MTO 20.2 Examples: Nicole Biamonte, Formal Functions of Metric Dissonance in Rock Music

(Note: audio, video, and other interactive examples are only available online)

Example 1. Temporal organization of pop-rock music

<table>
<thead>
<tr>
<th>LEVEL</th>
<th>UNIT</th>
<th>NORMAL GROUPINGS</th>
</tr>
</thead>
<tbody>
<tr>
<td>section level</td>
<td>section (groupings of phrases)</td>
<td>variable</td>
</tr>
<tr>
<td>hypermetric level</td>
<td>hyperbar (often aligned with phrases)</td>
<td>duple and quadruple</td>
</tr>
<tr>
<td>metric level</td>
<td>bar (groupings of beats)</td>
<td>usually quadruple</td>
</tr>
<tr>
<td>tactus level</td>
<td>tactus or beat</td>
<td>often quadruple</td>
</tr>
<tr>
<td>subtactus level</td>
<td>subdivisions of beat</td>
<td>duple, in-between, triple, quadruple</td>
</tr>
</tbody>
</table>

Example 2a. Krebs’s types of dissonance

displacement dissonance (syncopation-type):
nonaligned layers with the same grouping structure

\[
\begin{array}{c}
\frac{4}{4} \quad \bullet \quad \bullet \quad \bullet \quad \bullet \quad \bullet \quad \bullet \\
\frac{4}{4} \quad \bullet \quad \bullet \quad \bullet \quad \bullet \quad \bullet \quad \bullet
\end{array}
\]

grouping dissonance (hemiola-type):
layers with different grouping structures that periodically realign

\[
\begin{array}{c}
\frac{4}{4} \quad \bullet \quad \bullet \quad \bullet \quad \bullet \quad \bullet \quad \bullet \quad \bullet \\
\frac{3}{4} \quad \bullet \quad \bullet \quad \bullet \quad \bullet \quad \bullet \quad \bullet \quad \bullet
\end{array}
\]
Example 2b. Waters’s types of grouping dissonance

measure-preserving:

\[ \text{\textbullet} \quad \text{\textbullet} \quad \text{\textbullet} \quad \text{\textbullet} \quad \text{\textbullet} \quad \text{\textbullet} \quad \text{\textbullet} \quad \text{\textbullet} \]

tactus-preserving (= hypermeasure-preserving):

\[ \text{\textbullet} \quad \text{\textbullet} \quad \text{\textbullet} \quad \text{\textbullet} \quad \text{\textbullet} \quad \text{\textbullet} \quad \text{\textbullet} \quad \text{\textbullet} \]

Example 3a. Kansas, “Carry On Wayward Son” (1976), rhythmic displacement dissonance in first phrase of chorus melody

Example 3b. Black Sabbath, “Paranoid” (1970), rhythmic displacement dissonance in first phrase of verse melody

Example 3c. AC/DC, “For Those About to Rock” (1981), rhythmic grouping dissonance in guitar introduction
Example 3d. Van Halen, “Jump” (1983), rhythmic displacement and grouping dissonances in synthesizer introduction

Example 4a. Rufus featuring Chaka Khan, “Tell Me Something Good” (1974), perceptual strong beats in bass and vocals at end of verse (audio begins four bars before this transcription and extends two bars after, leading into the chorus)

Example 4c. Rush, “Free Will” (1980), metric grouping dissonance in verse melody

Example 5a. The Beatles, “I Want to Hold Your Hand” (1963), hypermetric displacement dissonance at end of bridge

Example 5b. The Beatles, “I am the Walrus” (1967), hypermetric grouping dissonance in verse
Example 6. Standard rock beat

Example 7a. Queen, “We Will Rock You” (1977), body percussion backbeat

Example 7b. Jimi Hendrix, “Foxy Lady” (1970), guitar mimicking backbeat

Example 8. Common clave-based rhythms in rock music
Example 9. Formal functions of metric dissonance

<table>
<thead>
<tr>
<th>SCALE OF METRIC DISSONANCE</th>
<th>FORMAL FUNCTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>small-scale</td>
<td>initiating dissonance</td>
</tr>
<tr>
<td></td>
<td>cadential hemiola</td>
</tr>
<tr>
<td></td>
<td>partial-bar link</td>
</tr>
<tr>
<td>large-scale</td>
<td>loose verse / tight chorus</td>
</tr>
<tr>
<td></td>
<td>dissonant bridge</td>
</tr>
<tr>
<td></td>
<td>dissonant frame</td>
</tr>
</tbody>
</table>

Example 10a. The Beatles, “Martha My Dear” (1968), opening of introduction and verse
(audio is instrumental verse beginning at 1:22)

Example 10c. Other initiating dissonances

**Initial irregular grouping (London’s Garden-Pathing #2)**

Chuck Berry, “Johnny B. Goode” (1958), introduction: groups of three 8th notes shift to straight 4/4
Beatles, “Martha My Dear” (1968), refrain: begins with bars of 3/4 and 2/4
Beatles, “Savoy Truffle” (1968), verse: begins with bars of 7/8 and 6/8
Beatles, “Don’t Let Me Down” (1969), verse: 5/4 bar at the beginning of both verse phrases
Chicago, “Make Me Smile” (1970), introduction: initial 3/4 gives way to 4/4

**Initial displacement (suggests wrong downbeat, London’s Garden-Pathing #1)**

Beach Boys, “Caroline No” (1966)
Jimi Hendrix, “Are You Experienced” (1967) and “All Along the Watchtower” (1969)
Black Sabbath, “Iron Man” (1971)
The Eagles, “Take it Easy” (1972)
Ozzy Osbourne, “No More Tears” (1991)
Radiohead, “Packt Like Sardines in a Crushed Tin Box” (2001)

**Initial meter unclear (London’s category V: rhythmic/metric vagueness)**

“Over the Hills and Far Away” (1973), and “Custard Pie” (1975)
Alan Parsons Project: “I, Robot” (1977)
Example 11a. David Bowie, “Changes” (1971), end of chorus melody

Example 11b. Led Zeppelin, “Rock and Roll” (1971), refrain melody

Example 11c. Beatles, “The End” (1969), ending
Jimi Hendrix, “Axis: Bold as Love” (1967), end of verse
Jimi Hendrix, “House Burning Down” (1968), end of chorus
The Band, “The Weight” (1968), end of chorus
Kansas, “Carry On Wayward Son” (1976), end of introduction

Example 12a. Prince, “Purple Rain” (1984), verse into chorus (audio begins one phrase before notated example)

\[
\begin{array}{c}
\text{F7} & \text{Bb} & \text{Eb} \\
\text{I only wanted to see you laughing in the purple rain. Purple rain, purple rain.} \\
\end{array}
\]

Example 12b. Derek and the Dominos, “Layla” (1971), chorus into verse

\[
\begin{array}{c}
\text{Dm} & \text{Bb5} & \text{C5} & \text{D5} & \text{Dm} & \text{Bb5} & \text{C5} & \text{C#m} \\
\text{Lay - la} & \text{Darling won't you ease my worried mind.} \\
\end{array}
\]

Example 12c. Other partial-bar links

Bobby Fuller Four, “I Fought the Law” (1966), 2/4 bars at end of verse and bridge
Jimi Hendrix, “Castles Made of Sand” (1967) and “Little Wing” (1968), 2/4 bar at end of verse
Beatles, “Back in the U.S.S.R.” (1968), 2/4 bar leads into bridge
Beatles, “The Continuing Story of Bungalow Bill” (1968),
2/4 bar in middle of refrain marks modulation from C major to A major
Beatles, “The Ballad of John and Yoko” (1969), 2/4 bar leading out of bridge
Elton John, “Your Song” (1970), 2/4 bar at end of refrain
B-52s, “Rock Lobster” (1978), 2/4 bar at beginning of bridge
(audio begins with second 4 bars of verse and continues through first refrain)

<table>
<thead>
<tr>
<th>SECTION</th>
<th>intro</th>
<th>verse</th>
<th>refrain</th>
<th>solo (verse+refrain)</th>
<th>intro</th>
<th>verse</th>
<th>final refrain</th>
</tr>
</thead>
<tbody>
<tr>
<td># BARS</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>(4 + 4 + 4)</td>
<td>4</td>
<td>4</td>
<td>12</td>
</tr>
<tr>
<td>KEY</td>
<td>D minor</td>
<td></td>
<td></td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>


VERSE: [mixed 3/4, 4/4, and 2/4]

CHORUS:
Living in the limelight, 3/4 concern with appearances
the universal dream
for those who wish to seem.

Those who wish to be 4/4 concern with actuality
must put aside the alienation,
get on with the fascination,
the real relation,
the underlying theme.

Example 13c. Other metric LVTC structures

Beatles, “All You Need is Love” (1967), verse in 7/4, chorus in 4/4
Rush, “Freewill” (1980), verse in 6/4, 7/4, and 8/4; chorus in 4/4
Rush, “Subdivisions” (1982), verse in 7/4, chorus 4/4
Radiohead, “Ripcord” (1993), recurring 2/4 bars in verse; chorus in 4/4
Example 14a. Yes, “Roundabout” (1971)

SECTION  intro  verse  [intro]  verse  chorus  [intro]  verse, trans.  bridge  intro  chorus solos  [verse,  coda
# BARS  (12+8)  14  4  10  16  (6+2)  chorus]  (2)  48  14  8  40  chorus]  (16 + 2)
METER  \( \frac{4}{4} \)  \( \frac{4}{4} \)  \( \frac{4}{4} \)  \( \frac{4}{4} \)  \( \frac{4}{4} \)  \( \frac{4}{4} \)  \( \frac{4}{4} \)  \( \frac{4}{4} \)  \( \frac{4}{4} \)
KEY  E minor  E dorian  G major  E dorian  E dorian  E min  G maj  E minor

2 \( \frac{4}{4} \) rhythmic displacement dissonance

A - long the drift - ing cloud, the eagle search - ing down on the land.

Catching the swir - ling wind, the sail - or sees the rim of the land.

The eagle’s danc - ing wings, create as weather spins out of hand.

GUITARS:  \( \frac{4}{4} \) (= 3+3)
DRUMS:  \( \frac{4}{4} \) (= 2+2) metric (or rhythmic) grouping dissonance


SECTION  intro  verse  refrain  B section  verse/bridge  trans.  C section  B’
# BARS  6  10  7  (4  3+1)  4x  1  24  (4  3+1)  2x
METER  \( \frac{4}{4} \)  \( \frac{4}{4} \)  \( \frac{4}{4} \)  \( \frac{4}{4} \)  \( \frac{4}{4} \)  \( \frac{4}{4} \)  \( \frac{4}{4} \)
KEY  G dorian  Gm→Am  A min/C maj  Cm→Dm  A min/C maj
Example 14c. Other metrically dissonant middle sections

Beatles, “Being for the Benefit of Mr. Kite” (1967), returns as coda
Led Zeppelin, “Dazed and Confused” (1969) and “Down by the Seaside” (1975)
Jimi Hendrix, “Rainy Day, Dream Away” (1968) and “1983 (A Merman I Should Turn to Be)” (1968)
Jimi Hendrix, “Purple Haze” (1967) and “Voodoo Child (Slight Return)” (1968), returns as coda
Doors, “Light My Fire” (1967)


Example 15b. Led Zeppelin, “Kashmir” (1975)
Example 16. Beatles corpus: 176 songs (all songs excluding covers)

a. types of metric dissonance

- consonant 4/4 (110 songs)
- consonant other meters (14)
- initiating dissonance (13)
- cadential hemiola (7)
- partial-bar links (31)
- loose verse/tight chorus (7)
- tight verse/loose chorus (3)
- dissonant middle (4)
- dissonant ending (5)
- dissonant frame (3)
- dissonant middle and ending (6)
- dissonant throughout (3)

Overall % of metric dissonance types

b. chronological distribution of metric dissonance

<table>
<thead>
<tr>
<th>Year</th>
<th>Consonance</th>
<th>Small-scale</th>
<th>Large-scale</th>
</tr>
</thead>
<tbody>
<tr>
<td>1963</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1964</td>
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<td>1965</td>
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<td>1966</td>
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<td>1967</td>
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<td>1968</td>
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<td>1969</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>1970</td>
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</tbody>
</table>

% within each year
Example 17. Rolling Stones corpus: 118 songs (all songs through 1972 excluding covers)

a. types of metric dissonance

- consonant 4/4 (80 songs)
- consonant other meters (9)
- initiating dissonance (15)
- cadential hemiola (2)
- partial-bar links (7)
- loose verse/tight chorus (0)
- tight verse/loose chorus (0)
- dissonant middle (2)
- dissonant ending (1)
- dissonant frame (0)
- dissonant middle and ending (2)
- dissonant throughout (0)

overall % of metric dissonance types

b. chronological distribution of metric dissonance

[Graph showing the percentage of consonance, small-scale, and large-scale metric dissonance by year from 1964 to 1972.]
Example 18. Hendrix corpus: 45 songs (studio albums and singles released during lifetime)

a. types of metric dissonance

- consonant 4/4 (16 songs)
- consonant other meters (1)
- initiating dissonance (7)
- cadential hemiola (4)
- partial-bar links (5)
- loose verse/tight chorus (3)
- tight verse/loose chorus (0)
- dissonant middle (4)
- dissonant ending (3)
- dissonant frame (2)
- dissonant middle and ending (3)
- dissonant throughout (0)

overall % of metric dissonance types

b. chronological distribution of metric dissonance

- "Stone Free" (1966)
- Are You Experienced? (1967)
- Axis: Bold as Love (1967)
- Electric Ladyland (1968)
- Band of Gypsys (1970)
- "Stepping Stone" (1970)

% within each year
Example 19. Led Zeppelin corpus: 59 songs (first six albums)

a. types of metric dissonance

- consonant 4/4 (24 songs)
- consonant other meters (2)
- initiating dissonance (5)
- cadential hemiola (7)
- partial-bar links (10)
- loose verse/tight chorus (4)
- tight verse/loose chorus (0)
- dissonant middle (9)
- dissonant ending (0)
- dissonant frame (0)
- dissonant middle and ending (1)
- dissonant throughout (5)

overall % of metric dissonance types

b. chronological distribution of metric dissonance

- consonance
- small-scale
- large-scale

Led Zeppelin I (1969)
Led Zeppelin II (1969)
Led Zeppelin III (1970)
Led Zeppelin IV (1971)
Houses of the Holy (1973)
Physical Graffiti (1975)
a. types of metric dissonance

- consonant 4/4 (35 songs)
- consonant other meters (2)
- initiating dissonance (13)
- cadential hemiola (2)
- partial-bar links (4)
- loose verse/tight chorus (4)
- tight verse/loose chorus (2)
- dissonant middle (7)
- dissonant ending (4)
- dissonant beginning (2)
- dissonant middle and ending (1)
- dissonant throughout (11)

b. chronological distribution of metric dissonance

- Pablo Honey (1993)
- The Bends (1995)
- OK Computer (1997)
- Kid A (2000)
- Amnesiac (2001)
- Hail to the Thief (2003)
- In Rainbows (2007)
Example 21. Tool corpus: 39 songs (four studio albums)

a. types of metric dissonance

- consonant 4/4 (4 songs)
- consonant other meters (1)
- initiating dissonance (13)
- cadential hemiola (9)
- partial-bar links (13)
- loose verse/tight chorus (1)
- tight verse/loose chorus (6)
- dissonant intro and middle (3)
- dissonant middle (11)
- dissonant middle and ending (4)
- dissonant ending (2)
- dissonant throughout (16)

Overall % of metric dissonance types

b. chronological distribution of metric dissonance

- Consonance
- Small-scale
- Large-scale

<table>
<thead>
<tr>
<th>Album</th>
<th>% within each year</th>
</tr>
</thead>
<tbody>
<tr>
<td>Undertow (1993)</td>
<td></td>
</tr>
<tr>
<td>Aenima (1996)</td>
<td></td>
</tr>
<tr>
<td>Lateralus (2001)</td>
<td></td>
</tr>
<tr>
<td>10,000 Days (2006)</td>
<td></td>
</tr>
</tbody>
</table>
Example 22. Rolling Stone 200 corpus: 200 songs (extracted from Rolling Stone Magazine’s “500 Greatest Songs of All Time” in DeClercq and Temperley 2011)

a. types of metric dissonance

b. chronological distribution of metric dissonance