"Blip, Buzz, Blorp":
The Challenge of Teaching New Ways to Listen

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Abstract

When first hearing electroacoustic music, many music theory students lack strategies to help
them focus on sound parameters, identify musical gestures, and improve their overall
perception. One difficulty stems from traditional theory's tendency to overlook musical
elements that are essential to an enriched hearing of electroacoustic music. With the goal of
redirecting and revising traditional listening approaches, our method begins with an explicit list
of sound parameters categorized as either fundamental or interpretive. After establishing this
initial focus, we suggest new ways to encourage students to actively engage sounds and increase
their retention through the use of visual and movement-based modes of analysis.

I. Introduction

The challenge of teaching new ways to listen
discourages many music theory teachers from including
electroacoustic music in the classroom. Students' initial
reactions to first hearings are often overly judgmental,
sometimes including unflattering comparisons between
sounds in a composition and disturbing real-life sounds.
"Blip, buzz, blorp" may have been a sophisticated
musical gesture, but the student only hears the sound
her car makes when it needs a new axle. Thus, teachers
who expand their curriculums to include
electroacoustic music must introduce new models for
listening and analysis.

Ideally, students will learn to move freely between
different listening modes. Denis Smalley identifies
three basic relationships between the listener and
sounds: indicative, reflexive, and interactive.1 In the
indicative mode listeners attempt to identify the sound
sources and any relevant associations. Whether the
music employs easily identifiable or heavily-processed
sounds, electroacoustic compositions often trigger the
indicative mode. In contrast, the reflexive mode
focuses on emotional responses. In the absence of other
relationships, this subject-centered mode seduces the
listener into a passive role. The interactive relationship
involves a more formalistic contemplation of the sound
object itself. Although music students learn to enter the
interactive mode in their analysis of Beethoven and
Brahms, the unfamiliarity of electroacoustic music
(exacerbated by a lack of scores) makes this mode less
accessible. Instead, they rely on indicative and reflexive
modes, failing to develop a well-rounded approach.

One challenge students face involves a shift to aural
analysis. Those accustomed to scores find themselves
lost without a visual reference, and lack of retention
becomes an obstacle. As a remedy, students can
develop skills representing aural experience visually.
Our approach begins with notation of fundamental
parameters, such as amplitude and frequency spectrum,
and moves towards more subjective discoveries, such as
form and phrasing. The body's ability to translate
sound into movement may be equally useful, allowing
kinesthetic memory to replace visual notation. We
propose that teachers incorporate movement as a
mnemonic and analytical device.

II. Parameters

Since students rarely engage the interactive relationship
when first listening to electroacoustic music, we propose
that they begin by concentrating on fundamental
parameters of the sound object. A sound-centered focus
allows students to describe music with a common
language and steers them towards greater objectivity
and open-mindedness. Judgmental attitudes prohibiting
appreciation of unfamiliar sounds may be replaced by
active involvement in the analytical process.

Table 1 lists fundamental parameters, which we have
categorized into five domains essential to sound. One
may wonder why we have omitted timbre as a domain.
The crucial elements of timbre, namely attack and
release, spectrum, and density, are included as
parameters within the domains of amplitude, frequency,
and texture. Although students should consider all

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parameters, they may find some less relevant to particular pieces. We have ordered parameters from the most readily apparent to the more detailed, encouraging students to begin by describing how time and texture function within a given piece. An evaluation of temporal progression, for example, generates a rewarding discussion because continuity and disjunction profoundly affect our musical impressions.

Observations of fundamental parameters provide a solid foundation but lack interpretation. At this point, we encourage students to approach the next stage of analysis from three vantage points: object-centered, subject-centered, and context-centered (as shown in Table 2). In the object-centered mode, students synthesize their observations and express opinions about parameters such as form. In the subject-centered mode, listeners are free to connect emotional and physical reactions to music. The context-centered mode invites listeners to develop extra-musical associations and consider artistic intention.

Consider a piece that contains sounds of farm animals juxtaposed against the clinking of silverware and bits of conversation at a dinner table. First, a student would focus on quantifiable features in the piece. For example, he might notice how the composition gradually grows from quiet and sparsely arranged animal sounds to a loud and dense cacophony of bleating and clucking. By assimilating this information, he would form an object-centered interpretation. He might notice a three-section arch form: animal noises climax in part I and recede in part III, contrasted by dinner sounds in part II. Entering the subject-centered mode, he may feel hungry or nostalgic for his childhood days on the farm. When considering contextual issues, he may decide that the work shows a kindred spirit between animals and people, perhaps even revealing a pro-vegetarian agenda.

### III. New Methods of Representation

Visual representation of music helps listeners to locate and recall sound events. Non-technical scores such as Ligeti’s *Artikulation* illustrate an intuitive relationship between sound and graphics. Other composers prefer sonograms, which plot frequency and amplitude over time. This method illuminates fundamental parameters, but allows the listener to construct her own interpretation. In her graphical representations of *Mellipse* and *Dragon of the Nebula*, Mara Helmuth combines sonograms with analytical markings and comments. In addition to clarifying elements that sonograms lack, these markings help to demonstrate the composer’s intentions. With access to tools that generate sonograms, students can add markings of their own, demonstrating aural recognition of fundamental and interpretative parameters.

If visual representations are not available, students can draw upon their listening experiences to construct one. Visual models following the familiar layout of traditional scores and sonograms will prove most successful. For this reason, we display time on the horizontal axis and frequency on the vertical axis.
Table 2: Potential Interpretive Parameters

<table>
<thead>
<tr>
<th>LISTENING MODE</th>
<th>PARAMETERS</th>
</tr>
</thead>
<tbody>
<tr>
<td>Object-centered</td>
<td>Tone color, Form, Phrasing, Pitch relationships, Meter</td>
</tr>
<tr>
<td>Subject-centered</td>
<td>Gut reactions, Physical responses, Emotions, Personal imagery</td>
</tr>
<tr>
<td>Context-centered</td>
<td>Meaning, Metaphor, Aesthetic considerations, Artistic intention, Title of work, Performance aspects (venue, diffusion, etc.)</td>
</tr>
</tbody>
</table>

making time and relative pitch a constant consideration. We begin with a focus on time and texture, asking students to discern the number and temporal placement of sound events. Each sound is assigned a shape and placed along both axes. The shape’s form derives from the sound’s amplitude envelope while its height represents density. Next, students fill in the shapes with darkness representing dynamics. Finally, an indication of sound location can be marked with letters. For instance, stereo pieces simply call for L, R, C, with arrows to show panning. More involved placements could use coordinate systems.

After mapping fundamental parameters, students can add interpretation to their graphs. We recommend the use of a highlighter pen to illuminate foreground, or three separate colors to distinguish between primary, secondary, and background events. Following Helmuth’s example, we include a line at the top of the page with brackets to show phrasing, resting points, and larger sections. In addition, a particular piece might occasionally demand notation of exact pitches, meters, or rhythms on a staff. To document their individual experiences of the piece, students describe tone color, emotional responses, and other interpretive parameters with text.

The relationship between electroacoustic music and other time-based art forms such as dance, film, or computer animation can also deepen students’ listening experiences. In the classroom, teachers frequently avoid the obvious connection between sound and the body. A student lacking technical vocabulary may express what he has heard more easily with physical movements. This correlation works naturally for pulsed music, but movement can also represent continuously evolving gestures. Classroom inhibitions or excessive silliness may initially hamper students’ ease with physical expression, so it is important to find movements that are comfortable to the class. Group involvement multiplies the possibilities for physical representation. For example, each student could enact a single sound event, moving only for the duration of that event and remaining still for the rest of the piece. Conversely, a single sound event could be represented with multiple bodies. Students could collectively respond to a quiet and sparse texture that grows in volume and intensity by beginning in all corners of the room and moving inwards to form a group huddle.

IV. Conclusion

We want to emphasize that our methods of representing music serve the purpose of helping undergraduate students appreciate the soundworld of electroacoustic music. We hope our method of observing fundamental parameters will lead to interpretive conclusions easily. As a result, we ask students to produce visual graphs and physical analogs that show intuitive sense and require minimal practice with complicated notation systems. Graphs should be easy to read, and movements should correspond naturally to sound events. At this point, our study privileges the visual approach. We welcome suggestions on how one could map sound to motion systematically.

In our experience as teachers who include electroacoustic music in theory classes, we find students need direction when approaching this unfamiliar and often frightening musical realm. Seven years after the death of John Cage and thirty-three years after the death of Edgard Varèse, listeners still need to be reminded that musical expression need not be limited to traditional instrumental and vocal sounds. Instead of succumbing to exasperation, teachers should offer strategies to help students achieve more meaningful understandings of electroacoustic music.
End Notes


4. An interpretation of timbre, “tone color” refers to non-technical descriptions, such as fat, grainy, and wet. Although electronic music courses would include sound processing as a parameter, the subject is beyond the scope of most music theory courses.

5. We have essentially conflated the time vs. amplitude axes common to sound editors and time vs. frequency axes of sonograms into one graph. We believe that the vertical representation of both pitch and vertical density will actually simplify graphing in a classroom situation. For more greater precision, Helmuth employs two parallel graphs to avoid this potentially confusing problem.