THE RUBBER BAND EFFECT: STYLISTIC TENDENCIES IN MUSIC HISTORY
FROM BEBOP TO COOL JAZZ, SERIALISM TO MINIMALISM

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The stylistic characteristics of music such as melody, harmony, and rhythm are continuously evolving. The different qualities and combinations of these characteristics are how we define and categorize our musical styles, and are able to analyze the differences between musical periods. Once the differences between styles are understood, certain patterns begin to emerge. This paper will discuss one such pattern that will be referred to as the Rubber Band Effect. The Rubber Band Effect is a phenomenon that occurs when musical characteristics such as melody, harmony, and rhythm become increasingly more complex. Then like a rubber band being pulled until it snaps, the music suddenly becomes dramatically simpler. There are several instances throughout music history in which this phenomenon takes place. The changes from the heavily ornamented baroque to the song-like gallant, or complex basso continuo to classical style are just two examples of shifts to a simpler state. This paper will focus, however, on two instances of the Rubber Band Effect in twentieth-century America. Analysis of stylistic differences between serialism and minimalism, and between bebop and cool jazz will show the drastic dissimilarity between the more complex style, and the following simpler style.

Much research has been done in various aspects of music history, especially examining specific details of a musical period. Terms such as baroque, classical, and romantic convey music history as individual points in time. But by studying the relationship between these points, the individual dots are connected, and an image of
musical evolution as a continuous, flowing line appears. Up and down like a rollercoaster, music climbs to complexity and falls to simplicity. Why is it helpful to be aware of this trend? By studying musical tendencies like the Rubber Band Effect, one can have a better understanding of how music has changed in the past, and how it might evolve in the future. Musicians are often striving to create new music, and understanding what has come before only helps that process. This awareness could also lead to new research in understanding why music displays certain patterns or tendencies, and whether or not these tendencies show up in other art forms.

While the occurrence of the Rubber Band Effect in bebop and cool jazz, and serialism and minimalism will be explored specifically, time will not permit the discussion of how music returns to a more complex state after becoming simple. This seems to be a more gradual process, as opposed to the seemingly sudden change from complex to simple. Any instances of music moving suddenly from simple to complex will also not be discussed. These are interesting issues that should be explored at another time.

Kyle Gann suggests that there is a common trend in music history in his book *American Music in the Twentieth Century*. Gann claims that every successive style is simpler than the preceding one, so that minimalism and cool jazz were following the natural course. He cites ideas from theorist Leonard Meyer who believed that no one is capable of creating something better than those before, but only needs to do something

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different.\textsuperscript{2} That is certainly what the originators of minimalism and cool jazz were doing, something very different than what had preceded. In the following analysis, several differences between the complex styles and the simpler styles will be pointed out. For comparison purposes, the simpler style will be discussed first, despite the fact it chronologically followed the complex style.

**Minimalism:**

Minimalism is a style that emerged in the United States during the 1960s.\textsuperscript{3} It is most basically defined as music by composers who were “working with drastically reduced means, limiting themselves to the most basic musical elements.”\textsuperscript{4} These elements include melody, harmony, rhythm, time, and development. Author Elaine Broad defined minimalism as an aesthetic, stating that the main focus was the process of listening to the music and thinking of it as an unfinished work.\textsuperscript{5} Instead of focusing on the direction the piece is moving, the listener must focus on the subtle changes that are happening in the moment. Many minimalist pieces evolve over time through gradual transformation. They often include a constantly repeated theme or pattern that moves at a steady pulse. Constant harmony and texture, canonic imitation, and the additive process are also minimalist techniques that will be discussed.

One piece that demonstrates several minimalist traits is *Phrygian Gates* (1977-1978) by John Adams, a prominent composer of the minimalist movement. Notice how the piece opens with a steady eighth-note pulse on E (appendix 1). Gradually, Adams introduces new notes into the pattern; a single eighth note in mm. 2, 4, and 5. F sharp is added to the ostinato in m. 8, and B is added in m. 19. Not only is Adams adding to the number of notes in the pattern, but also he is also gradually increasing the range. By m. 269 (appendix 2), the range increases from the single initial note to four octaves. These are examples of the subtle changes Elaine Broad says require special audience attention to perceive. The constant eighth-note pulse is also gradually developing. In m. 194 (appendix 3), sixteenth notes are continuously added until the peak in m. 231 (appendix 4) with twenty-four sixteenth notes in one measure.

Harmonically, the piece is not difficult to analyze. It starts in the key of E major, but by m. 114 is in the key of A Lydian, followed by A Phrygian. The piece then follows the circle of fifths while alternating between Lydian and Phrygian (A-E-B-F♯-etc.). The steady pulse, gradual transformation, and steady harmonic rate are all characteristics of a minimalist piece.

Some consider the first minimalist composition to be Terry Riley’s groundbreaking piece *In C* (1964). This piece is made up of fifty-three short musical fragments, or modules, that are played in order and repeated at the musicians’ discretion (example 1). Different textures and tonalities are produced depending on which modules are being played together. All the while, a C is repeated on the piano or pitched.

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7 Johnson, “Minimalism: Aesthetic, Style, or Technique?,” 745.
percussion to keep the pulse. This somewhat random layering creates a stagnant texture, and a lack of motion towards a harmonic goal.\(^8\) It is also a fair representation of phase shifting.\(^9\) Phase shifting is when two or more musical ideas are played at slightly different tempos so that they become out of sync with each other.

Example 1, Terry Riley, \textit{In C} (modules 1-27) as shown in Johnson, “Minimalism: Aesthetic, Style, or Technique?”

\(^8\) Johnson, “Minimalism: Aesthetic, Style, or Technique?,” 745.
\(^9\) Gann, \textit{American Music in the Twentieth Century}. 196.
Usually, the ideas join again before the end of the composition. In this piece, the modules are repeated at different rates by the musicians, which creates the phasing effect. Phase shifting became especially popular with the minimalist composer Steve Reich. His compositions *It’s Gonna Rain* (1965) and *Come Out* (1966) apply the idea of phase shifting with pre-recorded loops on tape. The loops start together, but are played at different speeds. They then gradually fall out of sync with each other, creating what Reich referred to as a fascinating auditory occurrence.\(^{10}\) After experimenting with phase shifting pre-recorded loops, Reich decided to try applying the idea to live music. In 1967, he wrote the piece *Piano Phase*, in which two pianists play a simple melody in B minor at slightly different tempos\(^ {11}\) (example 2).

Example 2, Steve Reich, *Piano Phase* (mm. 2-3) as shown in Warburton, “A Working Terminology for Minimal Music.”

\(^{10}\) Gann, *American Music in the Twentieth Century*, 198.
\(^{11}\) Gann, *American Music in the Twentieth Century*, 199.
Philip Glass favors the linear additive process, “gradually adding upon each repetition until an entire pattern is complete.” This is clearly visible in such pieces as *Music in Fifths* (1969). Scalar passages are repeated in a steady eighth-note pulse while notes of the scale are adding in, creating longer lines and phrases. Another example is Reich’s *Sextet* (appendix 5). Here, instead of using linear additive process, Reich is replacing rests with beats. This is a process called block additive process, and is often used together with canonic imitation, imitation of the entrances of voices.

**Serialism:**

As seen from the analysis, minimalist pieces often display slow, very gradual melodic development, steady rhythmic pulse, and static harmonic movement that was sometimes the result of simply allowing musical phrases to fall out of sync. It is possible that the simplicity of minimalism was reaction to what had happened in Serialism (1920s-1950s). Serialism turned music into a math problem that denied the composer of “personal choice and subjectivity” where there was “no room to use God’s given musicality.”

Milton Babbitt’s piece deceptively named *Semi-Simple Variations* (1956) illustrates several of the complexities involved in serialism. Unlike a lot of minimalist pieces that rely on a constant rhythmic pulse, Babbitt’s composition changes meter almost every measure. There is a “constant variation of the relationship between the

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12 Johnson, “Minimalism: Aesthetic, Style, or Technique?,” 752.
sixteenth notes and the controlling beat.”¹⁶ This means that Babbitt uses every possible division of the quarter note, which can be seen completely already in the first variation. Constant rhythmic variation is common in serialism, and completely opposite from the driving hypnotic pulse of minimalism. Instead, the melody feels choppy, with abrupt stops that feel uneasy and random.

The way serialist composers approach harmony is interesting as well, by creating a 12-tone row. A 12-tone row is an organization of notes that includes all twelve pitches of the Western chromatic scale. Other rows are then derived by manipulating the original row using retrogrades, inversions, and transpositions. The row is then used to create the melody of the piece. Pitches appear in the melody in the order that they appear in the row. Usually, all twelve pitches are played before one can be repeated. The row that Babbitt created for this piece is unique, as the first six notes are followed by the exact retrograde transposed by a tritone.¹⁷ By combining and layering the various transpositions of the original row, Babbitt creates dissonances and a lack of a tonal center. In fact, one goal of serialism was to avoid tonality. The chords that are produced in the piece are not part of a functioning tonality, but are the trichords resulted from the rows being layered.

By the later years of serialism, composers had become interested in creating rows for every aspect of musical composition: harmony, rhythm, dynamics, articulations, etc. The father of serialism Arnold Schoenberg said that serialism is “justified by historical

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development.”\textsuperscript{18} Still many of these composers grew bored with the “rational madness” and searched out other compositional techniques such as minimalism.\textsuperscript{19} In the book \textit{Repeating Ourselves: An American Minimal Music as Cultural Practice}, Robert Fink claims minimalism was a natural reaction since serialism was a movement without goals or moments of climax.\textsuperscript{20} Arnold Whittall seems to make the same conclusion in \textit{The Cambridge Introduction to Serialism}. The music of serialism was becoming so incredibly cerebral that it eventually reached a “dead end.”\textsuperscript{21} Whittall quotes the musicologist Richard Taruskin as saying that serialism paved the way for “less obtrusive forms of compositional thinking.”\textsuperscript{22} Both of these authors analyze the complexities of serialism, and suggest that they somehow led to the more basic music of minimalism. Of course, there were surely many things that influenced the original composers of minimalism. Several of these prominent composers speak of being influenced by Eastern, Indian, and African music, music that shares some common traits with minimalism.\textsuperscript{23} John Cage, a composer who is known to have influenced the original minimalists, was interested in Buddhism, which teaches simplicity.\textsuperscript{24} Still, one must wonder if these experiences would have made such an impact had they not been such a contrast to the complexity that was occurring in serialism at the time.

\textsuperscript{18} Schoffman, \textit{From Chords to Simultaneities}, 16.
\textsuperscript{19} Schoffman, \textit{From Chords to Simultaneities}, 17.
\textsuperscript{20} Robert Fink, \textit{Repeating Ourselves, American Minimal Music as Cultural Practice} (Berkely: University of California Press, 2005), 256.
\textsuperscript{22} Whittall, \textit{The Cambridge Introduction to Serialism}, 5.
\textsuperscript{23} Morgan, \textit{Twentieth-Century Music: A History of Musical Style}, 432.
\textsuperscript{24} Morgan, \textit{Twentieth-Century Music: A History of Musical Style}, 423.
Cool:

I will be performing a piece from the bebop era and one from the cool jazz era at my recital to demonstrate the differences between the styles. To represent the cool era, I will play one of the most recognizable modal tunes in jazz, Miles Davis’ “So What” (1959). A modal tune is based on a mode or modes, often for an extended period of time. “So What” is based on two Dorian scales, D Dorian and Eb Dorian. The Dorian scale is the second mode, or scale degree, of the major scale. Therefore, to play a D Dorian scale, one must simply play in the key of C major starting on D. Eb is the second scale degree of Db. So to play an Eb Dorian scale, one plays in Db major starting on Eb. It is already clear that this is not going to be a harmonically difficult piece, as there are only two chords; D Dorian (Dmin7) and Eb Dorian (Ebmin7). The harmonic rate is also very slow, consisting of sixteen measures of Dmin7, eight measures of Ebmin7, and then returning to Dmin7 for eight measures. This slow harmonic movement opens up many possibilities for the use of space, or silence during an improvised solo.

The opening melody, referred to as the ‘head,’ is the first example of how cool composers and players used space (appendix 7). The bass, which is primarily used for time and harmony, opens with a short melodic theme in the key of D Dorian. This is then answered with a simple dotted quarter note and one eighth note by the horns, piano, and drums. The call and response is continued three more times over the Dmin7 chord before it is transposed to Ebmin7 for eight measures, and then back to the Dmin7. At a relaxed 138 bpm, there is nothing frantic about the head of this tune. When Davis comes in with his solo, the relaxed feeling remains.
Throughout his solo (appendix 8), Davis makes a point to emphasize chord tones, even starting his solo on the tonic (D). He often begins and ends phrases on a chord tone, repeating them at the end for extra emphasis. There is a noticeable lack of dissonance, as Davis focuses on strictly using the appropriate Dorian scales for the correlating chords. Only a few times does Davis play above the staff, restricting himself to playing in the lower and middle register with a warm, vibratoless tone. Davis seems less interested in showing off any virtuosic technique, and more interested in developing short melodic ideas. He uses plenty of space, starting with short, approximately one-measure phrases divided by two to four beats of rest. At the peak of his development, Davis’ longest phrase is hardly more than four measures long. Davis’ use of space is possibly influenced by the bebop pianist Thelonious Monk.\textsuperscript{25} Monk’s solos often contained lots of space and long, held out notes with little comping in the left hand.\textsuperscript{26} Tenor saxophonist Lester Young was known for his lyrical playing, less emphasis on vibrato, and use of softer attacks.\textsuperscript{27} Bebop players who displayed characteristics that would later be associated with cool surely influenced the movement to cool. To better understand why the originators of cool possibly were more influenced by these characteristics, it’s important to know some of the history at that time.

\textsuperscript{25} Eddie S. Meadows, \textit{Bebop to Cool: Context, Ideology, and Musical Identity} (Westport, Conn., Praeger, 2003), 244.
\textsuperscript{26} Owens, \textit{Bebop}, 143.
\textsuperscript{27} Meadows, \textit{Bebop to Cool}, 244.
Bebop:

The evolution of bebop emerged from “a critical change in black emotions and attitudes during the second (and larger) great migration.”\textsuperscript{28} This is referring to the time in the 1940s when many African Americans were migrating to large cities in search of new opportunities. They were exposed to new religions and ideologies that gave them the motivation to assert their identities. This generation became more “politically informed, angry, and musically adventurous.”\textsuperscript{29} They began making music for themselves, rather than for the critics in a move to separate themselves from white association. Bebop players had deep roots in the swing era, but there were several new elements that made bebop more complex.\textsuperscript{30} Guitarist Biddy Fleet notes that the rapid chord changes and different keys of bebop were to “separate the sheep from the goats.”\textsuperscript{31} Bebop became a music of “fire and guts,”\textsuperscript{32} sometimes referred to as ‘hot’ jazz.\textsuperscript{33}

The piece representing bebop on my recital will be Charlie Parker’s “Confirmation” (1945). The melody to this tune (appendix 9) is noticeably more complex than that of Davis’ “So What.” It is made up almost entirely of eighth notes, sixteenth notes, and triplets, with frequent syncopation and uneven phrases. There is also a lack of space that is seen in many cool pieces. The few rests that exist go by very quickly at approximately 195 bpm. The harmonic progression is much quicker and contains more chords than Davis’ tune. Here the chords mostly change every other beat,

\textsuperscript{28} Meadows, \textit{Bebop to Cool}, xiv.
\textsuperscript{29} Meadows, \textit{Bebop to Cool}, xiv.
\textsuperscript{30} Owens, \textit{Bebop}, 5.
\textsuperscript{31} Meadows, \textit{Bebop to Cool}, xv.
\textsuperscript{32} Meadows, \textit{Bebop to Cool}, 244.
\textsuperscript{33} Meadows, \textit{Bebop to Cool}, 243.
with the longest duration of one chord being for two measures during the bridge. Not only are the chords moving at a more rapid pace, but they are also more complex than the chords used in “So What.” There are b9’s, b5’s, augmented, and altered chords present throughout. Bebop players often altered chords, adding extensions such as 9ths, 11ths, and 13ths to add certain colors to their solos.

Looking at Parker’s improvised solo, the differences from Davis are easily noticeable. While Davis emphasized chord tones and the Dorian scales, Parker uses non-chord tones to create tension and release. For example, on the bridge of Parker’s solo there is the use of chromatic approaches (example 3). This is when chord tones are approached by either a half or whole step from above, below, or ‘enclosed’ from above and below before resolving. There is also the use of the diminished scale, a scale that alternates half steps and whole steps. It is a versatile and advanced scale that helps Parker’s sixteenth-note lines weave through the chord changes in a virtuosic manner, much different from Davis’ approach of developing short melodic ideas.

Example 3, Charlie Parker’s solo on “Confirmation,” Diz ‘n’ Bird at Carnegie Hall.

While the characteristics of “So What” and “Confirmation” do not apply to every cool jazz or bebop tune, they demonstrate some of the fundamental aspects that represent the musical styles. Much to the dismay of Miles Davis, cool jazz attracted the attention of many white performers. Because of the “Black Nationalist” vibe of bebop, cool jazz
offered an alternative to the African American culture. Therefore, characteristics that were associated with that style of music were avoided, vibrato and harsh attacks, were replaced with more relaxed, smooth phrasing.

It’s clear that there are several contrasting characteristics between serialism and minimalism, and bebop and cool jazz. These characteristics generally show that minimalism and cool jazz are simpler musical styles than the preceding serialism and bebop. It seems that there is not one cause of this evolution, but many influences. Since these styles emerged during the twentieth century, it can be more difficult to put social influences into context, as we have not seen the full effects. By becoming aware of and examining the Rubber Band Effect, we can better understand that, while music is always changing, it can still move in a predictable way. When we realize this, we can better understand how it might change in the future, which musicians are always striving to do. We can also begin to question if any music is really new, or just the next part of the trend.

34 Meadows, Bebop to Cool, 244.
35 Meadows, Bebop to Cool, 244.
Appendix

Appendix 1, John Adams, Phrygian Gates (mm. 1-20) as shown in Palisca, *Norton Anthology of Western Music.*
Appendix 2. John Adams, Phrygian Gates (mm. 217-264) as shown in Païssia, Norton Anthology of Western Music.
Appendix 6, Milton Babbitt, Semi-Simple Variations as shown in Robert P. Morgan, Anthology of Twentieth-Century Music.
Appendix 7. Miles Davis, "So What" (mm. 1-21) as shown in Lex Gilil, The Music of Miles Davis.
Appendix 8. Miles Davis solo, "So What" as shown in Lex Gil, The Music of Miles Davis.
Appendix 9, Charlie Parker, "Confirmation" as shown in The Real Book: Volume 6.
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