Macro Analysis and Composition: A Model for Integrating Composition Assignments into the Theory Curriculum

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Introduction

Educational psychologist Lee S. Shulman has identified three symptoms that occur when teaching and learning fail to connect: “amnesia, fantasia, and inertia.” Amnesia (the tendency to forget material covered in class) is “perhaps the most frequent.” Fantasia refers to “persistent misconceptions” that have an unfortunate propensity to propagate, spreading misinformation in a contagious manner. Inertia refers to ideas that “are simply not in a form that lends them to any useful purpose beyond being remembered.”

All three of these symptoms can be problematic in music theory instruction. Amnesia is the most obvious, given the sequential nature of the theory curriculum. Instructors do not have the time to reteach foundational concepts from previous years, yet they are reluctant to move on when comprehension of the new subject matter is dependent on prior knowledge and skills that the students clearly no longer possess. The three symptoms are related in ways that are not always obvious. Amnesia is the direct result of inertia; the students’ inability to perceive the ways that the study of music theory connects to their other musical activities. The disciplined intellectual work of music theory is beautiful in its own right, but it is the weaving of the resulting insights into the fabric of the students’ musical lives that counters fantasia and overcomes inertia, leading to rich connections that students remember and utilize long after the final exam is a distant memory.

Shulman proposes “generative content” as one means to this end. Crucial concepts are explored in depth at multiple times in a curriculum, helping students to “understand more robustly what they

have studied.” Generative content is closely related to Michael Rogers’s concept of “spiral learning”: “Perhaps the single most useful rule in presenting new material is to compare the strange with the familiar. The interrelationships among elements of music are so abundant that each new topic invariably can be connected in some way to many others already studied. The structure and content of music theory are beautifully arranged for this spiral-learning or disguised-repetition approach.” Indeed, the music theory curriculum offers abundant possibilities for developing an integrated and sophisticated knowledge of form and compositional practice through the use of models and through a spiral that encompasses aural skills, analysis, composition, and performance. Such an approach encourages the development of thoughtful, engaged, and sensitive music students capable of applying the skills and insights that they have gained through this work to their activities as performers and music educators. The goal of this article is to demonstrate the ways by which macro analysis can play a valuable role in this process through the development of models (the “generative content”), based on circle progressions, that students study repeatedly throughout the curriculum and apply in analytical and compositional contexts.

Macro Analysis Models and Their Applications in Analysis

The models given in example 1 can be a fundamental part of theory instruction, regardless of the textbook used in the course. The instructor can introduce the fundamental circle progressions in major and minor keys (example 1a) in the first year of written theory, taking special note of the location of the diminished fifth that allows for the completion of the circle without chromaticism; that is, using only notes that are part of the scale and reinforce the tonic key. It is useful for the instructor to note that the circle of fifths presented in most theory textbooks consists entirely of perfect fifths and includes all twelve pitch classes, and that a harmonic progression that moves around the entire circle of fifths effectively undermines any sense of one tonic key. The instructor can apply the models to numerous examples from music literature.

2. Shulman, 41.
Major

\[
\begin{align*}
C & \quad F & \quad b^o & \quad e & \quad a & \quad d & \quad G & \quad C \\
C: & \quad I & \quad IV & \quad vii^o & \quad iii & \quad vi & \quad ii & \quad V & \quad I \\
\end{align*}
\]

Minor

\[
\begin{align*}
c & \quad f & \quad B^b & \quad E^b & \quad A^b & \quad d^o & \quad g (G) & \quad C \\
c: & \quad i & \quad iv & \quad VII & \quad III & \quad VI & \quad ii^o & \quad v (V) & \quad I \\
\end{align*}
\]

Modal Mixture

\[
\begin{align*}
c & \quad f & \quad B^b & \quad E^b & \quad A^b & \quad d^o & \quad (D^b) & \quad g (G) & \quad C \\
c: & \quad i & \quad iv & \quad \flatVII & \quad \flatIII & \quad \flatVI & \quad ii^o & \quad (N) & \quad v (V) & \quad I \\
\end{align*}
\]

Example 1a: Fundamental Circle Progressions

Major

\[
\begin{align*}
C & \quad C^7 & \quad F & \quad b^o & \quad B^7 & \quad e & \quad E^7 & \quad a \\
C: & \quad I & \quad V^7/IV & \quad IV & \quad vii^o & \quad V^7/iii & \quad iii & \quad V^7/vi & \quad vi \\
A^7 & \quad d & \quad D^7 & \quad G^{(7)} & \quad C \\
V^7/ii & \quad ii & \quad V^7/V & \quad V^{(7)} & \quad I \\
\end{align*}
\]

Minor

\[
\begin{align*}
c & \quad C^7 & \quad f & \quad F^7 & \quad B^b & \quad B^b^7 & \quad E^b \\
c: & \quad i & \quad V^7/iv & \quad iv & \quad V^7/VII & \quad VII & \quad V^7/III & \quad III \\
E^b^7 & \quad A^b & \quad d^o & \quad D^7 & \quad G^{(7)} & \quad C \\
V^7/VI & \quad VI & \quad ii^o & \quad V^7/V & \quad V^{(7)} & \quad I \\
\end{align*}
\]

Example 1b: Interpolation of Secondary Dominant Chords
It is helpful to introduce modal mixture (the last line of example 1a) after discussion of the basic major and minor models in order to compare the progressions formed in major and minor keys, and to introduce the Neapolitan chord and the concept of the role of chromaticism in forming additional circle progressions. The solo piano passage at the beginning of the second movement of Mozart’s Piano Concerto K. 488 offers students the opportunity to observe how the Neapolitan chord can function in this way. The slur in example 2 demonstrates that the Neapolitan chord (G major) forms a perfect fifth relation with the D major triad (VI in F sharp minor) that would not have been present if Mozart had employed the g♯ø triad (iiø) in place of the Neapolitan. The instructor notes that modal mixture and Neapolitan chords will return in the second year of the theory curriculum and will be explored in more detail and with additional examples from music literature, in particular later nineteenth-
century music, emphasizing Rogers’s concept of spiral learning and disguised repetition.

Example 2: Mozart Piano Concerto K. 488, Second Movement, Measures 8–12.

The instructor can add secondary dominants to the basic model in the second semester of the first year (example 1b), emphasizing the fact that secondary dominant seventh chords are another example of chromaticism used to create additional circle progressions. In this case, they create the effect of authentic cadences for scale degrees other than the tonic of the key, paving the way for modulation to, and tonicization of, these other scale degrees. Discussion of the expanded model offers analogies to a musical trope and a theme and variation structure, both of which involve the interpolation of material between the features of the original theme.

It also leads to the observation that repeating chords with the same root for every secondary dominant is cumbersome in a compositional context. The elision models in example 1c present different ways to address this concern. There are many possible models in addition to the ones given here, and numerous examples from music literature can be employed in class to demonstrate applications of these models. The instructor can introduce these models and the examples from literature in the second and third semesters. “Fly Me to the Moon” (example 3) consists of the fundamental progression (example 1a) with diatonic sevenths in place of triads, a common occurrence in jazz. Secondary dominant chords are interpolated to emphasize the ends of four-measure phrases, similar to example 1b. Measures 4 and 8 feature interpolated secondary dominant seventh chords with the same roots as the preceding chords (C$^7$ and A$^7$ respectively), while measures 12 and 16 feature interpolated chords that continue the chain of descending fifths (A$^7$ and E$^7$ respectively). The E$^7$ chord sets up the repeat of the material of measures 1–8, beginning with measure 17.
Example 3: Bart Howard, “Fly Me to the Moon,”
Harmonic Progression, Measures 1–17.

“Mister Sandman” (example 4) employs a progression similar to
the elision model given at the bottom of example 1c, transposed to
B-flat major; that is, a chain of secondary dominants that lead directly
to other secondary dominants rather than to triads. The first movement
of Mozart’s Piano Sonata in B flat Major K. 333 (example 5a and b)
features a particularly interesting example of the top model of example
1c. Measures 47–48 of example 5a occur near the end of the second key
area of the first movement (F major), and they employ the last half of
the circle progression given at the top of example 1c, transposed to F
major. The recapitulation of this passage in measures 143–46, back in
the original tonic key of B flat major, features an expansion of the circle
progression of measures 47–48, continuing through V\(^7\)/vi–vi in order
to set up a German augmented sixth chord followed by an authentic
cadence. The German augmented sixth chord resolves as expected to
a I six-four chord. In other compositional contexts, it can also resolve
unexpectedly as V\(^7\)/♭II (the Neapolitan), as shown in the last line of
example 1c.

B♭: I  iv  V⁷/iii  V⁷/vi  V⁷/ii  V⁷/V  V⁷

Example 4: Pat Ballard, “Mister Sandman,”
Harmonic Progression, Measures 9-22.


Example 5b: Mozart Piano Sonata K. 333, First Movement, Measures 143–150.
Analysis of phrase structure is also important at this point, in order to demonstrate the importance of circle progressions in the articulation of musical form. Song-form compositions (four eight-measure phrases in AABA or ABAC form) are good examples, since they are short, and many students are already familiar with them. The important distinctions between AABA and ABAC forms are worthy of class discussion. The first two phrases of AABA form a parallel period, whereas they form a contrasting period in ABAC form. The first phrase of a parallel period tends to end with a half cadence, since it leads gracefully to the repetition of the initial portion of the A material. The first phrase of a contrasting period can end with an authentic cadence, since new material follows the first phrase.

Rodgers and Hammerstein’s “Edelweiss” is a suitable example of an AABA form song. Example 6 contains a harmonic sketch of the song. This song is a good model because of its clear phrase structure and effective harmonic substitutions. Macro notation demonstrates clearly the parallels between the first, second and fourth phrases, particularly the second and fourth. The first and third phrases end with half cadences, with the dominant approached by a circle progression, and the second and fourth phrases end with authentic cadences, also approached by circle progressions. The viiº7/IV chord in measure 26 and the modal mixture chord (iv) in measure 28 provide a subtle variation of the second phrase to form the fourth phrase.

“White Christmas” (example 7) offers a good example of ABAC form, and the crucial ways that this form differs from AABA. Although the first, second, and third phrases all end with a dominant chord, the half cadence at the end of the second phrase is the strongest, since it is the only one in which the dominant chord is approached by a circle progression (measures 14–15). This half cadence sets up the return of the first (A) phrase progression in the third phrase beginning in measure 17. This form stands in contrast to “Edelweiss,” in which the strongest half cadences occur at the end of the first and third phrases, in order to prepare the return of the A progression in the second and fourth phrases. The fourth phrase of “White Christmas” is similar to the second, but ends with a perfect authentic cadence, rather than a half cadence. There are interpolated secondary dominant seventh chords (C7), similar to the model given in example 1b, in measures 10 and 26.

Example 7: Irving Berlin, “White Christmas,”
Harmonic Progression, Measures 1–32.
Example 7, continued.

The Application of Macro Models in a Composition Project

The instructor can integrate composition assignments with analytical work at any point in the music theory curriculum. It is perhaps optimal to give the students a year to analyze the ways that circle progressions are used in compositional contexts, then to introduce composition assignments in the third and fourth semesters. Even with such careful preparation, some students are intimidated by the notion of writing their own music. While many advanced students have previous compositional experience and welcome the challenge of applying their skills in this way, other students have not been asked to notate their musical ideas as part of their pre-collegiate training. Of more critical importance, they do not have much experience working creatively with material and synthesizing information in their own unique way.

Another difficulty is that composition assignments can often result in a “black box” process. The instructor is not involved in the actual compositional process either as an observer or as a guide. A required portfolio that contains preliminary sketch material, the final performance version of the composition, a transparency of this version, and an essay,
rather than only the final version, can be helpful in addressing this concern. It provides the instructor and the other students with a window into each student’s compositional process. The sketch includes macro analysis notation of the chord progression, particularly at important structural points. The essay is a reflective piece in which the students articulate their compositional process, and the reasons for their choices. The transparency enables all of the students in the class to follow along as the students perform their compositions. The instructor can require that students participate in the performance of their own compositions.

A song-form composition is an appropriate assignment for a sophomore-level theory course or a form and analysis course. The length is manageable, an important point given the short time frame generally available for completion of the project. The students’ previous work analyzing “Edelweiss” and “White Christmas” (or similar songs) helps them to understand that they do not need to employ complicated harmonic progressions in order to write an effective composition, and that a few harmonic substitutions go a long way towards creating welcome variety for repeated phrases.

Appendix A offers one possible set of requirements: a 32-measure piece in either AABA or ABAC form using voices and/or instrumentation of their choice. Students who are intimidated by the scope of the assignment can refer to the steps given in Appendix A, while more advanced students can proceed directly to the sketch, which is the analytical presentation of the composition. It contains the chord symbols, with slurs to indicate circle progressions, block chords, roman numerals, figures, melody, and the letters indicating the form that they have chosen (AABA or ABAC). The instructor can require that the students turn in their sketches before the final project due date, in order to provide the students with general advice on how to proceed. The final performance version omits the analytical notation. If the composition is successful, the students in the audience, viewing the transparency and listening to the performance, should be able to determine the form of the composition without the roman numerals and the letters. In the essay, the students explain their reasons for choosing either AABA or ABAC form, the progressions that reinforce the form, and the key and instrumentation.

The use of macro analysis and notation during the sketch phase of the project reinforces the importance of writing cadences at the end of each eight-bar phrase that clarify their choice of form, and it reinforces their analytical observations on the frequent use of the circle progressions in songs. It allows the students to proceed from one structural point to the next, with confidence that the goals of the harmonic progressions and the overall form are clear.

Instructors can include a grading rubric that outlines the grading criteria along with the project requirements. Appendix A offers a
sample rubric for the song-form composition project. Formal clarify is weighted most heavily, followed by adherence to principles of harmonic progression, then the extent to which the melody supports the harmony. Instructors can modify the weighting of elements in the rubric in order to support their own priorities for a given project.4

Allowing the students to choose their own instrumentation leads to a welcome variety exhibited in the performances of the final versions. Some students choose a jazz idiom for this project—understandable given the large number of jazz standards that use these two forms—while others choose a classical idiom. The former provide the performers with a lead sheet consisting of the chords and a basic realization of the melody, allowing for “comped” chords and improvised melodies, while the latter provide the performers with full notation.

Example 8 presents an example of a sketch for a jazz idiom solution to the project requirements. The sketch includes the letters for the form (AABA), chord symbols and slurs, the melody, block chords, roman numerals, and figures. The lead sheet for the final version was based on this sketch. The student improvised an ornamented version of the melody on saxophone, while the pianist “comped” the chords from the lead sheet and the bass player improvised a bass line from the lead sheet. The result could function as a “head” for a more extended improvisation. Diatonic seventh chords predominate, appropriate for a jazz piece. It is similar to “Edelweiss” in that it employs circle progressions leading to half cadences at the end of the first and third phrases, and to an authentic cadence at the end of the fourth phrase. The circle progression in measures 7 and 8, approaching the half cadence at the end of the first phrase, features the elision model from the bottom of example 1c used in “Mister Sandman” (secondary dominants leading directly to other secondary dominants), in place of the diatonic sevenths at the same place in “Edelweiss.” The half cadence at the end of the third phrase is prepared by both a vii7/V in measure 22 and V7/V in measure 23. The piece also employs a skillful use of a melodic G-flat, used first as a chromatic passing tone (measure 16), then as the seventh of V7/IV (measure 20).

Example 8: Brian Handeland, “Big Bird's Day Off,”
Harmonic and Melodic Sketch.
The song-form project can lead to informative post-performance class discussions on the importance of constructive limitations in the compositional process. Forms favored by composers throughout musical history (for example, Sonata-Allegro and song form) tend to be those that provide both structure and flexibility, enabling composers to work efficiently without excessive constraints upon their creativity.\(^5\) Such discussion helps to de-mystify the act of composition by focusing on practical issues. The students recognize that, although anyone can compose, it is difficult to do it well. They gain respect for accomplished composers at the same time that they gain self-confidence in their own compositional abilities.

The application of macro-based models in analysis and composition

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5. Thomas Priest, in his article “Using Creativity Assessment Experience to Nurture and Predict Compositional Creativity,” *Journal of Research in Music Education* 49, no. 3 (Fall 2001): 245–57, notes that “Limitations…that are perceived as informational rather than constraining, actually increase intrinsic motivation, thereby increasing creativity levels.”
assignments throughout the theory curriculum combats amnesia, fantasia, and inertia, through the continuous reinforcement of fundamental principles in new and increasingly more sophisticated contexts. The students comprehend that they are participating as composers in the same process of elaboration upon basic models as the processes that are evident in the music that they analyze. In this way, the composition projects are part of an extended spiral learning process that includes foundational knowledge and analysis, rather than an activity that is tacked on to their other course work in haphazard fashion. Students perform their compositions for the class and sometimes for recitals, gaining a sense of ownership of the material and integrating their theory studies with their other musical activities. Instructors revise the project requirements and preparatory assignments based on analysis of the previous years’ portfolios, thus engaging in their own spiral learning process. The macro-based models are the “generative content” for both the analytical and compositional processes, demonstrating the wisdom of Heinrich Schenker’s dictum, *Semper idem sed non eodem modo* (Always the same thing, but not in the same way).  

Appendix A

*Project Requirements, Steps, and Grading Rubric for Song Form Composition Assignment*

**Song Form Project**

Write a 32-measure piece (four eight-measure phrases) consisting of a melody and accompanying chords using either AABA or ABAC form, and your choice of instrumentation, key, and meter. An introduction and a postlude are optional additions to the form. Text is also optional. The chords must follow the standard principles of harmonic progressions discussed in class, and the melody must consist of chord tones and standard non-chord tones.

Provide a sketch that includes chord symbols, slurs, block chords, roman numerals, figures, melody, and letters that indicate your choice of form. Label all non-chord tones in your sketch. The final version consists of chord symbols and melody, but no roman numerals, letters, or labels for non-chord tones. A rhythmic realization of the chords is optional: you can “comp” the chords for the performance. Use only full sheets of music paper, or a music notation program, to create your final composition, and provide a transparency of your final composition for the class. See the Standards sheet for the grading criteria for this assignment.

Steps for Writing an AABA or ABAC Composition

1. Choose a form (AABA or ABAC), a major or minor key, and a meter.

2. Lay out a 32-measure grand staff sketch in pencil. An introduction and a coda are optional additions to the standard forms.

3. Divide the 32 measures into four eight-measure phrases, and label each phrase with letters according to the form that you have chosen (AABA or ABAC).

4. Label the cadences at the end of each phrase using chord symbols, slurs, roman numerals, and figures (PAC = Perfect Authentic Cadence, IAC = Imperfect Authentic Cadence, HC = Half Cadence, PC = Plagal Cadence, DC = Deceptive Cadence).

5. Fill in the harmonic progressions leading to the end-of-phrase cadences, according to principles of harmonic progressions discussed in class, using, in general, at least one chord per measure. Label them with chord symbols, slurs, roman numerals, and figures. Chord changes must reinforce the chosen meter.

6. Add optional elaborations to the harmonic progressions (for example, extended tertian chords, secondary chords, Neapolitan chords, and/or augmented sixth chords), and optional harmonic substitutions for repeated phrases.

7. Fill in the content of each chord in the bottom staff line as block chords.

8. Write the melody in the top staff line. All notes of the melody must belong to the underlying chord or be labeled as standard non-chord tones (passing tones, neighbors, etc.).

9. Create the final performance version as a three-staff system, consisting of a grand staff and a staff line above it, using concert pitch. Write the melody in the top staff line using the appropriate clef, chord symbols above this line, and the rhythmic realization of the chords in the grand staff line. “Comping” the chords is an option, and the grand staff can be omitted in that case. Text is optional for the melody line. Do not include any analytical notation from your sketch in your final version. Computer notation programs or pencil and music staff paper can be used for the final version. Create parts as necessary for transposing instruments.

10. Turn in a packet consisting of the sketch, the final version, and a transparency of the final version, and the essay. You must participate in the class performance of your project.
## Song Form Project Standards for Comparison

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<th>Form</th>
<th>Harmony</th>
<th>Melody</th>
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<tbody>
<tr>
<td><strong>Excellent</strong></td>
<td>The AABA or ABAC form is perceptible at all times, and all of the cadences at the ends of the phrases are appropriate for the chosen form (50 points).</td>
<td>The harmonic progression follows the principles given in the text and discussed in class at all times (30 points).</td>
<td>The melody supports the harmonic progression. All melodic notes are either chord tones or standard non-chord tones (20 points).</td>
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<tr>
<td><strong>Good</strong></td>
<td>The AABA or ABAC form is perceptible through most of the composition, and most of the cadences at the ends of the phrases are appropriate for the chosen form (45 points).</td>
<td>The harmonic progression follows the principles given in the text and discussed in class most of the time, with only occasional exceptions, such as harmonic retrogressions (27 points).</td>
<td>Most melodic notes are either chord tones or standard non-chord tones (18 points).</td>
</tr>
<tr>
<td><strong>Fair</strong></td>
<td>The AABA or ABAC form is perceptible at times, and some of the cadences at the ends of the phrases are appropriate for the chosen form (35 points).</td>
<td>The harmonic progression follows the principles given in the text and discussed in class some of the time, but there are numerous exceptions, such as harmonic retrogressions (21 points).</td>
<td>Some melodic notes are either chord tones or standard non-chord tones (14 points).</td>
</tr>
<tr>
<td><strong>Poor</strong></td>
<td>The form is not clear (25 points).</td>
<td>The harmonic progression does not follow the principles given in the text and discussed in class (15 points).</td>
<td>Few or none of the melodic notes are chord tones or standard non-chord tones, and/or it is not clear how the melody supports the harmony (10 points).</td>
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<td><strong>Total Points</strong></td>
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