Form and Process in Music, 1300-2014

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An Analytic Sampler

Edited by
Jack Boss, Heather Holmquest,
Russell Knight, Inés Thiebaut
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This book first published 2016

Cambridge Scholars Publishing

Lady Stephenson Library, Newcastle upon Tyne, NE6 2PA, UK

British Library Cataloguing in Publication Data
A catalogue record for this book is available from the British Library

ISBN (10): 1-4438-8550-9
ISBN (13): 978-1-4438-8550-8

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PREFACE

During the past seven years, the West Coast Conference of Music Theory and Analysis has published three volumes of conference papers with Cambridge Scholars Publishing. In 2008, *Musical Currents from the Left Coast* was released, based on the papers given at our meeting at the University of Utah in 2007. Our first book surveyed and analyzed music in a variety of styles and using numerous approaches, with a closing symposium that explored Schoenberg's Op. 11 Piano Pieces from four substantially different perspectives. It has influenced research in music theory significantly, continuing to receive mention in articles and conference presentations to this day.

In January of 2013, we published *Analyzing the Music of Living Composers (and Others)*, based on presentations from our meeting at the University of Oregon in 2010. In our second book, we focused on "applying traditional music-analytic techniques, as well as new, innovative techniques, to describing the music of composers of the late 20th and early 21st centuries." The book also included analyses of music of earlier eras that we saw as influential for contemporary composers. In time, we believe *Analyzing the Music of Living Composers* will have an impact on music scholarship even stronger than its predecessor, and could also influence the art of music composition in important ways.

Now we are pleased to offer this third book in the series, which is drawn from papers presented at our 2014 conference, again held at the University of Utah. Proposals for the 2014 meeting spanned a wider spectrum of musical styles than we had ever seen before. We had originally called for papers on European twelve-tone music after the Second World War, but we were also able to schedule sessions on fourteenth-century music, pop music and jazz, the music of living composers, narrative and characterization, and the history of music theory. The title of our book reflects the large span of musical cultures and styles that are represented within, but also accounts for the common thread through all of these essays, a strong emphasis on understanding the forms and processes of the music through analysis.

The book divides into three main sections, which correspond to the roughly equal divide during our conference between music from prior to the 19th century and music of the 20th century, with a handful of papers on popular music, jazz, the history of music theory and speculative music theory.

In Part I, we begin with two chapters that explore 14th-century music from different perspectives. Timothy Chenette discusses heard meters in polyphonic music and the kinds of "metric displacements" that emanate from them, while Heather Holmquest focuses her attention on monophonic songs from the Rossi and Squarcialupi codices, and the cyclical melodic patterns that can be heard within them when one adopts a modified Schenkerian approach. Susan de Ghizé then carries us forward to the 18th century with her study of the diverse range of common-tone transfers in the Mozart Piano Sonatas. Finally, the last two chapters of part I approach 19th-century music from contrasting viewpoints. Barbora Gregusova studies structural cohesion and text painting in Wagner's "Der Engel" using the tools of transformational theory, while Brent Yorgason performs narrative analyses (following Fred Maus) of the music of Brahms, Tchaikovsky, and Schumann, using "meter and expressive timing as the basis of the plot."

Contemporary music has traditionally been a favorite topic at West Coast Conference meetings, and the 2014 meeting was no exception. Several scholars responded to our call for papers on postwar European music, but a variety of late 20th-century (and some slightly older) musical styles were represented as well. Part II of our book begins with a chapter by Dale Tovar on the use of octatonic collections and ordered pitch-class interval cycles in Benjamin Britten's *Nocturnal after John Dowland*. This is followed by five chapters on more recent composers, reminding the reader of our second book *Analyzing the Music of Living Composers (and Others)*. Sara Bakker considers simultaneous offsetting rhythmic ostinati in Ligeti's Piano Etudes that create "cycles" too long for the duration of the pieces, and shows how Ligeti makes adjustments to the ostinati to create convincing cadences. Laura Emmery explores Elliott Carter's string quartet sketches, showing how they demonstrate processes of borrowing from composers such as Bartók and Webern. Inés Thiebaut and Aaron Kirschner describe the various patterns and processes that constitute the aggregate and serial organizations of Mario Davidovsky's Quartetto (Thiebaut) and Donald Martino's *Impromptu* No. 6 (Kirschner). To bring Part II to a close, Adam Shanley explains how Ursula Mamlok uses the twelve-tone matrix in unique and creative ways to create the pitch organization for her *Five Intermezzi* for Guitar.

Part III collects together four chapters that represent the variety of other topics that were discussed at our meeting. I begin in the realm of analyzing popular music, with my account of Freddie Mercury's *Bohemian Rhapsody*. I utilize Schenkerian and Neo-Riemannian analytic techniques, as well as allusions to traditional sonata form, to show how the song is a surprisingly unified structure, rather than a rhapsody, and how its large contour expresses its underlying meaning. Rich Pellegrin looks at ways in which the analysis of

jazz can be aided by using a "Salzerian" approach that relaxes restrictions on what may be admitted as a structural harmony or line, as opposed to a strict Schenkerian approach. Matthew Ferrandino turns our attention toward ancient music theory, with his consideration of the "dichotomy between theory and practice" represented by Aristoxenus's *Elementa harmonica* and Ptolemy's *Harmonics*. Finally, Yi-Cheng Daniel Wu brings the book to an end with a speculative theoretical chapter that reconsiders interval-class space as well as criteria for "evenness" and "spaciousness," and then develops a measurement "testing the degree of chromaticness of a chord."

Our third book should be of great interest to many of the same groups that were targeted by our first two volumes. First, musicologists and music theorists who work on any of the diverse styles of music that we explore. Then, performers of these various kinds of music (numerous chapters include advice for interpreters that grows out of the analytic findings). Finally, our audience will hopefully include music lovers who are seeking ways to enhance their listening experience by understanding more of the musical forms and processes that organize their favorite pieces.

Jack Boss, December 2015

PART I:

MUSIC OF THE FOURTEENTH, EIGHTEENTH AND NINETEENTH CENTURIES

CHAPTER ONE

METRICAL CONSONANCE, METRICAL DISSONANCE, AND GREATER METRICAL DISSONANCE IN THE *ARS SUBTILIOR*

TIMOTHY CHENETTE

The notation of meter, or mensuration, in the c. 1400 *Ars subtilior* uses multiple levels, of which the two most salient are tempus and prolation. Just as modern time signatures designate whether the number of beats in a measure is two, three, or four, *tempus* designates whether the number of semibreves in a breve is two or three; and just as modern time signatures indicate whether the subdivision of the beat is duple (simple meter) or triple (compound meter), *prolation* indicates the number of minimae in a semibreve—again, two or three. Editors of modern editions typically use these analogies to determine time signatures. For example, perfect tempus (three semibreves in a breve) with minor prolation (two minimae in a semibreve) is typically transcribed in $\frac{3}{4}$ (three beats in a measure, two subdivisions in a beat). Thus, inasmuch as notation constrains or suggests what metric and rhythmic experiences are possible, it might seem that the two systems would have significant similarities.

Yet the earlier system has flexibilities that are not inherent to modern practices. In common-practice music, the tyranny of time signatures constrains composers' ability to make alterations to meter at the level of the beat or the measure, though changing groupings are common at the levels of subdivision (through tuplets) and of hypermeter (through varying phrase lengths). In fourteenth-century music, which does not make use of barlines and measures, composers are constrained by the levels that I described above, but these differ from time signatures in several ways, the most prominent of which are listed below.[1]

- First, notes may be colored red, indicating that they lose one third of their duration: this is called coloration. This gives an effect similar to hemiola: in the classic instance, black semibreves in

imperfect tempus with major prolation (the rough equivalent of dotted quarter notes in $\frac{6}{8}$) are transformed into red semibreves, suggesting perfect tempus with minor prolation (the rough equivalent of quarter notes in $\frac{3}{4}$).

- Second, a metric unit may have another complete metric unit (or more than one) inserted within it: this is called syncopation.
- Finally, different voices of a polyphonic piece may be written in different mensurations: this is sometimes called polymensuralism.

In part because of these devices of coloration, syncopation, and polymensuralism, scholars have usually emphasized the distance between modern notions of meter and those of the fourteenth century. For example, Jason Stoessel, who made the excellent editions used in this essay, prefaces them with the justification that "[the tick bar line's] advantage over the internal bar line on each staff lies in its minimal implication of a regularity that is central to the concept of the bar line in today's common practice notation" (2002, 11).[2] Catherine Hawkes's doctoral thesis is on syncopation: she points out that, unlike modern syncopation or accents considered against an underlying meter, fourteenth-century metric groups retain their integrity in notation pedagogy even when displaced through syncopation. This, she says, "leads to the conclusion that the intervening notes need not be performed any differently than they would be performed if the syncopation were not there" (2009, 160). Uri Smilansky's dissertation at one point focuses on a passage written in one mensuration but seeming to imply another through repetition; modern meter pedagogy would suggest a different accentuation in a different meter, but Smilansky concludes that it is impossible to know if this would have been true in the fourteenth century (2010, 166).

While it is valuable to come at this repertoire without anachronistic preconceptions, modern cognitive theories of meter suggest that part of any musical experience—regardless of cultural-historical background—is an automatic attempt to entrain ourselves to a single sense of meter. Justin London, in his book *Hearing in Time*, argues that meter is "not fundamentally musical in its origin," since it relies on the human capacity for *entrainment*, "the synchronization of our attention with our capacity and preparedness for movement," and thus is potentially universal (2012, 4 and 12). For this reason, London argues that across cultures, meters are "subject to the same basic formal and cognitive constraints" (2012, 7).

Yet "synchronizing our attention with our capacity and preparedness for movement" is more abstract than most modern definitions of meter, which tend to emphasize either spatial metaphors and hierarchy within the

music or a sense of recurring "accent." For this reason, when I discuss meters in this music, I do not mean to assert that listeners of the time would have conducted, counted, or otherwise moved as we do. Rather, I assert that there is something in this music that facilitates prediction of important events such as the arrival of consonances and synchronization of attack points at regular intervals. Whether we try to imagine ourselves as early musicians or simply use our more familiar listening strategies, we will be using this innately human capacity for prediction and accessing something that truly is in the music and seems designed to stimulate this capacity.

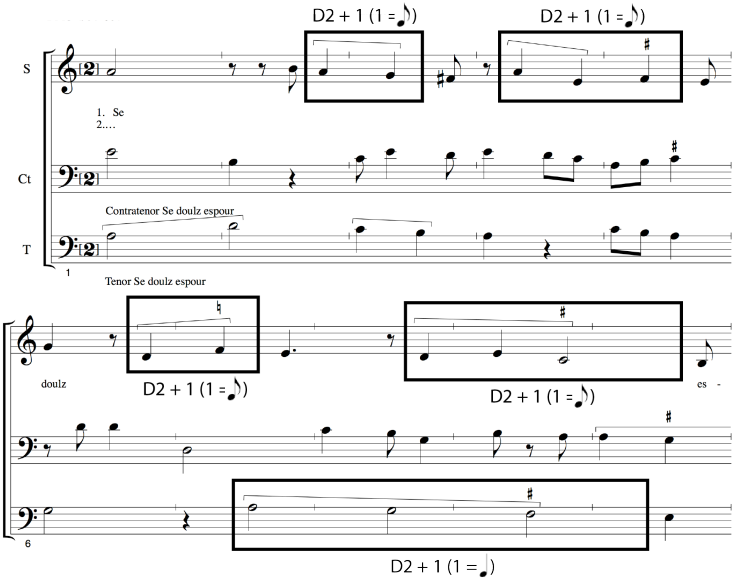
I will begin by revisiting coloration, syncopation, and polymensuralism, and I will suggest that a useful way to conceptualize these manipulations is through the concept of "metric dissonance" as theorized by Harald Krebs. Then, in the second part of the chapter, I will analyze two pieces in detail: these pieces will show that repeating patterns do indeed sometimes invite entrainment to a single underlying meter; but that in certain cases, unique aspects of fourteenth-century notation allow for aesthetic trajectories that we may miss if we are not attuned to the unique aspects of mensural notation. Particularly, dotted-quarter-note and quarter-note beats are often simultaneously available to the listener, or may alternate, in ways that create much of the beauty in this repertoire.

Coloration, Syncopation, and Polymensuralism as Metric Dissonance

In his book *Fantasy Pieces: Metrical Dissonance in the Music of Robert Schumann*, Harald Krebs notes the nineteenth-century "conceptualization of musical meter as a set of interacting layers of motion, each layer consisting of a series of approximately equally spaced pulses" (1999, 22). This description has obvious connections to modern notions of meter, which define subdivisions, beats, and measures, as well as potentially other levels; it also has precedents in Medieval metric practice, with the interacting layers of prolation and tempus (and modus, though this level is often not emphasized in the music). Given this essay's focus on perception, and the skepticism in the scholarly community surrounding modern assumptions about pulse in early music, it will be useful to reframe this: instead of layers of pulses, we might imagine different rates of motion, each created by recurrence of important events that facilitate entrainment at different levels. Krebs's concepts of "metrical consonance" and "metrical dissonance," similarly reframed, are also useful here: states of metrical consonance are common enough in this repertoire that certain

aspects of modern listening may be brought to bear, while Krebs's two types of metrical dissonance map nicely onto coloration and syncopation. I will show these connections and examine the role of polymensuralism in complicating the idea of a "primary metrical consonance" to set the groundwork for the analyses that follow.

Metrical consonance exists when interpretive layers are in alignment, that is, a pulse (or, reframed, an attentional peak) at any given level coincides with a pulse at each faster level. Pieces that emphasize a state of metrical consonance are common in the *Ars subtilior*. The opening of Conradus de Pistoria's *Se doulz espour* (Example 1-1) is such an example: if the listener uses the first two attacks (m. 1 and m. 2) to project a third important event the same amount of time later, they will be rewarded by simultaneous attacks in the lower parts (m. 3), then the arrival of these parts on a perfect consonance (m. 4), etc., suggesting a continuous layer of motion. This layer aligns with faster layers: the attacks on every transcribed quarter note except m. 1, beat 2, and the near-constant running eighth note composite rhythm. The meter is secure: the use of transcribed eighth notes, minims, is limited to the initiation and conclusion of small-scale syncopation or to fill exactly half a transcribed measure.



Example 1-1, Conradus de Pistoria, *Se doulz espour*, opening. Score from Stoessel 2002, 276.

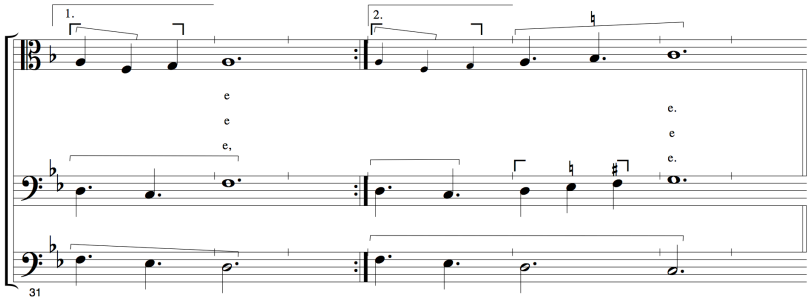
This piece is, of course, not without metric interest, as annotated in the example. The cadence to A and E at the downbeat of m. 4 is prepared with the tension of syncopation in the upper two voices; similarly, the cadence to G in m. 6 is prepared by a longer top-line syncopation. The annotations indicate, in labels derived from Krebs, that a metric layer that is the same length as a layer of the "primary consonance"—in this case, one quarter-note long—has been briefly displaced against that consonance. The "D" stands for "displacement dissonance," one of Krebs's primary types of metric dissonance; "2+1" indicates that a cycle of 2 units has been displaced by one unit; and "1 = ♪" designates that the unit used to measure these durations is the eighth note. Still, these disruptions constitute simply minor metric dissonance against a clearly defined primary meter: they always "resolve" quickly at the cadence, and the tenor consistently articulates the "aligned" quarter-note beat.

It is worth noting how well this type of Medieval syncopation maps onto Krebs's displacement dissonance. Johannes de Muris defines syncopation (*sincopatio*) as "a thorough division of a figure through separate parts which are reduced one to another by numbering perfections."[3] A "figure," in this case, is a duration that would fill a metric unit at some level; in syncopation, it is "divided," and "separate parts," or other complete metric units, are inserted. In the top line of mm. 4–5 in Example 1-1, for instance, the figure in question is the length of a quarter note; it has been divided into an eighth rest and an eighth note, between which have been inserted three whole quarter notes. In theory, this need not be the case, but in practice, as here, the inserted units nearly always clearly articulate a layer of motion that is therefore displaced, and syncopation in the Medieval sense that is longer than a single inserted note can virtually always be described coherently with Krebs's displacement labels.

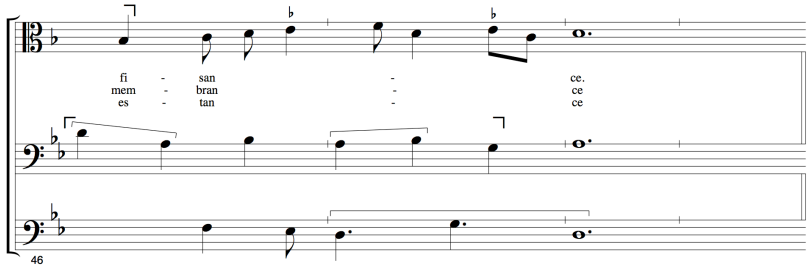
The texture becomes much more confusing in the second line. We get the longest phrase yet, nearly matching the length of the previous two combined before cadencing for the first time to the piece's final, D, in m. 11 (not shown); in the upper voices, syncopation is no longer limited to just precadential decoration; and the first tenor syncopation serves to undercut the metric foundation. This is about as confusing as this piece's meter gets, but the continuity of the primary consonance—roughly, a modern $\frac{2}{4}$—before and after this phrase render it, again, metric dissonance against a clear primary meter. This opening as a whole follows an interesting metric path, gradually becoming more and more metrically dissonant before each cadence, but ultimately the piece presents no

significant problems to a modern notion of meter, and it would be rather easy to conduct in duple meter throughout (if one wished).

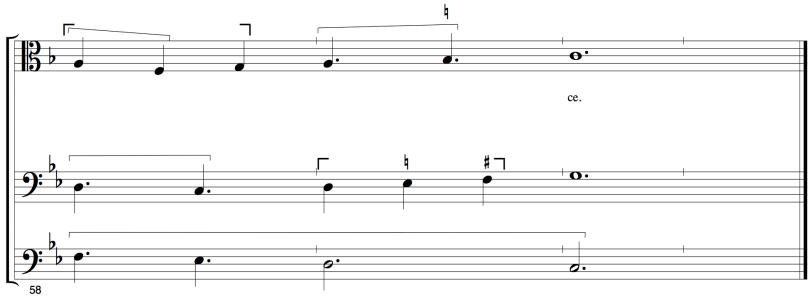
While displacement dissonance maps nicely onto syncopation, Krebs's "grouping dissonance" maps onto coloration. Example 1-2 gives the cadences of the major sections of Philippus da Caserta's *En atendant soufrir*. In each case, there is a clear layer of motion articulating the transcribed dotted quarter note, or black semibreve, and there is a simultaneous layer of transcribed quarter notes, or red semibreves. (The red color is indicated in this and most modern editions by open brackets above.) These layers are not the same length, but rather group the underlying eighth-note (minim) pulse differently, and thus Krebs would consider them together a "grouping dissonance": G2/3 (1 = ♪), indicating a conflict between one layer that groups the minims into twos and one that groups them into threes.



Example 1-2a, Grouping dissonances at major cadences in Philippus da Caserta, *En atendant soufrir*. From Stoessel 2002, 76–77. End of section A.

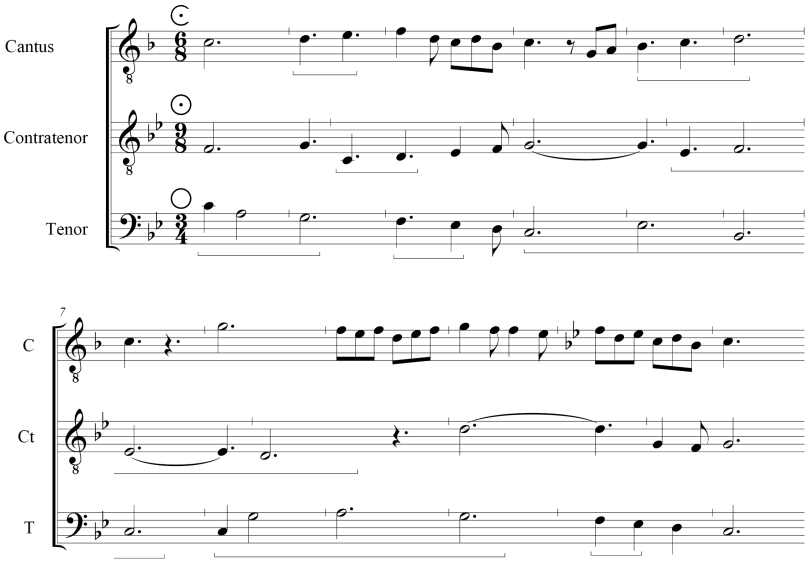


Example 1-2b, Grouping dissonances at major cadences in Philippus da Caserta, *En atendant soufrir*. From Stoessel 2002, 76–77. End of section B.



Example 1-2c, Grouping dissonances at major cadences in Philippus da Caserta, *En atendant soufrir*. From Stoessel 2002, 76–77. End of section C.

In one way, polymensuralism also represents grouping dissonance. The three different simultaneous mensuration symbols at the beginning of Antonello da Caserta's rondeau *Dame d'onour, c'on ne puet esprixier*, shown in Example 1-3, represent grouping dissonances: the top two parts would be labeled G3/2 (1 = 𝅗𝅥.), and the outer two G3/2 (1 = 𝅘𝅥𝅮). Yet here



Example 1-3, Polymensuralism, but at a low level of metric dissonance, in Antonello da Caserta, *Dame d'onour, c'on ne puet esprixier*. Based on *Le composizioni* 2005, 137.

these grouping dissonances are more apparent in the notation than in the sound, as the cantus's transcribed 𝄡 is clearly primary. The tenor's 𝅗𝅥 has the same periodicity—that is, its downbeats align with those of the cantus—and moves so slowly that among the first twelve measures of transcribed music, only three even mildly contradict the compound duple division of the measure, the last of which is a typical pre-cadential hemiola. The cantus, in contrast, clearly articulates its designated meter throughout, never engaging in even a single syncopation. Finally, the contratenor clearly articulates a dotted-quarter-note beat, as one might expect, and does not clearly privilege measures of 𝅗𝅥. over groupings that follow the cantus's 𝄡. The level of metric dissonance is very low throughout.

Though polymensuralism is not extremely common, and though it can be used in a way that keeps the level of metrical dissonance low, its very possibility also represents a challenge to the concept of the "primary metrical consonance." In Krebs's formulation, "One of the metrical interpretive layers generally assumes particular significance for the listener. . . . The layer formed by these pulses frequently, though not always, occupies a privileged position in the score, being rendered visually apparent by notational features such as bar lines and beams" (30). Thus the terms consonance and dissonance, to Krebs, do not just refer to the literal "sounding together" of aligned layers and "sounding against" of non-aligned layers, but also suggest an analogy to pitches in counterpoint, where more dissonant states are expected to "resolve" to more consonant states, and in the end, to the "primary metrical consonance"—analogous to the tonic. And usually, this primary metrical consonance is indicated by the meter signature, which in tonal music must be the same in all simultaneous parts.

The possibility of polymensuralism, then, provides a conceptual model where the default state of a piece of music may not, ultimately, be a metrical consonance, but a dissonance. (As will be seen below, this state often arises even when simultaneous parts are written in the same mensuration.) When this is the case, and when it is reinforced perceptually, we might call this state the "primary metrical dissonance." Analogies to resolution may still be made, however, as this primary metrical dissonance may be enriched and complicated by more complex dissonances, that in the end resolve (ironically) to this lesser degree of dissonance.

One final theoretical point remains, given the perceptual focus of this essay, which is to reconcile London's statement (reporting on perception and cognition research) that "there is no such thing as a polymeter" (67) with this emphasis on polymensuralism as a possible default state for a

piece of music. London's pronouncement indicates not that there cannot be multiple simultaneous meters written in the music, but that humans cannot simultaneously synchronize their attention to multiple conflicting cycles: rather, we will focus on one, measuring the other against it. From a perceptual standpoint, then, I do not mean that our attention is evenly divided, since this research suggests it cannot be. Instead, I mean that evidence in the music may draw us in two different ways, and that a kind of cognitive dissonance arises as fluctuations in the written music or performance factors draw our attention now to one cycle, now to the other, making us vacillate between. As will be seen below, this vacillation is exploited in the metric progressions of certain pieces.[4]

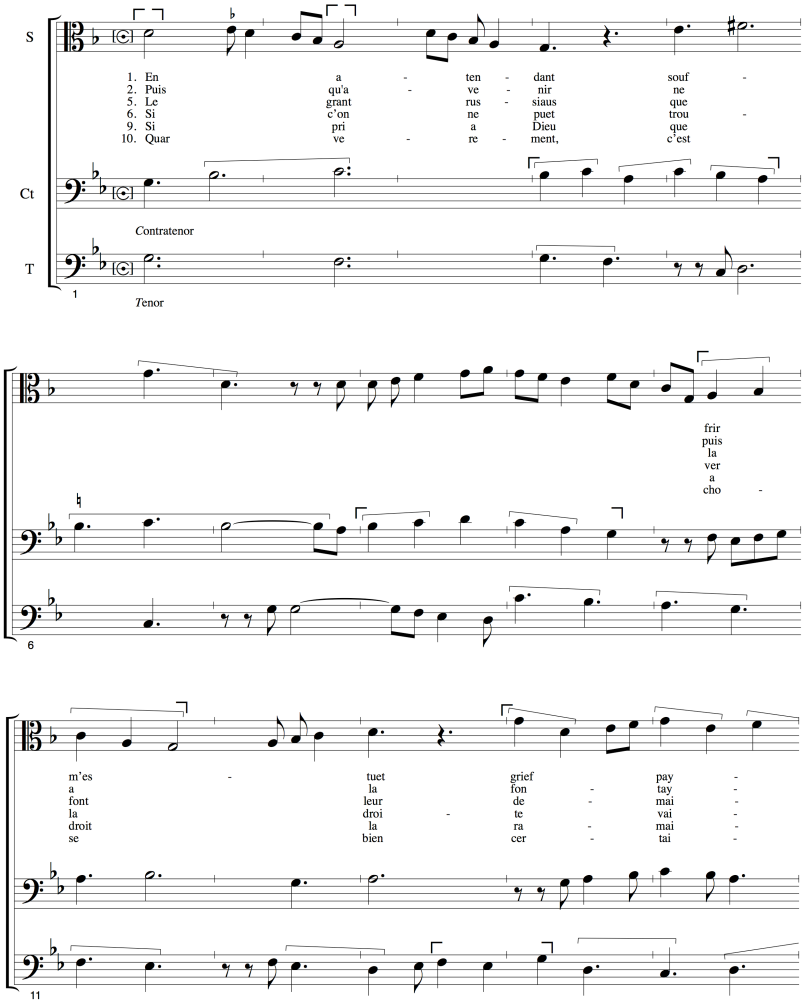
Analyses

The two pieces analyzed above, *Se doulz espour* in $\frac{2}{4}$ and *Dame d'onour* in $\frac{6}{8}$, each use a single, clear meter (perceptually, at least) that is recognizable to modern musicians and listeners. This is an important point: aspects of modern metric practice may be brought to bear on this repertoire without anachronism. In addition, this creates an environment where frustration of these metric expectations will be more effective. I will spend the rest of this essay looking at two pieces that are far more complicated and more fully take advantage of the kinds of flexibility offered by the mensural system to create unique metric progressions.

The basic contrast of metric strands in Philippus de Caserta's ballade *En atendant soufrir* is encapsulated in its section-ending cadences, shown in Example 1-2 above. In each, at least one voice articulates dotted quarter notes, and at least one articulates quarter notes. (In the B section, there is also a syncopation in the top voice.) These are not mere precadential hemiolas: transcribed quarters and dotted quarters conflict throughout the piece, generating a "primary metrical dissonance."[5] Because these points of repose do not "resolve" to one of these strands, I will treat both as "underlying continuities"—as potential meters—with performance choices and slight differences of texture determining which one listeners attend to as primary at any given time. This clearly differs from modern metric practices, where a written time signature would generally dictate the "true" meter: using fourteenth-century notation, Philippus does not need to decide, and can leave it up to the performers and vagaries of performance circumstances.

The metric conflicts in *En atendant* seem designed to bring attention to small-scale contrasts. Much of the opening of the piece (Example 1-4) jumps quickly back and forth between these two apparent beats. Mm. 4–5

clearly articulate both layers, then mm. 6–7 clearly express only dotted quarter beats. Starting in m. 8, the



Example 1-4, Quarters (imperfect semibreves) vs. dotted quarters (perfect semibreves) in the opening of Philippus da Caserta, *En atendant soufrir*. From Stoessel 2002, 74.

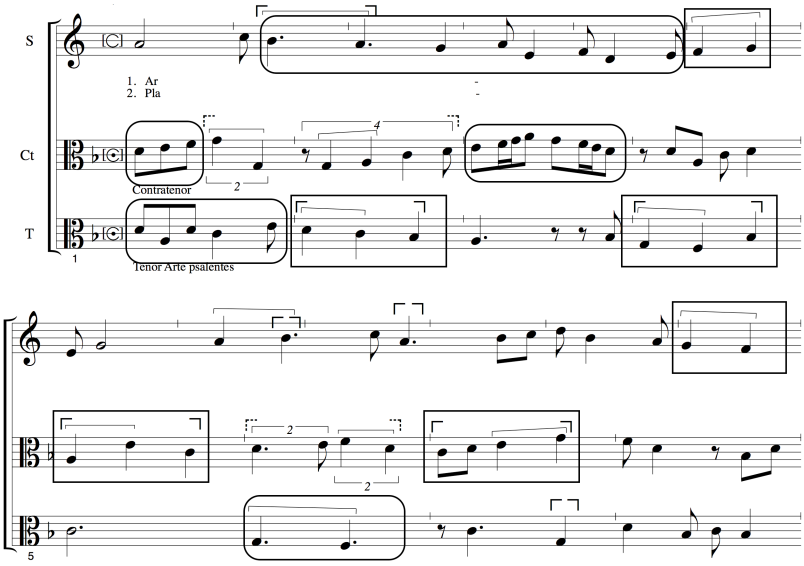
quarter-note layer is strongly articulated by a repeated pattern in the cantus, which is gradually liquidated in mm. 10–11, losing its characteristic eighth notes. Finally, no attack whatsoever materializes on the downbeat of m. 12: this is particularly surprising because the hemiola of the previous measures, and the E-G-Bb sonority right before, strongly hint at a D-A cadence here. (The cadence finally arrives a measure later.) This small-scale contrast, these quick changes of metric emphasis, keep us from designating one meter as primary: though the prominent tenor is always steadily singing dotted quarter notes, the cantus's equally prominent and florid melody is largely based on quarter notes after m. 7, and aspects of performance and a listener's predisposition will likely influence which is more clearly attended to.

The opening of the piece gives a clue to yet another level of metric conflict: repeated patterns here seem to articulate measures of $\frac{9}{8}$, rather than the transcribed $\frac{6}{8}$. Indeed, just as quarter notes and dotted quarters compete at the level of the beat, there is a constant alternation of apparent $\frac{6}{8}$ measures and $\frac{9}{8}$ measures at the level of the measure. After two apparent $\frac{9}{8}$ measures, the periodicity of the quarter/dotted-quarter conflict in transcribed m. 4 seems to confirm $\frac{6}{8}$ / $\frac{3}{4}$; mm. 5–8 again suggest $\frac{9}{8}$, with only the inner-voice contratenor articulating the downbeat of m. 6; and then $\frac{6}{8}$ / $\frac{3}{4}$ is very clearly confirmed by the repeated patterns in mm. 8–11. Though not shown in the example, a long passage of clear $\frac{6}{8}$ / $\frac{3}{4}$ follows, and then yet another passage of $\frac{9}{8}$ in mm. 19–21 accompanying the words "et en langour," or "and in languor."

The interaction of these two levels of conflict, quarter vs. dotted quarter beats and measures of $\frac{9}{8}$ vs. $\frac{6}{8}$ / $\frac{3}{4}$, is particularly fascinating. When the apparent measure is six eighth notes long, the conflict of quarters and dotted quarters is nearly always foregrounded as the periodicity of this conflict confirms this length of measure. When the quarter notes recede or disappear, the more languorous dotted quarters nearly always stretch the measure to its longer state.

These two levels of metric conflict and their interaction create constant fluctuations in our sense of meter. Aesthetically, this results in a feeling of yearning and affected artifice, as individual metric states appear as brief illusions but never become satisfactorily established. In as much as the extremely high, constant level of metric dissonance is ever resolved, this happens at the cadences; but, again, the preparation for each cadence clearly states the quarter/dotted quarter conflict in a very strict manner. Along with the subjugation of the normally quite florid upper line into a simple articulation of this conflict, this "resolution" of metric conflict feels to me like resignation to the fact that it will never be resolved.

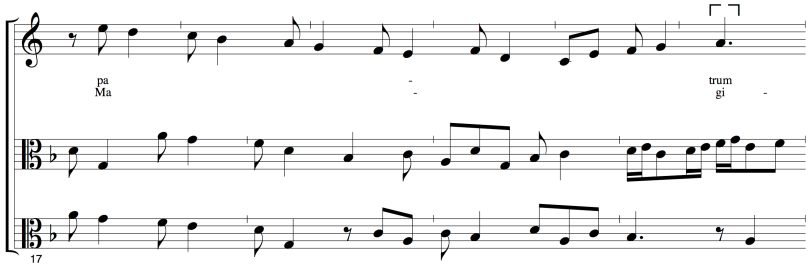
The opening of my next example, Bartholomeus de Bononia's *Arte psalentes*, is particularly complex and ambiguous. In Example 1-5, rounded rectangles mark passages that articulate the dotted quarter note layer, and square rectangles mark passages that articulate the quarter note layer. The opening measure in cantus and contratenor clearly divides the transcribed "measure" in half, and the longest stretch of consistent articulation in the cantus also indicates 𝄋. The cantus's metrical layer, however, is displaced against the 𝄋 barline (as measured by tick bar lines in the lower parts), and it is overlaid not only against occasional quarter notes in the contratenor and perceptually salient tenor but also much more complicated rhythms in the contratenor. In fact, in the first 16 measures of the piece, about the only consistency that can be found is a prevalence of quarter notes right before cadences. (Only one of these is shown in the example, at the beginning of the second line: the extreme length of phrases is another contributor to the metric complexity.)



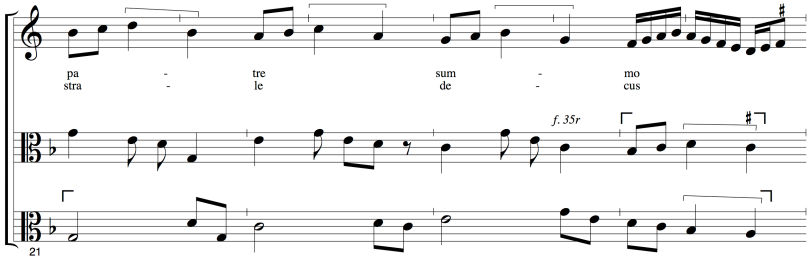
Example 1-5, Complex opening of Bartholomeus de Bononia's *Arte psalentes*.[6] Rounded rectangles indicate passages that articulate the dotted-quarter layer; square rectangles indicate the quarter layer. From Stoessel 2002, 110.

This makes it all the more surprising when the lower parts in mm. 17–20 (Example 1-6) suddenly come together and coordinate with the upper part in a kind of call and response as the cantus engages in a literal sequence, all

clearly indicating dotted quarter note beats. The remarkable nature of this passage is highlighted by changes in the tenor: thus far it has nearly always moved within the fifth between G3 and D4; in m. 16, a dramatic rising line brings it all the way up to A4 for the beginning of this passage.



Example 1-6, Dotted-quarter layer in *Arte psalentes*, mm. 17–20. From Stoessel 2002,111.



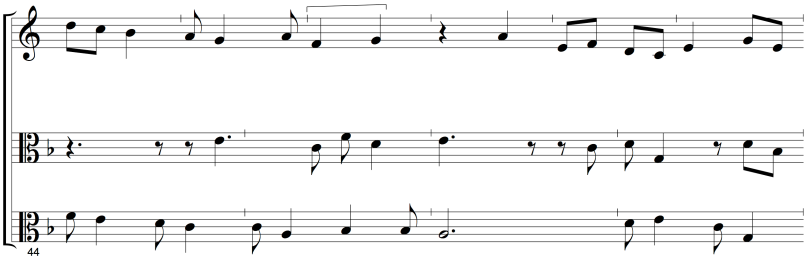
Example 1-7, Quarter-note layer in *Arte psalentes*, mm. 21–24. From Stoessel 2002, 111.

Immediately following, in mm. 21–24 (Example 1-7), the texture switches to only clear quarter-note articulations, and again, there is a sequence in the cantus. The parts trade off eighth notes to create a continuous texture and to emphasize, in the moments of swapping those eighth notes between parts, the quarter-note beats.[7] This passage is the last portion of the "body" of section A: after the cadence in mm. 25 and 26, immediately following the passage in the example, there is a 9-measure closing that is repeated literally at the end of the piece, as is traditional for a ballade. In this closing, one more brief passage of consistency appears, as mm. 29–31 clearly articulate only dotted quarters.

Aside from the pleasure of following these changes, part of the reason for them may be to emphasize important portions of the text. The text translates as, "Let us praise with art the goodness of the Fathers in the

presence of the sovereign pontiff, with serene countenance, may the dignity of the master deign to guide the singing of the young pupil." The dotted-quarter passage begins at the word for "of the Fathers," and the passages together lead up to a cadence on the word "Pontiff."

The text of the next passage continues, "and if the young pupil's singing be lacking in skill"; perhaps to suggest or even challenge a lack of skill, this section nearly always juxtaposes clear dotted quarter and quarter beats. Mm. 44–47 are a good example: here the cantus uses eighth notes only to fill quarter-note beats except for a brief syncopation, while, in the tenor, repeated groupings of eighth notes and quarter notes clearly suggest dotted-quarter beats. This continues for three measures past the section I have excerpted here in Example 1-8.



Example 1-8. Metric dissonance in the B section of *Arte psalentes*. From Stoessel 2002, 112.

The final section completes this thought: "may it please you to teach him the art of true song," and finally we have a section that is relatively stable in its use of dotted-quarter-note beats. After an extremely confusing passage in mm. 61–64, full of displaced seemingly metric strands, the rest of the piece clearly emphasizes dotted-quarter beats except in cadential preparations. This emphasis on dotted quarters continues in the last nine measures of the piece, which, again, are directly repeated from section A. The piece as a whole thus moves from a state of extreme confusion (hardly even a stable "primary metrical dissonance"), through brief states of extreme metrical consonance, to a moderate level of metrical consonance at the end.

Conclusion

I will briefly review some premises in light of these two analyses and the preceding theoretical discussion. I began by arguing that meter is a part of the listening experience of any music, and repeated patterns in this rep-

ertoire do indeed invite us to entrain to a recurring cycle of beat and, often, measure. Second, notation both constrains and suggests the kinds of metric experiences that are possible. *Ars subtilior* mensural notation invites composers to employ metric dissonance through syncopation (displacement dissonance), coloration (grouping dissonance), and polymensuralism. In addition, the model of polymensuralism suggests the possibility of pieces where the ultimate state of the music is actually metric dissonance, not metric consonance, providing an ideal context for the yearning and affected artifice of courtly love poetry.

I will close now with a few ramifications for performance and listening. First, in certain ways our modern notions of meter are not so far from those of the late fourteenth century, especially in pieces with regular articulation of one specific beat type; for this reason, it may not be totally anachronistic when ensembles trying desperately to perform this music accurately choose a single meter to tap or conduct. Second, while some flexibility in performance is nearly always desirable, it will be helpful to keep in mind the distinction between quarter and dotted quarter beats aligned with transcribed measures, which may together generate a "primary metrical dissonance," and displaced beats or beats of other lengths, which tend to be of short duration and may perhaps be performed with more freedom without destroying the sense of the piece. Finally, in contrast to modern time signatures that tend to decree a single sense of meter that is operative throughout an ensemble, a performance of or listening to this repertoire will be the richer for paying close attention to the conflicts and alternations between quarter notes and dotted quarter notes: as the analyses I described suggest, these conflicts often create interesting trajectories and affective states. In a repertoire so obsessed with complex rhythm, this allows us to accept the confusion these create, and to embrace it as beautiful.

Notes

[1] Instead of being given visual groupings through measures and beamed-together beat units, performers were expected to learn the process of "reduction" (*reductio*)—that is, scanning the music to count note values and group them together appropriately at each level. This grouping process is very important, because in certain cases, primarily in "imperfection" and "alteration," the matter of which notes group together can affect their duration.

[2] The editions comprise Volume 2 of Stoessel's dissertation. Those wishing to understand the examples in this essay in context can download this volume for free at http://diamm2.cch.kcl.ac.uk/resources/stoesseldiss.html. The only example in this essay not based on Stoessel's scores is Example 1-3, prepared by myself.

[3] *Sincopa est divisio cujuscunque figure per partes separatas que numerando perfectiones ad invicem reducuntur*. (This text is adapted from a number of sources that can be found at the Thesaurus Musicarum Latinarum: see http://www.chmtl.indiana.edu/ tml/14th/14TH_INDEX.html.)

[4] Chapter 4 of Krebs's book, "Metrical Progressions and Processes," uses these terms somewhat technically and defines large-scale progressions of metric states analogous to large-scale pitch processes in tonal music. My use of these terms is meant to evoke his, in the sense that we are both arguing for the importance of rhythmic/metric trajectories in the artistic appreciation of our respective repertoires, but the progressions described here are smaller in scale.

[5] This despite the fact that the parts are not written in different mensurations. In fact, there are no mensuration signs given at the beginning of the music (this is common at the time), though it is clear from context that the interpretation of each part relies on the assumption of imperfect tempus, major prolation (roughly, 𝄜).

[6] The red notes in mm. 2–3 of the superius are odd, in that they are applied to normally imperfect rather than perfect semibreves. In his compendious manual on interpreting early notation, Willi Apel explains this usage: "Although coloration usually diminishes the value of a note (by one third), it is occasionally used in an opposite meaning, signifying an increase by one half, that is, synonymous with a dotted note. Naturally, this type of coloration can only be applied to imperfect notes" (406).

[7] Part of the beauty of this passage lies in a motivic foreshadowing in m. 10, which states the model of this sequence but does not take it further.