of composition for students. Students can learn to ask themselves similar questions when they compose individually.

Summary

This paper presented a description of and rationale for two components of creative music activities: orientation and intentionality. Four types of original creative behavior were identified, and implications were presented for research and teaching.

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