A Community of Scholars Investigates Music Listening

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Our role as researchers is to crave knowledge. Our obligation is to produce it more scientifically.

—Bennett Reimer (1985, 21)

At the April 1984 biennial meeting of the Music Educators National Conference in Chicago, Bennett Reimer presented a challenge to music educators to adopt a more scientific approach to research. He proposed a significant change in the direction and structure of research: "We must cluster our research efforts around significant problems or topics or issues. . . . At every university offering a doctorate, a unifying topic [should] be chosen that is both significant for music education and compatible with the research interests and capacities of its faculty" (Reimer 1985, 15). Reimer suggested that the clustering of research studies would entail a period of defining borders, that it should reflect varying research modalities and address the need for large-scale and long-term research, and that it could lead to exchanges and cooperative studies among university centers. His speech, published in the Summer 1985 *Bulletin of the Council for Research in Music Education,* generated debate among researchers in the field, with one critic labeling the idea of research centers as "excessively idealist, if not a bit silly" (Heller 1985, 26). Few universities adopted Reimer's proposal, and the direction and structure of music education research has remained relatively unchanged. Most researchers are still working in relative isolation, with little connection to each other's ideas, methodologies, or results.

However, Reimer's challenge was taken up at Northwestern University, where he served as a member of the music education faculty. In 1984, the Center for the Study of Education and the Musical Experience (CSEME) was created, in an attempt to provide several important features of an effective scientific research group. The following is a summary of its guiding principles:

1. Doctoral dissertations would focus around a central issue—the nature of the musical experience and the ways it could be cultivated through education.

2. Each major mode of research—philosophical, historical, descriptive, experimental, as well as various combinations and offshoots—would be brought to bear on the central topic, reflecting (*a*) the particular needs that each research mode offers and the cumulative knowledge produced by the effects of one research mode on another, and (*b*) the different intellectual strengths of students.

3. Specific problems chosen to be investigated would deal with an important aspect of musical experience and its cultivation; would link with previous studies, both inside and out of the center; and would reflect the particular interest and experience of the researcher.

4. The center would encourage the study of particular issues requiring more than one person's research effort, leading to longitudinal research and simultaneous research studies organized by a single topic.

5. The center would provide an ongoing, regular source of research training, professional enrichment, and communal support through its weekly meetings. Participation in the center would be required for all doctoral students in music education. (Reimer and Wright 1992, viii)

In subsequent years, Northwestern faculty and students have worked together in a collaborative fashion, producing both individual and joint research projects on the central issue of "education and the musical experience." One group research project resulted in the publication of a book, *On the Nature of the Musical Experience* (Reimer and Wright 1992), which featured the relevant writings of twenty theorists, composers, aestheticians, and educators.

CSEME faculty and students have also developed individual research projects in close consultation with each other, and doctoral students are expected to relate their dissertations with those of their predecessors or peers.

More than twenty years have passed since Reimer's original challenge to the research community. What has occurred since that time? Has the development of a research center been feasible, or has it proven to be an idealistic, silly notion after all? What have we learned about education and the musical experience? This article will focus on a number of research projects produced by members of the CSEME. Written over a fifteen year span, the studies were linked by a common topic—music listening. Each study explores a distinctive aspect of music listening, and, together, they have generated a more complete description of the listening experience.

Music Listening and the Study of the Musical Experience

> Listening is an indispensable factor in every musical experience and an essential element in every aspect of musical growth.
>
> —W. C. Hartshorn (1957, 261)

From the onset, music listening has been a key interest among CSEME faculty and students, for music listening is at the foundation of the musical experience. According to Reimer, "listening is the essential mode of musical experiencing" (1970, 120). Whether composing, performing, conducting, or teaching music, listening is a critical component of all musical activities. As Haack stated, "music exists for hearing and listening," but it has been "among the last and least studied aspects of music" (1992, 451).

Others have underscored the importance of music listening to the musical experience. Anthropologist and ethnomusicologist Blacking noted that "informed and accurate listening is as important and as much a measure of musical ability as is performance, because it is the only means of ensuring continuity of the musical tradition" (1971, 23). Copland elevated the role of the gifted listener "as a key figure in the musical universe" (1952, 19). Through the study of listening and the listener, the CSEME has investigated what is the essence of the musical experience.

Music Listening and Education

> Given the vast, bleak wasteland of much that passes for "listening activity," it is certainly understandable that many music teachers have . . . abandoned its use.
>
> —Bennett Reimer (1970, 120)

What Reimer observed more than thirty years ago remains largely true today—listening has been overlooked by most music educators. With much of teaching and learning focused on the production of music, listening often plays an ancillary role in the total music curriculum. As Madison has said:

> Because of its intangibility, and the difficulty of obtaining reliable evidence of good and poor listening, there is a tendency either to neglect it as a prime objection of instruction or to fail to develop any complete comprehensive educational plan to develop its many facets. (1966, 120)

Faced with hectic schedules and concert pressures, few music teachers devote valuable class time to listening. Limited training, resources, and materials hinder a music teacher's ability to teach listening effectively. Furthermore, there is a lack of consensus about the development of listening skills, making it difficult to determine what to teach children, when, and how.

Paradoxically, while music programs devote little time to listening, children in contemporary society are surrounded by a plethora of opportunities to listen to music. From *Baby Einstein* DVDs to iPods to satellite radios, music listening occupies an ever-increasing portion of children's lives. Research suggests that preadolescents and adolescents listen to music (including radio, CDs, tapes and music videos) between three and four hours per day (Roberts and Christenson 2001). Yet few students spend time actually listening to music in a school music program. As the divide between "school" music and "real" music grows, "we shall risk becoming even more irrelevant to the larger musical culture in which we exist" (Reimer 1989, 209). Seeing the need for better information about education and the listening experience, a number of CSEME members have chosen to investigate the topic of music listening. What has emerged is a body of research that provides a framework for teaching and learning.

Challenges in the Research of Music Listening

Not only has listening been overlooked in the schools, but it is also an area that has received limited attention among researchers. Through the years, a small group of individuals, such as Flowers (2000), Haack (1992), Hedden (1980), Madsen and Geringer (1990), Radocy (1990) and Sims (2005), have advanced the profession's understanding of music listening through their research. But many questions remain: How do children listen to music? What do children think about when listening to music? Do they perceive and respond to music differently as they become older? Can researchers identify other variables, such as gender, musical background, or familiarity, that affect music listening? Does music instruction affect the nature of music listening?

Because of its intangible, elusive nature, music listening presents a particular challenge to the researcher. As Sloboda noted,

> The principal end-product of my listening activity is a series of fleeting, largely uncommunicable mental images, feelings, memories, and anticipations. When trying to understand what happens during music listening, the psychologist, therefore, is at a considerable disadvantage. (1985, 151)

Not only are those fleeting "images, feelings, memories, and anticipations" difficult for the researcher to observe or measure, but also the ongoing nature of musical sound present another type of challenge. As Aiello stated, "When we listen to a composition, we hear an array of very complex temporal stimuli. Many musical sounds occur simultaneously" (1994, 276). Mueller pointed out that because music is apprehended in time:

> There is (1) no way to gather all of its parts for a total assimilation of a completed whole at one moment of high level

attention, and (2) it is very difficult to "freeze" any one of its parts or any aspects of the whole for a few moments of study while is qualities are examined or described. (1956, 9)

Due to the transient nature of music, listening to a musical work is quite different from several other arts experiences, for example, looking at a painting or reading a poem. Thus, the researcher is faced with the problem of designing appropriate methods to investigate a highly complicated task, one which is processed internally and is invisible to the eye.

In the CSEME studies, a variety of research techniques were used to capture the listening experience. The methodologies evolved over time, with researchers replicating, extending, or adapting techniques from one another. When examining the studies in totality, the research techniques appear virtually organic in nature, like various branches connected to the same base. In the following sections, brief summaries of the selected studies will be provided, research methodologies will be described, and a series of conclusions about music listening will be presented.

CSEME Research on Music Listening: The Musical Thinking of a Critic

From 1989 to 1994, Carol Richardson was a member of the CSEME while she served on the Northwestern University music education faculty. Her 1988 dissertation, "Musical Thinking as Exemplified in Music Criticism," and subsequent work on music listening, influenced the design and methodology of a number of CSEME dissertations. In Richardson's study, data on the thinking processes of a music critic were collected during a concert. Although seated in a soundproof booth, the critic provided a stream-of-consciousness verbal narrative as he was listening to the music. His narrative was transcribed and compared to examples of the critic's written reviews. A paradigm of musical thinking was developed by the researcher that served as a basis for an analysis of the verbal report.

Richardson's methodology demonstrated that gathering verbal data while listening to music was a viable research approach. The critic was given an open-ended task, free to express thoughts and feelings as they occurred over time, while live music was being performed. This procedure was unlike many listening studies, which often take place in laboratories, with isolated bits of music, where a listener is given limited choices or specific directives. According to Richardson, its greatest benefit was as follows: "[Although] the verbalized record did not reflect an exact record of the critic's thought process, it was the most accurate replication available for scrutiny and served as evidence of process" (1988, 15).

Music-listening Processes of School-aged Children

Influenced by the work of Richardson, I investigated music listening through verbal data in my dissertation, "A Study of Music Listening Processes through the Verbal Reports of School-aged Children" (Bundra 1993). Using verbal protocol analysis, a technique developed by Ericsson and Simon (1980), I examined music listening processes through the verbal reports of school-aged children as they listened to extended examples of music. During thirty-minute individual sessions I met with seventeen randomly-selected children in grades two, five, eight, and eleven, with and without musical training. The children gave concurrent verbal reports while listening to the six musical examples of varying styles. Afterward, children were asked to reflect on their listening processes in semi-structured interviews.

From the verbal reports, seventeen categories of responses emerged which were grouped into six clusters. Perceptual descriptions of the music were verbalized most frequently, with a large number of associative and affective comments also made by children of all ages. The data revealed that the older children differed from the younger children in both the quantity and quality of their verbal reports (373). The general pattern of development paralleled other aesthetic developmental theories, although a wide range of differences existed within each age group. Boys gave contrasting verbal reports, but their listening processes did not appear to differ from girls'. Children who studied an instrument privately or participated in school ensembles responded to the examples more accurately and musically (375). When asked to reflect on their listening processes, the children were articulate about their approach to music listening, particularly how music affected their moods or feelings. Despite its limitations, I found that the verbal reports of children could yield valuable information about music listening processes, concluding that "words are one way to access, understand, and, ultimately, refine the musical experience of listening" (388).

Verbal Reports of Expert Musicians

In 1993, Zerull also drew on the work of Richardson as he studied expert musicians in "The Role of Musical Imagination in the Musical Listening Experience." A protocol analysis project was conducted in two sessions with a composer, a performer, and a critic, who were asked to listen to recorded musical selections. In the first session, subjects were asked to think aloud while listening to three varied musical selections. In the second session, they were asked to clarify or explain words used in the first session. Through recording and transcribing the data, the researcher constructed a framework of musical imagination. Sixteen categories on the functions of musical imagination emerged and were grouped into six larger categories. Verbal data were analyzed that largely supported Zerull's framework of musical imagination.

In his conclusions, Zerull noted that the verbal reports reflected "a remarkable difference in the emphasis of the listening by each of the subjects" (162). The performer, composer, and critic each brought a unique perspective to their listening experiences. Zerull inferred that "musical experience is a personal experience that depends not only on the music being heard, but [also] is affected by past experiences emotionally connected to the music being heard" (173).

Perceptual Modalities in Music Listening

Like me, Dunn (1994) studied the responses of children while listening to extended excerpts of music. In his dissertation, "Perceptual Modalities in Music Listening among Third-grade Students," Dunn studied sixteen third-grade students, who were presented with six repeated-listening experiences, two each in the auditory only presentation mode, (A), auditory reinforced with visual stimuli (AV), and auditory reinforced with kinesthetic stimuli (AK) (28). Their audiotaped and videotaped responses were transcribed for analysis. The students' perceptual modality preferences were assessed through the Swassing-Barbe Modality Index *(*SBMI), and by parents, teachers, the music teacher, and the students themselves.

Dunn's analyses of the verbal responses of the children revealed fourteen categories of comments, with music perception comments occurring most frequently. Unlike Bundra who played the musical examples a single time, Dunn's students listened to the same excerpt three different times within a single session; he found that most students showed basically the same response patterns after each hearing (368). After two sessions with three modalities used per session, Dunn was able to classify each individual as to his/her exhibited perceptual modality strengths for the listening task. Dunn discovered that "individual perceptual modality strengths may affect how students listen to music" (370), and concluded: "Evidence suggests [that] students are able to use auditory, visual, and kinesthetic stimuli to varying degrees as they tried to make sense of out the music [with which] they were presented" (371).

Children's Responses to Live Musical Performances

In "Children's Responses to Live Musical Performance by an Ensemble without, and then with, Pedagogical Training," Bolanis (1996) examined the music listening responses of first- and sixth-grade children while attending woodwind concerts. She observed the subjects while they were listening to the concerts and collected verbal data in focus groups following each set of concerts. Afterward, Bolanis made revisions to the concert program, trained the performers, and measured its effect on the listeners' experiences.

Bolanis found that children responded to the live performances in words, vocal sounds, and gestures. Eighteen categories of responses emerged from the data, and a detailed comparison of her study's categories to those developed by Bundra and Dunn was carried out. A number of differences emerged, which Bolanis attributed to variations in research design between the studies (131)—the use of live music with narration and visual aspects, rather than recordings, and the use of focus groups speaking retrospectively, rather than individuals speaking both concurrently and retrospectively. Unlike Bundra and Dunn, Bolanis discovered that the children frequently expressed their preferences about the musical events (176). Age and gender affected the quantity and character of the verbal reports, and the pedagogical training of the musicians resulted in more musical comments from the children. Bolanis also concluded that "the live musical experience is inherently different to a child from a musical experience based on recorded music" (194).

Verbal Reports while Performing

In his 1997 dissertation, "Listening while Performing: Music Listening Processes As Revealed through Verbal Reports of Wind Instrumentalists during Rehearsal," Williams asked two college juniors, two tenth-graders, and two sixth-grade subjects to report what they were thinking while participating in band rehearsals. Over a six-week period, students wore head-set microphones for five rehearsals. Students were asked to stop playing and comment freely on whatever they were listening to or thinking about, and their comments were recorded. Interview sessions followed in which students were asked to reflect on their listening processes.

Despite the complexity of the task, Williams found that the subjects were capable of giving a verbal report while participating in a band rehearsal. In the data analysis, four category clusters emerged, comprised of twelve subcategories. When compared to Bundra's seventeen subcategories and six clusters of categories, Williams discovered considerable differences between the two sets of data. He concluded, "It is apparent that the listening and thinking processes of performers (listening as they perform), and of listeners (engaged primarily in listening) [are] different at a very basic level" (184). Despite the differences, Williams found that the studies were similar in two ways: (*a*) subjects tended to emphasize perceptual descriptions and evaluations, and (*b*) verbal reports changed with age and musical experience, with the older, more musically experienced subjects able to provide more thoughtful and thought-provoking reports (186). The students also reported that they felt the task of listening and talking aloud forced them to listen carefully, resulting in more focused attention during the rehearsal situation (172).

Verbal, Visual, and Kinesthetic Responses to Music while Listening

Kerchner (1996) built on the work of other CSEME members, in the design of her study of the cognitive processes, "Perceptual and Affective Components of the Music Listening Experience as Manifested in Children's Verbal, Visual, and Kinesthetic Representations." Kerchner selected twelve children from her general music classes, where she was employed as a part-time music teacher. Six second-grade and six fifth-grade students, half with additional musical training and half without, met with Kerchner for two thirty-minute listening and interview sessions in which they responded to a musical example through verbal, visual, and kinesthetic means.

The two musical examples Kerchner selected were also used in Bundra's study, an excerpt from Bach's *Brandenburg Concerto No. 2 in F* for the first part and Berlioz's *Symphonie Fantastique* for the second. Initially, the students simply listened to the Bach exam-

ple; during the second listening, a verbal report was given by the students; following the third time, students provided a visual map of their listening experience, which they subsequently explained in an interview; and finally, students listened to the same example a fourth time and provided movements depicting the music. Then the students viewed a videotape of their movements and described them in relation to the music. The entire procedure was replicated in the second week, with the same students performing the same tasks after listening to the excerpts repeatedly. Two weeks later, four students were selected for phase two of the study, in which they met with Kerchner for additional sessions involving the same tasks, but this time the Berlioz excerpt was used.

Analyses were conducted at the individual and group level in relation to age and musical training. Eight clusters of responses emerged from the transcripts. Similarly to Bundra, Dunn, and Williams, Kerchner found that perceptual information dominated the children's responses (618), and, as in Bundra's study, referential associations were used by most of the children (619). The visual mode of response was favored most highly by the children, while the kinesthetic was least preferred (620). Differences in response modes yielded different information, and with each listening the children's responses became more detailed. As with other CSEME listening studies, age, and musical training also affected the nature and sophistication of the children's responses (622–24).

Kinesthetic and Creative Dimensions of Music Listening

Two other dissertations explored the topic of music listening from a more philosophical and theoretical perspective. Dura (1998), in "The Kinesthetic Dimension of the Music Listening Experience," investigated the question: "How, precisely, does music produce a sense of movement in the listener experiencing that music?" (4). Drawing on the work of other CSEME dissertations by Wis (1993) and Dunn (1994), Dura also examined the role of bodily intelligence in the musical experience. She also related her study to the Stokes (1990) dissertation on cognition and emotion in the musical experience.

In "The Creative Dimension of the Music Listening Experience," Peterson (2002) developed and articulated a theory of creative music listening. She also built on the work of other CSEME members, studying: (1) imagination in listening (Zerull 1993); (2) cognitive lenses on the listening processes (Kerchner 1996); and (3) the consistency and complexity of listeners' mental imagery for music as demonstrated by their judgments of "right" tempi (Lapidaki 1996). Similarly, her work complemented studies that have examined musical listening through students' descriptions of their listening experiences as performers (Williams 1997) and as audience members (Bolanis 1996). Because of its philosophical nature, her study connected to other philosophical studies on the nature of the musical experience (Stokes 1990; Reimer and Wright 1992; Dura 1998). Peterson's theory of creative music listening reflects the complexity and uniqueness of an individual's listening experience.

Effects of Music Appreciation Instruction on College Students' Verbal Reports

In the guiding principles for the CSEME, the participants articulated a desire for their research to link with research endeavors at other universities. This is exemplified in the work of a researcher outside the CSEME, Ellis (1999), who studied the spoken responses of thirty university students enrolled in a music appreciation course. During a five-part testing session, Ellis played sixteen musical excerpts of varying lengths, from popular, classical, and world music styles. Subjects were encouraged to speak aloud what they were thinking as they heard the music. Then the subjects enrolled in a music appreciation course, where the researcher asked subjects to verbalize their responses to music in class discussions, quizzes, and written examinations. A posttest was administered, using the same materials and procedures.

When analyzing the data, Ellis used the categories of listener responses developed by Bundra. In comparing pre- and posttest results, he found that, after the music appreciation course, more musical observations were made by the subjects, with fewer affective, associative, judgmental, and miscellaneous observations. Ellis reported that, "the procedure used to gather spoken data for this study worked well," with several remarking that the experience was "fun" (27). As a result of instruction, subjects "moved toward observing music more objective and technically. . . . Simply put, subjects learned to respond to music more like musicians" (28). In his conclusions, Ellis contemplated whether or not the change in perceptions would result in a positive change in attitude, noting that music educators could "win the battle" of developing listening skills but "lose the war" of fostering increased appreciation (28).

Other CSEME Listening Research Projects

Related research projects were also conducted by other CSEME members on the topic of music listening. Although these studies were not dissertations, they were presented at state or national conferences or published in a research journal. The results highlight the interconnectedness between the work of CSEME members on music listening.

In "The Diversity of the Music Listening Experience as Reflected in Thought-listed Responses of First-year Undergraduate Music Majors," Smith (1996) conducted a literature meta-analysis on the subject of verbal and written response modes to construct new, broad, verbal response mode categories. Using these new categories and coding guidelines, Smith analyzed the written responses of ninety-three first-year undergraduate music majors; one group listed thoughts while listening to a recording, and a second group listed thoughts after listening to the same selection. From a total of 623 thoughts (phrases), the plurality (40.29 percent) was placed in the aesthetic category,

comprising music-cognitive, affective, and combined music-cognitive and affective comments (22).

In contrast to using college music majors, Larsen (1996) studied twelve adult nonmusicians, ranging in age from twenty-eight to seventy-seven years, who listened to a variety of extended choral, jazz, and classical instrumental musical examples, for her project, "Affect and Cognition in Music Perception: A Qualitative Study of Listening Processes." In the first set of sessions, the musical examples were played twice, and the subjects were asked to comment after the conclusion of each piece. In the second set of sessions, musical examples were presented just one time, three new to the listener and one a repeat selection from the first session. At the conclusion of the second set of listening sessions, Larsen conducted structured interviews, asking about perceived listening strategies and past musical experiences.

Larsen treated the data using my seventeen categories. She found that the data varied slightly, with adults offering more affective and associative comments than children. She suggested that adults have experienced a greater range of feelings and have had more practice associating those feelings with words (32–33). In analyzing the interrelationship between cognition and affect, Larsen drew on the work of CSEME member Stokes (1990), whose dissertation explored intelligence and feeling in the musical experience and music education. Through her study of the responses of adult listeners, Larsen suggested that "thinking and feeling are necessarily and intricately interdependent" (34). She reported that listeners' responses varied with the piece of music, and a diversity of musical styles and performances types appeared to have an effect on the aesthetic experience. Finally, she concluded that repeated listening can encourage greater depth of both the thinking and feeling responses.

In "Development of Children's Verbal Interpretive Responses to Music Listening," CSEME members Rodriguez and Webster (1997) joined together to study children's verbal responses to repeated hearings of a brief music excerpt. The excerpt was played three times, and each playing was followed by a set of questions asking listeners to describe what they were thinking, how the music was made, how the music made them feel, and why it did so. The thirty-three kindergarten through fifth-grade children were interviewed individually, and their verbalizations were recorded and transcribed. The data were submitted to three judges, who had significant practical and research experience with children in music. The judges developed categories and classified the students' comments.

Rodriguez and Webster found that "there appears to be a gradual trend for responses to become increasingly global and reflective of emotional sensitivity with age" (24). They also discovered that subjects became increasingly capable of understanding the creative process (25), and a gradual transformation in the affective responses also took place (24). In their study, children were capable of identifying the musical source of their stated emotions at various ages (24), and expressions of preferences and associations were not age-related. Rodriguez and Webster observed, "We believe that children's verbal reports of music listening experiences can reveal how they apprehend and organize information . . . [and] children are equally disposed to verbally represent their level of development at any age" (13).

Recommendations for Music Listening Research

The primary challenge of analyzing the CSEME work has been the sheer quantity of data and the multitude of findings. All of the studies mentioned above are qualitative in methodology and mostly descriptive in nature. Unlike a quantitative meta-analysis, the results cannot be reduced easily for even the most basic comparisons. This article is simply a first step toward synthesizing the work of the CSEME researchers; it is evident that more work is needed in this area. What has been learned from the studies thus far?

Next Steps

The following section presents some initial findings about music listening, based on an overview of the CSEME studies and presents recommendations for future research.

1. Research suggests that verbal protocol analysis is a viable tool to investigate music listening.

According to Pogrow, "The best mirror of the mind is the mouth" (1992, 5). Ericsson and Simon (1980) proposed that verbal reports could be collected and treated as data: "Verbal reports, elicited with care and interpreted with full understanding of the circumstances under which they were obtained, are a valuable and thoroughly reliable source of information about cognitive processes" (247). A series of CSEME researchers used verbal reports and found the methodology to be an effective means of gathering information about music listening. Whether concurrently (Bundra 1993; Dunn 1994; Ellis 1999; Kerchner 1996; Richardson 1988; Williams 1997; Zerull 1993), retrospectively (Bolanis 1996; Larsen 1996; Rodriguez and Webster 1997), or both (Smith 1996), subjects were able to provide data that were supported by other investigative means. Verbal protocol analysis has provided music researchers a mechanism to address the "the principal problem facing the student of listening processes" which "is to find a valid way of tapping the moment-to-moment history of mental involvement with the music" (Sloboda 1985, 142).

Recommendations:

(*a*) Further use of verbal protocol analysis should be pursued, specifically focused on refinement of its techniques, so that more accurate, reliable, and precise data can be produced.

(*b*) Other data-gathering techniques, separately or in conjunction with verbal protocol analysis, should also be examined closely for refinements that would improve their efficacy.

2. Relationships in verbal data existed among the studies and warrant further investigation.

A unique feature of the studies was the way verbal data were treated and compared. Several studies used identi-

cal categories when analyzing data. Bundra generated categories used by Ellis (1999) and Larsen (1996), and a number of studies made direct references to the findings of others (Bolanis 1996; Bundra 1993; Dunn 1994; Kerchner 1996; Williams 1997). It is interesting to follow the threads between the studies, noting similarities and differences in categories that emerged and the frequency of the comments within each category.

A number of the researchers discovered that listeners attended to perceptual elements in the music most often (Bundra 1993; Dunn 1994; Ellis 1999; Kerchner 1996; Williams 1997), with associative or affective elements also occurring frequently (Bundra 1993; Dunn 1994; Ellis 1999; Kerchner 1996; Larsen 1996; Smith 1996; Rodriguez and Webster 1997). In the studies where results differed, a source of variation could have been the data-gathering method; for example, verbalizations given by subjects in individual interviews differed from those of individuals within focus groups (Bolanis 1996). Written, retrospective descriptions differed from written, concurrent descriptions (Smith 1996). Other variables such as gender and testing conditions also appeared to have an impact on the quantity and quality of verbal data. Smith (1996) and Rodriguez and Webster (1997) also did extensive work on the development of categories, although correlations were not made between their data sets and other CSEME projects.

Recommendations:

(*a*) The multiple sets of data from the CSEME listening studies should be examined further for their similarities and differences.

(*b*) The treatment of verbal data is a topic that merits additional research, with particular attention to refinements in both coding and categorizing techniques to improve reliability and validity.

3. Age and musical training appear to influence the quantity and quality of verbal reports and the nature of the listening experience.

Subjects who participated in the CSEME studies ranged in age from first grade through adulthood. In the studies that examined more than one age group (Bolanis 1996; Bundra 1993; Kerchner 1996; Rodriguez and Webster 1997; Williams 1997), the researchers discovered developmental changes in their reports—older children appeared to talk more, in different ways, and about different things, than younger children. The older children provided greater detail, reflected a broader perspective about the music and its creation, and offered more insight when reflecting on their own listening processes. The adult nonmusicians and musicians had the most to say, drawing on a wide range of personal, educational, or professional experiences (Larsen 1996; Richardson 1988; Zerull 1993).

Musical background appears to affect music listening. The musically trained subjects spoke with more specificity and greater accuracy about the musical examples (Bundra 1993; Dunn 1994; Kerchner 1996; Larsen 1996). When comparing the reports of the performer, composer and critic, their attention differed according to the experiences they brought to the music (Richardson 1988; Williams 1997; Zerull 1993).

Recommendations:

(*a*) Replication of studies for students of different ages and varying musical experiences is needed to clarify and validate (or invalidate) present findings.

(*b*) Further investigation of other variables, such as the listener's gender, acquaintance with different styles of music, and their ethnic/cultural backgrounds, is also warranted.

(*c*) Longitudinal studies are sorely needed to trace the development of students according to the same characteristics in the preceding recommendation.

4. The type of listening experience—for example, repeated listening and listening to recorded or live musical performances—appeared to have some effect on the nature of the listening experience.

A number of the researchers studied the ways repeated listening could influence the perceptions and reactions of the listener (Bolanis 1996; Dunn 1994; Ellis 1999; Kerchner 1996; Larsen 1996; Rodriguez and Webster 1997). Although some found that listening to examples more than once improved the listening experience, others found that repeated listening had no impact at all. When comparing their studies, the results were inconsistent.

The data also differed when listening to recorded music (Bundra 1993; Zerull 1993; Dunn 1994; Kerchner 1996; Ellis 1999; Smith 1996; Larsen 1996; Rodriguez and Webster 1997); to live musical performances (Richardson 1988; Bolanis 1996; Williams 1997), and while performing music (Williams 1997). Each setting appeared to affect the data, raising questions about the inherent differences in the musical experiences of the listener.

Recommendations:

(*a*) The effect of familiarity with a particular piece, genre, or style on music listening is an important issue that warrants further study.

(*b*) Further research on the listening environment is merited, examining questions such as, How does the focus of attention change when listeners are listening to a recording, in the presence of live performers, or are involved with the performers themselves? What strategies should be used to teach children to listen effectively in each setting? Do the media affect the aesthetic experience of the listener? If so, how?

5. Instruction appears to influence the music listening experience.

In the studies where investigators trained the listeners (Bolanis 1996; Ellis 1999), there was evidence of a change in their listening skills. In at least one study, the subjects revealed that the act of verbalizing about the music led to greater attention to the musical details (Williams 1997). The research suggests that listeners can be taught to listen more carefully, with increased focus on the music itself. Several researchers, however, raised the question about the value of analytical listening, asking whether other types of listening are more meaningful (Ellis 1999; Larsen 1996).

Recommendations:

(*a*) Effective instructional strategies need to be developed for, and tested, in real classroom settings.

(*b*) Researchers should investigate how analytical listening can both posi-

tively and negatively affect a holistic listening experience.

6. Listeners can attend and respond to music through multiple modalities in varying degrees.

In a number of studies, the listeners' responses to music were captured in a variety of modalities: verbal (spoken and written), visual, and/or kinesthetic. The researchers who made comparisons between multiple modalities (Bolanis 1996; Dunn 1994; Kerchner 1996; Smith 1996) found that listeners attended to the music in different ways and responded differently in each modality. As Reimer (1985, 1) once stated, "The paradox is that every human being is, in certain respects, like all other human beings; like some other human beings; like no other human beings." The research suggests that this is particularly true for music listening.

Recommendations:

(*a*) Verbal, visual, and kinesthetic modalities warrant further study to determine their influence on listening perception and reaction.

(*b*) Teaching materials should be developed to address the distinctive needs of students, with emphasis on attending to music and responding through each modality.

7. Coordinated research is a feasible and necessary means toward studying the music listening experience.

The thirteen research studies summarized in this article took place over a period of approximately fifteen years, each revealing distinct characteristics of the music listening experience. Most of the research took place within a single university, providing opportunities for the informal and formal exchange of ideas between researchers. The studies were intentionally linked, and the researchers drew on each other's research designs, data-gathering techniques, results, analytical tools, and conclusions. Despite their efforts, all the researchers would probably admit that more could have been done to collaborate at various stages of their work.

The music education profession has initiated steps toward collaborating: the MENC Special Research Interest Groups (SRIG) supports cooperative work, and the two MENC research handbooks synthesize research and inform the research community. However, a more significant level of collaboration among researchers requires a new way of thinking about research, predicated on an unselfish approach and a willingness to contribute to a body of knowledge. Given the technological advantages of e-mail, videoconferencing, and other means of communication, researchers have tools which can assist in the coordination of their work. Are music education researchers willing to share their ideas and use these tools to connect their research in more meaningful ways?

Recommendations:

(*a*) All projects would benefit from careful coordination to avoid the randomness so often apparent in music education research literature.

(*b*) True collaboration between researchers requires a paradigm shift in the nature of research and the ability to share ownership of the research endeavor.

Conclusion

> Music listening is extraordinarily complex, spontaneous, intuitive, naïve, and sophisticated, all at the same time.
>
> —George Perle (1990, 22)

When the CSEME was conceived, researchers agreed to come together to study common issues. At the start, no one knew exactly what would be studied or how participants would work together. Anyone who has attended a center meeting would agree that the participants have "improvised," and the group's research topics and methods have evolved over time. Music listening has emerged as one of the issues studied both individually and collectively, and the results have revealed many dimensions of the listening experience from multiple perspectives.

The studies included in this article reflect the complexity of music listening. The topic is broad, elusive, and difficult to measure, and the CSEME researchers have discovered how challenging an area that it is to study. When the research is lined up side by side, the commonalities between the studies and, just as important, the differences, become apparent. An aggregate view of the CSEME research completed thus far suggests that the whole is greater than its parts. At the same time, however, each study is unique in its point of view, and everyone approached listening in distinct and different ways. Participants would agree that researchers can collaborate, and a music education research center can be implemented in a university setting. Idealistic? Perhaps, but certainly worthy of pursuit.

Music listening is a fundamental dimension of all musical experience and, therefore, fundamental to music education and to the research intended to improve the quality of teaching and learning. To design meaningful listening experiences for the classroom, music educators need to draw on a body of research about how human beings listen to music, the development of listening skills, and ways to improve listeners' perceptions and reactions. Otherwise teachers rely on habit, instinct, and guesswork, or, as is often the case, they neglect listening altogether. The word "research" is derived from French terms meaning "to seek" or "to search." Much is yet to be learned about music listening, and even more will be learned when we seek knowledge and carry on our search together.

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