ESSENTIAL QUESTION

How have singers responded as advances in studio recording techniques have enabled increased technological “perfection”?

OVERVIEW

While most musical instruments are man-made, one—the voice—is a natural part of the human body. Because the voice and the person using it are inseparable, singing is a particularly personal form of expression. Many vocalists, even professionals, experience a sense of vulnerability related to the use of their bodies as expressive, emotional instruments. Vocalists who take expressive risks, despite these feelings, are often the musicians we most closely relate to on a “human” level; John Lennon, Amy Winehouse, and Aretha Franklin are among that special group. Such singers are sometimes described as “authentic,” because they are perceived as revealing themselves honestly, or as some might say, “from the heart.”

Singers were among the first musicians to benefit from the emerging recording technologies of the early 20th century. While previously a loud voice was a survival skill—singers depended primarily on volume to be heard—artists such as Bing Crosby and Frank Sinatra embraced the microphone, singing softly and with a dynamic range that would have been lost before the microphone’s invention. To many who were accustomed to the “shouters” of the past, the softer tones of singers such as Crosby and Sinatra signaled a dramatic shift.

With the heightened sense of intimacy made possible by microphones also came increased scrutiny of vocal performances. Projected over the musical accompaniment, singers were heard with increased clarity, and many also felt more exposed and vulnerable. As students discover while completing the vocal activity in this lesson, by nature the sound of one’s own recorded voice often sounds alien, not quite right. We hear our own recorded voices in a way that is different from how we hear other’s recorded voices. Many singers, even professional musicians, report such a feeling. For instance, in Soundbreaking Episode Three, The Who’s Roger Daltry reports that he and most of the vocalists he knows dislike hearing recordings of their own voices.

As recording technology improved, many singers embraced studio techniques that enabled them to manipulate their recorded vocals with effects such as reverb, which creates a sense
OVERVIEW (CONTINUED)

of physical space around the voice, or even push toward a “perfect” performance by splicing the best moments of several “takes.” Some singers, such as The Beatles’ John Lennon, employed “double-tracking,” a process of thickening a vocal performance by recording a second, nearly identical version atop the original.

Since the dawn of the digital recording era in the early 1990s, the possibilities for vocal manipulation have only increased, with software such as Antares Audio Technologies’ “Auto-Tune” encouraging musicians, producers and engineers to aspire to “perfect” performances. Auto-Tune pushes and pulls vocalists’ pitches toward selected notes, “correcting” the pitch. Most recordings are in some way “corrected,” but some critics argue that pitch correcting technologies risk removing the human element from recorded vocals. The very vulnerability that listeners often connect with can be compromised.

There are many who believe that “less is more” when it comes to using technology. This is the heart of the debate around recording vocals in music: how much manipulation is too much? If recording engineers and producers can use computers and software to digitally alter a vocal track, what happens to the original voice, and what role does talent play? To many, there is a fine line between the “perfection” that can be achieved with technology and the experience of “authenticity” in a recorded vocal performance. This lesson explores the ways in which music technology can enhance a singer’s performance. It also considers the listener’s interest in hearing the “authenticity” of a vocal performance. Either way, the heart of most popular music is the same, important center: the human voice.
Upon completion of this lesson, students will:

1. **KNOW (KNOWLEDGE):**
   - That the human voice, like the guitar or keyboard, is an instrument
   - About the different ways vocal tracks can be manipulated during the recording process
   - How music technology has changed the way voices are experienced on recordings
   - About the different ways singers can be musically expressive with and without recording technology and the debates around technological manipulation
   - How recording the human voice changed in the digital era, and how that change reflects contemporary life

2. **BE ABLE TO (SKILLS):**
   - Evaluate the effects of technology on history and culture
   - Analyze and compare contrasting viewpoints
   - Interpret critical readings
   - Apply knowledge of specific concepts and ideas to broader historical situations

**MOTIVATIONAL ACTIVITY:**

Ask your students:

- Do you think the human voice is an instrument? Why or why not?
- In what ways do you think the human voice is different than other instruments? (Students might answer that the voice is part of your body and not an object, or that it’s inside your body and therefore you can’t see it like other instruments. They may also mention that you use your voice for activities not related to music-making.)
PROCEDURE:

1. Show Clip 1, Soundbreaking - Annie Lennox on Vulnerability. Ask your students:
   - Why do you think Lennox considers the voice a vulnerable instrument, or feels that singing is a vulnerable act? (Students should remember that Annie Lennox describes being judged by people.)
   - Have you ever been judged for your voice? Can you think of situations where you or others have judged someone’s singing voice? (Students might mention American Idol or other “contest” T.V. shows as well as singing in groups at social events, such as singing “Happy Birthday.”)

2. Ask your students what they think of when they hear the word “authentic.” Have students name things they consider “authentic” and ask them how they might apply the idea of “authenticity” to music. Then display the following definitions of “authentic” and “authenticity” to your class:
   - Authentic: genuine, sincere, representing one’s true nature or beliefs
   - Authenticity: the quality of being authentic, genuineness, trustworthiness
   - Ask your students: What do you think Annie Lennox might have meant in the last clip when she described an “authentic vocal performance”?

3. Play Clip 2, Soundbreaking - Bonnie Raitt on Recording in which Raitt explains, “Recording’s a really personal matter, and you dig deep…. You need to just really be present and get into the emotion of it.” Ask students:
   - In what ways do you think singing can be thought of as a “personal matter”?
   - How do you think singing is different from other instruments?

4. Break your students into groups of two. Have one student from each pair open a “voice memo” or voice recording app on a tablet or phone. If there are not enough phones or tablets either break into larger groups, or choose two students to demonstrate at the front of the class. Each pair of students should then do the following:
   - Record yourself speaking the first stanza of the Pledge of Allegiance. Then listen back to the recording. Then have your partner do the same.
   - Record yourself singing “Happy Birthday” and then have listen to the recording. Have your partner do the same.

5. After students have completed this group activity, discuss the following questions as a class:
   - When you heard the recording of your speaking voice did it sound like you expected it to? How did the sound of your voice on the recording contrast with the way you hear your voice in your head as you speak?
   - Did the recording of your partner sound different than your partner’s voice sounds to you otherwise? How and why?
   - Did you find it hard to sing in front of your partner? If so, why?
   - Do you like the way your voice sounds on the recording of you singing? Why or why not?
   - Did anyone feel self-conscious or vulnerable when talking on the recording? How about when singing? What do you think is different in these two situations?
   - Having done this exercise, in what ways might you now explain singing as a “personal matter” now?

6. Distribute Handout 1: Vocal Processors and ask for volunteers to read the definitions of each piece of technology. Ask students if
PROCEDURE: (CONTINUED)

they think they might have heard these and where.

7. Have students return to their groups and open the Soundbreaking Vocal Effects TechTool. Direct students to experiment and listen to the prerecorded vocal track in the three available settings: “clean,” “reverb” and “double-tracked.” Then ask the class:

- What happens when you turn on “reverb”? How would you describe the effect? (Students may suggest that the voice sounds “bigger” or more distant. Reverb creates a sense of physical space around the voice.)

- Why do you think a singer would choose to add reverb to his or her voice?

- What do you think is happening when you turn on “double-track”? (Students may say they hear two singers. Double-tracking is adding a second layer of the same part.)

- Why do you think a vocalist would want to employ a “double-track” of his or her voice?

- In what ways might “double-tracking” help a person who felt some sense of vulnerability about his or her voice? (Students may suggest that it thickens the sound or that the second track makes it seem less like a single person singing.)

8. Explain to your students that the use of reverb has been common since the 1950s, and double-tracking dates to the 1960s, but that with the rise of digital recording in the 1990s, many new forms of vocal processing and editing became available. Play Clip 3, Soundbreaking - Vega, Massenburg and Robinson on Vocal Editing. Have your students pay attention to the various methods of vocal recording discussed and ask:

- What are some of the different approaches to making a vocal recording explained in this clip? What are the main differences between the approaches described by Suzanne Vega and Smokey Robinson? (Students should remember Suzanne Vega’s explanation of the “splicing” of different takes as well as Smokey Robinson describing his preference for performing a “concert in the studio.”)

- In what ways do you think “splicing” vocal takes to make what Vega calls an “ideal” vocal performance might help a singer who feels vulnerable in the studio? (Students might mention that splicing allows a singer to pick only the moments they like in each successive performance.)

- The technique of “splicing” caused some to question the “authenticity” of vocal performances that used it. Looking again at the definition of “authentic” from earlier in this lesson, in what ways might this studio technique cause some to feel this way? (Encourage your students to discuss how some might have felt that “spliced” vocal takes were not “genuine” or “true” and thus, not authentic.)

9. Tell your students that you will now discuss a type of music software that they have most likely heard, even if they were not conscious of it while listening. Explain to your students that “Auto-Tune” is software initially intended to make minor corrections to vocalists’ pitches and that, used lightly, is mostly inaudible. However, when the parameters of the software are adjusted, it creates an audible effect that has become popular. Play Clip 4, Soundbreaking - Auto-Tune and have your students keep track of the various ways Auto-Tune is
PROCEDURE: (CONTINUED)

used. Ask your students:

- Have you ever heard of Auto-Tune before this class? Are there any artists you know of that use it in an audible way?

- How would you describe the “Vocoder” vocal effect used by Zapp & Roger at the beginning of this clip? Why do you think a vocalist would choose to use this effect? (Students may suggest that the voice is “robotic,” and that it provides a different layer of sound or perhaps even makes the music sound “futuristic.”)

- What is the South Park scene within this clip suggesting about Auto-Tune and music technology in general?

- Thinking back to our earlier discussion of “authenticity,” do you think the South Park clip is making a point about authenticity?

SUMMARY ACTIVITY:

Distribute Handout 2: New York Magazine Excerpt and read it out loud as a class. Discuss with your students:

- Why do you think the author states that an “unsullied” recording is the “Sasquatch” of music? What does this analogy imply? Do you think he believes there is such a thing as a completely “natural” recording?

- Thinking about the technologies we’ve discussed throughout this lesson, in what ways do you think the analogy of “applying make-up” works or does not work for the functions they perform in recording vocals? (Students may agree or disagree. Perhaps some effects are like make-up and others are akin to plastic surgery?).

EXTENSION ACTIVITIES:

1. If students have access to computers or iPads, have them go to TwistedWave Online, a free web site that allows people to experiment with recording a vocal track and editing it with various effects. (The site can be used without logging in, but students can’t save their end product unless they create a login.) https://twistedwave.com/online/

2. Have students each choose one of these five activities and create a group with which they can meet after class: Writers, Visual Artists, Athletes, Dancers, and Musicians. Assign one student from each group to be the note-taker for the group. Ask students:

   - How do you think expressing emotion while performing your activity might affect its outcome?

   - How do you think your group might feel vulnerable while performing your activity?

   - Do you think it’s important to express emotion and allow yourself to be vulnerable while performing your activity?

   - Allow students some discussion time before asking each note-taker to present their group’s discussion to the rest of the class.
EXTENSION ACTIVITIES: (CONTINUED)

3. What is authenticity?

- Step 1: Before doing any research, write down three things you think of as being “authentic.”
- Step 2: Define “authentic” in several ways.
- Step 3: Return to the list you made in Step 1. Has your feeling about the “authenticity” of these things changed at all?

STANDARDS

COMMON CORE STATE STANDARDS

*College and Career Readiness Reading Anchor Standards for Grades 6-12 for English Language Arts*

Reading 1: Read closely to determine what the text says explicitly and to make logical inferences from it; cite specific textual evidence when writing or speaking to support conclusions drawn from the text

Reading 2: Determine central ideas or themes of a text and analyze their development; summarize the key supporting details and ideas

Reading 4: Interpret words and phrases as they are used in a text, including determining technical, connotative, and figurative meanings, and analyze how specific word choices shape meaning or tone

Reading 6: Assess how point of view or purpose shapes the content and style of a text

Reading 7: Integrate and evaluate content presented in diverse formats and media, including visually and quantitatively, as well as in words

Reading 8: Delineate and evaluate the argument and specific claims in a text, including the validity of the reasoning as well as the relevance and sufficiency of the evidence

Writing 1: Write arguments to support claims in an analysis of substantive topics or texts using valid reasoning and relevant and sufficient evidence

Speaking and Listening 1: Prepare for and participate effectively in a range of conversations and collaborations with diverse partners, building on others’ ideas and expressing their own clearly and persuasively

Speaking and Listening 2: Integrate and evaluate information presented in diverse media and formats, including visually, quantitatively, and orally
Speaking and Listening 3: Evaluate a speaker’s point of view, reasoning, and use of evidence and rhetoric

Speaking and Listening 4: Present information, findings, and supporting evidence such that listeners can follow the line of reasoning and the organization, development, and style are appropriate to task, purpose, and audience

Speaking and Listening 5: Make strategic use of digital media and visual displays of data to express information and enhance understanding of presentations

Speaking and Listening 6: Adapt speech to a variety of contexts and communicative tasks, demonstrating command of formal English when indicated or appropriate

Language 1: Demonstrate command of the conventions of standard English grammar and usage when writing or speaking

Language 3: Apply knowledge of language to understand how language functions in different contexts, to make effective choices for meaning or style, and to comprehend more fully when reading or listening

Language 5: Demonstrate understanding of figurative language, word relationships, and nuances in word meanings

Language 6: Acquire and use accurately a range of general academic and domain-specific words and phrases sufficient for reading, writing, speaking, and listening at the college and career readiness level; demonstrate independence in gathering vocabulary knowledge when considering a word or phrase important to comprehension or expression

SOCIAL STUDIES – NATIONAL COUNCIL FOR THE SOCIAL STUDIES (NCSS)

Theme 3: People, Places, and Environments

Theme 4: Individual, Development and Identity

Theme 8: Science, Technology, and Society

NATIONAL STANDARDS FOR MUSIC EDUCATION

Core Music Standard: Responding

Interpret: Support interpretations of musical works that reflect creators’/performers’ expressive intent. Describe a personal interpretation of works or contrasting works and explain how creators’ and performers’ application of the elements of music and expressive qualities, within genres, cultures, and historical periods, convey expressive intent

Enduring Understanding: Through their use if elements and structures of music, creators
and performers provide clues to their expressive intent

Essential Question: How do we discern the musical creators’ and performers’ expressive intent?

Evaluate: Support evaluations of musical works and performances based on analysis, interpretation, and established criteria

Enduring Understanding: The personal evaluation of musical work(s) and performance(s) is informed by analysis, interpretation, and established criteria

Essential Question: How do we judge the quality of musical work(s) and performances(s)?

Core Music Standard: Connecting

Connecting 10: Synthesize and relate knowledge and personal experiences to make music. Demonstrate how interests, knowledge, and skills relate to personal choices and intent when creating, performing, and responding to music.

Enduring Understanding: Musicians connect their personal interests, experiences, ideas, and knowledge to creating, performing and responding.

Essential Question: How do musicians make meaningful connections to creating, performing, and responding? Demonstrate how interests, knowledge, and skills relate to personal choices and intent when creating, performing, and responding to music?

RESOURCES

VIDEO RESOURCES
- Soundbreaking – Annie Lennox on Vulnerability
- Soundbreaking – Bonnie Raitt on Recording
- Soundbreaking – Auto-Tune
- Soundbreaking – Vega, Massenburg and Robinson on Vocal Editing

HANDOUTS
- Handout 1: Vocal Processors
- Handout 2: New York Magazine Excerpt