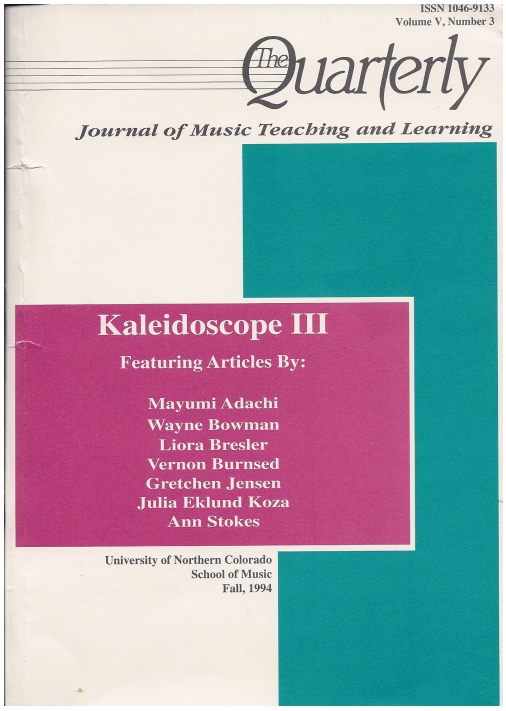

Title: Thinking and Feeling in Music

Author(s): Ann Stokes

Source: Stokes, A. (1994, Fall). Thinking and feeling in music. *The Quarterly*, *5*(3), pp. 37-48. (Reprinted with permission in *Visions of Research in Music Education, 16*(5), Autumn, 2010*). Retrieved from* http://www-usr.rider.edu/~vrme/

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.*

Thinking And Feeling In Music

By Ann Stokes

Bloomsburg University

Literature from aesthetics and arts education furnishes many descriptions of the kinds of experiences that western music and arts are able to provide. Some authors emphasize the thinking aspect of the experience; others focus upon the feeling aspects. Few theorists have described both aspects equally or attempted to explain in depth the relationship between thinking and feeling in artistic processing. Research practices in many fields, music included, tend to follow long-established separatist tendencies. Thinking (or the processing of cognitive information) and feeling (more usually called affect) factors are rarely studied together.

Many psychologists who study human thinking processes call themselves cognitive scientists. They want to know how human beings acquire knowledge, and they search for specific answers using empirical research methods. In his account of the development of cognitive science, Gardner reports that the decision of cognitive scientists to de-emphasize affective factors and emotions in their research was deliberate. It was considered that the inclusion of affect into their investigations would unnecessarily complicate the cognitive-scientific enterprise.[1] In this paper it is not disputed that the inclusion of affective considerations complicates research into cognition, but the assumption that feeling factors are unnecessary in our understanding of thinking in the arts is seriously questioned.

> Over the past two decades, there has been a growing interest among psychologists in studying the interaction between cognition and affect.

Fortunately, some exceptions to the general practice of examining thinking and feeling independently of each other can be found. Over the past two decades, there has been a growing interest among psychologists in studying the interaction between cognition and affect. Although there is a confusing variety of directions taken by researchers in the field, Drucker describes one recent position that continues to gain ground. This is a position in which the psychologist proposes that:

1. "all cognition has an affective context", and
2. "all affect has a cognitive component."[2]

She suggests that this realization has been an important advance in much current thinking about the relationship between cognition and affect. With regard to the second proposition, it makes sense to claim that every feeling response to a work of art has a cognitive element. For example, a listener may feel the energy of the first movement of Bach's third Brandenburg Concerto, but that response is based upon cognitively-verifiable features of the musical piece — the speed, inflections, dynamics, textural contrasts, and repetition of rhythmic motives. The first of

Ann Stokes is Assistant Professor of Music Education and Violin Performance, Bloomsburg University, PA. Her major research interest is the contribution that philosophical and psychological theory can make to music education research and practice.

these two propositions, however, does not go far enough for the arts. In this paper, I suggest that affect is not merely context in artistic processing but a necessary and integral component of the process.

The implications of the claim that affect is a necessary and integral component in artistic processing are important and far reaching for music education. Teachers who plan musical experiences for students need to understand how closely feeling and thinking intermesh when students interact appropriately with music. Music and all the arts provide opportunities for students to develop not only a variety of perceptual skills, but also an opportunity to develop thinking-feeling abilities in concert.

Psychologists who research the interaction between human cognition and affect generally take one of three approaches. Some believe cognition is the primary mental process and insist that a cognitive event is a necessary precursor to experiencing a feeling or an emotion. Others view emotion and feeling as the primary mental process and insist that it is affect which provides the cause and/or motivation for cognition. Finally, a growing number of researchers claim that both processes make an equal contribution to mental functioning and behavior as a whole. This last approach seems to lend itself best to a conception of musical intelligence. In this paper, I offer a philosophical defense of the claim that musical intelligence is necessarily described as a composite thinking-feeling process.

Thinking and Feeling in the Arts

Authors who focus upon cognitive processes in the arts make a variety of claims. For example, Arnheim identifies eight higher cognitive processes which he claims operate in perception: active selectivity, discrimination, comparison, categorization, seeing in relation, problem solving, concept formation, and abstraction.[3] Taylor identifies several similarities between artistic and ordinary logic. He suggests that the relationship between a musical theme and its derivations is similar to the relationship between axioms in logic and the resulting deductions.[4] Goodman provides a probing analysis of how works of art function as symbol systems which display both similarities and differences to a symbol system like language.[5] Several authors offer descriptions of artistic rationality and claim important differences and similarities between rationality or logic (John Dewey, Frederick Taylor), understanding (Roger Scruton, Stephen Davis), and meaning (Edward Casey, Nelson Goodman).[6]

Authors who focus primarily on the element of feeling or emotion in art also make a wide variety of claims. Hepburn suggests that it is commonly agreed that works of art have something to do with emotion despite the fact that it is "notoriously" difficult to determine precisely what this something is. Historically, claims have been made that works of art imitate, purge, evoke, master, organize, represent, and express emotion.[7] Among these theories there is common agreement that feeling or emotion is a necessary condition, component of, or accompaniment to artistic activity, but the authors' conceptions of the function of feeling in artistic experiences differ considerably.

In examining philosophical views of the relationship between thinking and feeling in art, one finds positions similar to those in the field of general psychology. For example, Goodman appears to view cognition as the primary process in the arts and suggests that emotions participate in cognition.[8] In contrast, Langer views feeling as the generic basis of all mental processes; cognitive and intellectual elements are simply differentiated aspects of the great range of human feeling possibilities. That is to say, she suggests that the major elements of mind — "sensation, perception, emotion, imagination, recollection, and reasoning"[9] — in combination are "a vast and developing psychological branch of feeling."[10]

Other authors support a view of cognition and affect as co-contributors to musical experience. Discussing emotion and meaning in music, Meyer views thinking and feeling as different manifestations of the single psychological process of expectation.[11] Reid presents an even more fused view of the relationship, suggesting that emotion and cognition in aesthetic response are two aspects which cannot be separated. That is to say, a perceiver looking at a work of art is given immediately "perceptual facts-charged-with-

affective-meaning."[12] Dufrenne sees a dialectical relationship between feeling and thinking. In response to a work of art, feeling is immediately intelligent because of prior knowledge. Yet the culminating feeling in experiencing an aesthetic object is deepened by both critical questioning and sympathetic reflection upon the work of art.[13]

Goodman suggests that many philosophical problems in aesthetics can be blamed upon the domineering dichotomy between cognition and emotion.[14] On the cognitive side, theorists put "sensation, perception, inference, conjecture, all nerveless inspection and investigation, fact and truth." On the affective side, theorists place "pleasure, pain, interest, satisfaction, disappointment, all brainless affective response, liking and loathing." This practice very effectively prevents us from recognizing that in the aesthetic experience, "emotions function cognitively."[15]

In experiences with art, Goodman specifically, but briefly, describes three cognitive processes which involve feeling: discriminations, classifications, and what he calls "weightings." Weighting is the ability to rank perceptual input in terms of a particular continuum, for example, greater or lesser importance, greater or lesser relevance, greater or lesser value. He suggests that cognitive employment of the emotions may happen in experiences outside art, and sometimes may not happen in an aesthetic experience. As an example of the process in daily life, Goodman suggests that the "classification of things by feeling is often more vital than classification by other properties." It is often more advantageous for human beings to be skilled in "fearing, wanting, braving or distrusting the right things, animate or inanimate, than if they only perceive their shapes, sizes, weights, etc."[16], and if the motivation becomes theoretical rather than practical, as it may in certain types of investigation, he argues that the importance of discernment by feeling does not disappear.

In the aesthetic experience feelings function in the same manner. "The work of art is apprehended through the feelings as well as through the senses. Emotional numbness disables here as definitely if not as completely as blindness or deafness." Goodman insists that feelings are not only used for exploring the emotional content of a painting but the visual aspects as well. An observer may feel how a painting looks or see how it feels. "Emotion in aesthetic experience is a means of discerning what properties a work has and expresses."[17]

Goodman's claim — that in art feelings function cognitively — will be expanded below into the claim that eleven cognitive processes are able to operate in art on the basis of feeling. These eleven processes are divided into three categories of perception, memory, and understanding:

Perception

- discriminations
- comparisons or seeing in relation
- classifications or categorizations
- abstractions
- weightings

Memory or Representation

- schema or percept formation

Understanding

- problem setting and solving
- syntheses
- judgments
- intuitions
- interpretation

It is not claimed that this list is exhaustive, but it does include selected major cognitive processes which may be used in artistic activity.

The Function of Feeling in Relation to the Eleven Cognitive Processes of Musical Intelligence

Intelligence theorists frequently divide intelligence into a number of differing components. These components may include sensation, perception, memory, rational thinking, and general organization structures. These five levels are each thought to perform a different task in the complex activity of making an intelligent response to an environmental stimulus. In addition, these components are commonly ranked: the sensory level is regarded as the lowest level of mental processing, and generalized, context-independent thinking as the highest. This hierarchy will be followed because I suggest that more information is processed at the level of musical understanding, and that therefore this level is more complex and more abstract than immediate perceptual processing.

Shuter-Dyson and Gabriel provide a model

of their view of the interaction of these five components in musical intelligence.[18] In what follows, however, I will restrict myself to the three levels of perception, memory, and understanding. The fifth level of general organization (or the "g" factor) is disputed by a number of theories of intelligence. However relevant "g" may be in the domain of factorial analysis, it seems a somewhat artificial level for the purpose of this paper. Similar considerations are true for the level of sensation. Although a store of familiar sensory contents are the foundation upon which the higher levels of intelligent processing crucially depend, only in theory is it possible to stay at the level of sensation. One is never presented with a single sensation in everyday experience. The environment normally presents such a vast amount of sensory information that we process only a portion of it. The mind tends to focus centrally on certain parts of it, to delegate other parts to the periphery, and to ignore the rest. As soon as a perceiver notices more than one sensation, either concurrently or in succession, then the individual sensations are seen in relation to each other and further organization is required. The processes of recognizing, associating, discriminating, comparing, classifying, weighting, abstracting, judging, and comprehending sensory data are generally considered to take place at the level of perception.

(1) The Contribution of Feeling at the Level of Perception

Many studies have been conducted which investigate the role of cognitive processes and the way they structure the contents of perception. Much less is known about the contribution of feeling to the organization of perception. I suggest that perceivers often develop connections and recognize relations between perceptual elements on the basis of how those elements feel to them. It is likely that feeling influences the organization of perceptual input in at least three important ways:

1. Feelings can help observers detect essential characteristics of their surroundings.
2. The feeling of a particular mood or emotion can organize the focus of perception and determine what an observer abstracts from a multiple stimulus situation.
3. Both types of feeling provide an additional basis for discriminating, comparing, classifying, abstracting, weighting, relating, and comprehending perceptual input.

The five processes briefly described below do not usually work alone. More frequently they are activated concurrently in a variety of possible combinations during the perception of a complex stimulus.

Discriminations

The ability to make fine discriminations with respect to individual sensory qualities, or "sensory acuity" as Serafine[19] and others call it, is important in musical processing. This is because the contents of sensory awareness are the basic foundations upon which higher level types of musical thinking are built. The quality of listeners' musical understanding as a whole rests crucially on their sensibility to pitch, volume, duration, and timbre differences. Sensitivity to variations in these musical elements can be developed along two dimensions: the qualitative differences between sensory contents, and the lessor to greater degrees of a distinct quality. But equally importantly for higher-level musical thinking, each discriminated degree of that quality tends to be processed inseparably with its own characteristic feeling tone.

Without feeling the qualities of the music, important aspects of a musical passage may not even be apprehended at the level of perception. In his discussion of a melody from the Gavotte in Bach's *English Suite no. 3*, Clifton suggests that there is something about the melody which presents a certain feeling quality which he is inclined to describe as energetic.[20] This musical quality is not only in the listener but is also actually in the music. It is an essential feature of the constituent character of the piece, and a listener whose sensibility did not discriminate the precise musical feeling of this melody would be failing to register and apprehend perceptually a primary feature of the music. The listener's active feeling response (e.g., perhaps enjoyment) to a piece of music is secondary to the primary necessity of first discriminating between the different sound patterns and their felt qualities. Without input from prior and current feeling responses, these types of discriminations cannot appropriately be made.

...it would seem that perceptual intelligence in music is dependent upon three primary activities: discrimination..., organization..., and perceptual comprehension....Input from feeling may contribute to the effective functioning of any one of these perceptual processes in musical activity.

Comparisons or Seeing in Relation

Arnheim suggests that when two objects are presented together in perception, the relation between them is either one of resemblance or of difference. "Different creatures vary as to what they are able and willing to accept as resemblance."[21] If the relationship between the two objects is one of contrast, there may be either a difference of quality or a difference in the degree of the same quality. In addition, a "figure perceived in comparison with another ... may look different from the way that it would appear by itself."[22] All these comments may be transferred to the domain of feeling. Feelings may be similar but vary in degree or they may be qualitatively different. Emotions have a different feel when they are experienced alone or when they are felt simultaneously in conflict. So the human capacity for feeling makes it possible to compare the contents of perception not only for aspects such as shape, size, weight, color, etc., but also for how the contents make individuals feel. Human feeling responses, therefore, greatly extend the range of possibilities for the making of comparisons. The hearing of two musical events as either similar or different can be made upon both cognitive and affective information.

Classifications or Categorizations

The human ability to remember the feeling tone of sensory stimulations is important because it provides another way for observers not only to compare but also to categorize the contents of perception. Perceptual information may be classified into sensory qualities which produce similar psychological effects and those which produce antagonistic ones. For example, human beings are inclined to classify colors into two categories: colors towards the red end of the spectrum are considered warm; at the other end of the spectrum blues and purples are thought to be cold. In this situation, the terms are being used to refer to both the sensory qualities (the result of differing wavelengths of light which machines can measure) and the psychological effect that these colors have on perceivers.

When sensory qualities are presented in combinations, the perceiver may experience more complex and/or more subtle feeling responses than when sensory qualities are presented singly. Offering some preliminary thinking on the topic of sensate development, Witkin suggests that perceptual stimuli can be ordered in four basic ways: by means of contrasts, semblances, harmonies, and discords.[23] Each type of combination may elicit from the perceiver its own quality of feeling response with ever-expanding opportunities for new types of categorization or classification based upon those feeling responses.

Abstractions

Langer and Heller suggest that two functions seem to control what is attended to and what is abstracted from a given stimulus situation: biological mechanisms and feeling states. Heller claims that the "involvement" of feeling selects in all instances of perception. Human beings are provided with biological selection patterns, but if we were "to select exclusively under the leadership of biological patterns, ... then the flood of stimuli selected purely biologically would render us incapable of living."[24] The human capacity for involvement is not mere accompaniment to human behavior but an "inherent constructive factor" in all the activities — including perception — in which individuals find themselves involved.[25]

In a multiple stimulus situation it would seem that feelings frequently determine which aspects are found prominent. In choosing to attend to this organized set of features rather than another, feelings play a large part (often below the level of consciousness) in the process of abstraction.

If a listener does not have access to a store of musical schemata, the processing of musical input will not merely be defective, it will not be able to function at all. The schemata in use may be primarily affective..., primarily cognitive..., or they may be combination structures.

The aspects chosen for attention are not purely subjective; they contain both subjective and objective elements. Certain aspects of the stimulus may seem prominent at this moment, and other features may seem more important later. On both occasions, the features attended to are actually present in the stimulus situation. It would seem that differing feeling states may lead to the organized and logical perception of one integrated set of features in the first instance, and later, to another equally logical set of features. De Sousa suggests that it is not easy to give reasons for these shifts of attention; such changes seem to be prompted by intuitive processes. Yet each shift of attention abstracts a different set of sensory information and enlarges one's knowledge of the stimulus.

Weightings

Once discriminations, comparisons, classifications, and abstractions have been made, the next step needed may be the weighing (or weighting as Goodman terms it) of perceptual contents in terms of their relative importance. Feeling is frequently involved in this process. For example, if one makes a classification of sounds into the categories of consonance and dissonance, it may be necessary for a composer to evaluate a sound sequence on the consonance/dissonance continuum for its suitability to contribute to a particular feeling quality. In the process of weighting, some elements will seem more appropriate for, or relevant to, the current purpose than others.

From the perceiver's perspective, Goodman describes how the visual weighting of a painting's features — of volume, line, or movement — may alter dramatically from one day to the next with changing interests and new insights.

> Emphasis or weighting is not always binary as is sorting into relevant and irrelevant kinds or into important and unimportant features. Rating of relevance, importance, utility, and value often yield hierarchies rather than dichotomies. Such weightings are also instances of a particular type of ordering.[26]

For an experienced listener, many of these ratings take place at the tacit level which makes it all the more difficult to research the great variety of cognitive processes based upon feeling. Listeners need to succeed in weighting promptly and appropriately the relevance, value, and importance of the musical elements they hear; and unless the tacit criteria which guide these weightings include input from both feeling and cognition, the choices are likely to be defective.

In conclusion, on the basis of the five cognitive processes described above, it would seem that perceptual intelligence in music is dependent upon three primary activities: *discrimination,* i.e., the acuity and accuracy of sensory registration of both perceptual and expressive information and its feeling quality; *organization* of the information, e.g., by appropriate comparisons, classifications, abstractions, weightings, etc.; and perceptual *comprehension* of that sensory information once registered and organized. Input from feeling may contribute to the effective functioning of any one of these perceptual processes in musical activity.

(2) The Contribution of Feeling at the Level of Memory or Representation

Schemata or Percept Formation

Current thinking in psychology claims that information is stored in memory in various modes of representation. Actions, images, sound patterns, and language all use their own type of schemata. Mandler defines schemata as mental representations of experience that guide perception, thought, and action. These schemata vary on a continuum from the most concrete to the most abstract. "They are available for the perceptual elements of an event as well for the abstract rep-

resentation of its 'meaning' or 'gist'." Events are comprehended in terms of the schemata they activate, and different types of comprehension — perceptual, semantic, and structural — depend upon different types of schemata.[27]

Several authors have investigated the interaction between cognition and affect in representative processes. Schemata are viewed as having both cognitive and affective elements. Cowan claims that there can never be a cognitive schema without affect. Since schemata always contain emotional and cognitive aspects, "there is no strict dividing line between the two domains. Schemata vary on a continuum from those which appear as primarily affective to [those] which appear highly cognitive."[28] In his theory, Sigel supports a similar position arguing that essentially, "no developed schema evolved without cognitive-affective constituents. Particular experiences activate one of the components, which also activate the other or both depending upon the event in question."[29]

These theories are highly relevant to the processing of musical events. If a listener does not have access to a store of musical schemata, the processing of musical input will not merely be defective, it will not be able to function at all. The schemata in use may be primarily affective (perhaps the recognition of a particular feeling quality), primarily cognitive (perhaps the recognition of a familiar scale pattern), or they may be combination structures. No sense can be made of musical input unless the listener has acquired a minimum of musical schema, or stable "perceptual constructs," as Reimer calls them.[30]

(3) The Contribution of Feeling to the Level of Musical Comprehension and Grasping of Musical Relations

At this level of understanding music, the processes described at the level of perception — discriminating, comparing, classifying, abstracting, and weighting — may still be in use. These processes, however, may be called upon to organize more complex types of input as described below. Because the input with which they have to deal is much less tied to the constraints of the current perceptual field, I suggest that thinking at the level of understanding tends to be more complex, flexible, and creative. Rock makes a similar suggestion for verbal thinking.[31] In addition, the acquisition of competencies in various artistic media makes it possible to develop still higher-level mental skills, i.e., problem setting and solving, syntheses, judgments, intuitions, and interpretation. These processes are also constituent parts of the total complex of musical understanding. The contribution of feeling to five higher level processes is briefly described below.

Problem Setting and Solving

Reporting on their research into artistic creativity, Csikszentmihalyi and Getzels suggest that creative accomplishment in painting crucially depends upon a problem-finding attitude.[32] This attitude is characterized by a painter's openness to a number of metacognitive events: visual, auditory, and kinesthetic sensations; ill-defined intimations and emotions; both less or more clearly formulated ideas; and a "deeply felt need to bring personal order into this congeries of problematic experiences. The work of art represents an attempt to discover a visual symbolic expression for this ordering process."[33] In each artistic domain "much hard work needs to be done after the problem is sufficiently formulated to become amenable to attempts at symbolic solution."[34] But no originality in thinking can take place unless emotions, curiosity, imagination, and baffling glimpses of a reality beyond present conceptions influence both the finding and the solving of artistic problems.

Syntheses

Dewey, and others, suggest that artistic unity is a logical necessity that comes from a synthesis of parts based upon feeling. Emotion works "to effect continuity of movement, singleness of effect among variety. It is selective of material and directive of its order and arrangement."[35] He suggests that a balance needs to be maintained. Too much absorption in the emotion or feeling may obstruct the necessary elaboration and definition of parts. Too little involvement of feeling will result in a coldly correct product. Feeling is necessarily involved in choosing the right word, tone, or hue, of placing the right incident in the right place, or of arriving at an exquisite proportion of parts to achieve artistic synthesis.

Since feeling is essential to the artist's creation of synthesis in art, perceivers cannot dispense with feeling either. Petock suggests that perceivers apprehend the cohesive forces in a work of art "by taking part in a process which is like the composer-performer's. Like the artist whose thought we follow, we care deeply about his materials."[36] Listeners who care about sounds will want to involve themselves in the process of knowing the parts of the composition and putting them together in their own experience. It is just as important, then, that a listener's act of reconstruction achieve an appropriate synthesis of musical elements based upon feeling as it is that a composer achieve a feelingful synthesis of parts in the creative process.

Judgments

Feelings also make essential contributions to the exercise of musical judgment. In fact, Jung described feeling itself as a "kind of judgment, differing from intellectual judgment in that its aim is not to establish conceptual relations but to set up a subjective criterion of acceptance or rejection."[37] The process of feeling requires more time than does perception. "It behaves in the same way as thinking, rationally organizing perceptions. It is coherent if not systematic." The object of concern is to be "exactly right," not from a truthful or logical sense, but from the point of view of feeling.[38]

Judgments regarding the suitability of materials for specific aesthetic purposes, the effectiveness of new combinations, the appropriate balance between repetition and contrast, of the right relationship between the parts and the whole, must be made by the artist on the basis of feeling if the work is not to seem mechanical and contrived. In addition, a perceiver must also learn to make appropriate aesthetic judgments about all these aspects of art works on the basis of educated feeling. That is to say, feelings whose precise nature are formed by the individual's prior knowledge of both art forms and life experiences.

Intuitions

Langer's definition of intuition is precise. It is the direct perception of relations, forms, instances of forms, and logical and semantic meanings.[39] If a listener does not understand the meaning of a verbal utterance, the speaker may be able to demonstrate his meaning by other means -- by paraphrasing or defining the words the listener does not know. The significance of works of art, however, can only be exhibited, and there is no further way of identifying their import.

> The only way to make the feeling content of a design, a melody, a poem or any other art form public, is to present the expressive form so abstractly and forcibly that anyone with normal sensibility for the art in question will see this form and its emotive quality.[40]

For Langer, the function of artistic symbols is to negotiate a variety of intuitions. The intuition may be the envisagement of an individual object or event, but it may also be the seeing of relatedness or distinctness, correspondence or contrast, or the synthesis in a total Gestalt. The contribution of the individual elements to the whole feeling import is seen intuitively or not at all. The understanding of an art work begins with the perceiver's intuition of the whole feeling presented, and contemplation then gradually reveals the complexities of the art work and the complexity of its import. Whether listeners are intuiting or contemplating, I suggest that their grasp of musical meaning depends essentially upon the part which affect contributes to the feeling quality of the composition and the input from the listener's feeling responses brought to the experience.

Interpretations

At the highest level of musical interpretation, both life experiences and language understandings may contribute enormously to its fine tuning. For example, Manfred Clynes considers (as have many musicians) that the last works of Beethoven reveal a completely new quality compared to early and middle works. Struggling to describe this new quality, Clynes asks: "How was he [Beethoven] able to program us in such a way that the dancing and the love is not felt as dancing of our individual egos, the 'I,' but of universal forces?" In order to experience the great calm that Beethoven programs, it seems that a disconnection as well as connection is made in the listener's internal programming. "Our own individual drives are disconnected from their usual outputs." He suggests that more than detachment is implied. "We are

The same melody can be played exclamatorily, lyrically, matter-of-factly, or with conviction and, in each case, it will convey a different meaning as a totality. Cognitive, affective, and performance elements fuse powerfully together to produce the precise meaning of each different whole.

also connected in an immediate, direct way to what appears as a source of universal energy and love."[41]

In this late music we remember not only a specific state, "but the quality of a point of view, of feeling a different sense of connectedness — a state that allows for the simultaneous experience of energy and peace."[42] Clynes insists that the peace of Beethoven's last quartets is not the peace of a lullaby.

> It is an apparent paradox that this sense of utmost peace is at the same time combined with a state of energy. If we examine this paradoxical combination closely we note that it is also combined with absence of anxiety. The strength it gives is not that of the armed aggressor, but that of the man who is at home in the wonder of existence. Yet, all that brought this experience forth are only sounds, vibrations of the air, tones. How can these relationships transform us to such an extent?[43]

Clynes writes eloquently about the quality of the music from Beethoven's late period. Beethoven enthusiasts have also sensed those features which are so difficult to describe in words, and the new quality may well have emerged because of profound changes in Beethoven's attitude towards life. In addition, Clynes's verbal description may well help other musicians interpret more effectively the musical character of Beethoven's late music. Yet satisfactory interpretation on the part of performers can only take place when they have grasped through feeling those extra-musical ideas or qualities in the music, and are guided by that feeling to make the performance decisions which will best present those qualities to the feelings of the listener.

The Complexity of Musical Understanding

Although I have attempted in this paper to identify some of the individual elements of musical comprehension, I do not advocate any rigid application of my suggested distinctions. Based upon ideas presented by P. Lersch, Francis Dunlop argues that the formation of psychological concepts is more a matter of emphasis than reality, is more an exercise in accentuating than demarcating. He suggests that a common problem with conceptualizing lies in the fact that once the emphasizing concepts have been formed, theorists tend to assume that they mark clear demarcations under all circumstances.[44] His point is an important one.

Obviously, the description presented above of individual components of mature musical understanding do not present an adequate picture of the intermeshing of those components. In most circumstances, cognitive and affective meanings are formulated and understood as a totality. Based on ideas from Wittgenstein, Heller provides an illustration of expression. Someone makes a propositional statement, but the actual words are not sufficient to convey the whole meaning. The very same sentence can be said "descriptively, exclamatorily, ironically, hintingly, familiarly, skeptically, or with conviction; the conceptual or lingual meaning is the same, but the meaning as a whole is not the same."[45] Within certain limitations, I suggest, the musical performer has the same capability as a speaker with language. The same melody can be played exclamatorily, lyrically, matter-of-factly, or with conviction and, in each case, it will convey a different meaning as a totality. Cognitive, affective, and performance elements fuse powerfully together to produce the precise meaning of each different whole.

Unless patients are brain damaged, it is often extremely difficult to extricate thought and feeling processes in human response. Oliver Sacks reports on an incident which demonstrates this point.[46] A ward of aphasic patients were listening to a political speech

Similarly with music, I argue that without a grasping awareness there can be no adequate feeling response, and without a feeling response there can be no adequate grasp of the feeling quality of the music.

by the president, and when Sacks came into the ward, they were all laughing at what they perceived was the president's attempt to hoodwink the public. Aphasia patients have left hemisphere damage and are incapable of identifying words as such. Nevertheless, they understand most of what is said to them. When doctors wish to test for aphasia, they have to avoid all non-verbal emotional clues. Otherwise, even when the patients have not recognized the words being used, they understand the meaning in an emotionally-toned utterance. Aphasics learn to compensate for loss of word recognition by enhanced sensitivity to emotional tone.

In the same ward there was another patient suffering right-hemisphere damage, and she could understand words but not emotional tone. Her attention was totally focused upon the exactness of the words and the way that they were used, and she also believed that the president was telling lies from the word content of his speech. It was only those listeners with intact brains processing both content and affect, but at lower thresholds of sensitivity than the brain-damaged patients, who found the speech persuasive.

In artistic activity, the picture is equally complex. Dufrenne suggests that conclusions reached in the domain of thought have lasting repercussions upon the domain of feeling. He offers a convincing description of how verbal thinking contributes to the specific feeling qualities embodied in a work.

> Thus one can say that the work's affective quality embodies thought and even that there is philosophy in every work, whether it be the bitter and fervent Christianity of Roualt's paintings, Debussy's sensual and open defiant openness to the world, or the Parthenon's Platonic taste for order and measure (not to mention its exaltation of light and its sense of the splendor of the true). But since thoughts are enclosed within their respective works, they exist in a state of feeling and communicate themselves to feeling. When we reflect on such feeling, we may try to restore it to the state of thought. However, this thought is living for the artist only insofar as it becomes feeling.[47]

Here, Dufrenne prefers to say that thought participates in artistic feeling in contrast to Goodman who suggests that emotions participate in cognition. Perhaps this conflict of emphasis is best resolved by claiming that the participation can work both ways.

To summarize, I argue that the understanding of music is a complex synthesis of the five types of understanding listed below which can be developed by using the mental processes described above. Mandler describes three kinds of comprehension: *perception* is comprehension of sensory input; *semantics* is the comprehension of language relations, and *preference* involves comprehension of structural relations.[48] To Mandler's three I would add two others: *artistic* understanding (more developed than preference) also involves comprehension of structural and non-structural relations in various media; and *personal* understanding involves seeing relationships between the general and the particular in human interaction. I suggest that artistic functioning at the highest level involves seeing relationships between all five types of understanding, with nonlanguage arts being less directly influenced by the understanding of semantic relations. Each type of understanding or comprehension, however, is crucially dependent upon input from the domain of feeling.

Conclusion

In this paper, I have identified a number of theorists who describe the composite nature of the thinking-feeling response to works of art. For example, translating comments from the visual domain to music, Edward Casey would say that we hear the contrast between a series of tones and feel their impact and their tension.[49] Louis Arnaud Reid would say that we immediately hear musical tones charged-with-affective-meaning.[50] These authors remind us of the seamlessness or the wholeness of the experience during which we are not aware of any separation between the cognitive

awareness and the feeling response.

Unfortunately, the practice of studying cognitive and affective elements separately makes it difficult to further our knowledge of the intimate reciprocity between the listeners' sensitive awareness of the stimulus and the nature of their feeling response. Francis Dunlop describes the importance of this reciprocity reflecting upon a similar idea presented by Edith Stein. They both insist that it is important to distinguish between the act of understanding or grasping (by feeling) a value and the appropriate feeling-response to that value. Each element has a crucial need for the other. "There can be no proper response without a proper grasp, no adequate grasp without adequate response."[51] Similarly with music, I argue that without a grasping awareness there can be no adequate feeling response, and without a feeling response there can be no adequate grasp of the feeling quality of the music.

For complete musical understanding, it is necessary to become sensitive to the feeling qualities of a piece of music just as much as sensitivity to emotional tone in social situations is essential for a complete understanding of what others are saying. Interaction with music requires that individuals be able to make discriminations, comparisons, classifications, abstractions, weightings, and to store schemata on the basis of both cognitive and affective aspects. Often it is educated feeling which tells artists when there is a problem to solve, which problems are important, which lets them recognize the right solution, and which makes the sudden associations between hitherto separate elements that we call insight or intuition. Listeners use feeling to recognize the rightness of the artist's choices and to read the music's feeling qualities. Feeling gives individuals many of their criteria for artistic judgments, and without our living experiences of what it is to be a sentient being, we could not understand or interpret the feeling qualities of art works created by other sentient beings.

On the basis, therefore, of these descriptions of the contribution of feeling to eleven cognitive processes in music, it seems necessary to conceive of musical intelligence as a composite thinking-feeling process. The cognitive processes implicated in the comprehension of musical form depend essentially upon feeling components. The feeling responses necessary for the comprehension of musical form can become highly intelligent. It would seem that neither dimension, affect or thought, can exist without the other except at minimal levels.

Because of this close interdependence between musical thinking and feeling, it is essential for music educators to include opportunities for students to make musical discriminations, comparisons, classifications, etc. on the basis of how a piece of music feels to them. Play a passage from a piece of music in two highly divergent ways and ask your students which feels best. Although, at first, they often cannot give reasons for their preferences, their choices often demonstrate sound musical instincts. For example, if a new piece with cadences at the end of every phrase is played to adult students, most likely they will prefer a performance that appropriately emphasizes whether each phrase feels like a question or answer phrase as indicated by the cadences. Students should be encouraged to become more aware of how contrasting musical compositions evoke different feeling responses. They should be asked to make decisions about performance and composition choices, and know that you expect them to solve varied kinds of musical problems based upon input from feeling as well as thinking. A student's interaction with music may remain defective unless feeling and thinking skills are developed in concert at all levels of musical intelligence.

Notes

1. Howard Gardner, *The Mind's New Science: A History of the Cognitive Revolution* (New York: Basic Books, 1985), 6.

2. Jan Drucker, "Developmental Concepts of Cognition and Affect," in *Cognitive and Affective Growth: Developmental Interaction,* eds. Edna Shapiro and Evelyn Weber (Hillsdale, NJ: Lawrence Erlbaum, 1981), 42.

3. Rudolph Arnheim, *Visual Thinking* (Berkeley, CA: University of California Press, 1969).

4. Frederick E. Taylor, "Music and its Logic," *British Journal of Aesthetics* 14 (Summer 1974): 214-230.

5. Nelson Goodman, *Language of Art: An Approach to a Theory of Symbols,* 2nd ed. (Indianapolis: Hackett, 1976).

6. John Dewey, "Qualitative Thought," *Philosophy and Civilization,* (New York: G.P. Putnam's Sons, 1931); Frederick Taylor, "Music and Its Logic," *British Journal of Aesthetics* 14 (Summer 1974), 214-230; Roger Scruton, *The Aesthetic Understanding: Essays in the Philosophy of Art and Culture* (London and New York: Methuen, 1983); Stephen Davies, "Is Music a Language of the Emotions?" *British Journal of Aesthetics* 23 (Summer, 1983): 222-233; Edward S. Casey, "Meaning in Art," *New Essays in Phenomenology: Studies in the Philosophy of Experience* (Chicago: Quadrangle Books, 1969): 100-115; Nelson Goodman, *Languages of Art: An Approach to a Theory of Symbols,* 2nd ed. (Indianapolis: Hackett, 1976).

7. Ronald Hepburn, "Emotions and Emotional Qualities: Some Attempt at Analysis," *British Journal of Aesthetics* 1 (September 1961): 225.

8. Nelson Goodman, "Art and Inquiry," in *Aesthetics Today,* Revised Edition, eds. Morris Philipson and Paul J. Gudel (New York: New American Library, 1980), 311.

9. Susanne K. Langer, *Philosophical Sketches* (Baltimore, MD: The John Hopkins University Press, 1962), 18.

10. Susanne K. Langer, *Mind: An Essay on Human Feeling* (Baltimore, MD: The John Hopkins University Press, 1967), 23.

11. Leonard B. Meyer, *Emotion and Meaning in Music* (Chicago: The University of Chicago Press, 1956).

12. Louis Arnaud Reid, *Meaning in the Arts* (London: George Allen and Unwin, 1969), 51.

13. Mikel Dufrenne, *The Phenomenology of Aesthetic Experience,* Translated by Edward S. Casey, Alberta A. Anderson, Willis Domingo, and Leon Jacobson, (Evanston, IL: Northwestern University Press, 1973).

14. Nelson Goodman, "Art and Inquiry," 311.

15. Ibid., 311.

16. Ibid., 313.

17. Ibid., 311.

18. Ibid., 72.

19. Serafine, Mary Louise, "Music," in *Cognition and Instruction,* eds. Ronna F. Dillon and Robert J. Sternberg (New York: Academic Press, 1986), 299-341.

20. Thomas Clifton, *Music as Heard: A Study in Applied Phenomenology* (New Haven: Yale University Press, 1983), 14.

21. Rudolf Arnheim, *Visual Thinking,* 67.

22. Ibid., 68.

23. Robert Witkin, *The Intelligence of Feeling,* (London: Heinemann Educational Books, 1974).

24. Ibid., 39.

25. Agnes Heller, *A Theory of Feelings* (Assen, The Netherlands: Van Gorcum and Company, 1979), 7-8.

26. Ibid., 12.

27. George Mandler, "The Structure of Value," in *Affect and Cognition,* eds. Margaret Snydor Clark and Susan T. Fiske (Hillsdale, N.J.: Lawrence Erlbaum, 1982), 3.

28. Phillip A. Cowan, "The Relationship Between Emotional and Cognitive Development," in *Emotional Development,* eds. Dante Cicchetti and Petra Hesse (San Francisco: Jossey-Bass, 1982), 59.

29. Irving E. Sigel, "Cognition-Affect: A Psychological Riddle," in *Thought and Emotion: Developmental Perspectives,* eds. David Bearison and Herbert Zimiles (Hillsdale, NJ: Lawrence Erlbaum, 1986), 225.

30. Bennett Reimer, "The Nonconceptual Nature of Aesthetic Cognition," *Journal of Aesthetic Education* 20 (Winter, 1986): 111-117.

31. Irvin Rock, *The Logic of Perception* (Cambridge, MA: The MIT Press, 1983), 339-341.

32. M. Csikszentmahalyi and Jacob E. Getzels, "Creativity and Problem Finding in Art," in *The Foundations of Aesthetics, Art and Art Education,* eds Frank H. Farely and Ronald Neperud (New York: Praeger, 1988).

33. Ibid., 111.

34. Ibid., 114.

35. John Dewey, *Art As Experience* (New York: Paragon Books, G. P. Putnam's Sons, 1979), 68-69.

36. Stuart Jay Petock, "Expression in Art: The Feelingful Side of Aesthetic Experience," *Journal of Aesthetics and Art Criticism* 3 (Spring, 1972): 307.

37. Carl Gustave Jung, *Psychological Types* (Princeton, N.J.: Princeton University Press, 1973), 433-436.

38. James Hillman, "C. G. Jung's Contribution to Feelings and Emotions: Synopsis and Implications," in *Feelings and Emotions: The Loyala Symposium,* ed. Magda Arnold (New York: Academic Press, 1970), 127-128.

39. K. Susanne K. Langer, *Mind: An Essay on Human Feeling* (Baltimore, MD: The John Hopkins University Press, 1967), 128-129.

40. Susanne K. Langer, *Feeling and Form* (New York: Charles Scribner's Sons, 1953), 379-380.

41. Manfred Clynes, *Sentics: The Touch of Emotions* (Garden City, N.Y.: Doubleday, 1977), 86.

42. Manfred Clynes, *Sentics,* 86.

43. Manfred Clynes, *Sentics,* 87.

44. Francis Dunlop, *The Education of Feeling and Emotion* (London: George Allen and Unwin, 1984), 36.

45. Agnes Heller, *A Theory of Feelings,* 54.

46. Oliver Sacks, *The Man Who Mistook His Wife For a Hat,* (London: Duckworth, 1985. New York: Simon and Schuster, Large Print, 1986).

47. Mikel Dufrenne, *The Phenomenology of Aesthetic Experience,* 452.

48. George Mandler, "The Structure of Value," 16.

49. Edward Casey, "Expression and communication in Art," *Journal of Aesthetics and Art Criticism* 30 (Winter, 1971): 197-207.

50. Louis Arnaud Reid, *Meaning in the Arts* (London: George Allen and Unwin, 1961), 41.

51. Francis Dunlop, *The Education of Feeling and Emotion,* 70.