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Shape shift: riff variation and development in the music of Metallica

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Thesis

**'SHAPE SHIFT': RIFF VARIATION AND DEVELOPMENT
IN THE MUSIC OF METALLICA**

by

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A.B., Wheaton College, 1999

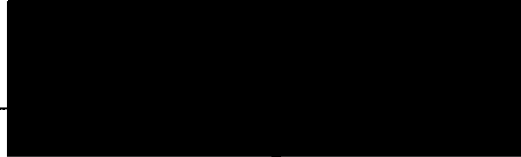
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**SHAPE SHIFT: RIFF VARIATION AND DEVELOPMENT
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ABSTRACT

Past musicological efforts have helped to elucidate the elements of style and aesthetics in heavy-metal music and explain their deeper social and cultural meanings, especially through the efforts of musicologists such as Robert Walser, Steve Waksman, Susan Fast, and Glenn T. Pillsbury. Through these discussions we recognize the riff as the primary structural unit in heavy metal and understand how it has developed out of the blues and earlier rock traditions.

The use of the riff, which is typically repeated multiple times, presents heavy-metal musicians with the opportunity and impetus to use variation. We recognize variation as a normal occurrence throughout heavy metal that also developed out of past traditions.

However, we do not typically examine riff variation as an element of style or aesthetic in heavy metal. Do certain bands or subgenres of heavy metal use it more frequently than others? Are there certain techniques that are used, and are some of those techniques more complex than others. Is variation a significant part of the songs and music that are described as being sophisticated within heavy metal?

This paper will participate in this discussion by examining the approaches to riff variation by the band Metallica. Metallica is generally acknowledged as one of the most prominent, influential, and commercially successful bands in heavy metal. Understanding Metallica's use of variation will provide an effective baseline against which the usage of variation among other heavy-metal bands can be measured, for Metallica's music satisfies the heavy-metal aesthetic in the minds of typical fans (as evidenced by the band's commercial success and reputation) and Metallica's influence on other bands may also have inspired those bands to use variation similarly to Metallica's approach. Also, Metallica's music—particularly the music written in the late '80s—is regarded as reaching the highest levels of sophistication within the context of heavy metal. Examining their use of variation within these songs may elucidate whether variation plays a role in creating the perception of this music as sophisticated.

This paper will demonstrate that Metallica's usage of riff variation and development is a significant element of their style in how they create riffs and organize songs, and one that has characterized the band's compositional process throughout their entire output. It will also establish Metallica's music as an exemplar to which the usage of variation and development by other bands can be compared, helping to aid future examinations of riff variation as an element of style and aesthetics.

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INTRODUCTION

Popular Musicology and Heavy Metal

Musicological studies of heavy metal have proliferated over the past decade. These efforts—along with the efforts that had been ongoing among heavy metal musicians, fans, and commentators from popular music publications—have helped to delineate the elements of the heavy metal style, the markers of the genre as a whole and the dividing lines between the many subgenres, and the values and aesthetics attributed to each subgenre.¹ Certainly much of the work had already been done before musicology began to address heavy metal, for by the time of Robert Walser’s landmark musicological text, *Running with the Devil: Power, Gender, and Madness in Heavy Metal Music* in 1993, heavy metal had been around for over two decades.²

The elements and aesthetics of heavy metal were already—and continue to be—in discussion among its fans and practitioners. The basic musical elements of heavy metal—including distorted timbres (particularly in guitars and vocals), power-chord harmonies,

¹ Heavy metal is commonly recognized as comprising many different subgenres. The exact number and labeling of the genres, as well as their exact qualities and representative bands, differ slightly between heavy-metal writers and commentators. In his book *Sound of the Beast: the Complete Headbanging History of Heavy Metal*, Ian Christe describes over twenty different subgenres of heavy metal or genres of music closely-related to heavy metal, including New Wave of British Heavy Metal (NWOBHM), thrash metal, death metal, black metal, glam metal, hardcore punk, grindcore, hardcore rap, and nu metal. Ian Christe, *The Sound of the Beast: The Complete Headbanging History of Heavy Metal* (New York: HarperCollins, 2003).

² Robert Walser, *Running With The Devil: Power, Gender, and Madness in Heavy Metal Music* (Hanover, NH: Wesleyan University Press, 1993). It should also be noted that Deena Weinstein was also influential in introducing heavy metal as a topic of scholarly study, particularly from a sociological position. See Deena Weinstein, *Heavy Metal: The Music and its Subculture* (New York: Da Capo 2000) and Deena Weinstein, *Heavy Metal: a Cultural Sociology* (New York: Lexington, 1991).

strong rhythmic pulse, and predilection towards performance virtuosity—were well-established and general analyses of songs and the characteristics of individual bands and subgenres were provided. The sources of these discussions came primarily in the form of instrument instruction magazines (such as *Guitar World*), genre magazines (such as *Kerrang!* and *Metal Massacre*), biographies about individual bands or artists, and encyclopedias and discographies on heavy metal.

Musicologists have also participated in defining these musical elements and aesthetics, often with the added perspective of their relation to other genres of music. Musicologists also have provided different perspectives on how to analyze songs, borrowing procedures from classical music analysis and adapting them as appropriate. They have also helped to develop an understanding of how the musical elements express power and sexuality and how these expressions are tied to larger social and cultural issues.

For example, the element of guitar virtuosity has been examined for how it became and is used in heavy metal. Steve Waksman traces heavy metal as a guitar culture stemming from British blues-rock in the '60s that in turn was inspired by the primarily African-American blues and rock 'n' roll musicians from earlier decades. The blues guitarists from the '40s and '50s (including Muddy Waters and Buddy Guy) were the first to experiment with amplification and distortion, and they used these elements to turn the guitar into a featured instrument, sparking the tradition of the “guitar hero” that continued through

heavy-metal guitarists such as Eddie Van Halen.³ Furthermore, as Walser argues, part of the function of the heavy metal “guitar hero” is to attain cultural significance—on par with the cultural significance attributed to classical music—by emulating the performance virtuosity practiced by classical musicians. Walser supports this point by analyzing guitar solos by some of heavy-metal’s most famous guitarists and identifies their use of famous classical melodies as obvious attempts establish a connection between heavy metal and classical music.⁴ Hence, musicology has helped to elucidate the role of guitar virtuosity in heavy-metal music and finds that it stands at the intersection of a few different social issues: the appropriation of African-American musical practices by white guitarists, the perceived notion of “European” classical music as a benchmark for artistic merit, and all the related issues concerning race and culture that these connections raise.

Musicologists have also addressed the style and contributions of individual bands, establishing connections to social and cultural issues. In her book *In the Houses of the Holy: Led Zeppelin and the Power of Rock Music*, Susan Fast examines some of the characteristics of Led Zeppelin’s style—their reflection and appropriation of different music traditions (including blues, folk, African, and Indian), their construction of long and epic-like songs,

³ Steve Waksman, “The Turn to Noise: Rock Guitar from the 1950s to the 1970s,” in *The Cambridge Companion to the Guitar*, edited by Victor Anand Coelho (Cambridge, UK: Cambridge University Press, 2003), 109-121; Steve Waksman, “Contesting Virtuosity: Rock Guitar since 1976,” in *The Cambridge Companion to the Guitar*, edited by Victor Anand Coelho (Cambridge, UK: Cambridge University Press, 2003), 122-132; Steve Waksman, “Into the Arena: Eddie Van Halen and the Cultural Contradictions of the Guitar Hero,” in *Guitar Cultures*, edited by Andy Bennett and Kevin Dawe (Oxford, UK: Berg (Oxford International Publishers Ltd.), 2001), 117-134; Steve Waksman, *Instruments of Desire: The Electric Guitar and the Shaping of Musical Experience* (Cambridge, Massachusetts: Harvard University Press, 1999).

⁴ See Walser, *Running With the Devil*. Discussion occurs primarily in Chapter Three, “Eruptions: Heavy Metal Appropriations of Classical Virtuosity.”

and their use of harsh sounds such as distorted guitars and wailing vocals.⁵ The band's appropriation of blues and "exotic" music is discussed in how it reflects the band's (and the audience's) attitudes towards other cultures.

Glenn T. Pillsbury's book *Damage Incorporated: Metallica and the Production of Musical Identity* examines some of the band's key stylistic developments—the incorporation of the power ballad in their early period, the growth of musical complexity from the second through fourth albums, the representation of escapism in the song "Wherever I May Roam," and the incorporation of blues and country elements in their later albums—and relates them to the band's objective to not only express the themes of control and power in their music but also maintain their own control and independence as musicians.⁶ He also discusses how these developments inspired, affected, or contrasted with developments within the genre as a whole and how Metallica both championed and challenged the values of heavy metal as perceived by the typical fan.

⁵ Susan Fast, *In the Houses of the Holy: Led Zeppelin and the Power of Rock Music* (New York: Oxford University Press, 2001). Led Zeppelin's status as a heavy-metal band is a subject of debate. Some writers attribute Led Zeppelin as one of the originators of heavy metal, whereas others credit Led Zeppelin only as an influencer of heavy metal and not as a legitimate heavy-metal band. Regardless of this debate, it is undeniable that many of Led Zeppelin's musical qualities (especially usage of distortion, reliance on riffs, and overall heavy sound of many of its songs) coincide with heavy metal's, and the band was (and continues to be) a primary influence on many heavy-metal bands. Hence, it is appropriate to include Led Zeppelin in this discussion.

⁶ Glenn T. Pillsbury, *Damage Incorporated: Metallica and the Production of Musical Identity* (New York: Routledge, 2006). Pillsbury refers to the power ballad in Metallica's works as the "Fade to Black Paradigm," which refers specifically to the song "Fade to Black," the first such ballad that Metallica wrote.

The Riff and Variation

In these works there is frequent discussion of the basic musical unit in heavy metal, the riff. The riff is a self-contained musical idea that commonly has a distinct rhythm, generally is repeated, and functions as the main structural element of the song. The practice of using riffs in heavy metal derives from rock music and the blues. Walser makes this connection in reference to Led Zeppelin, writing, “Their songs were often built around thematic hooks called riffs, a practice derived from urban blues music and extended by British imitators such as Eric Clapton (e.g. ‘Sunshine of Your Love’).”⁷ This phenomenon is also recognized by David Headlam in his article “Blues Transformation in the Music of Cream.” Headlam writes:

This procedure of extracting or arranging motivic figures or riffs from blues songs and using them repeatedly within a simplified and regularized harmonic and metric framework is characteristic of Cream and other rock bands. The practice continued in the later band Led Zeppelin and beyond, when such riffs, now newly-composed, became a staple of heavy metal. The development of riff-based blues-rock, in which the complex rhythmic and melodic patterns of the earlier country and electric blues solo styles are simplified and evened out in a rock group setting, is an essential aspect of the transformation from blues to rock music.⁸

As riffs are frequently repeated, there is opportunity and impetus for heavy-metal musicians to mix in variations of the riffs. Variation helps to break the monotony of listening to and playing the same riffs repeatedly. This practice is also tied to heavy metal’s

⁷ Walser, *Running with the Devil*, 10.

⁸ Headlam, “Blues Transformation in the Music of Cream,” in *Understanding Rock: Essays in Musical Analysis*, edited by John Covach and Graeme M. Boone (Oxford: Oxford University Press, 1997), 71.

ancestral roots in the blues, as blues riffs are often played with at least slight variances in the rhythm, meter, melodic lines, and/or harmony upon each repetition.⁹

Variation is commonly discussed in analyses of heavy-metal songs. In *Houses of the Holy*, Fast examines the riffs from the song “Black Dog” and notes that the opening riff leads to three variations.¹⁰ In *Damage Incorporated*, Pillsbury examines the song “Wherever I May Roam” and notices that the riff that follows the second chorus is a variation of the main theme of the song.¹¹ Variation is also sometimes identified in the descriptions of song transcriptions in guitar magazines.

However, variation is not typically discussed as an element of style, neither in the context of the style of individual bands nor in the context of the stylistic differences between heavy metal’s subgenres or between heavy metal in general versus other forms of popular music. There is no formalized understanding of whether certain bands or subgenres use variation more than their respective counterparts, whether specific variation techniques and effects (such as metric displacements, melodic elaborations, and changes of timbre) are used

⁹ Headlam makes note of this connection in his analysis of Cream’s version of Robert Johnson’s song “Crossroad Blues.” He demonstrates that the riffs in Johnson’s version show consistent variation upon each repetition of the riff. Headlam, “Blues Transformation,” 62-72.

¹⁰ Regarding the first variation, she writes, “It appears directly after the main riff is heard for the third time and consists of a transposed rendering of the opening gesture of the first three beats of the first full bar. This variation consists of four and one-half beats repeated three and one-half times, distributed evenly over measures of $\frac{3}{4}$, which causes a metrical displacement . . .” Of the second variation, she writes, “[It] is related to the triplet figure heard in the main riff and also the descending drop down to the octave A heard at the end of the main riff.”¹⁰ Concerning the third variation, she writes, “[The opening] motive is drawn from the gesture of the main riff that occurs directly after the opening pickup notes, which includes the rhythmically accented, dissonant C/C#-A figure.” Fast, *Houses of the Holy*, 123.

¹¹ He writes of this variation, “Ornamented by trills on melodic arrival points, it first climbs an octave, pausing partway on the #3 scale degree (thus inflecting the previously pure Phrygian mode [of the original riff] toward a more Phrygian-dominant sound) before continuing upward.” Pillsbury, *Damage Incorporated*, 108.

more often than others, or whether sophisticated forms of variation and thematic development occur and how they interact with the form of the songs in which they appear. Nor is there a discussion of how variation is a part of and contributes to the aesthetics of subgenres and the genre of heavy metal as a whole, such as whether more frequent use of variation and variations of high levels of complexity are congruent with bands that are perceived as being highly-regarded or sophisticated.

Variation and Metallica

In order to understand how variation is a part of heavy-metal style and aesthetics, it is necessary to first examine how individual bands approach variation. As part of this process, this thesis will examine the usage of riff variation in the music of Metallica. Metallica as the subject for this kind of study is appropriate for a few reasons. Metallica is generally acknowledged as one of the most prominent, influential, and commercially successful bands in heavy metal. Understanding Metallica's use of variation will provide an effective baseline against which the usage of variation among other heavy-metal bands can be measured, for Metallica's music satisfies the heavy-metal aesthetic in the minds of typical fans (as evidenced by the band's commercial success and reputation) and Metallica's influence on other bands may also have inspired those bands to use variation similarly to Metallica's approach. Also, Metallica's music—particularly the music written in the late '80s—is regarded as reaching the highest levels of sophistication within the context of heavy

metal. Examining their use of variation within these songs may elucidate whether variation plays a role in creating the perception of this music as sophisticated.

Metallica's use of variation has been generally—but not extensively—identified, not only in Pillsbury's book but also in other books about the band and heavy metal and in guitar magazines. In the article "Tweak Show: Hammett on Guitar Mutation" in *Guitar* magazine, guitarist Kirk Hammett demonstrates some of the typical ways he applies variation to his riffs.¹² In *Sound of the Beast*, Ian Christie hints at a source of inspiration for Metallica's approach to variation; regarding Metallica's self-titled album released in 1991, he writes, "... [guitarists] Hammett and Hetfield let their guitar strings ring out clearly, emphasizing obvious, attention-grabbing melodic hooks while retaining the reliable [New Wave of British Heavy Metal] formula of three riffs and a variation."¹³ Metallica is hence known to be a band that uses variation with at least some frequency, and there is anecdotal evidence that their approach is based on that of the bands of the NWOBHM.¹⁴

As this paper will demonstrate, Metallica actually uses variation with a great amount of frequency. Metallica also uses a multitude of different variation procedures, some of which result in a radical transformation of the original riff that qualify as "developments,"

¹² Joe Gore, "Tweak Show: Hammett on Riff Mutation," *Guitar*, October 1996, 63-65.

¹³ Christie, *Sound of the Beast*, 216. As explained in Note 1, "NWOBHM" stands for "New Wave of British Heavy Metal," a subgenre of heavy metal that proliferated in the late '70s and early '80s and included the bands Iron Maiden, Judas Priest, Motörhead, and Diamond Head. Guitarist James Hetfield and drummer Lars Ulrich reference the NWOBHM as one of their primary musical influences.

¹⁴ Curiously, Allan F. Moore's description of Metallica suggests that they do not use variation, writing "... the lengthy structures of Metallica, which consist of a series of (melodically unrelated) riffs, are far distant from the chord sequences of hard rock choruses." Allan Moore, *Rock: The Primary Text. Developing A Musicology Of Rock* (Burlington, Vermont: Ashgate, 2001), 151.

similar to those defined in classical music.¹⁵ Riff variation and development are used to serve various functions—not only to break the monotony of repeating the same riff but also to radically transform a riff through successive modifications and to create connections between different riffs and the sections in which they appear. In some cases the use of riff variation and development impacts the structure and form of the song, creating either mono- or multi-thematic songs. It is particularly in the songs from the late '80s where the usage of riff variation and development are the most complex and advanced.

Hence, this paper will demonstrate that Metallica's usage of riff variation and development is a significant element of their style in how they create riffs and organize songs, and one that has characterized the band's compositional process throughout their entire output. It will also establish Metallica's music as an exemplar to which the usage of variation and development by other bands can be compared. With the aid of this study, it will be possible through future research to determine how Metallica's approach to variation differs with that of other bands and if variation serves as an element of style within certain subgenres, for example, whether the subgenres of thrash metal (the subgenre to which Metallica is most closely connected) and New Wave of British Heavy Metal (as suggested by Christie) share the same approaches to riff variation and whether they differ greatly from other subgenres.

¹⁵ Some variations represent a slight change from the original idea, whereas others depart far greater and mark a significant structural change. In classical music studies, the difference in the quality of change between lesser and greater variations is addressed by the usage of two distinct terms, "variation" and "development" (the definitions of which will be discussed in Chapter 1). In this paper, the term "riff modification" will be used as a generic term describing both variation and development.

Chapter 1 will survey the multitude of variation and development procedures that the band uses and will analyze several examples from the gamut of their works. Chapter 2 will analyze the song “Of Wolf and Man” to show how Metallica builds a song mostly from one riff and its variations and developments, essentially creating a monothematic song (an approach they use in several of their songs). Chapter 3 will examine the song “. . . And Justice for All” to reveal how Metallica uses variation and development in a multi-thematic work to extensively manipulate and interrelate the three separate themes and delineate the song form. Chapter 4, the concluding chapter, will briefly analyze two songs by Pantera and Megadeth (heavy-metal bands contemporaneous with Metallica) to demonstrate how Metallica’s peers use variation and development.

A Brief History of Metallica

Metallica was formed in Los Angeles by singer and rhythm guitarist James Hetfield and drummer Lars Ulrich, two friends who shared a taste for the New Wave of British Heavy Metal (NWOBHM) bands such as Angel Witch, Saxon, Diamond Head, and Iron Maiden. The musical elements of the NWOBHM—multi-structured song forms, use of pentatonic scales and minor modes with $\flat 2$ and $\flat 5$ scale-degrees, changes in tempo, and palm-muting¹⁶ on the guitar—were incorporated into Metallica’s style along with the fast tempos and aggressive dynamics of punk music. This unique blend distinguished Metallica

¹⁶ A muting technique in which the palm of the strumming hand is rested lightly on the strings near the bridge of the guitar.

from other burgeoning bands, as they were far more aggressive than the glam-rock bands that dominated Southern California in the early 1980s. By cultivating a powerful underground following, Metallica quickly found themselves influencing other bands to codify this style into a new subgenre called thrash metal (a.k.a. speed metal). Their first album *Kill 'Em All*, recorded in 1983, is considered one of the very first thrash-metal recordings.¹⁷

With their second and third albums *Ride the Lightning* (1984) and *Master of Puppets* (1986), Metallica displayed a progressive refinement of their songwriting: song structures become more dense and complex with the inclusion of more riffs; metric changes and interjections of odd measures disturb the prevailing four-measure phrase; acoustic textures are intermingled with distortion for dramatic effect; the dual guitar texture becomes more contrapuntal and adds harmonic variety; and the tonality expands into Dorian, Phrygian, Locrian, and major modes. This growth in their style culminates in the album . . . *And Justice for All* (1988), in which the sophistication of their song structures and shifts in meter along with the sheer length of the songs (an average of six and a half minutes long) represent the pinnacle of complexity of not only their own output but of thrash metal as a whole.¹⁸

Their fourth album brought mainstream success to the band and to the genre, as it became the first thrash metal-album to enter the Billboard Top Ten, and Metallica was soon

¹⁷ “. . . *Kill 'Em All* was largely responsible for spearheading the thrash phenomenon.” Jeff Kitts, “Thrasherpieces: The Top Ten Thrash Albums of All Time,” *Guitar School Presents Thrash Guitar*, 1993, 10.

¹⁸ “Rising above the now vast and rich heavy metal underground, Metallica was on the verge of destroying a host of heavy metal clichés with a distinguished, grand-scale rebuttal, crowning the heavy metal 1980’s with a master’s thesis on heaviness.” Christie, *Sound of the Beast*, 194.

recognized as the premiere heavy-metal band.¹⁹ Metallica would enhance their status with the release of their fifth album *Metallica* (1991), informally known as the Black Album. In the Black Album, Metallica retreated from the complexity of the songs in *Justice*; the songs are shorter, feature fewer riffs, and tempo and metric changes are eschewed. The songs are more radio- and MTV-friendly, which resulted in a tremendous boost in their popularity: *Metallica* entered the Billboard chart at No. 1 and became widely known outside the circle of heavy metal.²⁰

Metallica wouldn't release another album for five years, and during that time period the popularity of heavy metal would decline with the rise of grunge and alternative music. In that time, Metallica would craft enough songs to fill two albums. Half of them were released on the album *Load* (1996). On this album, the music demonstrates a further development in their style: the same simplified approach to song structures from the Black Album is present, but riffs are more blues-oriented than before, and the music features different guitar, drum, and vocal effects and timbres. The second set of songs was released on the album *Re-Load* (1997), which also featured a varied use of timbres, though with less emphasis on blues-oriented riffs.

¹⁹ "Heavy metal held the popular majority [by the end of the 1980s], and Metallica had become the ambassador to the world outside the heavy metal parking lot. *Justice* had already sold more than 2 million copies in two years [since its release in 1988], and nearly every fan of heavy metal was now a Metallica loyalist." Christe, *Sound of the Beast*, 214.

²⁰ "The band crafted a thick sound befitting universal popularity—one that would carry to the back rows of big venues and punch through the speakers of tiny transistor radios. The product of these labors, *Metallica*, the Black Album, would eventually make the band a household name 50 million times over. It would turn America into a nation of headbangers—housewives, sailors, software programmers, major-league ball players, and all." Christe, *Sound of the Beast*, 216.

During this period, Metallica retained its appeal to the mainstream, though its authenticity as a heavy-metal band began to be challenged. Noticeably absent from both albums were the qualities of speed and overwhelming guitar distortion that defined traditional heavy metal. Their highly publicized legal battle with the makers of the popular music-swapping software Napster further eroded their popularity among faithful heavy-metal fans, as many of them began to perceive Metallica as money-obsessed and callous in their attempt to deprive fans of free music.

Metallica did not release another album of original music until 2003—almost six years since *Re-Load*—with *St. Anger*. The making of the album, along with the personal struggles of the band members and their attempt to find resolutions through group therapy, was captured in the film *Some Kind of Monster* (released in early 2004), bringing additional attention to the band for their willingness to make the intimate and embarrassing details of their lives open. In this album, Metallica showed yet another dramatic shift in their songwriting, with elements of their past styles infused with fresh approaches. Riffs that recall the speed and motivic simplicity of the earliest albums are incorporated in complicated structures similar to those of *Master* and *Justice*. As with *Load* and *Re-Load*, Metallica uses various timbres, and unlike any previous album they use down-tuned guitars exclusively, neglect their previously-favored technique of palm-muting, and do not feature a significant guitar solo. Many critics view this latest album as Metallica's attempt to return to their roots and recover the crown as the premier heavy-metal band.

Currently, the band consists of Hetfield and Ulrich (the two remaining original members), Kirk Hammett (the lead guitarist since 1983), and Robert Trujillo (the bassist since 2003). Noteworthy past members include former lead guitarist Dave Mustaine (who was replaced by Hammett and went on to form the band Megadeth), former bassist Cliff Burton (who died in a bus accident while the band was on tour in 1986), and former bassist Jason Newsted (who played in the band from 1987 to 2001); several others have played temporary and insignificant roles during the band's history. Although current and past members have participated in the songwriting to varying degrees, the lion's share of the songwriting and arrangement duties have been performed by Hetfield and Ulrich, with Hammett and Burton having made significant contributions as well. Some of the songwriting on *St. Anger* was also contributed by producer Bob Rock, who also produced *Metallica*, *Load*, and *Re-Load*.

Notes on Analyses

Heavy metal is guitar-driven music, and Metallica's music is no exception. The significant musical material generally occurs in the guitar parts. Sometimes the vocals, drums, or bass will contribute to the thematic material, but most often in conjunction with the guitars and rarely independently. Therefore, the music analyses will chiefly concern the guitar parts; the vocals will be included to indicate the progression of the lyrics in the song.

The analyses will be based on the studio-recorded versions of Metallica's songs. Metallica mostly records only two guitar parts. However, there are instances where more than two guitar parts are recorded, though the material played in the additional parts is often ancillary. Furthermore, the two principal guitar parts often play the same material.

Guitar parts are conventionally notated with a treble clef with the notes transposed an octave above the actual tones. Metallica's music, as with heavy metal in general, is normally confined to the lower registers, i.e. E2 to E4. Even with the transposition of the notes, the resulting notation requires the frequent use of multiple ledger lines, which makes reading difficult. In the following excerpts, the guitar parts will be notated in the bass clef with notes at actual pitch, which reduces the need for ledger lines and accurately portrays the low registers in which this music occurs.

In order to focus the analyses on the essential aspects of the riff (e.g. the pitch and rhythm of the notes, meters, and keys), indications of articulations and other performance techniques (e.g. vibrato, palm-muting, slides, and bends) will not be indicated, and guitar solos will not be notated. This is not to indicate that such aspects are superfluous in Metallica's music; in fact, muting of the guitar strings is an important and rather ubiquitous part of Metallica's music, and Kirk Hammett's guitar solos are considered among the best in the genre. However, for the purposes of this paper, discussing and indicating these elements is not essential to the understanding of how variations and developments relate to their source riffs or the how the riffs form the framework of the song.

Delineation of Form

The standard song form in Metallica's music, as in heavy metal in general, is the ABA' form: the A section begins with a short introduction and contains at least one set of verse and chorus, the B section contains an instrumental interlude or solo section, and the A' section is a modified reprise of the first with a final set of verse and chorus.

Though this standard formula applies to most heavy-metal songs, it is by no means the only song form used; songs in binary form are not uncommon, nor are rondo-like and free-form structures. Within the ABA' form, there is also a great deal of diversity of length and organization, especially within the latter two sections. B sections can consist of anywhere from a few measures to over a hundred of independent music, and A' sections typically represent an incomplete and shortened version of the A section or a complete return of the section with an extended coda.

Within the sections themselves there are many different subsections that can be used. The A section often begins with an instrumental introduction, which includes music that may reappear over the course of the song. An instrumental refrain follows, which often includes the main theme of the song. The vocals enter with the first verse of lyrics, often set to the music of the refrain. A chorus with repeating text follows after the verse, but sometimes it can be prefaced by a pre-chorus, a separate section with lyrics. The main feature of the B section is normally the lead guitar solo, and it can also include an

instrumental interlude of contrasting music or a bridge with a secondary vocal section.²¹

The A' section often ends with a coda, which can include contrasting music or a return of music from the A and B sections. All of these subsections can be connected with transitions, which can vary in length from one to several measures long.

²¹ This rock-music definition of a bridge contrasts with its classical-music definition as a transitional section between two sections of greater importance. The vocal bridge section described here can also serve a transitory function, either prefacing a guitar solo or the entrance of the A' section, but there is no implication of the bridge in rock music as being of secondary importance. In some examples, the bridge acts as the climax of the song, such as in Metallica's "Creeping Death" from the album *Ride the Lightning*.

CHAPTER 1: EXAMPLES OF VARIATION AND DEVELOPMENT

"I tweak [riffs] a lot. When I'm writing a lick or riff, I'll play it like 50 times, but, say, change it every fourth time. Maybe I'll alter it rhythmically, or go from a minor 3rd to a major 3rd, or sharp the 4. Maybe I'll add drone notes or play it on the upbeat. I might chop it in half, add bends—there are so many different ways of doing it."
-Kirk Hammett ¹

The above quotation by Kirk Hammett offers a glimpse into his creative process.

Clearly he seems to generate his ideas by playing a riff continuously and periodically making small changes. Not only does he make a multitude of changes but also makes the changes on many different aspects of the riff: rhythm, melody, harmony, phrase length, ornamentation, etc.

Aside from Hammett's use of the vernacular term "tweak," heavy metal does not have a codified term to describe variation and development. The term "riff mutation" is used in the same article in which Hammett describes how he "tweaks" his riffs, but there is no evidence that either term is used universally among heavy-metal musicians and scholars.² However, the terms "variation" and "development" have specific connotations within art music, so it is important to distinguish how these terms should be used in the context of heavy metal without misrepresenting either genre.

"Variation" and "development" both refer to the modification of a musical idea.

The *Harvard Dictionary of Music* makes the following distinctions:

¹ Joe Gore, "Tweak Show: Hammett on Riff Mutation," *Guitar*, October 1996, 65.

² Gore, "Tweak Show" 63-65.

Variation: A technique of modifying a given musical idea, usually after its first appearance . . . In the context of Western art music, the term commonly means elaboration of melody or accompaniment; other kinds of modifications, such as development or transformation, are often considered outside the scope of variation.³

Development: structural alteration of musical material, as opposed to the exposition or statement of material. Development may affect any parameter of a theme; typical examples would include significant modification of pitch contour or rhythm, formal expansion or contraction, textural change, melodic fragmentation, and melodic or contrapuntal combination with other themes. Development may also usefully be distinguished from variation, the former involving a true structural transformation, the latter merely an ornamental change such as a melodic elaboration or a shift in dynamics or orchestration.⁴

In the context of this paper, the term “variation” will be used to refer to those modifications in which the phrase length, meter, motivic ordering, and melodic contour or basic chord progression of the original riff are preserved; embellishments, ornamentations, changes in timbre, and transpositions will fall under this category. Modifications that affect a structural change to any or all of the above parameters will be considered “development.” As will be seen in the following analyses, developments occur mostly on entire riffs, whereas variations occur both on riffs and on the motives upon which they are built.

³ Don Michael Randel, *The New Harvard Dictionary Of Music*, (Cambridge, Massachusetts: Belknap Press of Harvard University Press, 2003), 938.

⁴ *Ibid*, 238.

Examples of Variation

Metallica commonly uses transpositions, changes in timbre, and embellishments as variation devices. As variation only creates a superficial alteration from the original riff, the resulting riffs are perceived as closely related to the original. The most obvious function of these variations is to extend and refresh a musical idea, which is a valuable tool in breaking the monotony of repeating riffs verbatim, a standard device in heavy metal music.

Example 1.1 shows how Metallica uses transposition of a riff from the song “Seek and Destroy” from the album *Kill 'Em All*. Riff H, which is in A minor, is transposed to E minor to create Riff I. There is a minor difference between the two riffs—the first two notes of Riff H are on a dyad, whereas the first two notes of Riff I are on single notes—but otherwise the transposition is exact. The transposition is understood best by observing how it is played on the guitar. The tablature underneath the first riff demonstrates that it is played on the A and D strings on the guitar beginning in the fifth position (i.e. the fretting hand is initially positioned at the fifth fret of the neck on the guitar). The tablature underneath the transposed riff shows that it is played in the same positions but on the E and A strings, a string lower from the original riff. Therefore, the transposition of the riff from A minor downward to E minor is facilitated by the simple movement of the left hand down by a string.

Example 1.1: "Seek and Destroy," Riffs H and I

The image shows two musical examples. The first, labeled 'Riff H', is in bass clef with a tempo marking of quarter note = 208. It consists of a single melodic line on a guitar staff. Below it is a guitar tablature with six strings (E, B, G, D, A, E) and fret numbers: 5-7-0-7-0-0-7-0, 5-0-0-7-0-0-7-0, 4-0-0-7-0-0-7, and 3-2-0-3-2-0-3-0. The second example, labeled 'Riff I', is in bass clef with a key signature of one sharp (F#). It consists of a single melodic line on a guitar staff. Below it is a guitar tablature with the same fret numbers as Riff H. A dashed line between the two staves is labeled 'Riff H transposed to E min.'.

"Seek and Destroy," written by James Hetfield and Lars Ulrich, courtesy of Creeping Death Music (ASCAP)

Another simple variation procedure that Metallica uses is embellishment via the harmonization of single notes, usually in the form of parallel thirds, fourths, or fifths. Example 1.2 demonstrates how harmonization is applied to a riff from the song "Fuel" from the album *Reload*. The riff, Riff C, is in E \flat minor and is a repeat of a motive (labeled x) on the notes A \flat - G \flat - E \flat - D \flat (Example 1.2a):⁵

⁵ The E \flat minor key is facilitated by the tuning down of the guitar one half-step to E \flat - A \flat - D \flat - G \flat - B \flat - E \flat .

fifth. The melody combines with the power chords in the rhythm guitar to create the harmonic progression on the following chords: A min. - G maj. - E min. - F maj. - A min. - G maj. - E min. - G maj.

Example 1.3a: "To Live is to Die," Riff H

Riff H $\bullet = 100$
w/ distortion

Guitar 1

Guitar 2

"To Live is to Die," written by James Hetfield, Lars Ulrich, and Cliff Burton, courtesy of Creeping Death Music (ASCAP)

The next riff, Riff I, is a variation in which the melody of the riff is embellished by the addition of harmony in parallel thirds (Example 1.3b):

Example 1.3b: "To Live is to Die," Riff I

Riff I

The image shows a musical score for two guitars. The top staff is labeled 'Guitar 1' and the bottom staff is labeled 'Guitar 2'. The key signature has one sharp (F#) and the time signature is 4/4. The score is divided into two systems. The first system shows the initial riff. The second system shows a variation of the riff. A dashed line separates the two systems. The text 'Riff H with harmonization in thirds, embellishment' is written above the first system. The notation includes various chords, single notes, and a melodic line with a long note in the second system.

Guitar 1

Riff H with harmonization in thirds, embellishment

Guitar 2

"To Live is to Die," written by James Hetfield, Lars Ulrich, and Cliff Burton, courtesy of Creeping Death Music (ASCAP)

After the Riff I, the electric guitars, drums, and bass halt, and a clean-tone guitar enters with another variation, Riff J. Both elements of Riff H are incorporated into a single guitar part as the melody is embellished and interwoven with chord tones of the harmonic progression, and the striking of the strings with a plectrum is replaced with the use of fingerpicking style:

Example 1.3c: “To Live is to Die,” Riff J

The musical notation shows two staves for Guitar 1. The top staff is labeled 'clean-tone' and 'Riff J'. It begins with a triplet of eighth notes (G4, A4, B4) followed by a quarter note (C5), a quarter note (B4), and a quarter note (A4). The bottom staff starts with a quarter note (G3), a quarter note (F3), and a quarter note (E3), followed by a quarter note (D3), a quarter note (C3), and a quarter note (B2). The notation includes various rhythmic values and articulation marks.

“To Live is to Die,” written by James Hetfield, Lars Ulrich, and Cliff Burton, courtesy of Creeping Death Music (ASCAP)

The embellishment of the melody is not significant, but the changes to the timbre and texture of the theme create a powerful moment of contrast. The rapid reduction of the instrumentation from the two guitars (plus bass and drums) to a single guitar part, the change from a distorted timbre to clean-tone, and the change from picking with a plectrum to fingerpicking combine to create a dramatic sonic reduction.

Along with harmonic and melodic embellishments, Metallica also makes changes to the rhythm of riffs. In the song “Leper Messiah” from the album *Master of Puppets*, Metallica applies several different changes of rhythm to a riff. Example 1.4a is Riff M, the first riff of the B section of the song. The riff comprises the first guitar playing a power-chord progression on E - F - G - A - E - D - A - B and the second guitar playing an E minor melody with occasional chromaticism:

Example 1.4a: "Leper Messiah," Riff M

Riff M ♩ = 184

The musical notation for Riff M consists of two staves, Guitar 1 and Guitar 2, in the key of E major (one sharp) and 4/4 time. The tempo is marked as ♩ = 184. Guitar 1 plays a series of power chords: E2-A2 (measures 1-2), E2-A2-G#2 (measures 3-4), and E2-A2 (measures 5-6). The first two measures of each chord are tied over. Guitar 2 plays a rhythmic pattern of eighth notes: E2 (quarter), G#2 (quarter), A2 (quarter), B2 (quarter), E2 (quarter), G#2 (quarter), A2 (quarter), B2 (quarter), E2 (quarter), G#2 (quarter), A2 (quarter), B2 (quarter), E2 (quarter), G#2 (quarter), A2 (quarter), B2 (quarter). The last measure of the riff features a vibrant rhythm with both guitars playing power chords.

"Leper Messiah," written by James Hetfield and Lars Ulrich, courtesy of Creeping Death Music (ASCAP)

The riff is repeated as Riff N, which is a slight variation of Riff M (Example 1.4b).

In both the second and sixth measures in the first guitar, the whole note chords tied over from the previous measures are replaced by two eighth notes with rests filling in the remainder of the measure. In the last measure, both guitars play a vibrant rhythm on the power chords:

Example 1.4b: “Leper Messiah,” Riff N

Riff N

Gtr. 1

Gtr. 2

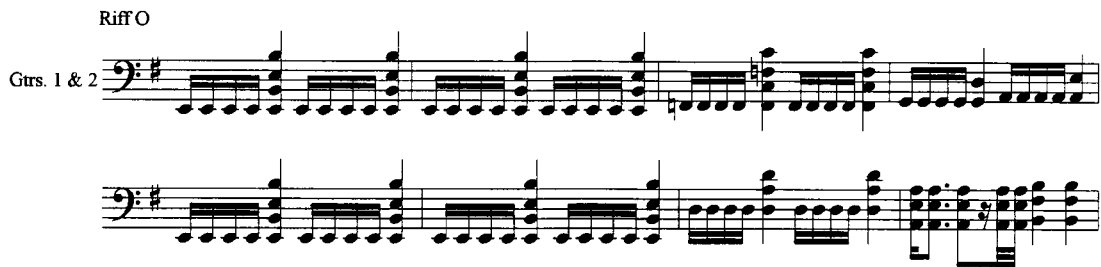
“Leper Messiah,” written by James Hetfield and Lars Ulrich, courtesy of Creeping Death Music (ASCAP)

In Riff O, the melody is removed from the setting, and both guitars play the chord progression, which is embellished by the replacement of the whole-note values with a pattern of sixteenth and quarter notes (Example 1.4c). The final measure is the same as in Riff N:

Example 1.4c: “Leper Messiah,” Riff O

Riff O

Gtrs. 1 & 2



“Leper Messiah,” written by James Hetfield and Lars Ulrich, courtesy of Creeping Death Music (ASCAP)

The next riff, Riff P, is a variation in which the texture is further reduced to the root notes of the chord progression (Example 1.4d). The rhythm is galvanized with a rhythmic pattern that suggests a $\frac{12}{8}$ meter:

Example 1.4d: “Leper Messiah,” Riff P

Riff P

Gtrs. 1 & 2



“Leper Messiah,” written by James Hetfield and Lars Ulrich, courtesy of Creeping Death Music (ASCAP)

Riff Q then enters, which features the second guitar plays a variation of its melody from Riff M (Example 1.4e). Diminution is applied to the half notes of the original melody,

which are filled in with a melodic embellishment in eighth notes. The first guitar plays the original rhythm of the chord progression:

Example 1.4e: “Leper Messiah,” Riff Q

Riff Q

The musical notation for Riff Q consists of two systems of two staves each. The top staff is labeled 'Gtr. 1' and the bottom staff is labeled 'Gtr. 2'. Both staves are in bass clef and have a key signature of one sharp (F#). The first system shows Gtr. 1 playing a chord progression with melodic embellishments (eighth notes) and Gtr. 2 playing a rhythmic eighth-note pattern. The second system shows a variation of the riff, with Gtr. 1 playing a different chord progression and Gtr. 2 playing a different rhythmic pattern.

“Leper Messiah,” written by James Hetfield and Lars Ulrich, courtesy of Creeping Death Music (ASCAP)

Riff R acts as a repeat of Riff Q (Example 1.4f). It is a slight variation in which the first guitar plays according to the rhythm of Riff O while the second guitar repeats its part from Riff Q:

Example 1.4f: “Leper Messiah,” Riff R

Riff R

The musical score for Riff R consists of two systems of two staves each. The top staff is labeled 'Gtr. 1' and the bottom staff is labeled 'Gtr. 2'. Both staves are in a key signature of one sharp (F#) and use a bass clef. The first system shows the initial riff, with Gtr. 1 playing a series of chords and Gtr. 2 playing a rhythmic pattern. The second system shows a variation of the riff, with Gtr. 1 playing more complex chordal textures and Gtr. 2 playing a similar rhythmic pattern.

“Leper Messiah,” written by James Hetfield and Lars Ulrich, courtesy of Creeping Death Music (ASCAP)

Not only are many different changes made to the riff, the changes are presented in different combinations, adding another element to the riff modifications. These riffs constitute a “theme-and-variations” section, in which the theme (Riff M) and its variations (Riffs N, O, P, Q, and R) are united by a common chord progression and phrase structure. As these riffs are unrelated to the music of the other sections of the song, they distinguish the B section from the A and A' sections in terms of thematic material.

Examples of Development

Many of the modifications that occur in Metallica's music involve a structural change to the original themes and can thus be classified as developments. These types of modification often affect one or more of the motives of the riff, either by accretion, expansion, or diminution of motives, or by a reordering of their position in the riff.

In the song "Creeping Death" from the album *Ride the Lightning*, the main riff of the song is extended by the addition of related material (Example 1.5). The refrain riff, Riff D, is a two-measure phrase that includes an eighth-note motive (motive \times) that comprises an alternation of root notes on E and perfect-fourth dyads built on B and E (Example 1.5a). The phrase ends with a melodic figure centered on B:

Example 1.5a: "Creeping Death," Riff D

The musical notation for Riff D is written in bass clef with a key signature of one sharp (F#) and a common time signature (C). The notation shows a two-measure phrase. The first measure contains a sequence of eighth notes: E2, B1, E2, B1, E2, B1, E2, B1. The second measure contains a sequence of eighth notes: B1, E2, B1, E2, B1, E2, B1, E2. A bracket labeled 'x' spans the first two measures. Above the first measure, there is a tempo marking '♩ = 184'.

"Creeping Death," written by James Hetfield, Lars Ulrich, Cliff Burton, and Kirk Hammett, courtesy of Creeping Death Music (ASCAP)

Riff D yields a development, Riff H, which is the first riff of the B section (Example 1.5b). It is a four-measure phrase in which Riff D is used as the first two measures. The second two measures include a transposition of \times up a perfect fourth to A (with the root

note A played underneath the perfect fourth dyads), and the phrase ends with quarter-note power chords on A and C:

Example 1.5b: “Creeping Death,” Riff H

Riff H

Gtr. 1

x transposed (A minor)

“Creeping Death,” written by James Hetfield, Lars Ulrich, Cliff Burton, and Kirk Hammett, courtesy of Creeping Death Music (ASCAP)

The development of Riff D is facilitated by the addition of a variation on motive x . The addition not only doubles the length of the riff but also changes the static harmony of the original verse riff into an I-IV-VI power chord progression.

Metallica also occasionally adds motives to riffs within the same space of the original riff. In the song “The Thing that Should Not Be” from *Master of Puppets*, the simple motive of the beginning riff evolves over the following riffs (Example 1.6). Riff A is a simple ascent beginning on an anacrusis from a D power chord to an E power chord, with the E chord sustaining for nearly two measures (motive x). In Riff B, x is shortened (x') and the space is filled in by an ascending chromatic figure on B \flat - B - C (y). In Riff C, the clean-tone timbre of the guitar is switched to distortion, x is embellished by chromatic step-wise movement

from the D power chord to E (x^2), and the notes of y become the root notes of power chords (y^1).

Example 1.6: “The Thing that Should Not Be,” Riffs A, B, and C

Riff A
clean-tone $\bullet = 116$

Guitar 1

Riff B

Riff C
w/ distortion

“The Thing that Should Not Be,” written by James Hetfield, Lars Ulrich, and Kirk Hammett, courtesy of Creeping Death Music (ASCAP)

In this particular example, Metallica uses motivic accretion, embellishment, and a change in timbre to create an evolution from the sparse initial idea into a more rhythmically and melodically active riff.

Metallica also will change a riff by subtracting material. Example 1.7a is the opening riff from the song “All Within My Hands” from the album *St. Anger*. The riff is in C minor

and includes a descending pattern of power chords on G - G^b - F - E[♯] - E^b, with the first two chords alternated between chords on the tonic:⁶

Example 1.7a: “All Within My Hands,” Riff A

Riff A $\bullet = 216$

Guitars 1 & 2

The musical notation for Riff A is written on a single staff for Guitars 1 & 2. It begins with a treble clef and a key signature of one flat (B-flat). The tempo is marked as quarter note = 216. The riff consists of a sequence of power chords: G2, Gb2, F2, E#2, and Eb2. The notes are played in a descending sequence, with some chords being held or tied across measures.

“All Within My Hands,” written by James Hetfield, Lars Ulrich, Kirk Hammett, and Bob Rock, courtesy of Creeping Death Music (ASCAP)

After a repeat, the riff is followed by a development, Riff B (Example 1.7b). The final three chords are removed and replaced by a half-note rest. The pattern, which is truncated from four measures to two, is repeated:

Example 1.7b: “All Within My Hands,” Riff B

Riff B

Gtrs. 1 & 2

The musical notation for Riff B is written on a single staff for Guitars 1 & 2. It follows the same key signature and tempo as Riff A. The riff is a truncated version of Riff A, consisting of the first two chords (G and Gb) followed by a half-note rest, then the last two chords (E# and Eb).

“All Within My Hands,” written by James Hetfield, Lars Ulrich, Kirk Hammett, and Bob Rock, courtesy of Creeping Death Music (ASCAP)

As one of Metallica’s most common development procedures involves the expansion or diminution of a phrase, the result often includes a change in the metrical length of the riff. Example 8 shows such a change between the verse and chorus riffs from the song “Until It Sleeps” from the album *Load*. The verse riff, Riff C, is a two-measure phrase in $\frac{4}{4}$ and in A

⁶ The C-minor tuning is facilitated by the tuning down of the strings to C – G – C – F – A – D.

minor with a descending chord pattern of i - VII - VI. It is transposed to E minor and reconstructed to become the chorus riff, Riff D. The first nine eighth notes of the phrase, which include the i - VII progression, are transposed verbatim (see solid brackets), but the rest of the verse riff is excluded and replaced by new material (see dashed brackets). Instead of a descent to VI, the phrase ends with an ascent to \sharp vii. The substitution of this new material shortens the phrase length to a single $\frac{6}{4}$ measure:

Example 1.8: “Until It Sleeps,” Riffs C and D

The image shows two musical staves. The top staff, labeled 'Riff C', is in 4/4 time and is for 'Guitars 1 & 2'. It features a descending chord pattern of i, VII, and VI. A tempo marking of 120 is shown. The bottom staff, labeled 'Riff D', is in 6/4 time and shows a descending chord pattern of i, VII, and \sharp vii. Solid brackets connect the first two chords of Riff C to Riff D, indicating transposition. Dashed brackets indicate the replacement of the final chord and subsequent notes in Riff D.

“Until It Sleeps,” written by James Hetfield and Lars Ulrich, courtesy of Creeping Death Music (ASCAP)

In this instance, it is only the length of the phrase that is affected rather than the quality of the meter itself. This is consistent with most changes of meter in Metallica’s music—they frequently represent the addition or subtraction of a fraction of a measure, which creates a “hiccup” in the dominant meter of the song section. However, in the case of the opening riff of “One” from . . . *And Justice for All* (Example 1.9), the development

represents a true change of meter. Example 1.9a shows Riff A, which is an eight-measure figure in B minor and in $\frac{4}{4}$, with the final measure in $\frac{2}{4}$. All measures except for the fourth and last end with a tied eighth note and half note on D:

Example 1.9a: “One,” Riff A

Riff A
Guitar 1
• = 108

“One,” written by James Hetfield and Lars Ulrich, courtesy of Creeping Death Music (ASCAP)

This riff is developed into a $\frac{3}{4}$ version to become the verse riff, Riff D (Example 1.9b). To facilitate the change in meter, the tied eighth and half notes on the pitch D at the end of each measure are replaced by embellishments on D of the value of three eighth notes. The final $\frac{2}{4}$ measure is unchanged:

Example 1.9b: “One,” Riff D

Riff D

Gtr. 1

The musical notation for Riff D is presented in two staves. The first staff, labeled 'Gtr. 1', shows a repeating eighth-note pattern in D major (two sharps) and 2/4 time. The notes are D2, F#2, A2, B2, G#2, F#2, E2, and D2. The second staff continues this pattern but includes a change in meter to 3/4 at the end, with notes D2, F#2, A2, B2, G#2, F#2, E2, and D2.

“One,” written by James Hetfield and Lars Ulrich, courtesy of Creeping Death Music (ASCAP)

Summary

The above examples demonstrate Metallica’s basic approaches to riff variation and development. Metallica puts riffs through a multitude of variation and development procedures that include but are not limited to transposition, change in timbre, melodic or rhythmic ornamentations and embellishments, addition or subtraction of motives or chords, variations to the motives, and changes of meter.

In many of Metallica’s songs, riff modification is used with enough frequency and deliberation that it affects the actual structure of the song. Example 1.4 from “Leper Messiah” is one such instance where riff modification is part of a significant portion of the song (in this case, the entire B section of the song). In some songs, as we shall see, Metallica takes this process a step further and applies these procedures to most or nearly all of the riffs. The next two chapters will show how riff modification is used throughout a song and how it significantly informs the song structure.

CHAPTER 2: “OF WOLF AND MAN”

In the fall of 1990, Metallica entered the studio to record their fifth album with a particular objective: to shorten and simplify their songs. The songs from the previous album, . . . *And Justice for All*, averaged roughly six-and-a-half minutes in length, with a few songs approaching ten minutes in length. Playing songs of this duration during their live performances began to wear on the band’s collective patience. “About half way through the ‘Damaged Justice’ tour [the concert tour following the release of . . . *And Justice for All*],” admitted Ulrich, “I was sitting there playing these nine-minute songs thinking, why am I sitting here worrying about how perfect these nine-minute songs have to be when we play [a shorter song] like ‘Seek and Destroy’ or ‘For Whom the Bell Tolls’ and it has a great fucking vibe?”¹

Hetfield remarked that longer songs were affecting the band’s ability to gain exposure on the radio. “That was always a problem. We’d record a song that people liked and wanted to hear on the radio, and the radio bastards wouldn’t play it because it was too long. Or they would want to edit it, which we wouldn’t allow. But radio airplay wasn’t the whole idea behind our writing shorter songs. It just seemed to us that we had pretty much done the longer song format to death.”²

¹ Malcome Dome and Mick Wall, *The Complete Guide to the Music Of Metallica* (London: Omnibus, 1995), 58.

² Jeff Gilbert, “Black Power” *Guitar World Presents Guitar Legends* 20 (1997), 22. Reprinted from *Guitar World*, October 1991.

Metallica would meet their goal with the release of their fifth album, *Metallica*, or the Black Album, the following year. The average length of the songs on this album is about five minutes. “A lot of the songs on this album are more simple and concentrated,” observed Hetfield. “They tell the same story as our other shit but don’t take as long. There aren’t a hundred riffs to latch on to—just two or three stock, really good riffs in each song.”³

Even with their newfound brevity, the songs on the Black Album do not represent a regression of their songwriting, as Metallica compensated for writing fewer original riffs per song by creating multiple variations and developments on the handful of riffs they did write. In some songs, the band takes this process a step further by fixating on a single riff in particular. The result is a monothematic setting, in which nearly all of the riffs of the song are based on a single theme and dominate all of the major subsections.

The song “Of Wolf and Man” typifies this approach. The song is based on a main theme, though it does include two other riffs of secondary importance. Variation is applied to all three riffs to generate fourteen total variations and developments, and the ABA' form of the song is articulated by the riff content of each section. The variations and developments invoke a sense of continuous change within the song while promoting coherence by retaining the essential character of the theme and two secondary riffs.

³ Jeff Kitts, “Prime Cuts: Metal Reflectors,” *Guitar World Presents Guitar Legends* 20 (1997), 30. Reprint from *Guitar World*, October 1991.

Motives

All the material of “Of Wolf and Man” is derived from three ideas: the theme and two secondary motives (motives v and w), which are related. Motives v and w are related by their rhythm and length: both are a measure long and are based on an alternation of eighth notes and eighth note rests (Example 2.1). The difference is that v begins with the note and w begins with the rest, and w features a rising chromatic figure (power chords on E, F, F#, and G, or $\hat{1} - \hat{b}_2 - \hat{b}_2 - \hat{3}$ in E minor) while v is melodically static (tonic E power chords).

Example 2.1: Motives v and w



The theme consists of three motives: motives x , y , and z (Example 2.2). Motive x is a “gallop” motive consisting of an eighth note and two sixteenth notes on the tonic.⁴

Motive y consists of a half-step descent of power chords on F and E, or $\hat{b}_2 - \hat{1}$ in E minor.

Motive z is an eighth note alternation of single E notes and power chords, the first on B and the second on B \flat , or $\hat{3}$ and \hat{b}_3 ; a significant aspect of the motive is the syncopated half-step

⁴ The term “gallop” refers to a type of rhythmic pattern common in heavy-metal music that has a lively, energetic quality. The pattern is based on a repeating rhythmic motive that is a combination of eighth notes and sixteenth notes, frequently including a pattern of $\text{♩} \text{♫}$ or $\text{♫} \text{♩}$ which creates an effect similar to that of a horse’s gallop. The “gallop” is a staple of heavy-metal music and is heard in the music of the earliest metal bands, such as Black Sabbath and Led Zeppelin.

descent. With the power-chords on F and B \flat , it may seem appropriate to describe the riff as in the mode of either E Phrygian or E Locrian, though due to the presence of B in the Locrian context and B \flat in the Phrygian context it does not fit either definition completely.⁵

Example 2.2: Motives x, y, and z (Theme)



Riff-By-Riff Analysis

The Introduction is made up of Riffs A and B (Example 2.3). Riff A consists of motive *v*, as played by the first guitar in measures 1 and 2. Riff B enters at measure 3 as the second guitar plays *w* over *v* in the first guitar, and their conflicting rhythms create a hocket. Motive *w* undergoes slight variation upon its repeats: in measure 4, the final power chord goes up to G \sharp instead of G (*w'*); in measure 6, the final two power chords remain at F (*w''*).

⁵ Glenn Pillsbury discusses this problem of defining a mode for Metallica's riffs at length in the chapter "The Road and the Mode" in *Damage Incorporated: Metallica and the Production of Musical Identity*. He examines a few riffs in E with notes or chords on F and B \flat and finds that the B \flat is usually positioned to create a tritone relationship with E. He argues that, rather than viewing the B \flat as the fifth scale-degree in E Locrian, the B \flat to E relationship should usually be considered an element independent of the notion of mode or scale. He describes the conundrum as "The B \flat Question" and concludes, "Ultimately, therefore, The B \flat Question, that which involves riffs marked strongly by an E/F association but also features a specific relationship between B \flat and E, raises questions not really addressed in a strictly modal scheme. The danger of instantly labeling a riff as either Phrygian or Locrian is the same as for any kind of analytical tool: for everything that is revealed, something else is concealed." Glenn T. Pillsbury, *Damage Incorporated: Metallica and the Production of Musical Identity* (New York: Routledge, 2006), 125-6.

I agree with this concept and add that riffs with power chords on the tonic and dominant will further undermine the definition of Phrygian or Locrian—such power chords add the natural 2 and 5 scale-degrees. Hence, with riffs such as the theme from "Of Wolf and Man," it is best to assign them to minor and consider the flatted 2 and/or 5 scale-degrees as independent of or adjustments to the scale.

Example 2.3: Introduction, Riffs A and B

INTRODUCTION
Riff A $\bullet = 116$ Riff A

Guitar 1

Guitar 2

Riff B

4

4

w¹ w w²

“Of Wolf and Man,” written by James Hetfield, Lars Ulrich, and Kirk Hammett, courtesy of Creeping Death Music (ASCAP). All subsequent excerpts appear by permission.

Refrain 1 begins, and it introduces Riff C, the theme, in measures 7-10 (Example 2.4).

Example 2.4: 1st Refrain, Riff C

Riff C

Gtr. 1

7

x y z

Immediately following is the first development of the theme, Riff D, in measures 11-14 (Example 2.5). The first half-measure of Riff D is the same as Riff C— x followed by y (this combination of x and y appears in the beginning of many of the theme’s variations and

developments). The second half of the measure replaces \mathcal{z} with a repeat of x and a variation of y (y'), in which the tonic notes of the power chords are switched to B and B \flat , or $\hat{5}$ and \hat{b}_5 , respectively.

Example 2.5: 1st Refrain continued, Riff D

Riff D continues through the first verse (Example 2.6).

Example 2.6: 1st Verse, Riff D

25

Riff E continues as the music for the second verse (Example 2.8). The second verse ends with a one-measure transition, which is a return of the combination of Riff A and the first measure of Riff B from measure 3.

Example 2.8: 2nd Verse, Riffs E; 1st Transition, Riffs A and B

27 Riff E

Gtrs. 1 & 2

Voc.

Off through the new day's mist I run.

29

Voc.

Out from the new day's mist I have come.



31

31

We shift, puls - ing with the earth.



33

Riff A

Gtr. 1

33

Riff B (1st measure)

Gtr. 2

33

Voc.

Com-pa-ny we keep, roam-ing the land while you sleep. Oh.

The transition leads to the chorus section, which begins with Riff F (Example 2.9). Riff F is prefaced by an isolated statement of the ending motive of α followed by a full statement at measure 38. It is only a slight variation of Riff C as α is simplified to two eighth notes on E power chords (α').

Example 2.9: 1st Chorus, Riff F

36 Riff F (fragment)

Gtrs. 1 & 2

Voc.

Shape shift.

38 Riff F (complete)

Nose to the wind. Shapeshift.

The chorus continues with Riff G beginning at measure 40 (Example 2.10). Riff G is a variation of Riff F (hence a second-generation variation of Riff C) in which the motive z power chords on B and B \flat are replaced by power chords on C \sharp and C (z'). These chords signal a transition to F \sharp minor—they are on $\hat{5}$ and \hat{b}_5 of that key, the same scale-degrees as the chords of the original motive z in the key of E minor.

Example 2.10: 1st Chorus continued, Riff G

40 Riff G

Gtrs. 1 & 2

Voc.

40

Feel - ing I've been. Move swift.

Riff H, a variation of Riff G (hence third-generation of Riff C), completes the transition to F# minor (Example 2.11). Motives x^1 and y are transposed from E minor to F# minor (x^2, y^2 respectfully) while z^1 remains.

Example 2.11: 1st Chorus continued, Riff H

42 Riff H

Gtrs. 1 & 2

Voc.

42

All sens - es clean. Earth's gift.

Riff I continues the key of F# minor through the end of the chorus and includes motives from both Riffs A and the theme (Example 2.12). Riff I begins with a pair of variations of x and y transposed to F# minor (x^3 and y^3), and the pair is repeated. The second measure of Riff I is a variation of v from Riff A, in which the motive is transposed to F# minor and the final power chord is reduce to a single note an octave higher (v^j).

Example 2.12: 1st Chorus continued, Riff I

44 Riff I

Gtrs. 1 & 2

Voc.

Back to the mean - ing, back to the mean - ing of mean - ing life.

The third refrain (Riff E) follows the chorus and leads to the third verse and second chorus. These three sections (m. 46-68) are a repeat of the music from the first appearance of the second refrain through the first chorus (m. 23-45).

After the second chorus, the music from the first refrain is repeated to close out the A section (Example 2.13). The two riffs of the first refrain, Riffs C and D, are brought back in reverse order. This reversal of the riffs in the first refrain adds to its function of closure—just as the first instance of the first refrain functioned in the beginning of the A section, its repeat as a mirror image of itself works as an ending.

Example 2.13: 4th Refrain, Riffs D and C

69 Riff D

Gtrs. 1 & 2

71

73 Riff C

The B section begins with Riff J at measure 75, another development of the theme (Example 2.14). The first measure of Riff J begins with the familiar x - y combination, which is followed by two repeats of x . The measure itself is repeated twice, and the riff ends at measure 78 with a closing figure on G and F power chords. As Guitar 1 plays Riff J, Guitar 2 begins its solo (indicated but not notated).

Example 2.14: 1st Solo, Riff J

SOLO I (Gtr. 2 plays solo)

Riff J

75

Gtr. 1

77

Guitar 1 begins Riff K at measure 83 as the transition to the second part of the solo section (Example 2.15). Riff K is a development of Riff F: Riff F constitutes the beginning

two measures, but the power chord on B \flat at the end of \mathcal{z} is extended another half note and an eighth note (measure 85). The chords of \mathcal{z} are then sequenced upward a major second($\mathcal{z}^{\hat{2}}$). A variation of motive w is added to the end: the rhythmic ordering is reversed to eighth note followed by eighth note rest (similar to motive v) and the power chords are transposed down to C, C \sharp , D, and D \sharp , or $\hat{6} - \hat{\#6} - \hat{7} - \hat{\#7}$ (w^{\flat}).

Example 2.15: 3rd Transition, Riff K

Riff E returns and is repeated, and the guitar solo ends with Riff L as a closing riff (2.16). Riff L is a variation of \mathcal{z} , which represents a change from the original motive: the rhythm is the same, as is the half-step descent in power chords, but the chords are on G and F \sharp , or $\hat{3} - \hat{2}$ and the position of the power chords is shifted ($\mathcal{z}^{\hat{3}}$). In \mathcal{z} the first and third note is on the tonic E and the second note is a power chord; in $\mathcal{z}^{\hat{3}}$, the first and third notes are on power chords and the second note is on the tonic E.

Example 2.16: 2nd Solo, Riffs E and L

88 Riff E

Gtr. 1

90

(Gtr. 2 solo ends)

92 Riff L

The bridge section begins with Riff M in Guitar 1, another development of the theme (2.17). It also begins with x and y , which are followed by a percussive figure played to the rhythm of x (x^{muted}). The muting creates a palpable shift in timbre, and with the rhythm of x playing out over a longer period without interruption there is a reduction in the sonority and activity of the riff.

Example 2.17: Bridge, Riff M

BRIDGE

94 Riff M

Gtr. 1

PM

x y x^{muted}

Play 4 times

After the riff is played four times, the vocals begin with a spoken passage (Example 2.18).

Example 2.18: Bridge continued, Riff M

The bridge continues with Riffs N and O, marking a change to F# minor (Example 2.19) and an increase in energy from Riff M. Riff N itself is most simply understood as a transposition of Riff D from E minor to F# minor; it is made up of x^3 and y^2 , which are extant from prior riffs, and y^3 , which is on C# and C- \flat power chords ($\hat{5}$ and \hat{b}_5). Riff O is the closing riff of the bridge section, and it includes a variation on motive w^3 in which the ascending power chords run through B, C, C#, and D (w^4), followed by w^3 itself, creating an ascending half-step sequence.

Example 2.19: Bridge continued, Riffs N and O

106 Riff N

Gtrs. 1 & 2

Voc.

106

(Shape shift.)

The hair stands on the back of my neck.

108

Voc.

108

(Shape shift.)

In wildness is the preservation of the world.

110 Riff O

Voc.

110

so seek the wolf in thyself.

At this point, the A' section begins with a return of the chorus (Example 2.20). Most of the chorus is a literal repeat of the music from the A section.

Example 2.20: 3rd Chorus, Riffs F, G, and H

112 Riff F (fragment)

Gtrs. 1 & 2

Voc.

Shape shift.

Detailed description: This block shows the first system of music for Example 2.20. It consists of two staves. The top staff is for Guitars 1 and 2, in bass clef, 2/4 time, with a key signature of one sharp (F#). It shows a guitar riff starting at measure 112, labeled 'Riff F (fragment)'. The riff consists of a quarter note G4, a quarter note A4, a quarter note B4, and a quarter note C5, followed by a half note chord of G4 and B4. The bottom staff is for the vocal line, in treble clef, 2/4 time, with a key signature of one sharp. It shows a vocal line starting at measure 112, with a whole rest in the first measure, followed by a quarter note G4, a quarter note A4, a quarter note B4, and a quarter note C5, followed by a half note chord of G4 and B4. The text 'Shape shift.' is centered below the vocal staff.

114 Riff F (complete)

Nose to the wind. Shape shift.

Detailed description: This block shows the second system of music. It consists of two staves. The top staff is for Guitars 1 and 2, in bass clef, 2/4 time, with a key signature of one sharp. It shows a guitar riff starting at measure 114, labeled 'Riff F (complete)'. The riff consists of a quarter note G4, a quarter note A4, a quarter note B4, and a quarter note C5, followed by a half note chord of G4 and B4. The bottom staff is for the vocal line, in treble clef, 2/4 time, with a key signature of one sharp. It shows a vocal line starting at measure 114, with a quarter note G4, a quarter note A4, a quarter note B4, and a quarter note C5, followed by a half note chord of G4 and B4. The text 'Nose to the wind. Shape shift.' is centered below the vocal staff.

116 Riff G

Feel - ing I've been. Move swift.

Detailed description: This block shows the third system of music. It consists of two staves. The top staff is for Guitars 1 and 2, in bass clef, 2/4 time, with a key signature of one sharp. It shows a guitar riff starting at measure 116, labeled 'Riff G'. The riff consists of a quarter note G4, a quarter note A4, a quarter note B4, and a quarter note C5, followed by a half note chord of G4 and B4. The bottom staff is for the vocal line, in treble clef, 2/4 time, with a key signature of one sharp. It shows a vocal line starting at measure 116, with a quarter note G4, a quarter note A4, a quarter note B4, and a quarter note C5, followed by a half note chord of G4 and B4. The text 'Feel - ing I've been. Move swift.' is centered below the vocal staff.

118 Riff H

118

All sens - es clean. Earth's gift.

At the end of the chorus, however, the last measure of Riff I is replaced by Riff P as the vocals sing an extension to the lyrics of the chorus (Example 2.21). Riff P is a truncated variation of Riff K: the first half measure is deleted and the B \flat power chord of ζ is only extended another eighth note rather than a half note plus an eighth note. The motive w^3 that closes Riff K is slightly modified: the final chord is on a quarter note instead of an eighth note (w^5).

Example 2.21: Chorus III continued, Riffs I and P

120 Riff I

120 Riff P

Gtrs. 1 & 2

Voc.

Back to the mean - ing, back to the mean - ing of wolf

122

and man, yeah.

The final chorus is followed by a short coda, which brings back riffs from both the A and B section (Example 2.22). Riff E is played twice, followed by Riff M. The final measure of the song includes Riff A and Riff Q, which is a very slight modification of motive w in which the final power chord falls an eighth-note earlier (w^6).

Example 2.22: Coda

125 Riff E

Gtrs. 1 & 2

The image shows two staves of musical notation for guitar. The top staff is labeled 'Gtr. 1' and the bottom staff is labeled 'Gtr. 2'. Both staves begin with a treble clef and a key signature of one sharp (F#). The first section of both staves is labeled '129 Riff L' and contains four measures of music. The second section is labeled 'Riff A' and 'Riff Q' and contains four measures of music. The notation includes various rhythmic values, accidentals, and articulation marks.

Structural Analysis

Table 2.1 shows the organization of the sections of the song by riff content. In the A section, the first nine riffs of the song are presented from the introduction through the first chorus. In the B section, all of the riffs with the exception of Riff E are new. In the A' section, the chorus—a structure from the A section—is integrated with an extension that includes Riff P, which is merely a slightly modified version of Riff K from the B section, and the coda also contains riffs from both the A and B section. Hence, each section is distinguished by a unique blend of riffs: the A section introduces the source riffs and the first set of variations, the B section introduces the second set of variations, and the A' incorporates and modifies material from both sections. The overall song form is grounded by the prominence of Riff E, which is included in all three sections and thus helps maintain structural cohesion.

Table 2.1: Sections by Riff Content

Riff	A section	B section	A' section
A	✓		
B	✓		
C	✓		
D	✓		
E	✓	✓	✓
F	✓		✓
G	✓		✓
H	✓		✓
I	✓		✓
J		✓	
K		✓	
L		✓	✓
M		✓	
N		✓	
O		✓	
P			✓
Q			✓

Variations and Developments

Table 2.2 shows Riffs D through Q and their relation to the source riffs A, B, and C as variations or developments. Riff C yields all but two of the modifications, clearly establishing its role as the dominant theme of the song. As noted in the previous analyses, the riff modifications are not always straightforward: some of the riffs derive from two of the source riffs (such as Riff I), and some of these riffs are second- or even third-generation modifications (such as Riff G).

Table 2.2: Riff Modifications by Relationship to Source Riffs

Modification	Riff A	Riff B	Riff C (Theme)
D			dev.
E			var.
F			var.
G (var. of F)			var.
H (var. of G)			var.
I	var.		dev.
J			dev.
K (dev. of F)		dev.	dev.
L			dev.
M			dev.
N (var. of D)			dev.
O		dev.	
P (var. of K)			dev.
Q		dev.	

Example 2.23 shows the motive variations as they relate to their source motives.

The variations are focused mainly on a few aspects, specifically scale-degree positions of all or part of the motive and length and position changes of the rhythm. Even with multiple changes, at least one of the defining characteristics of the source motive is always retained within each variation. The static melody of motives ν and \varkappa , the stepwise ascent of motive ψ , and the half-step descent of motives γ and ξ —all of these qualities are preserved in their respective variations, which promotes the coherence of the original motives within even the more drastic riff developments.

Example 2.23: Variations of Motives V, W, X, Y, and Z

Motif V: v (original), v^1 (transposed to F# minor)

Motif W: w (original), w^1 (last chord up by whole-step), w^2 (2nd chord repeated twice), w^3 (change of scale-degree (6th) switch of chord and rest positions)

Motif W (continued): w^3 : transposed down min. second, w^4 (last chord on quarter note), w^6 (last chord eighth note earlier)

Motif X: x (original), x^1 (homogenized rhythm), x^2 (homogenized rhythm transposed to F# minor), x^3 (transposed to F# minor), x^{muted} (muted)

Motif Y: y (original), y^1 (change of scale-degree (5th)), y^2 (transposed to F# minor), y^3 (transposed to F# minor change of scale-degree (5th))

Motif Z: z (original), z^{dim} (diminution of last chord), z^1 (change of chord scale-degree (#6th))

change of chord scale-degree (#6th)
change of rhythm (notes to rests)

change of chord scale degree (3rd)
position switch of chord and single note
switch of repeat from single note to first chord

Conclusion

“Of Wolf and Man” demonstrates Metallica’s ability to weave a multitude of variations and developments from a limited amount of material into a song that is consistently evolving. Riff modification occurs throughout the song, up to the last measure. The modifications occur on many different aspects of the riff; the rhythm, key, timbre, and/or scale-degree positions of notes of individual motives are changed, or the original motivic order and content of the riff is changed. The song is dominated by the theme, Riff C, and its variations and developments. The order of the riffs also informs a structural logic to the song, in which the first two sections introduce separate material and the third section integrates that material.

Just as Hetfield described, it took just a few “stock” riffs to generate a song, yet they were still able to achieve complexity and diversity with a minimal amount of material. The next chapter will examine what Metallica is able to accomplish with several riffs instead of a few and within a song more than twice as long as “Of Wolf and Man.”

CHAPTER 3: “. . . AND JUSTICE FOR ALL”

Of all of Metallica’s albums, none have a more mixed reputation than . . . *And Justice for All*. At the crux of many perceptions of the album, both favorable and unfavorable, is the recognition of the structural density and complexity of its songs. Since the band’s first album, *Kill ‘Em All*, Metallica’s musical style and sophistication grew with each subsequent album. . . . *And Justice for All* was the apex of this growth and clearly distinguished the band from its peers. The album also gave the band commercial success, ascending to No. 2 on the Billboard chart and reaching platinum-level record sales, which primed them for the explosion of popularity that they would enjoy with the release of the Black Album.

The success of the Black Album, however, is firmly founded on the band’s effort to make their songs shorter and simpler, a reaction *against* the style of . . . *And Justice for All*. Even though many critics and fans applauded the sophistication of . . . *And Justice for All*, there was a perception that it stretched the boundaries of heavy metal too far, that it leaned too close towards the progressive or “artsy” side of music. The band members themselves have since acknowledged their dissatisfaction with the album, finding the music on that album to be long-winded and overly-complicated. “There was a lot of urgency to that material, but a lot of it was just wank—just us showing off,” admitted Hetfield.¹

The song, “. . . And Justice for All,” shares not only the same name of the album but

¹ Jeff Kitts, “Cover Story,” *Guitar World*, December 1998, 60.

also the same characteristics and reception. In their book *A Complete Guide to the Music of Metallica*, Malcolm Dome and Mick Wall write of the song, “Coming in at just under 10 minutes, [“. . . And Justice for All”] is one of the longest, most ambitious and, it has to be said, not entirely successful experiments of their adventurous career.”² At nine minutes and forty-four seconds in length, the song far exceeds what is typical in a heavy-metal song. The song is brimming with changes of timbre, meter, tempo, riffs, etc., which combine to create a very complex setting. Hetfield attributes this approach, and their overall style at the time, to their NWOBHM influences:

Diamond Head, for example, had a pretty unique way of putting songs together. It wasn't the traditional verse-chorus-verse-chorus-middle eight and then out. They had middle breakdowns, new riffs that came in at weird places, and their songs kind of took you on journeys. Budgie and Mercyful Fate were also pretty inventive . . . those bands taught us that there were more than three parts to a song—that you could have a song with different parts, each of which could almost be its own song. You can really hear their impact on . . . *And Justice for All* [1988], which was where we really started to go over the top with that type of songwriting.³

As it pertains to their use of riff variation and development, “. . . And Justice for All” is the crown jewel of Metallica’s output. With its three themes generating all but three of the twenty-six riffs, no other song matches its simultaneous diversity and cohesion of riff content. The manner in which the three themes are manipulated by means of their respective variations and developments, which serve to delineate the ABA' form and interrelate the three themes, is also an exceptional display of the members’ compositional skills.

² Malcome Dome and Mick Wall, *The Complete Guide to the Music Of Metallica* (London: Omnibus, 1995), 50.

³ Kitts, “Cover Story,” 59-60.

Themes

There are three themes in “Justice”, which I have labeled according to the section in which they first appear: the first theme, or Prelude theme; the second, or Refrain theme; and the third, or Chorus theme. Each of the themes has a distinctive key and metrical pattern.

The Prelude theme is a six-measure phrase in E major and $\frac{3}{4}$ meter (Example 3.1). It involves the descending sequence of two motives (motive *q* and motive *r*) through the chord progression E major, D major, C major, B minor, and B \flat major. Motives *q* and *r* appear for the E major and D major chords, respectively. They are sequenced downward over the C major and B minor chords (*q*¹ and *r*¹), and *r* undergoes an additional sequence with variation—the final note ascends a fourth instead of descending down a second—for the final harmony of B \flat major (*r*²).

Example 3.1: Prelude Theme

Guitar 1

E maj *q* D maj *r* C maj *q*¹

Gtr. 1

B min *r*¹ B \flat maj *r*²

The Refrain theme is a four-measure phrase in E minor (Example 3.2). The Refrain theme is subdivided into two statements of a pair of motives, motives *u* and *v*. Motive *u* consists of two eighth-note power chords on B \flat descending to a quarter-note power chord on A, or $\hat{b}_5 - \hat{4}$. Motive *v* is distinguished by a rhythm of $\text{♩} - \text{♩} - \text{♩} - \text{♩}$ and a melodic descent through E – D – B, or $\hat{1} - \hat{b}_7 - \hat{5}$.⁴ In the first statement of the motive pair, motive *u* is played twice followed by motive *v*; in the second statement, motive *u* is only played once. This creates an unequal subdivision in which the first statement is composed of two $\frac{4}{4}$ measures and the second statement is composed of one $\frac{2}{4}$ measure and one $\frac{4}{4}$ measure. A simpler view of this riff is according to its half-note subdivision, in which the first statement is four half notes long and the second statement is three. This half-note subdivision is manipulated in many of the developments of the theme.

Example 3.2: Refrain Theme



⁴ Based on the root notes of the power chords, this riff could be defined as Locrian. However, as many of the ensuing modifications of the riffs have elements that are in the natural minor mode, it would unnecessarily complicate the discussion to refer to the theme as changing modes within these modifications. In addition, as will be discussed, the Chorus theme could be defined as Phrygian, though there are elements in its modifications that do not belong to that mode. In general, much of the song (excluding the sections with the Prelude theme) vacillates between material that could be defined as natural minor, Phrygian, and Locrian. Instead of attributing each riff or motive to a specific mode (which, as discussed in Chapter 2, Note 4, usually does accurately portray the nature of the riff or motive), it is most appropriate to consider this material as being generically in the key of minor. This will be particularly appropriate in this analysis, for as will be discussed, the Refrain and Chorus themes are connected through the tonality of their modifications—describing both themes as minor as opposed to Phrygian and Locrian helps to elucidate this connection.

The Chorus theme is a four-measure phrase in F# minor and $\frac{4}{4}$, and it is built on three motives (Ex. 3.3). Motive *x* is a static attack on an E power chord to the rhythm of a quarter note followed by six eighth notes. Motive *y* consists of power chords built on an initial descent through G – F# – E, or $\hat{b}_2 - \hat{1} - \hat{7}$, followed by an ascent back up to G ornamented by grace notes. Motives *x* and *y* are played as a pair three times; the third time, *y* undergoes variation to ascend up to A (*y'*). Motive *x* is played once more before leading to motive *z*. Motive *z* is best understood by examining how it is played on the guitar; the tablature underneath the notation of the motive reveals that it is simply a sequence of a finger pattern down the G, D, and A strings of the guitar (see tablature). The first three triplets occur on the notes of the open string, fifth fret, and seventh fret on each string, and the final triplet is shifted to the open string, second fret, and third fret of the A string.⁵

Example 3.3: Chorus Theme

The musical notation for Example 3.3 consists of two staves. The upper staff is a bass clef with a key signature of two sharps (F# and C#) and a common time signature. It contains four measures of music. The first two measures are bracketed together and labeled 'x'. The next two measures are bracketed together and labeled 'y'. The third 'y' measure is marked with a variation 'y'' and includes grace notes. The final measure is marked 'z' and contains a triplet of eighth notes. Below the staff is a guitar tablature for the 'z' motif, showing fret numbers on the G, D, and A strings: 0-5-7, 0-5-7, 0-5-7, 0-2-3.

⁵ As stated in the previous note, this riff could be defined as Phrygian but will instead be described as minor.

Song Analysis

The Prelude theme begins as Riff A by Guitars 1 and 2 in a clean-tone timbre (Example 3.4).

Example 3.4: Prelude, Riff A

Riff A ♩ = 96 clean-tone guitar *f*

Guitar 1

Guitar 2

“... And Justice for All,” written by James Hetfield, Lars Ulrich, and Kirk Hammett, courtesy of Creeping Death Music (ASCAP). All subsequent excerpts appear by permission.

It is immediately followed by its first variation, Riff B, in which Guitars 3 and 4 are added to the texture to fill in the harmonies (Example 3.5), simultaneously expanding into the register above middle C (reaching G4). At measure 16, Guitars 3 and 4 drop from the texture, the drums and bass enter, and Guitars 1 and 2 switch to a heavily distorted and muted timbre. The ringing chord of the last measure of the riff is replaced by three quarter-note power chords.

Example 3.5: Prelude, Riff B

Riff B

13

3

3

q

r

q'

Gtr. 1

Gtr. 2

Gtr. 3

Gtr. 4

distorted guitars, enter drum and bass

16

r¹

r²

Gtr. 1

Gtr. 2

clean-tone guitar, exit drum and bass

22

distorted guitar, enter drum and bass

After a repeat of the first variation, the second variation, Riff C, enters in distortion and with the drums and bass, which remain in the texture the rest of the way (Example 3.6). The range is further expanded (reaching A4) by the harmonic line in Guitar 3 and the motives undergo slight variations (q^2 , r^3 , q^3 , r^4 , and r^5) that create more rhythmic activity.

Example 3.6: Prelude, Riff C

The musical score for Example 3.6: Prelude, Riff C, spans measures 25 to 31. It is written for four guitar parts (Gtr. 1, 2, 3, 4) in a key signature of three sharps (F#, C#, G#) and a 4/4 time signature. Measure 25 is marked 'Riff C' and begins with a treble clef. The score features various rhythmic patterns, including eighth and sixteenth notes, and rests. Trills are indicated by 'tr' above notes in measures 25, 26, and 27. Triplets are marked with a '3' above groups of notes in measures 25, 26, 27, 28, 29, 30, and 31. The guitar parts are arranged in a four-staff format, with Gtr. 1 and 2 in the upper register and Gtr. 3 and 4 in the lower register. The key signature changes to two sharps (F#, C#) at the end of measure 31.

Over the course of Riffs B and C, the Prelude theme has been expanded or enhanced in terms of range, register, texture, timbre, harmony, melody, and rhythm, creating the sense of building energy. The energy holds at the B \flat major chord at the end of the

second variation, melding into the opening of the transition to the Introduction (Example 3.7). The change in tempo and the quarter-note rest in the first measure, along with the reduction in texture from four guitar parts to one, bring that building energy to a halt. The phrase that follows consists of two downward sequences, the first a chromatic motive beginning at two notes and expanding to four (motive *s*) and the second sequence on a descending four-note motive in parallel fourths that circles through the E Phrygian and natural minor scales (motive *t*). The descent ends on an E power chord (now well below middle C), which sustains 11 measures into the Introduction. The important material lies in the drum line, which presents the rhythmic motive of the forthcoming Refrain theme.

Example 3.7, 1st Transition, Riff D

The musical score for Example 3.7, 1st Transition, Riff D, is presented in two systems. The first system, starting at measure 31, is for Gtr. 1 and Gtr. 2. Gtr. 1 plays a complex riff with triplets and chromatic descents, while Gtr. 2 provides a simpler accompaniment. A tempo change to 160 is indicated above the first system. Motives 's' and 't' are bracketed under the Gtr. 1 staff. The second system, starting at measure 36, continues the riff. A tempo change to 168 is indicated above the second system. The Gtr. 1 staff features a descending sequence of parallel fourths, and the Gtr. 2 staff provides a steady accompaniment.

41

Gtr. 1

Drums

After two statements of the rhythmic motive in the drums, the Refrain theme enters as Riff E (Example 3.8). The theme is repeated in full three times; at measure 65, the first measure of the theme is played once before leading to the next riff.

Example 3.8: Introduction, 1st Refrain, Riff E

49 Riff E *Play 3 times*

Gtrs. 1 & 2

u u v u v

61

The first measure of the theme at measure 65 prefaces the entrance of its first development, Riff F (Example 3.9). The texture expands from one part to three: Guitar 2 plays the melody, Guitar 3 plays a counterpoint of mostly parallel thirds underneath, and Guitar 1 plays power chords on the E and A. Like in Riff B, the range expands into the treble clef, and this significant change in register contributes to the sense of expansion created by the addition of guitar parts, harmonies, and chord progression. Though the

phrase length remains the same, the half-note division is reversed: the first half of the phrase is now three half-notes long and the second half of the phrase is now four. Concurrently, the motives of the theme switch positions and are modified, creating a more florid line. Motive v^1 adheres to the same basic pattern of the original motive, though the rhythm is slightly modified and the melody is changed to a descent on B – A – G, or $\hat{5} - \hat{4} - \hat{3}$ (parallel sixths in the contrapuntal line below). Four variations of motive u are used (motives $u^1 - u^4$); each retains the rhythm of the original motive and includes a change in the melody, which is mirrored in the contrapuntal line.

Example 3.9: Introduction, 1st Refrain continued, Riff F

66 Riff F

Gtr. 1

Gtr. 2

Gtr. 3

v^1 u^1 v^1 u^2 u^3

70

The Refrain theme then returns for two more statements (Example 3.10). The first statement is incomplete: it includes the latter three measures of the theme, which in effect combine with the single measure of the theme at measure 64 in Example 3.8 to form a complete statement. In other words, Riff F is interjected into a complete statement of the Refrain theme. It is followed by a one-measure statement of motive μ (Riff G): μ is played once, followed by a variation (μ^5) in which the descent from the power chord on A continues through power chords on G and F# to a tonic note on the final.

Example 3.10: Introduction, 1st Refrain Continued, Riffs E and G

Riff E

74

Gtrs. 1 & 2

77

Riff G

The next riff is the second development of the Refrain theme (Example 3.11), and it follows the structural model of the first development. Again, the half-note division of the two statements has been reversed to three half-notes plus four, and the order of the motives is again switched. Though the rhythm of motive v is retained in the variation (motive v^{\wedge}), its melody becomes a static attack on tonic power chords. The variation of motive u (motive u^{\flat}) changes scale-degree position and direction, moving upward by step from E to F. At the end of the first statement of the phrase (m. 85), the original form of the motive u appears; at the end of the second statement (m. 89), the motive remains static on B \flat (u^{\wedge})

Example 3.11: Introduction, 1st Refrain continued, Riff H

Riff H

82

Gtrs. 1 & 2

86

The verse begins with Riff I (3.12). Riff I is a slight variation of Riff H, in which the rhythm of motive v^2 is filled in with eighth notes (v^3). A one-measure transition, consisting

of motive *w*, prefaces the arrival of the chorus and a corresponding change of key (Riff J).

The ending power chords on G act as the pivot point, relating to E minor as III and relating to F# minor as bII.

Example 3.12: 1st Verse, Riffs I and J

The musical score consists of three systems, each with a guitar part (Gtrs. 1 & 2) and a vocal part (Voc.).

System 1 (Measures 90-93):
Guitar: Riff I. Measures 90-93 show a sequence of power chords: v^3 , u^6 , v^2 , u , and u .
Vocal: Lyrics: "Halls of jus - tice paint-ed green. Mon - ey talk - ing."

System 2 (Measures 94-97):
Guitar: Continuation of Riff I. Measure 97 shows a power chord u^7 .
Vocal: Lyrics: "Pow - er wolves be - set your door. Hear them stalk - ing."

System 3 (Measures 98-101):
Guitar: Continuation of Riff I.
Vocal: Lyrics: "Soon you'll please their ap - pe-tite. They de - vour."

Riff J

102

102

Ham-mer of jus-tice crush-es you. O - ver-pow-er.

The Chorus theme enters as Riff K, and it represents a change not only of key but also of meter (Example 3.13). For the first time since measure 38, a $\frac{4}{4}$ meter continues uninterrupted, and the key of F# minor is introduced. At the end of the repeat of the Chorus theme, motive ζ is played twice.

Example 3.13: 1st Chorus, Riff K

Riff K

Gtrs. 1 & 2

Voc.

107

107

The ul - ti - mate in van - i - ty.

111

111

Ex - ploit - ing their su - pre - ma - cy.

115

115

I can't be-lieve the things you say.

119

119

I can't be - lieve, I

121

121

can't be-lieve the price you

Riff L, a development of Riff K, is played for the second part of the chorus, which re-establishes the key of E minor (Example 3.14). The variations of motives x and y represent a verbatim transposition to E minor (motives x' and y'). A different chord progression follows each statement, and each progression is of a different length: the first progression follows through power-chord harmonies on A – B – C – F, the second on A – B – F, and the third on A – B – G – C – F.

Example 3.14: 1st Chorus continued, Riff L

124 Riff L

Gtrs. 1 & 2

Voc.

124

pay, Noth-ing can save you, Jus-tice is lost. Jus-tice is raped. Jus-tice is

129

Voc.

129

gone. Pull-ing your strings. Jus-tice is

133

Voc.

133

done. Seek-ing no

136

136

truth. Win-ning is all. Find it so grim, so true, so real.

The refrain returns at measure 140⁶, which is essentially a repeat of the music from mm. 74-89. The second verse and chorus follow (mm. 140-206), and it comprises a repeat of the first verse and chorus (mm. 90-139). After the second chorus, another statement of the Refrain theme (plus a repeat) follows to bring the A section to a close (mm. 207-214).

The transition begins abruptly with Riff D, the transition riff from the prelude to the introduction, and the sequence again falls to an E power chord (Example 3.15). At the end of this transition appears a variation of motive ζ (as Riff M) from the Chorus theme, which undergoes an interesting form of retrograde: instead of a reversal of the melody, the fingering patterns on the open strings are reversed (motive ζ').

⁶ This time in its full form, i.e. without the fragmentation that occurred with the interjection of the first variation of the Refrain theme at mm. 65-72. This accounts for the one-measure discrepancy between the Introduction-verse1-chorus and the refrain-verse2-chorus sections.

Example 3.15: 2nd Transition, Riffs D and M

The image contains two musical staves. The top staff is labeled 'Gtr. 1' and 'Riff D' with a measure number '215'. It features a complex bass line with several triplet markings (indicated by '3' over a group of notes) and a bracket labeled 's' spanning a section of the riff. The bottom staff is labeled 'Gtr. 2' and shows a simpler bass line with a bracket labeled 't' under a specific measure. Below this, a second staff is labeled 'Gtrs. 1 & 2' and 'Riff M' with a measure number '220'. This staff shows a more active bass line with triplet markings and a bracket labeled 'z' under a section of the riff.

The B section begins with the guitar solo section. Riff N, a development of the Chorus theme, is played by Guitar 1 to provide the backdrop for the solo in Guitar 2 (Example 3.16). The development is a transposition of the Chorus theme to E minor, though motive ζ appears in its original form. Motive y^1 from the Chorus theme is also transposed to E minor (motive y^3). As with the original theme, the second statement of the phrase includes an extension of motive ζ , which is not transposed.

Example 3.16: Guitar Solo, Riff N

Riff N (Gtr. 2 plays solo)

224

Gtr. 1

228

232

236

Riff O follows, which is the most extensive development of the Refrain theme (Example 3.17). Riff O's entrance is first signaled by a measure of motive μ transposed up a whole step (motive μ^8), which indicates the change in key to F# minor, followed by the full riff. The phrase length is increased to eight full measures, which subdivides into four parts. The half-note pulsation is similarly affected to accommodate this division; the length in half notes is 3+3+3+4. The rhythm of the motives and melodic contour follow the pattern of the Riff H, but the position of the root notes of the power chords and melodic intervals are

changed: motive v^f moves from E – F \sharp , motive u^o ascends from E – F \sharp – G, motive v^5 follows motive v^f but descends back down to E on the last note, and motive u^{10} ascends directly from E – G. In the final measure, motive u^8 is played twice.

Example 3.17: Guitar Solo Continued, Riff O

Riff O (fragment) Riff O (complete)

241

Gr. 1

246

The solo continues over Riff P, which is a development of Riff J (Example 3.18). In this instance, motive w is played twice and is followed by its variation (motive w^1), which extends the motive and adds muted notes.

Example 3.18: 3rd Transition, Riff P

Riff P

(Gr. 2 solo ends)

258

Gr. 1

Riff H then returns (Example 3.19), which, by virtue of its familiar setting and restoration of the theme to its original key, could be heard as the entrance to the A' section.

Example 3.19: 4th Refrain, Riff H

However, Riff H proves to be a false entrance, as the riff is followed by another isolated variation of motive *u* in Riff Q (Example 3.20). The variation consists of a descending sequence that starts with the original motive *u* in the previous riff followed by a transposition of motive *u* down a half-step (motive *u*¹) and another transposition down another half-step (motive *u*²). After motive *u*² is repeated, the phrase ends on power chords on F.

Example 3.20: 4th Refrain Continued, Riff Q

The Prelude theme returns for the interlude in variation as Riff R (3.21). The original theme (including motives *q* and *r* and their variations) is played here in full distortion.

Example 3.21: Interlude, Riff R

It is followed by another variation, Riff S, in which a third guitar part is added to the texture as a contrapuntal line to the melody (Example 3.22). As with the first variation at the beginning of the song, an arpeggio accompaniment is added over the melody.

Example 3.22: Interlude Continued, Riff S

Riff S

295

Gtr. 1

Gtr. 2

Gtr. 3

298

Gtr. 1

Gtr. 2

Gtr. 3

The arpeggio accompaniment is expanded in Riff T, as four guitar parts are now used (Example 3.23).

Example 3.23: Interlude Continued, Riff T

301 Riff T

Gtr. 1

Gtr. 2

Gtr. 3

Gtr. 4

304

In Riff U, the theme is reduced to power chords on the root notes of E – D – C – B – B \flat (Example 3.24). The attack on the B \flat power chord is extended, which adds weight to its eventual resolution to an E power chord in the next measure.

Example 3.24: Interlude, Riff U

313 Riff U
Gtrs. 1 & 2

316

The A' section opens with the same ringing E power chord and drum pattern from the transition between the prelude and Introduction subsections, though its length is truncated (Example 3.25).

Example 3.25: 5th Transition

320 ♩ = 168
Gtrs. 1 & 2

The Refrain theme appears in its original form for two statements, followed by Riff G (Example 3.26).

Example 3.26: 5th Refrain, Riffs E and G

The image shows two staves of musical notation for guitar. The first staff, labeled 'Riff E' and '327', is for 'Gtrs. 1 & 2' and features a bass clef, a key signature of one sharp (F#), and a 2/4 time signature. It contains a sequence of chords and eighth notes. The second staff, labeled 'Riff G' and '331', also features a bass clef, a key signature of one sharp, and a 2/4 time signature, continuing the musical sequence with similar chordal and melodic elements.

The music of the third verse and chorus present almost a literal return to the music of mm. 82 - 139. The only musical difference occurs at the transition, in which motive *w* is played twice (Example 3.27, Riff V).

Example 3.27: Riff V (Transition from 3rd Verse to 3rd Chorus)

The image shows a single staff of musical notation for guitar, labeled 'Riff V' and '352', for 'Gtrs. 1 & 2'. It features a bass clef, a key signature of one sharp (F#), and a 2/4 time signature. The notation consists of a series of eighth notes and chords, representing a specific musical motif.

The end of the chorus is followed by the familiar single measure of the Refrain theme. Instead of a return of the refrain, however, it leads to the entrance of the coda. The coda begins with Riff F (Example 3.28). Unlike the first appearance of this riff in the Introduction, the statement is repeated without the second ending.

Example 3.28: Coda, 6th Refrain, Riff F

After the second statement, the first half of Riff F is combined with an element from Riff L to form a final repeat of the ending chorus phrase (Example 3.29). The Refrain theme fragment (Riff F) works in the context of the Chorus theme fragment (Riff L) because it uses the same E power-chord tonic as the fragment it replaces; likewise, the Chorus fragment works in context of the Refrain fragment because it begins on the same harmony (A power-chord subdominant) as the fragment *it* replaces. In other words, the I-IV chord progression is used as the hinge to relate both themes.

Example 3.29: Coda, 6th Refrain Continued, Riff F and Riff L Fragments

396 Riff F Fragment + Riff L Fragment

Gtr. 1

Gtr. 2

Gtr. 3

Voc.

Seek - ing no

399

truth. Win - ning is all. Find it so grim, so true, so real.

Once again, the single measure of the Refrain theme follows, this time to usher in Riff W, another Refrain theme development (Example 3.30). This development is a transposition of Riff F downward by an octave (motives v^6 and u^{13-15}). Riff X follows as a slight variation to Riff W, as v^6 undergoes a change of rhythm (v^7).

Example 3.30: Coda, 6th Refrain, Riffs W and X

403 Riff W

408 Riff X

The final developments, Riff Y and Z, removes the theme from its polymetric context (Example 3.31). The local metrical pattern remains polymetric: a $\frac{4}{4}$ measure followed by a $\frac{3}{4}$ measure. However, the larger half-note division—an uninterrupted pattern of three half-notes—articulates a perfect triple meter. Riff Y is played over a power-chord progression on E – D – B – A before ending on a variation of u on the power chords G – F# – E (u^{16}). Riff Z is a variation of Riff Y in which the sixth measure (m. 425) includes a variation of u on the power chords C – B (u^{17}). A fragment of Riff Z closes the song.

Example 3.31: Coda, 6th Refrain Continued, Riffs Y and Z

412 Riff Y

Gr. 1

Gr. 2

Gr. 3

416

420 Riff Z

424

427

Riff Z Fragment

Structural Analysis

The 429 measures of the song divide by section uniformly: the A section (mm. 1-214), 214 measures; the B section (mm. 215-319), 105 measures; and the A' section (mm. 320-429), 110 measures. At 214 measures, the A section is nearly equivalent in length to the combined 215 measures of the B and A' sections, which themselves are comparable in length.

These sections can be subdivided according to riffs outlined in Table 3.1 below. As

in “Of Wolf and Man,” roughly half of the riffs (Riffs A-L) are introduced in the A section and several riffs (M-U) are introduced in the B section. Unlike in “Of Wolf and Man,” the A' section brings back riffs from only the A section in addition to a set of new riffs (V-Z). In this song, the B section is almost entirely dedicated to different material from that of the A sections:

Table 3.1: Sections by Riff Content

Riff	A section	B section	A' section
A	✓		
B	✓		
C	✓		
D	✓		
E	✓		✓
F	✓		✓
G	✓		✓
H	✓	✓	
I	✓		✓
J	✓		✓
K	✓		✓
L	✓		✓
M		✓	
N		✓	
O		✓	
P		✓	
Q		✓	
R		✓	
S		✓	
T		✓	
U		✓	
V			✓
W			✓
X			✓
Y			✓
Z			✓

Variations and Developments

Each theme has undergone multiple variations or developments: six of the Prelude theme, ten of the Refrain theme, and three of the Chorus theme. Table 3.2 shows the modifications and their relationship to their respective source themes. The variations and developments of the themes, just as in “Of Wolf and Man,” tend to fall into groups that yield multiple generations of riffs. The Prelude theme, as Riff A, expands texturally and harmonically into Riffs B and C, and its variation of Riff R in the interlude also follows a pattern of expansion through Riffs S and T. The first development of the Refrain theme, Riff F, is related to the final riffs of the song, Riffs W, X, Y, and Z. Another development of the Refrain theme, Riff H, also yields a variation in Riff I.

Table 3.2: Modifications by Theme

Modification	Prelude Theme (Riff A)	Refrain Theme (Riff E)	2nd Transition (Riff J)	Chorus Theme (Riff K)
B	var.			
C (var. of B)	var.			
F		dev.		
G		dev.		
H		dev.		
I (var. of H)		dev.		
L				dev.
M				dev.
N				var.
O		dev.		
P			dev.	
Q		dev.		
R	var.			
S (var. of R)	var.			
T (var. of S)	var.			
U	var.			
V			dev.	
W (var. of F)		dev.		
X (var. of W)		dev.		
Y (var. of F)		dev.		
Z (var. of Y)		dev.		

The range and extent of the changes made by the variations and developments in “... And Justice for All” are on a level well above what has been previously analyzed. The Refrain theme in particular has been extensively developed via changes in meter, phrase length, key, motives, position of motives, texture, harmony, and chord progressions. Most of the modifications of the Refrain theme have been centered on the treatment of motive *u*, which has seventeen discrete variations. As Example 3.32 shows, motive *u* is cycled through almost every different scale-degree position, transposed to F# minor, and inverted both harmonically and melodically. The melodic contour and rhythm of the motive also serve as points of variation:

Example 3.32: Motive *u* and its variations

The diagram illustrates 17 variations of motive *u* in F# minor, arranged in two rows. Each variation is shown on a bass clef staff with scale-degree numbers above the notes and descriptive text below. The variations are labeled *u* through *u*¹⁶.

Row 1:

- u*: Scale-degree numbers $\flat 5$, $\flat 5$, 4.
- u*¹: Scale-degree numbers $\sharp 2$, $\sharp 2$, 1. Description: change of scale-degree, inversion of dyad.
- u*²: Scale-degree numbers $\sharp 2$, $\sharp 2$, 7. Description: change of scale-degree, inversion of dyad.
- u*³: Scale-degree numbers $\sharp 2$, 3, 1. Description: change of scale-degree, inversion of dyad, change of melodic contour.

Row 2:

- u*⁴: Scale-degree numbers $\flat 2$, $\flat 2$, 1. Description: change of scale-degree, inversion of dyad.
- u*⁵: Scale-degree numbers 3, 3, 2, 1. Description: change of scale-degree, change of rhythm.
- u*⁶: Scale-degree numbers 1, 1, $\flat 2$. Description: change of scale-degree, inversion of melodic motive.
- u*⁷: Scale-degree numbers $\flat 5$, $\flat 5$, $\flat 5$. Description: static melody.

u^3
 transposed to F# minor

u^9
 transposed to F# minor
 change of scale-degree
 inversion of melodic contour

u^{10}
 transposed to F# minor
 change of scale-degree
 inversion of melodic contour

u^{11}
 change of scale-degree

u^{12}
 change of scale-degree

u^{13}
 u1 transposed down an octave

u^{14}
 change of scale-degree
 inversion of dyad

u^{15}
 change of scale-degree
 change of dyad
 change of melodic contour

u^{16}
 change of scale-degree

u^{17}
 change of scale-degree

Thematic Interrelation

These variation and development processes work to relate the Refrain theme to the Prelude and Chorus themes. The Refrain and Chorus themes are related by a development of the Refrain theme, Riff O, which is played in the same key as the Chorus theme, F# minor. The final developments of the Refrain theme, Riffs Y and Z, features an overall meter of $\frac{3}{2}$, which mirrors the triple meter of the Prelude theme. This interrelation process reinforces the status of the Refrain theme as the principal theme—the theme to which the other themes are connected—which is already suggested by its prominence in the song. It

also sets a function for each of the sections of the song form: the A section introduces all three themes, the B section connects the Refrain and Chorus themes, and the A' section further connects the Refrain theme to the Chorus theme and finally links the Refrain and Prelude themes.

The ABA' form of the song is further articulated by the placement of the themes and their modifications. All the themes and transitional motives are present in all three sections, but each section is delineated by its treatment of the material and includes its own set of variations and developments. The ordering of the themes also distinguishes the sections: in the A sections, the themes (via their original forms and their modifications) are presented in order; in the B section, the themes are presented in reverse order—Riffs M and N (of the Chorus Theme), followed by Riffs O and Q (of the Refrain Theme), followed by Riffs R through U (of the Prelude Theme).

Conclusion

The song “. . . And Justice for All” is clearly at the apex of Metallica’s output regarding riff modification. The riffs undergo numerous variations and developments, which subdivide into a multitude of variations on the source motives (especially motive *u*). The extent to which the Refrain theme is developed is substantial, as it is placed in different keys, meters, and phrase lengths. The developments of the Refrain theme serve to connect it to the Prelude and Chorus themes, creating relationships between the otherwise disparate

themes. The order of the riffs also helps to articulate the ABA' form, in which the sections are proportionate to each other and are distinguished by riff content and the ordering of the themes. Hence, the usage of thematic variation and development in "...And Justice for All" informs many compositional features on both the microcosmic and macrocosmic levels.

CHAPTER 4: CONCLUSION

This paper has presented examples of variation and development from eleven songs representing all of Metallica's eight studio albums, clearly establishing the use of riff modification as a regular occurrence in the band's songwriting. The analyses of the songs have uncovered a multitude of variation and development procedures used by the band that include transpositions, changes in timbre, melodic or rhythmic ornamentations and embellishments, additions of motives or chords, alterations of motives, reorderings of motives, expansions or diminishment of phrase lengths, and changes of meters. The analyses of the songs "Of Wolf and Man" and ". . . And Justice for All" have demonstrated how the band uses riff modification to extend a riff throughout the course of a song and/or relate it to other riffs and sets an order to the riffs that helps to delineate the song form and establishes a function within each section. Hence, riff variation and development is an integral element of Metallica's style, an element that they exploit to great extent in both their phase of writing dense and complex songs (culminating in the . . . *And Justice for All* album) and the period of simplicity that followed (with the release of the *Black Album*).

Of course, Metallica is not the only heavy metal band to use riff variation and development. As stated in the Introduction, the most immediate function of variation is to refresh a musical idea and break the monotony of repetition, and heavy metal bands use variation routinely, if not always to a significant extent.

In the song “Walk” by the band Pantera from its album *Vulgar Display of Power*, a riff based on a single and simple motive acts as the theme of the song, and the original riff and its three modifications form most of the song. The motive (*motive y*) begins with the tonic D followed by an E that played with the guitar string bent up a half step. The bend is released, sounding the note E \flat , before leading back down to the tonic.¹

Example 4.1a: “Walk,” Riff A

“Walk,” written by Vincent Abbott, Darrell Abbott and Phillip Anselmo. All rights administered by Warner-Tamerlane Publishing Corp.

The song begins with that motive, which is repeated several times. The riff is then developed through the addition of chords on B \flat - A - C \sharp in between iterations of the motive, followed by a new motive in triplets (*motive z*) that closes the riff:

¹ The low D is facilitated by a “dropped-D” guitar tuning, meaning that the low E string is tuned down a whole step.

Example 4.1b: "Walk," Riff B

The musical notation for Riff B is presented in two staves for Gtr. 1. The first staff, labeled "Riff B", shows a sequence of eighth notes with triplets. A bracket labeled "y" is placed under a group of notes. The second staff continues the riff with more triplets and a bracket labeled "z" under a group of notes.

"Walk," written by Vincent Abbott, Darrell Abbott and Phillip Anselmo. All rights administered by Warner-Tamerlane Publishing Corp.

A second development is played during the verse of the song. *Motive y* is played seven times, followed by power chords on C♯ at the end of the riff.

Example 4.1c: "Walk," Riff C

The musical notation for Riff C is presented in two staves for Gtr. 1. The first staff, labeled "Riff C", shows a sequence of eighth notes with triplets. A bracket labeled "y" is placed under a group of notes. The second staff continues the riff with more triplets and a bracket labeled "3" under a group of notes.

"Walk," written by Vincent Abbott, Darrell Abbott and Phillip Anselmo. All rights administered by Warner-Tamerlane Publishing Corp.

Riffs A, B, and C are used throughout most of the song. The song ends with a variation of Riff A, Riff F, in which the rests are filled in by triplet eighth-notes on the tonic D (motive *y*¹). The riff is repeated multiple times as the song fades out.

Example 4.1d: “Walk,” Riff F

The image shows two staves of music for guitar (Gtr. 1). The top staff is labeled 'Riff F' and contains a sequence of eighth notes grouped into triplets. A bracket under the first triplet is labeled 'v¹', indicating a vibrato mark. The bottom staff is identical to the top one. The music is written in a key signature of one flat (Bb) and a common time signature (C).

“Walk,” written by Vincent Abbott, Darrell Abbott and Phillip Anselmo. All rights administered by Warner-Tamerlane Publishing Corp.

“Walk” thus constitutes a monothematic song, a purer version than Metallica’s “Of Wolf and Man.” The number of riff modifications in “Walk”, however, does not approach that found in “Of Wolf and Man”, nor do the modifications involve significant changes to the thematic motive.

The band Megadeth uses variation and development on a four-note chromatic ascent in the song “Hanger 18” from the album *Rust in Peace*. The theme, A - B \flat - B \natural - C, is played in a series of riffs that include differences in harmonic progressions and rhythmic patterns. The song begins with the pattern being played under chords in a constant eighth-note pattern, first on the chords D min. - B \flat maj. - B \natural dim. - D min. 7, and then on the chords D min. - B \flat maj. - B \natural dim.. - C maj.

Example 4.2a: "Hanger 18," Riff A

$\bullet = 164$
Riff A

Guitars 1 & 2

Gtrs. 1 & 2

Gtrs. 1 & 2

Gtrs. 1 & 2

"Hanger 18," written by Dave Mustaine. Rights for Mustaine Music controlled and administered by Screen Gems-EMI Music Inc.

The latter chord progression, D min. - B \flat maj. - B \natural dim. - C maj, is used in arpeggio in the next riff, Riff B. Each arpeggio begins with one of the notes of the four-note theme, and each arpeggio also features a pedal point on D on the last note.

Example 4.2b: "Hanger 18," Riff B

The image shows two staves of musical notation for guitar. The top staff is labeled 'Riff B' and 'Gtrs. 1 & 2'. It features a repeating rhythmic pattern of eighth notes and chords. The bottom staff is also labeled 'Gtrs. 1 & 2' and shows a variation of the riff with a different chord structure.

"Hanger 18," written by Dave Mustaine. Rights for Mustaine Music controlled and administered by Screen Gems-EMI Music Inc.

The refrain riff, Riff C, appears next and is a development of Riff B. Each chord is shortened from two measures to one, and each measure begins with a dyad of the chord followed by two eighth notes on D and an ascent to another dyad, which is comprised of a chord tone above the pedal on D.

Example 4.2c: "Hanger 18," Riff C

The image shows a single staff of musical notation for guitar. It is labeled 'Riff C' and 'Gtrs. 1 & 2'. The riff consists of a repeating pattern of dyads and eighth notes.

"Hanger 18," written by Dave Mustaine. Rights for Mustaine Music controlled and administered by Screen Gems-EMI Music Inc.

Riff C is also used for the verse of the song. The chorus follows with a variation, Riff D, in which the two dyads within each measure of Riff C change positions and are played on dotted quarter-notes. The notes of the theme are now found on the lower pitch of the second dyad within each measure.

Example 4.2d: “Hanger 18,” Riff D



“Hanger 18,” written by Dave Mustaine. Rights for Mustaine Music controlled and administered by Screen Gems-EMI Music Inc.

In the case of “Hanger 18,” the modifications surrounding the four-note theme place it within several riffs of great diversity.

None of the above examples compare to the extensive development of the Refrain theme in “. . . And Justice For All”, but it is possible that there are examples that do. It is not possible to know how frequently and extensively other heavy-metal bands use riff modification without providing an analysis of their output as detailed as that presented here. It should also be noted that both Megadeth and Pantera are typically connected to the subgenre of thrash metal, the same genre to which Metallica is most closely linked. It is possible that the approaches to variation and development that Metallica, Megadeth, and Pantera share are part of the thrash-metal aesthetic.

Hence, future research and analysis is needed to help reveal how riff variation and development serves as an element of style—for individual bands, for subgenres of heavy metal, and for the genre as a whole—and how Metallica’s approach to riff modification compares and contrasts with that of other bands. The examples presented in this paper demonstrate that Metallica’s music, at least at the outset, should be considered the standard of how variation and development is used in heavy metal. Nor should this paper stand as

the final word on Metallica's use of riff modification, for there are many other songs that warrant a thorough analysis.

It is my hope that this thesis will help create a deeper understanding of Metallica's music and heavy metal in general in the minds of scholars, musicians, and critics alike.

Metallica's music demonstrates true compositional insight and sophistication on the part of the band members. Though the band certainly enjoys a fair share of attention, the richness and depth of Metallica's music has yet to be fully explored. Those who explore the band's music further will not be disappointed.

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