# Theory II: Musical Structures
# Course Information

Course Meeting Times: MWF 8:30-9:40 Office: WCC 230
Instructor: Justin London Office hours by appointment
**Note:** Online vs. Face-to-Face meetings may vary; see Moodle page for details

**Required Texts and Materials**
Lecture notes, mp3 recordings, scores, and reading PDFs are all on the course Moodle Page. mp3s work best when downloaded onto your computer; likewise, please print copies of readings and (especially) scores prior to the class in which they will be discussed.

**What is Theory II About?**
Theory II is, as its title says, about musical structures: how to describe, analyze, and think about them. As such, we will look at pitch and timbre (the "musical" aspects of sound), rhythm, melody, harmony, and form. Each class meeting engages a particular question or problem: How many notes do you need to write a melody? What is syncopation? What is special about triads? (and so on). The class covers a wide and eclectic musical repertoire, from Beethoven and Bach to African Drum Patterns and the Beach Boys. We will also draw on a broad range of disciplines and perspectives, including acoustics, psychology, mathematics, and statistics, as well as traditional music theory.

**What Theory II is Not About**
Theory II is not about "the rules" of harmony or counterpoint; it is not a class in musical analysis (though some pieces will be analyzed along the way). Only a few homework assignments will involve worksheets or chord labeling; most will involve looking at a problem, along with a piece (or pieces) of music that illustrates that problem, and thinking and writing about it. The aim is not to learn the grammar and syntax of any particular musical style, as would be the case in a traditional harmony-based course. Rather, our goal is to unpack the constituent elements of a musical passage or piece to see what general principles are at work in it, and then to describe their workings in clear, precise language.

**Assignments and Assessment**
In Theory II there are 17 homework assignments; the attached assignment roster gives a brief description of each, along with its assignment and due date. Half involve short writing assignments, ranging from one sentence to two pages. Several involve group work (groups of 2–4 students). Any and all writing assignments may be revised, and revision is encouraged(!). All homework is due at the beginning of class on its due date; you are responsible for getting homework to me in cases of absence. Our classes are largely discussion based, as our "answer" to the day's question will emerge from our collective struggle with it.

Your grade will be comprised of the following elements:

| | |
|---|---|
| Homework | 40% |
| One-sentence essays | 15% |
| Midterm Essay | 10% |
| Final Essay | 15% |
| End-of-Term Project | 10% |
| Class Participation | 10% |

The midterm and final will both be take-home tests, where you will be free to use your notes and other resources in writing your answers, as well as be able to take the time edit your prose before turning in your essays. In these and other writing assignments, you will of course (a) follow the colleges guidelines for academic honesty, and (b) properly acknowledge and cite any and all sources you have used/quote from in your research and writing. A copy of the Music department's guidelines for citing sources and document formatting is on the course Moodle Page.

**Music Theory II: Musical Structures**
Detailed Syllabus

## Unit I: Pitch and Timbre

Primary Goal:

- To understand the fundamental nature of these two musical parameters, most especially that pitch is our reduced, one dimensional perception of (usually) complex sounds, while timbre is a complex, multi-dimensional attribute of sound sources.

Secondary Goals:

- To understand the harmonic (or inharmonic) composition of complex tones
- To explore the ways pitch and timbre are/can be described in words, most especially with respect to the description of vocal timbre
- To understand the difference between the ecological versus acousmatic apprehension of sounds

Readings and Resources

- Acoustical Society of America (ASA) definitions of Pitch and Timbre
- Oxenham (2013) on the Perception of Musical Tones
- McAdams (2013) on Timbre
- Podcasts on vocal tone production; ASA demonstrations of pitch

Assignments

- Low-Stakes
    - One Sentence Definition of "Pitch"
    - Similarity rating of pairs of singers (via google form)
- Higher Stakes
    - Short Paper describing/contrasting the voices of Billie Holiday, Sara Vaughn, Carmen McRae, and Dinah Washington singing "Lover Man"

## Unit II: What is a Musical Instrument?

Primary Goal:

- To appreciate how much of our musical enculturation is carried in our heads, versus how much is externalized into various technologies (instruments, notations, cultural practices) we use in making and/or listening to music

Secondary Goals:

- To understand the categorization of musical instruments from an ethnographic perspective
- To understand musical instruments in terms of their basic acoustic attributes
- To understand musical instruments as cognitive extensions used by musicians to enhance and improve their musical thought and action

Readings

- Cambell & Greated (1987) on the acoustic classification of musical instruments
- Hornbostel-Sachs on the ethnographic classification of musical instruments (Wikipedia)
- Andy Clark (2015) on cognitive extensions

Assignments

- Low-Stakes
    - Group Project: Make a musical instrument that can play "Twinkle, Twinkle Little Star" from materials found in your dorm room
- Higher Stakes
    - Individual: One-paragraph essay giving a technical description of your instrument

**Music Theory II: Musical Structures**
Detailed Syllabus

## Unit III: Melodies and Scales

Primary Goals:

- To appreciate how the intervallic structure of a scale constrains one's compositional choices
- To understand the relationships between various scales/modes, especially scales of different cardinality

Secondary Goals

- To understand the basics of rhythmic scansion of a text (a scaffold for a melodic composition assignment)
- To explore how scale and mode are related to similarity measures of melodic structure(s)
- To understand how scalar constraints can be used to understand the evolution of melodies in oral musical traditions (i.e., English Folksong)

Readings and Resources

- Fussell (1965) on poetic scansion
- Bronson (1946) on folksongs and modes

Assignments

- Low-Stakes
  - One-Sentence definition of "Scale"
  - Compose a melodic setting to the opening stanza of Whitman's "When Lilacs Last in the Dooryard Bloomed" using the set of pitch-classes you are given (different PC sets given to different students)
  - Group project: Sort the given set of English folksongs (12-15 Child ballads) into 3-5 groups based upon their "melodic similarity" (intentionally undefined)
- Higher-Stakes
  - Individual Assignment: After reading Bronson, revise your folksong sorting, and write a short paragraph explaining your revision

## Unit IV: Beat, Rhythm, and Meter

Primary Goal

- To explore what makes a rhythmic pattern "groovy" versus what does not, i.e., the interplay between density, complexity, tempo, and familiarity

Secondary Goals

- To appreciate and understand the difference between rhythm and meter
- To have several ways of notating a rhythmic pattern/texture, and appreciate the plusses and minuses of different kinds of musical representations
- To understand how technological artefacts (i.e., a drum machine) embody musical-cultural practice

Readings and Resources

- Roland TR 808 Owners Manual
- Vincent Riemer's online programmable 808 (https://io808.com/)
- Koetting (1970) on TUBS notation for multipart rhythms
- Toussaint (2013) on quantitative analysis of Syncopation
- London (2001) on Rhythm and Meter (Grove Online)

**Music Theory II: Musical Structures**
Detailed Syllabus

**Unit IV: Beat, Rhythm, and Meter (continued)**
Assignments
- Low-Stakes
  - One-sentence definition of "beat"
  - Group Assignment: Using the online 808, create both (a) a really good, "groovy" drum pattern, and (b) a really bad, undanceable drum pattern
  - Group Assignment: Create TUBS and single-line notations/representations of both of your patterns
- Higher Stakes
  - Individual: Using the syncopation analysis method from Toussaint, evaluate your good and bad rhythms, and discuss whether or not this helps explain why one is better than the other

**Unit V: Consonance and Dissonance**
Primary Goals
- To understand the traditional (i.e., interval ratio based) versus psychoacoustic ("roughness" based) approaches to consonance and dissonance, as well as the fact that this remains an open question in both music theory and psychoacoustics

Secondary Goals
- To understand the close relationship between complex tones and chords made of harmonically-related tones
- To appreciate how triadic structures (irrespective of any particular tuning system) strike a balance between toneness, harmonicity, and fusion

Readings and resources
- Zarlino (1558/1976) on the classification of intervals (and the problematic fourth)
- Helmholtz (1863) on auditory "roughness"
- Huron (2016) on harmonicity, fusion, and masking

Assignments
- Low-Stakes
  - One-sentence definition of "Chord"
  - Group Assignment: Using ChucK, create three- and four-voiced chords that are either (a) very consonant, or (b) very dissonant
- Higher-Stakes
  - Short Essay (1-2 pages) on musical texture and dissonance in Penderecki's *Threnody to the Victims of Hiroshima*

**Music Theory II: Musical Structures**
Detailed Syllabus

## Unit VI: Chord Progressions and Harmonic Syntax

Primary Goal

- To explore the factors that give a sequence of chords a sense of motion and progression, as well as a sense of closure (or lack thereof) at the end of a sequence.

Secondary Goals

- To review of the principles of part writing in terms of parsimonious voice leading
- To understand the interaction between contrapuntal texture (number of voices) and harmonic structure, or "why four voices?"
- To understand common chord progressions as examples of tonal schemata
- To introduce several idioms from jazz harmony (the tritone substitution) as a means of exploring the notion of harmonic syntax

Readings and Resources

- Harrison (2016) on the history of the cadence
- Terefenko (2009) on the tritone substitution

Assignments

- Low-stakes assignment
    - One-sentence definition of "chord progression"
    - Review worksheets on Roman Numeral analysis and basic part-writing
- Higher-stakes assignment
    - Short essay (2-3 pages): is there a chord progression in Arvo Pärt's *Cantus in Memory of Benjamin Britten*?

## Unit VII: A Very Brief Introduction to Musical Form

Primary Goals

- To understand how the basic formal processes of *repetition*, *variation*, and *contrast* are involved in the creation of musical structures from the micro to macro levels
- To understand how musical form is fundamentally hierarchic in nature

Secondary Goals

- To introduce the "classical forms" (ABA, Minuet & Trio, Theme and Variations, and Sonata Form) via exemplars, and to appreciate the structural modulation at the heart of sonata form
- To understand the play of closure and parametric congruence (or non-congruence) in articulating different levels of musical structure.
- To introduce the practice of "live sketching" as an exercise in formal comprehension and focused listening.

Readings and Resources

- Meyer (1973) on Hierarchic Structures
- Sisman (2001) on Variation Form (Grove Online)
- Webster (2001) on Sonata Form (Grove Online)
- Michael Hamad on song schematics (https://setlistschematics.tumblr.com/press)
- Boone (2010) on the Grateful Dead's "Dark Star"

Assignment

- Low-stakes assignment
    - Live sketch of the Grateful Dead's "Dark Star"

**Music Theory II: Musical Structures**
Detailed Syllabus

## Unit VII: Introduction to Empirical Musicology

Primary Goals

- To demonstrate how quantitative and statistical analysis can be used to deepen our understanding of music-analytic and aesthetic questions
- To show how to move from symbolic (score-based) analysis to the analysis of audio files, and how this enables a broader range of analytic questions and musical styles/practices to be studied

Secondary Goals

- Gaining a basic knowledge of how to analyze an audio file using a DAW and various software packages (e.g., Sonic Visualizer, PRAAT)
- Understanding what is involved in selecting and compiling a representative corpus of material for analysis
- To introduce the notion of a statistical significance, and some of the basic tests used to determine statistical significance

Readings and Resources

- Bengtsson & Gabrielsson (1983) on the analysis of expressive timing in musical performance
- Cook & Leech-Wilkinson (2009) on how to use Sonic Visualizer
- Windsor (2004) on data, experiments, and statistics in music research

Assignment/Project: Can musicians play mechanically?

- Group project, in which one member of the group performs (a) simple scales, and (b) a piece of their choosing, under two conditions (1) as mechanically/deadpan as possible, and (2) with appropriate expression. The groups then:
    - Make recordings of each performance
    - Analyze/extract the timing data from each performance
    - Create a figure/graph that displays that data
    - Gives a short presentation (poster or power-point) of their findings, especially in terms of the differences in expressive timing between each pair of performances.

# Theory II Winter 2022 Daily Syllabus

| Date | Topic(s) | Class Activity | Pieces | Readings | Assignment |
|---|---|---|---|---|---|
| 1.05 | The Parameters of Music | Intro to Class; Writing Guidelines | | | Write a 1-sentence definition (1SD) of “pitch” |
| 1.07 | What is a musical sound? Definitions of Pitch & Timbre | Socratic exploration of pitch and "timbre" | Listening Example of various sounds | ANSI/ASA definitions of Pitch and Timbre | Make an instrument that plays “Twinkle, Twinkle” (GA) |
| | | | | | |
| 1.10 | Festival of Musical Instruments. | Oscillators, Amplifiers, and Resonators | | Campbell & Greated on Instruments | Describe your instrument (IA) |
| 1.12 | Measuring Timbre Similarity | In-class rating of sounds BRING LAPTOPS! | Clips of various jazz singers | | Read Fussell on scansion and poetic feet |
| 1.14 | How do you scan a text? | Introduction to text scansion | Student Melodies | Fussell (1965) on Scansion | Compose a melody for the given text using the notes given (IA) |
| | | | | | |
| 1.17 | How many notes do you need to write a good melody? | Comparison of student melodies | Student Melodies | | Sort some melodies (GA); 1SD of “scale” |
| 1.19 | What is a scale? | Sorting melodies in terms of scale and mode | Melodies for sorting (Moodle folder) | | Read Bronson (1946) |
| 1.21 | Melodies, Modes, and Scales | Exploring properties of various scales | Student Melodies and Sorted Melodies | Bronson (1946) on modal classification | Read London (2001) on Meter; 1SD for “beat” |
| | | | | | |
| 1.24 | What is a beat? What is Meter? And meet the TR 808 | Learning to program a drum machine | Stop time, Loud Rests, and Beats in Brubeck | TR-8 Users Manuals; Koetting (1970) on TUBS notation | Create a “good” and a “bad” rhythm, and notate them (GA) |
| 1.26 | What is a good rhythm? What is a bad rhythm? | Listening to and discussing student rhythm examples | Student Rhythm Patterns | | Read Toussaint (2013); Analyze your rhythms (IA) |
| 1.28 | What makes a rhythm complex (or boring)? | Applying Gottfried Toussaint's algorithm to our rhythms | Some Syncopations | Toussaint (2013) on syncopation and Euclidian rhythms | Read Zarlino & Helmholtz. 1SD of “chord” |
| | | | | | |
| 1.31 | What are consonance, dissonance consonance, and roughness? | Plato vs. Aristotle | Stravinsky *Symphony of Psalms,* "Purple Haze" | Zarlino (1558) on Intervals; Helmholtz (1863) on Roughness | Read Huron Chapters 3 & 4; |
| 2.02 | What is the difference between a note and a chord? | Fusion, Harmonicity, Toneness | | Huron (2016) on “Image Formation” | Read Huron Chapter 5; Make a “good” and a “bad” chord (GA). |
| 2.04 | Auditory masking, the critical band, and consonance and dissonance | Critical Band demonstration | Bach Chorales, Mozart, Etc., etc. | Huron (2016) on “Auditory Masking” | Midterm: Dissonance in Penderecki's *Threnody* Due: 2.09 |

“GA” = Group Assignment (groups TBA); “IA” = Individual Assignment; “1SD” = One sentence definition

# Theory II Winter 2022 Daily Syllabus

| Date | Topic(s) | Class Activity | Pieces | Readings | Assignment |
|---|---|---|---|---|---|
| 2.07 | **MIDTERM BREAK** | | | | (none) |
| 2.09 | Roman Numerals and Harmonic Accounting. | A whirlwind review RN "analysis" | Bach Chorales, Mozart, etc., etc. | | Roman Numeral Analysis Worksheet (IA) |
| 2.11 | Counting chords, and the principles of voice leading | A whirlwind review of part writing. And a little game. | A Romanesca, and others. | | Part Writing/Figured Bass Worksheet (IA); Read Harrison |
| | | | | | |
| 2.14 | What is a cadence? And: Why do we need four voices? | Review of cadence taxonomy and history. | Cadential progressions, including the "ECP" | Harrison (2016) on the Cadence | 1SD of "chord progression?" |
| 2.16 | What is a chord progression? | Playing around with random chord progressions | "Autumn Leaves" | Quinn (2017) on Tonal Harmony | Read Terefenko on the TT Sub |
| 2.18 | Chord substitution and the notion of "harmonic syntax." | Playing around with substitute chords. | "Ipanema," "Satin Doll" "Well You Needn't" | Terefenko (2009) on the Tritone Substitution | Read Meyer on hierarchic structure |
| | | | | | |
| 2.21 | How do musical parts combine to form wholes? | Repetition, Contrast, and Variation. | Beethoven Op. 130, 2nd mvt. | Meyer (1973) on Hierarchy | Paper: Does *The Unanswered Q.* end or just stop? (IA) Due 2.25 |
| 2.23 | A quick & dirty intro to classical movement forms | Listening to Haydn, Mozart, and Fernando Sor | | Webster on Sonata Form; Sisman on Variations | |
| 2.25 | Ending vs. Stopping in Ives | Can we grasp musical form as we listen? | Schubert, Phish, Beach Boys | Hamad video & webpages | Make a live-sketch of the Dead's "Dark Star" (GA) |
| | | | | | |
| 2.28 | Share and discuss "Dark Star" Sketches | | "Dark Star" (performance TBA) | | 1SD of "Rubato" |
| 3.02 | What is Rubato(?) | Playing like a metronome | Mozart Sonata K. 331 | Bengtsson & Gabrielsson (1983) on SYVAR | Cook & Leech-Wilkinson's Guide to Sonic Visualizer |
| 3.04 | In-class work session | Learning to use Sonic Visualizer | TBA | Cook & Leech-Wilkinson (2009) on Sonic Visualizer | Assemble your performance data (GA) |
| | | | | | |
| 3.07 | In-class work session | Collect & Analyze Expressive Timing Data in your Group | TBA | | Prepare Group PPT presentation (GA). |
| 3.09 | Presentations of Expressive Timing Projects | | TBA | | Read Cone (1977) and read Conan Doyle |
| 3.11 | The End of Theory | Brahms' Intermezzo, and second and third hearings | Brahms Intermezzo, and the Talking Heads. | Cone (1977) on Stories and Conan Doyle's *Speckled Band* | **Final Exams Due Wed. 3.16.22 at 5:00 PM CST.** |

**MUSC 204 Course Bibliography**


Clark, A. (2012). Embodied, embedded, and extended cognition. In *The Cambridge Handbook of Cognitive Science,* K. Frankish & W. Ramsey, eds. Cambridge University Press

Bengtsson, I., & Gabrielsson, A. (1983). Analysis and Synthesis of Musical Rhythm. In *Studies of Music Performance,* J. Sundberg, ed. Royal Swedish Academy of Music. 39: 27-60.

Boone, G. (2010). Dark star mandala. In *The Grateful Dead in Concert: Essays on Live Improvisation,* J. Tuedio and S. Spector, eds. McFarland & Co., pp. 85-106.

Bronson, B. H. (1946). Folksong and the Modes, *The Musical Quarterly*, 32.1:37-49

Cambell, M., & Greated, C. (1987). Sound production in musical instruments, in *The Musician's Guide to Musical Instruments,* Schirmer, pp. 182-202.

Cook, N., & Leech-Wilkinson, D. (2009). A musicologist's guide to Sonic Visualizer. AHRC Research Centre for the History and Analysis of Recorded Music website. https://charm.rhul.ac.uk/analysing/p9_0_1.html

Fussell, P. (1965). The technique of scansion, in *Poetic Meter and Poetic Form.* Random House, pp. 20-35.

Harrison, D. (2016). Cadence. In *The Oxford Handbook of Critical Concepts in Music Theory,* A. Rehding & S. Rings, Eds. Online: 10.1093/oxfordhb/9780190454746.013.1

Helmholtz, H. (1863). On the interruptions of harmony, in *On the Sensation of Tone,* 152-197. Dover Reprint.

Hornbostel-Sachs, https://en.wikipedia.org/wiki/Hornbostel%E2%80%93Sachs

Huron, D. (2016). *Voice Leading: The Science Behind a Musical Art.* MIT Press.

Koetting, J. (1970). Analysis and Notation of West African Drum Ensemble Music. UCLA *Selected Reports in Ethnomusicology* 1:3. http://www.ethnomusic.ucla.edu/images/acrobatfiles/ethnomusic/koetting_tubs.pdfKoetting

London, J. (2001). Rhythm. *Grove Music Online.*

McAdams, S. (2013). Musical Timbre Perception. In *The Psychology of Music,* 3d edition, D. Deutsch, Ed. Academic Press, pp. 35-67.

Meyer, L. B. (1973). Hierarchic Structures. In *Explaining Music: Essays and Explorations.* University of Chicago Press, pp. 80-97.

Oxenham, A, J. (2013). The Perception of Musical Tones. In *The Psychology of Music,* 3d edition, D. Deutsch, Ed. Academic Press, pp. 1-33.

Sisman, E. (2001). Variations. *Grove Music Online.*

Terefenko, D. (2009). Jazz transformations of the II7-V7-I progression. *Current Research in Jazz.* https://www.crj-online.org/v1/CRJ-JazzTransformations.php

Toussaint, G. (2013). Syncopated Rhythms. In *The Geometry of Musical Rhythm.* CRC Press, pp. 67-72

Webster, J. (2001). Sonata Form. *Grove Music Online*.

Windsor. L. W. (2004). on data, experiments, and statistics in music research. In *Empirical Musicology: Aims, Methods, Prospects,* E. Clarke & N. Cook, eds. Oxford, pp. 197-222.

Zarlino, G. (1558/1976). The Intervals. In *The Art of Counterpoint,* part three of *Le Institutione Harmonice,* G. Marco & C. Palisca, trans. Norton, pp. 6-23.

**M204 Assignment #1: A one-sentence definition of "pitch".**

In one sentence, provide a definition of pitch (OK, make it "musical pitch", to distinguish it from (a) something that happens in baseball, (b) something that happens in advertising, or movie production studios, or (c) a substance produced in the distillation of coal tar (and a carcinogen)).

You will be asked to provide a number of one-sentence definitions over the course of the term. So here are some ground rules and and helpful information:

1. What is a sentence? Well, this is a tougher question than you might think (ask Prof. Fortin or Prof. Ussery). It has to be grammatical (with a clear subject and predicate), though it can have a number of subordinate clauses. It isn't a list of bullet points.

1a. How long can my sentence be? Ah, this is the real question. If you are Immanuel Kant, or James Joyce, quite long. But for our purposes, let's put a cap of 50 words on your sentence. Which is still a pretty long sentence.

2. Can I use other sources in writing my one sentence definition (like, for example, the associated readings in the course folder)? Yes you can, although you don't have to. But if you do, you will need to cite them properly.

   2a. No, your citation (and/or bibliography) won't be counted in the 50 word limit. Use a footnote.

   2b. Can I just quote another definition I really like? Yes, but that probably isn't a really good idea (even if you have found a really good definition), as the aim of the assignment is for you to wrestle with these concepts (like "pitch" and "beat" and "dissonance"). So (hint) you might do something like this:

> While Smith defines pitch as "blah blah blah,"[1] to which Jones adds "blah blah blah"[2], pitch also involves "MY OWN blah blah blah."

3. What is a definition? Good question! I'm not going to answer it, though, at least not here. I'll just say that different kinds of things require different kinds of definitions, and these differences will emerge in the course of our discussions about this (and other) one-sentence definition assignment(s).

4. Your one-sentence definitions are due by the beginning of class, through the appropriate Google Form (which collects them in a convenient format). For this assignment the link to the google form is:

---

[1] Smith citation goes here, though you can also use author-date citation (with a list of source(s) cited following your definition), as per the Music Department Style Sheet.
[2] Jones citation goes here, though see footnote #1.

**M204 Bronson Reading Prompt**

This reading is from a pioneering 1946 article, published in *The Musical Quarterly,* that combined both Ethnomusicology and Music Theory (only recently have the two subjects had much more to do with each other). Bronson was an ethnomusicologist/folklorist, and his interest was in categorizing the melodies of British and American folk songs. These songs had long been described as "modal", but in this article Bronson comes up with an elegant way of understanding how modes and scales relate to each other, especially if a melody only uses 5 or 6 different pitches, or if it uses 8 or 9.

The key to Bronson's argument is the diagram on page 44—if you understand this, you've got it. So that is the goal of your reading and our discussion: to understand what "Bronson's Star" represents. An annotated version of his star is on the following page, which may help with your understanding.

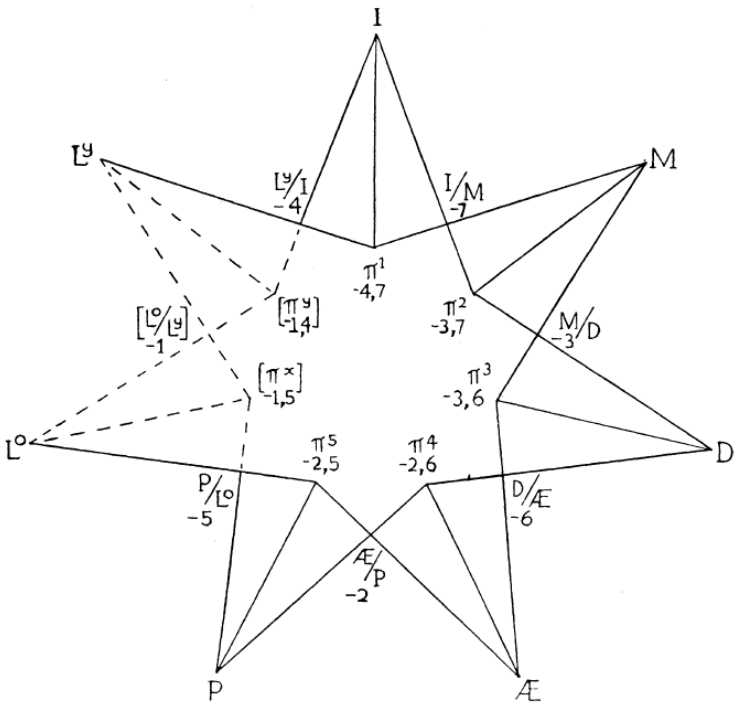
As such, you can focus on pages 37-44 for the reading, though if you are interested in how Bronson is able to talk about families of folksongs, you may enjoy his discussion of "Henry Martin" (note: sorting out the similarities amongst folksongs, some of which appear from Scotland and Ireland to Georgia and the Carolinas, is a huge and interesting topic).

The annotated version of the diagram on the back of this page should help your understanding. Knowing the following terms will also help:

- Diatonic Scale/Diatonic Set
- Pentatonic, Hexatonic, and Heptatonic Scales/Sets
- The church modes
    - Dorian, Phrygian, Lydian, Mixolydian, Aeolian, Locrian, and Ionian
- Pentachord and Tetrachord (note: these aren't chords)

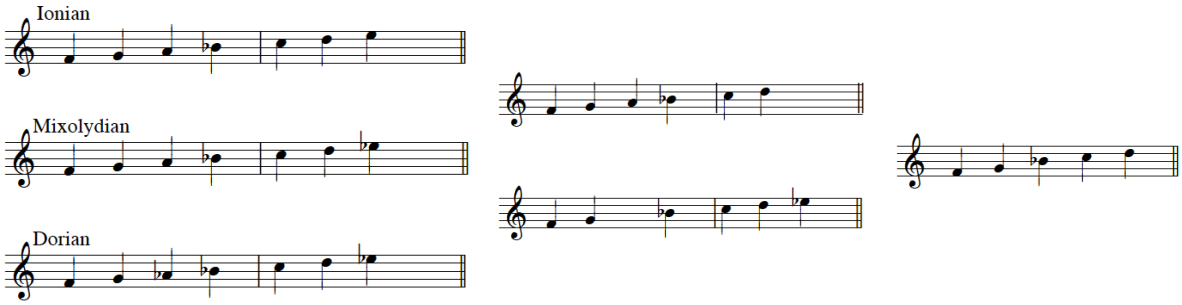
If you need help with these terms, try the following resources:

https://www.musictheory.net/
http://openmusictheory.com/scales2.html
and even
https://en.wikipedia.org/wiki/Mode_(music) (it’




I - Ionian M - Mixolydian D - Dorian AE - Aeolian P - Phrygian
$L^o$ - Locrian $L^y$ - Lydian

This may also help:




What does Bronson's star imply (well, claim, really) regarding the relationship between Hepta-, Hexa-, and Pentatonic scales? Think of this in terms of "families" of similar folk songs.

Certain links between Heptatonic modes and their Hexa- and Pentatonic relatives are indicated with dashed lines in Bronson's star--Why?

**M204: Homework Assignment: Create a Killer Beat, and a Dead Beat**

Having played with the TR-8 in class, and thus having seen how drum machines allow one to assemble layers of sound in a pre-existing rhythmic/metrical framework, your homework involves using the virtual 808 drum machine (https://io808.com/)

We will look at the Website a bit in class, and so you should know how to save/download the beat patterns you have created. First, play around with with the web app to learn how it works. Then, create your beats. The good beat should be (a) interesting, and (b) danceable; the bad beat, well, it should be the opposite of the good beat. Here are some things to keep in mind:

- It is often helpful to start with a four-on-the floor kick drum pattern to orient your construction of sounds; you can remove/alter those original sounds later.
- Tempo will make a difference.
- Take notes as you create your beat, keeping track of all they different layers/instruments you have used, because . . .

You will also need to notate your beats (see next page). As we discuss all of the beats in class, also be prepared to discuss how you layered the sounds, how you used the various volume and sound controls (e.g., "snappy") and so forth.

When you have created your beats:

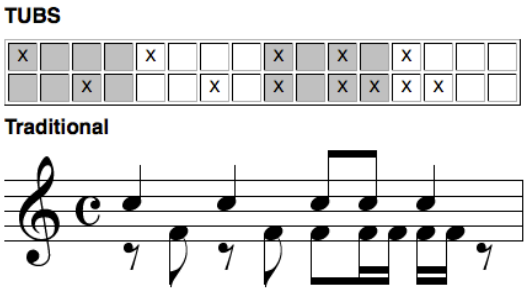
- Download them to your computer or lab workstation—the default filename is io808.json.
- Change the names to GROUP#_GOODBEAT.json and GROUP#_BADBEAT.json (keep the .json file extension), where "#" is your group number (see below)
- Upload to the "M204 2020 Good and Bad Beats" Folder in the "M204 2020 ReadWrite Folder" Google drive
    - If you have problems with the drive or folder, e-mail them to me ASAP
    - Please try and upload/send them <u>before</u> the wee hours on Wednesday Morning.

**Notating Your Rhythms**

Having created two rhythmic sequences using your 808 emulation program, your next task is to produce visual representations of them--in other words, you must put it into some form of musical notation. Actually, you will put each rhythm you've created into <u>two</u> forms of rhythmic notation.

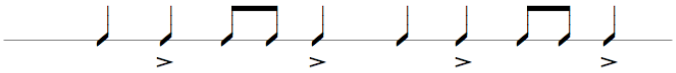
The first form of notation you will use is the "TUBS" (Time-Unit-Box-System), developed by Philip Harland and James Koetting for the representation of non-western drum music. A copy of Koetting's article in which he describes/details the TUBS system is in the course folder. The TUBS system is very much akin to the programming system of the TR-808:

**M204: Homework Assignment: Create a Killer Beat, and a Dead Beat**




Each row of boxes indicates a position in a metric sequence; here shading is used to distinguish beats (HINT: using shading in your own notation is a good idea). One has as many different rows as one has percussion instruments. In addition, one can distinguish different kinds of attacks using different symbols in each box. Make sure you label each of your rows as to what instrument it represents/indicates, as well as what your attack symbols mean (if need be).

The second employs traditional percussion notation, time signatures, and durational orthography. The challenge here is this: suppose you only had one drum on which to perform your rhythm—what would you do? Thus you will need to distill down your multi-part texture to a single line. For example, a typical rock drumming pattern (played on a kick drum and snare) might look like this:



You may use excel or the "table" feature of WORD to create your TUBS representation, and you can use Sibelius (or another music notation program), or just staff paper for your traditional notation (if you do this by hand, please scan your notation and save as a TIFF or JPEG file; use a high resolution, i.e., 600dpi). Combine them and your legends into a single word document or PDF file, and please send your notation(s) to me in electronic form prior to class.

And here's something to mull over, as it will be the focus of our discussion: which notational system worked better for representing your rhythm pattern, and what aspects of your pattern were you unable to represent with each(?).