

MUSIC 557  
Topics in Music Theory: Theories of Timbre and Timbral Analysis  
Spring 2019 (edited for ACTOR Network, 2 July 2021)

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**Course Topic**

Timbre has emerged as the predominant organizing feature of much music composed or created since the middle years of the twentieth century in virtually all styles of music. But while timbre has become increasingly important as an organizing and expressive principle of musical works, an instrumental concept of timbre and a productive form of timbral analysis have proved resistant.

The seminar focuses on a broad range of readings that aim toward conceptualizing timbre as an operational concept, considering historical and present attempts to conceptualize and analyze timbre. Throughout the seminar, participants will explore the timbral logics of particular works (broadly conceived).

**Course materials:**

Scores and other materials will be posted at Blackboard. Readings will either be available through Blackboard or through the SBU Library Website.

Weekly Assignments: these will consist of reading and analysis projects, and they will vary from week to week. I'll give you the specific assignments on Tuesday for the following Tuesday. [After the first couple of weeks, the weekly timbre projects were defined by participants in the seminar.]

**Seminar Project:**

You have considerable freedom to craft a project. The only "requirements" are that you shape the project around the question of timbre and how it can be represented and analyzed, understanding both representation and analysis in broadly inclusive terms. Your project should have a thesis and you should directly engage with the literature we have been reading over the course of the term. Your paper should be contextualized by the authors we have read and any other additional authors whose work is relevant to your particular project. Finally, your project should focus on a specific musical creation that provides a specific musical instances to demonstrate your ideas.

**Weekly**

**5 February**

McAdams and Goodchild. 2017. "Musical structure: sound and timbre," *The Routledge Companion to Music Cognition*, eds. Richard Ashley and Renee Timmers. Routledge Companions. New York, NY : Routledge. [BB]

Emily Dolan, *The Orchestral Revolution: Haydn and the Technologies of Timbre*: Chapter 2, "The Idea of Timbre" 53-89. [BB] Write a one-page précis of this chapter.

Casati, Roberto and Dokic, Jerome, "Sounds", *The Stanford Encyclopedia of Philosophy* (Fall 2014 Edition), Edward N. Zalta (ed.), URL = <https://plato.stanford.edu/archives/fall2014/entries/sounds/>.

### **Analysis of “Old” Music**

Eleanor Hovda, *Lemniscates*

String Quartet, 1988

Choose some 1-minute segment of this piece and represent the timbre using whatever means you come up with. Be prepared to present your representation to the class.

### **12 February**

Chou Wen-Chung. 1979. “Ionisation: The Function of Timbre in Its Formal and Temporal Organization.” In *The New Worlds of Edgard Varese: A Symposium*, ed. Sherman Van Solkema. 27–74. Brooklyn: Institute for Studies in American Music

Fales, Cornelia. 2002. "The paradox of timbre." *Ethnomusicology: Journal of the Society for Ethnomusicology* 46 (1):56-95.

### **Analysis of “Old” Music**

Rachel McInturff, “By Heart” (1996)

“By Heart” is an electro-acoustic piece which uses pre-recorded sound that has been manipulated and added to. The sounds of this piece may be disturbing to you. If they are and you feel uncomfortable engaging with the piece, please do let me know and I’ll give you another assignment.

There are two large parts of this 10’50” piece. The second part starts at ca. 5’

For your assignment, please focus on either the first or second half. Using any means you find appropriate, take account of the “timbres” and their changes over time. Be prepared to present your account in class and discuss it.

### **19 February**

Levin, Theodore with Valentina Suzukei. 2006. *Where Rivers and Mountains Sing: Sound, Music and Nomadism in Tuva and Beyond*, Chapter 3: “Listening the Tuvan Way: Timbre-Centered Music,” (posted at BB)

Eidshein, Nina. 2011. “Marian Anderson and ‘Sonic Blackness’ in American Opera,” *American Quarterly*, Vol. 63, No. 3, Sound Clash: Listening to American Studies (September 2011), pp. 641-671

### **Timbral Analysis/Transcription/Representation**

From: XXX

Karlheinz Stockhausen, *Stimmung*

A version of this piece for 6 voices, electronics (amplifiers, microphones, etc.), loudspeakers, and tablelamp by the Hillier Ensemble is posted at Blackboard. We will use this version for consistency sake.

There are 51 sections, in the performance and the score. The score—version 24.5—will be on reserve in the Music Library.

Reading to prep as a launching point for listening + analysis:

<http://homepage.eircom.net/~braddellr/stock/index.htm>

Your task is to choose one (or more, if you want to do a comparison), of the “models” or sections and “take account” of the timbral features of the music.

## **26 February**

### **Reading:**

Johann Wolfgang von Goethe, *Theory of Colors*, trans. Charles Lock Eastlake.  
Preface to the First Edition; Introduction, and Chapter One, Parts I and II.  
Scan will be provided at BB

Ludwig Wittgenstein, *Remarks on Color*, trans. Linda McAlister and Margaret Schättle Paragraphs 1-63  
Scan will be provided at BB

David Batchelor, *Chromophobia*  
Read the whole book. It is short.

### **Timbral Analysis/Transcription/Translation/Representation**

From: XXXXX

Huck Hodge, *Aletheia* for chamber ensemble (2010-11)

“One of the things I find interesting about Huck Hodge's writing is his ability to have instruments sit into a more composite timbre until special moments where they stick out without having to own a typical "soloist" role. Given that we've touched on how we use timbre to identify sound sources, listen to this piece (preferably without score and also without watching a video of people playing) and take note of how you hear these instruments interact over time. Where do you feel like instruments stand out on their own? In groups? As a part of a composite whole? If you get the chance to listen again, see if your observations change. If you decide to look at a score or watch a video on a repeat listen, what surprised you? What remained the same?”

To Submit: Write a no-more-than-one-page response to Kyle's questions.

Submit through the gadget a BB:

A score and sound file for *Aletheia* will be posted at BB.

## **5 March**

Reading:

Zachary Wallmark, Marco Iacoboni, Choi Deblieck, Roger A. Kendall. 2018. “Embodied Listening and Timbre Perceptual, Acoustical, and Neural Correlates,” *Music Perception: An Interdisciplinary Journal* 35/3 (February) pp. 332-363.

McAdams, Stephen. 1999. Perspectives on the Contribution of Timbre to Musical Structure, *Computer Music Journal*, Vol. 23, No. 3, Recent Research at IRCAM (Autumn) pp. 85-102

### Supplementary

Wessel, David L. “Timbre Space as a Musical Control Structure.” *Computer Music Journal* 3, no. 2 (1979): 45–52.

Timbral Analysis/Transcription/Translation/Representation

From XXXX

Gyorgy Ligeti, “Mysteries of the Macabre”

Performance by Barbara Hannigan with the London Symphony Orchestra, Simon Rattle, conductor

<https://www.youtube.com/watch?v=w0TvJ83xqDw>

From Alice: “I was really astonished by how almost ‘unhuman’ her voice sounded in certain sections. So I think it would be interesting to take 1-minute sections and take the singer's voice and try to organize her different inflections, etc., or analyze how the voice interacts/is triggered by the orchestra. At the same time though, it will be really cool to just leave it pretty open ended and see what everyone focuses on when they analyze the piece.”

So, choose some 1-minute part and produce an “Analysis/Transcription/Translation/Representation.”

Be prepared to show/discuss in seminar.

## **12 March**

One article from the Oxford Handbook of Timbre—see the separate document with abstracts for each of the selected.

Each of you will pick one article to read (there will be 2 people reading each article). You will prepare a two paragraph summary of the article (along the lines of what you would write for an annotated bibliography).

Upload a copy of your summary at Blackboard so that I can make them available to everyone (before class).(A gadget will be provided)

Then during class next week, the two presenters for each article will have 10 minutes to confer. Each article group will then make a 15 minute presentation to the seminar about the article, not only summarizing the content but showing how the author(s)’s article relates to previous articles and the themes that are emerging.

Timbral Analysis/Transcription/Translation/Representation

From XXXX

Composed and Performed by Sahba Motallebi

<https://www.youtube.com/watch?v=D804WpC1SCE>

**Composer website**

<https://sahbamusic.com/>

**Information on the instrument:**

Tar [https://en.wikipedia.org/wiki/Tar\\_\(string\\_instrument\)](https://en.wikipedia.org/wiki/Tar_(string_instrument))

Prompt from XXXX (paraphrase)

“It feels like the composer/performer, Sahba Motallebi, is using timbre and register to form various layers in her piece. And to me it is interesting to figure out how these timbral layers are formed and how they play a role in the overall form of the piece.”

Prepare an “analysis/transcription/translation/representation” of this piece. Be prepared to share and discuss it in class.

**26 March**

Assignment for 26 March (week 8)

De Vale, Sue Carole. 1985. “Prolegomena to a Study of Harp and Voice Sounds in Uganda: A Graphic System for the Notation of Texture.” In *Selected Reports in Ethnomusicology*, Volume 5: Music of Africa, ed. J.H. Kwabena Nketia and Jacqueline Cogdell DjeDje. 250–81. Berkeley: University of California Press.

There are 4 examples analyzed in this. You do not need to read all of them in detail.

Cogan, Robert. *New Images of Musical Sound*. Cambridge, MA: Harvard University Press, 1984.

Read: 1-19, 96-108

Cogan, Robert and Pozzi Escot. *Sonic Design: The Nature of Sound and Music*. Englewood Cliffs, NJ: Prentice Hall, 1976

Read:327-350, Skim: 350-365, Read: 365-380, Skim:380-85, Read:385 to end

**Timbre Listening Assignment**

From: XXX

“The piece is the opening of the Art Ensemble Of Chicago record “Certain Blacks” (1970).

<https://www.youtube.com/watch?v=kqyWHaW9CaA>

This piece seems particularly relevant to our discourse on timbre, because for me it blurs the line that separates music organized around pitch and melody versus music based exclusively on timbre.”

The performance is 39 minutes long. Choose some segment of “Certain Blacks” to produce an “Analysis/Transcription/Translation/Representation” of its timbre or of the “wobbling” between timbre/pitch.

Be prepared to show/discuss in seminar.

## **2 April**

Readings from *The Relentless Pursuit of Tone: Timbre in Popular Music*, eds/ Fink, Wallmark and Latour

Read the Introduction and one additional article. Write a summary of the article and submit it through Blackboard (for posting). Report on the reading in class.

“Introduction— Chasing the Dragon: In Search of Tone in Popular Music,” Robert Fink, Zachary Wallmark, and Melinda Latour

“The Twang Factor in Country Music,” Jocelyn Neal

“Below 100 Hz: Toward a Musicology of Bass Culture,” Robert Fink

“Santana and the Metaphysics of Tone: Feedback Loops, Volume Knobs, and the Quest for Transcendence,” Melinda Latour

“The Death Rattle of a Laughing Hyena: The Sound of Musical Democracy,” Albin Zak

“The Spectromorphology of Recorded Popular Music: The Shaping of Sonic Cartoons through Record Production,” Simon Zagorski-Thomas

“Crossing the Electronic Divide: Guitars, Synthesizers, and the Shifting Sound Field of Fusion,” Steve Waksman

### Timbral Analysis/Transcription/Translation/Representation

Luciano Berio, *Visage*

<https://www.youtube.com/watch?v=JmMJV-NrQrA>

From: XXX

Choose some 1-minute segment to focus on and analyze/transcribe/translate/represent. Be prepared to share with the class.

“I picked *Visage* because I hear it as an antagonistic drama between the human voice which very clearly indexes a material body and synthetic sounds which do not. I am interested in how the voice, as it is continually deconstructed into gestures and phonemes, is integrated into (or resists) the rest of the musical fabric and if, by being recognizable as a human voice, it inspires alternative modes of listening.”

## **9 April**

Reading:

Slawson, Wayne. 1981. “The Color of Sound: A Theoretical Study in Musical Timbre.” *Music Theory Spectrum* 3: 132–41.

Jennifer Iverson. 2010. "The Emergence of Timbre: Ligeti's Synthesis of Electronic and Acoustic Music in Atmosphères," *Twentieth-Century Music* 7/1:61-89.

Timbral Analysis/Transcription/Translation/Representation

Byungki Hwang – "The Labyrinth"

"The following link is the very first recording performed by the composer himself (he played a Kayagum, a Korean traditional plucking instrument) and Hong Shin Cha (singer).

[https://www.youtube.com/watch?v=a\\_HrXfWsThU](https://www.youtube.com/watch?v=a_HrXfWsThU)

From XXX

One of his interviews, available in the following link, will be highly helpful for anyone who is interested in the composer's profile, the genesis of the piece, and the composer's comment on the piece.

<http://daily.redbullmusicacademy.com/2018/02/hwang-byungki-migung-interview>

Byungki Hwang (1936-2018) was a Korean composer/Kayagum player. His contribution to the contemporary Korean traditional- and Western music was enormous, and his influence on the Western researchers also resulted in an extensive body of study of the composer in English.

Labyrinth (1973) has been one of the most sensational compositions by the composer largely due to its strange and even frightening affect on Korean audiences. Even this piece was banned by the Korean dictatorship of the time. After the ban was lifted, this piece suffered from notorious rumors and urban legends circulated among Koreans until a recent rediscovery.

As to the timbral quality of the piece, I would invite you to consider how the composer creates a wordless, abstract, but powerful drama through a variety of female vocal timbres, the spectrum of which exceeds what is normally expectable. If you're more interested in the accompaniment (kayagum), it will also be a nice topic for the timbral experiment.

**16 April**

Reading

Brad Osborn, Chapter 4 "Timbre" from *Everything in its Right Place: Analyzing Radiohead* (Oxford University Press, 2017)

McMullan-Glossop, Eva. 2017. "Hues, tints, tones, and shades: Timbre as colour in the music of Rebecca Saunders." *Contemporary music review*. XXXVI/6 (December 2017):

Timbral Analysis/Transcription/Translation/Representation

Orovela: A Georgian Folk Song

From XXX

Two Versions

1) Hamlet Gonashvili and the Rustavi Choir

<https://www.youtube.com/watch?v=ExkXJcx7RZ4>

2) Ensemble Kalaptari, Soloist Ana Bajiashvili

<https://www.youtube.com/watch?v=p9m6blsUzml>

Prompt:: In listening to the 2 different versions of the same piece, how do we identify and describe the different sound worlds and timbres between the male and female voices. What colors, forms, and movement do these sound worlds create in your imagination as you listen to them? What are the similarities? What are the differences? Are these a result of timbre? How/Why?

### 23 April

Heidemann, Kate. "A System for Describing Vocal Timbre in Popular Song." *Music Theory Online* 22, no. 1 (2016).

Eidsheim, Nina Sun. *The Sound of Race*, Chapter 5 "Bifurcated Listening: The Inimitable, Imitated Billie Holliday"

### Timbral Analysis/Transcription/Translation/Representation: Choose One of the following

From Multiple people

1) Péter Eötvös is a Hungarian composer. His composition *Multiversum* (2017) tries to capture the wholeness of the universe (including all parallel universes). He sets performers into several blocks: string section on the left, the 12 woodwind players on the right, and percussion divided into three groups. Also, he chooses both the pipe organ and Hammond organ as solo instruments to make up the string section, which only has 20 players.

The idea of the sonic universe may be found in Eötvös's timbral design. Please choose any one minute to produce a timbral analysis in any formats.

<https://www.youtube.com/watch?v=P5zZMIhAMy>

2) The listening is the first movement of Philippe Hersant's Eight Duos for Bassoon and Viola. I find this piece really interesting and fun because of all the different timbral dialogues Hersant chose to play with between these two instruments. For this listening example, I would like you to construct a timbral representations of both the bassoon's and viola's sound in the first movement (0:00-2:09).[JL--choose some shorter segment] Then show how they interact together. For this activity, try listening without watching the video first and then constructing your response. Do the timbres come together or stay separate to you? Do they sound like its coming from one instrument or multiple?...etc...

<https://www.youtube.com/watch?v=4Txb5wVcqF0>

3) Ari Honig, Album: *Inversations*, the track: "This Little Light of Mine."

Prompt: consider the way this piece blurs the distinction between pitched and unpitched sounds. Do the drums work on their own as a melodic voice? Does the singing invite you to hear the drums differently? Some of you may or may not know the original tune. How do you think this knowledge (or lack thereof) influences your hearing of the piece?

Spotify: <https://open.spotify.com/track/4i9aGvXMypulOodYnm5Y2a>



4) Please listen to Ligeti's *Lux Aeterna*. I'm interested in how Ligeti uses the human voice to create a sound cloud/fog, which then evolves (both slowly and quite suddenly at times) over the course of the piece.

Choose a 1-minute segment to produce a timbral analysis/transcription/translation/representation.

<https://www.youtube.com/watch?v=-iVYu5lyX5M>

If you're interested in a scrolling score: <https://www.youtube.com/watch?v=Ftc7Jm8B1I>

5) Yasunao Tone - Solo for Wounded • Part I

<https://m.youtube.com/watch?v=CEDi-39o5qw>

Question: I'm curious about the influence of randomized machine-process music on our perception of timbre, texture, and time.

### **Addendum: Things we might have read if there were time**

Adeli, Mohammad, Jen Rouat, and Stéphane Molotchnikoff. "Audiovisual correspondence between musical timbre and visual shapes," *Frontiers in Human Neuroscience*, 8/#352. 30 May 2014.

Thomas, Jennifer. "The Use of Color in Three Chamber Works of the Twentieth Century." *Indiana Theory Review* 4, no. 3 (1981): 24–40.

Rudy, Paul. "Timbral Praxis: When a Tree Falls in the Forest, Is It Music?" *Organized Sound* 12, no. 1 (2007): 5–13.

Mirka, Danuta. "To Cut the Gordian Knot: The Timbre System of Krzysztof Penderecki." *Journal of Music Theory* 45, no. 2 (2001): 435–456.

Leydon, Rebecca. "Clean as a Whistle: Timbral Trajectories and the Modern Musical Sublime." *Music Theory Online* 18, no. 2 (2012). <http://www.mtosmt.org/issues/mto.12.18.2/mto.12.18.2.leydon.html>. Find this resource:

Eidsheim, Nina Sun. *The Sound of Race*  
Chapter 3 "Familiarity as Strangeness: Jimmy Scott and the Question of Timbral Masculinity"

Blake, David K. "Timbre as Differentiation in Indie Music." *Music Theory Online* 18, no. 2 (2012). Available as <http://www.mtosmt.org/issues/mto.12.18.2/mto.12.18.2.blake.html>.

James A. Steintrager and Rey Chow, eds. *Sound Objects*. Durham and London: Duke University Press, 2019.

- Chapter 1. Reflections on the Sound Object and Reduced Listening / Michel Chion
- Chapter 2. Pierre Schaeffer and the (Recorded) Sound Source / John Dack
- Chapter 6. Listening after "Acousmaticity": Notes on a Transdisciplinary Problematic, Rey Chow

Thoresen, Lasse with Andreas Hedman. "Spectromorphological analysis of sound objects: an adaptation of Pierre Schaeffer's typomorphology," *Organised Sound* 12/2:129-41.

Alluri, Vinoo, and Petri Toiviainen. 2010. "Exploring perceptual and acoustical correlates of polyphonic timbre." *Music perception: An interdisciplinary journal* 27 (3):223-241.

Alluri, Vinoo, and Petri Toiviainen. 2012. "Effect of enculturation on the semantic and acoustic correlates of polyphonic timbre." *Music perception: An interdisciplinary journal* 29

- (3):297-310.
- Anderson, Julian. 2010. "Timbre, process and accords fixes: Dutilleux and his younger French contemporaries." *Contemporary Music Review* 29/5: 447–461.
- Chiasson, Frédéric, Caroline Traube, Clément Lagarrigue, and Stephen McAdams. 2017. "Koechlin's volume: Perception of sound extensity among instrument timbres from different families." *Musicae scientiæ: The journal of the European Society for the Cognitive Sciences of Music* 21 (1):113-131.
- Elferen, Isabella van. 2018. "Dark timbre: The aesthetics of tone colour in goth music." *Popular music* 37 (1):22-39.
- Jathal, Kunal. 2017. "Real-time timbre classification for tabletop hand drumming." *Collected Work: Computer music journal. XLI/2 (summer 2017): Musical interface design. Published by: Cambridge, MA: MIT Press, 2017. (AN: 2017-31656)*. 41 (2):38-51.
- Latartara, John. 2012. "The timbre of Thai classical singing." *Asian music: Journal of the Society for Asian Music* 43 (2):88-114.
- Andrew Stiller. "Where's that sound coming from? : John Cage, George Crumb, and the world of timbre," *George Crumb and the Alchemy of Sound*, eds. Steven Bruns and Ofer Ben-Amots.