

# **Sound in Action: Modality and Technique in Guitar Improvisation of Joe Satriani and Steve Vai**

By Saulius Trepekunas

For a long time rock music was considered the music of youth. It seems to have gone unnoticed that today's audience and performers of rock are spread throughout the generations; today it is performed and consumed by parents and grandparents. This characterisation of rock as youth music came from the earliest analysis of rock through its song poetry, which portrayed and reflected experiences and feelings of a new generation in the Western world. Rock songs were rather successful in discussing the issues of youth in this world.<sup>1</sup>

Recently rock has emerged as a legitimate subject for academic discourse. According to Matthew Brown a lot of attention to rock has been raised from a wave of pluralism and interdisciplinary research and partly from the sheer importance of this music. Brown states that "rock music is an important resource for evaluating and perhaps even refining current theories of musical behaviour."<sup>2</sup> According to Nicholas Cook rock should be used as a catalyst for opening theory up to new perspectives. This would benefit the understanding of all music.<sup>3</sup> However, discussions of rock music have tended to focus their attention on issues of social function and meaning. Detailed musical analysis was avoided for a long time, because of the inferiority of genres of popular music in the eyes of traditional musicology. The area in rock musicology that most needs further expansion is the manner in which the music itself is experienced. A number of texts addressed to rock music analysis have initiated the expansion of this area.

At last the musicology of popular music's argument of superiority and inferiority against classical music was replaced by different arguments within smaller fields of popular music. From the works of Richard Middleton, Allan More and Robert Walser

<sup>1</sup> Saulius Trepekunas, "Changing Meanings of the Term 'Popular Music'," unpublished paper.

<sup>2</sup> Matthew Brown, "'Little Wing': A Study in Musical Cognition," in John Covach and Graeme M. Boone (eds.), *Understanding Rock: Essays in Musical Analysis* (New York, Oxford: Oxford University Press, 1997), pp.155-169 (p.155).

<sup>3</sup> Nicholas Cook, "Music Minus One: Rock Theory and Performance," *New Formations* 27 (winter 1995-96), pp.23-41 (p.41).

an obvious movement towards division of large areas like popular music, rock or even progressive rock into smaller units is evident. This essay can be seen as a continuation of this movement. The result of this movement is a more accurate description of different musical and social functions of a particular style, genre, performance and performer, or even a particular aspect within a style, genre, performance or performer. The description of a particular musical and social function is even more accurate when an analysis of a particular area of music is directed in relation to a particular historical, geographical or sociological context.

In this essay I will look at a particular field in guitar music: instrumental music of guitar virtuosos Joe Satriani and Steve Vai. According to Jeff Schwartz these guitarists produced music that is extremely challenging to learn to play, whether by ear or by notation. Today, it is not enough only to know how to read music, or how to play by ear. A combination of methods and representations should be used as preparation for a successful performance and understanding of their music.<sup>4</sup>

Recently different traditional analytical approaches were applied to rock music analysis. In many cases the analytical approaches used for score analysis were transferred straight from traditional musicology without any adaptation. The same analytical approach that was used to explain how certain things make sense on the page was now used for analysis of recorded material. Any analytical approach used by traditional musicology should go through major adaptations because rock musicology works mainly, not with a score, but with a recorded performance, because rock exists not as scores, but as recordings.<sup>5</sup> Susan McClary and Robert Walser describe recordings as “the thing itself, completely fleshed out with all its gestures and nuances intact.”<sup>6</sup>

There is a major discussion in progress between rock teachers, journalists and performers concerning how recorded rock material (especially music consisting of improvisations) should be recreated in new performances. Should this material be recreated to the last detail or should it be treated as a general guide for a performer’s new creation, as previously in jazz? Therefore, in this essay I will show how rock musicians, like Joe Satriani, approach recorded material and how they suggest approaching

---

<sup>4</sup> Jeff Schwartz, “Writing Jimi: Rock Guitar Pedagogy as Postmodern Folkloric Practice,” *Popular Music* 12/3 (1993), pp.281-288 (p.282).

<sup>5</sup> Cook, “Music Minus One,” 38-39.

<sup>6</sup> Susan McClary and Robert Walser, “Start Making Sense! Musicology Wrestles with Rock,” in Simon Frith, Andrew Goodwin (eds.), *On Record: Rock, Pop and Written Word* (London: Routledge, 1990), pp.277-292 (p.281).

transcriptions of their performances. Transcriptions of rock music are created, but their relationships to the recorded music are problematic and this leads to controversies.

A large number of publications for guitarists in different journals and different rock teaching practices show that some forms of rock are successfully explained with the modal system. To understand what mode a particular piece is written in is very useful for the reproduction of improvisation. For example, to say that the sequence Am-Bb-G is Phrygian i-II-VII chord progression means that this chord progression can be approached with A Phrygian mode.

In this essay I am going to show how guitar improvisation is affected by “modal” and “tonal” ways of thinking. The same chord sequence will be represented in the light of tonal and modal systems. Analysis will show how melodic line and articulation of improvisations change, depending on the way of thinking. Consequently I will argue that the significance of “mode” in rock discourse is not simply a more economical way of representing audible structures but it is a way of representing the essential productional dimension of the music.

Different notes in a piece of music can be approached as essential, depending on the listener’s historical, social and geographical background, which dictate her/his experience. The experience directly affects the performer’s learned responses. Musicians change some elements of the music in their performance because they configure the original differently. They make these changes involuntarily. For example, a person with a European classical musical training will hear and will approach the same chord sequence differently from a person with eastern modal training.

An articulation of a phrase or melodic line is directly affected by the thinking of the performer. A performer decides what to refer to as a structure or essential notes. According to Jose A. Bowen “the notes we choose to think of as essential are totally at our discretion.”<sup>7</sup> For example, according to Barry Kernfeld, modal jazz differs from other forms of jazz in that the static chordal succession does not have any cadences.<sup>8</sup> Chords in modal jazz are moving in a circle. In “Maiden Voyage” by Herbie Hancock, the pianist in Miles Davis quintet, represents the static succession of chords in modal jazz. Each 8-bar phrase consists of two chords (Am7/D and Cm7/F) that individually

---

<sup>7</sup> Jose A. Bowen, “The History of Remembered Innovation: Tradition and Its Role in the Relationship between Musical Works and Their Performances”, *Journal of Musicology* II (spring, 1993), pp.139-173 (p.161).

<sup>8</sup> Barry Kernfeld, *What to Listen For in Jazz* (New Haven, London: Yale University Press, 1995), 67-68.

and together avoid a strong sense of tonality. Herbie Hancock explains the harmony of “Maiden Voyage” as follows: “You start with a 7<sup>th</sup> chord with the 11<sup>th</sup> on the bottom – a 7<sup>th</sup> chord with a suspended 4<sup>th</sup> – and then that chord moves up a minor third.... It doesn’t have any cadences; it just keeps moving around in a circle.”<sup>9</sup> Hancock created a harmony with an ambiguous tonality. The improviser is free to interpret those chords depending on the mood that is created. For example, Am7/D chord alternatively can be thought of as D7/11 or Dm11, because the third step (F natural or F#) is unspecified. Therefore, a performer decides which note (A or D) is essential and what are the missing notes. The resulting collection of pitches from the solo and accompaniment could show that a performer used A Aeolian, D Aeolian or D Dorian modes when playing F natural and A Dorian or D Mixolydian modes when playing F#.

From this essay it will be possible to see that traditional analytical techniques like Schenkerian analysis can be applied to rock. For example, quasi-Schenkerian graph and applied reductive technique can very clearly present tonal centres, central notes and their different relationships. I will adopt Gary Potter’s approach by trying to accommodate a number of analytical approaches on the same piece of music in order to see it in different analytical contexts. Consequently, in this thesis I am going to show a way in which analytical methods adopted from classical music can be used to reveal something quite specific to the construction and significance of rock.

### **Rock musicology**

Richard Middleton in his book *Studying Popular Music*<sup>10</sup> pulls together many analytical tools to study popular music in general. He also provides a critique of these tools. He concludes that popular music is in continuous movement and one cannot therefore identify a particular methodology in order to study it. He notes the broader contexts for the analysis of popular music including musical, geographical, historical and social. His musical context includes pitch, as accentuated in traditional musicology, as well as other musical elements including timbre, sound, rhythm, tempo and duration.

Allan Moore’s book *Rock: The Primary Text* serves as a good example of the realisation in musicology that the monologue of traditional musicologists concerning

---

<sup>9</sup> David N. Baker, Linda M. Belt, Herman C. Hudson (eds.), *The Black Composer Speaks* (Metuchen: Scarecrow Press, 1978), 120, cited from Kernfeld, 67-68.

<sup>10</sup> Richard Middleton, *Studying Popular Music* (Milton Keynes: Open University Press, 1990).

superiority of the classical music over popular genres has been replaced by arguments within that genre.<sup>11</sup> An argument within a musical genre helps to recognise different values of the genre. The main achievement of this book is that it deals not with the whole field of popular music but with a field within popular music. This field is called *rock*. Moore's main achievement was to provide a general description of progressive rock styles and an outline of the basic music elements of progressive rock. Moore provides an introduction to methodology of rock analysis. He provides a syntactical model and analysis of different styles of progressive rock. He gives clear definitions of instrumentation including the function of the drum kit, voice, bass guitar and how rhythm and lead guitar differ. He points out the issues in rock improvisation and composing at the instrument. Most importantly, Moore approaches the study of rock music with seven modes and not the traditional major/ minor scales. He concludes, "rock is not a monolithic style, although there are no 'essential features' which distinguish rock from other musical practices."<sup>12</sup>

I would like to argue that, although rock can be seen as not being a monolithic style, there are essential distinguishing rock features. How can one see the essential rock features that distinguish rock from other musical practices? Moore has an analytical approach to investigating rock music. He looks at pitch relationships and rhythm. He approaches this analysis as a free, independent listener choosing from any style or period of rock in the 1960s and 1970s. He picks the music fairly randomly from different styles within the progressive rock category. Moore listens to the primary text i.e. the sounds of the music itself. For him the secondary text is the commentaries of the music, be they quotes from the fans, write-ups in journals or comments from the musicians. Just from listening he claims he can categorise the music.

This led him to his conclusion that does not take any account of other forces/influences of the various rock genres. It may be true that to a certain degree there are no major distinguishing features between the various genres of rock but there is more to rock music than pitch relationship and rhythm. To some extent he does mention the historical, geographical and sociological context but fails to take these into account for his concluding statements. The musical context is of paramount importance. Each genre

---

<sup>11</sup> Allan F. Moore, *Rock, The Primary Text: Developing A Musicology of Rock* (Buckingham: Open University Press, 1993).

<sup>12</sup> Moore, *Rock, The Primary Text*, 185.

of rock has its own social, geographical and historical background from which the music has grown. Each genre has its own specific interrelations with other genres.

Later he gives greater attention to the social, geographic and historic characteristics in his book *The Beatles, Sgt. Pepper's Lonely Hearts Club Band*.<sup>13</sup> He places the album *Sgt. Pepper's Lonely Hearts Club Band* in a much broader historical, musical, geographical and social context.

Unlike Middleton and Moore, Robert Walser in book *Running with the Devil*<sup>14</sup> looks at a specific area of rock music, namely heavy metal. He analyses music through the different contexts, musical, harmony, rhythm etc. historical, geographical and social. He makes use of primary and secondary texts. He places emphasis on social, historical and geographical backgrounds of musicians, fans and journalists. His musical analysis is not restricted to the traditional pitch analysis but also includes other elements of music. Walser studied the heavy metal as a valid cultural product. He suggests a way of musicological analysis with the following points: “[An] appropriation and adoption of classical models sparked the development of a new kind of guitar virtuosity, changes in the harmonic and melodic language of heavy metal, and new modes of music pedagogy and analysis.”<sup>15</sup> The study of heavy metal was made by separating a genre into small parts, through a study of internal relationships within a genre, and then comparing these parts with similar parts from other genres. For example, in the third chapter “Eruptions: Heavy Metal Appropriations of Classical Virtuosity” he pulls out virtuosity and compares this with virtuosity within other genres mainly in classical music. The virtuosity introduced in rock music by guitarists like Eddie Van Halen and Randy Roads and developed by Joe Satriani and Steve Vai was a new phenomenon in rock history. It was possible to compare the virtuosity of rock only with virtuosity from different styles in different historical periods. In doing so Walser found many similarities of rock virtuosity with the virtuosity of baroque (Bach, Vivaldi) and romantic (Lizt, Paganini) music.

### **Historical context of guitar virtuosity in heavy metal**

---

<sup>13</sup> Allan Moore, *The Beatles, Sgt. Pepper's Lonely Hearts Club Band* (Cambridge: Cambridge University Press, 1997).

<sup>14</sup> Robert Walser, *Running with the Devil* (Hanover, London: Wesleyan University Press, 1993).

<sup>15</sup> Walser, *Running with the Devil*, 58.

Guitarists Jimi Hendrix, Jeff Beck and Eric Clapton introduced virtuoso to rock in the sixties. They were guitarists of the bands that are often associated with the beginning of heavy metal history. The British bands Yardbirds, Cream, and the Jeff Beck Group along with Jimi Hendrix developed the sound features that today define heavy metal. Certain features, like usage of blues-derived riffs, virtuosi distorted guitar, heavy drums and bass, and a powerful vocal style are used by those bands' music and are the main features of heavy metal.<sup>16</sup>

Bands like Led Zeppelin, Black Sabbath and Deep Purple codified the sound of heavy metal in 1970. These bands created a new sound by putting together Jimi Hendrix's, Jeff Beck's and Eric Clapton's virtuosity, Cream's usage of riffs, distorted guitar, heavy drums, bass and powerful voice. Speed and power, unusual rhythmic patterns, contrasting terraced dynamics, wailing voice, European classical music influence and heavily distorted guitar are the main characteristics of the sounds of Led Zeppelin, Black Sabbath and Deep Purple. It was this characteristic blend of blues, classical traditions, jazz and rock, which was retrospectively labelled as heavy metal.

In 1978, in the first album of the Van Halen group, Eddie Van Halen revolutionised metal guitar technique and brought the guitar as an instrument into a new dimension. He became the new Clapton or Hendrix of the 1980's, in Walser's words "fuelling a renaissance in electric guitar study and experimentation."<sup>17</sup> Guitarists Edward Van Halen and Randy Roads established the virtuosity name in the rock.

In the second half of the eighties the virtuoso approach in rock was expanded and developed by guitarists like Steve Vai and Joe Satriani. Complexity, virtuosity and individuality are the main characteristics of these rock guitarists. In their music heavy metal characteristics like blues-derived riffs, virtuoso distorted guitar, heavy drums and bass, speed and power, unusual rhythmic patterns, and contrasting terraced dynamics are common. Though they are seen as part of the heavy metal genre they did not follow old traditions of compositions, but adopted new forms and new approaches. They are seen as the new Nicolo Paganini, Antonio Vivaldi, Miles Davis or John Coltrane.

Hypervirtuosic players like Steve Vai and Joe Satriani, sell their records mainly to

---

<sup>16</sup> Dave Headlam, "Blues Transformation in the music of Cream", in Covach, Boone (eds.), *Understanding Rock*, pp. 59-92 (p.69, 87).

<sup>17</sup> Walser, 11.

thousands of semi-professionals or amateur guitarists. Little of their music is known outside the “devoted circle of fans.”<sup>18</sup>

### **Recreation of an original rock recording**

Today in rock there is no certain position as to whether the original recording should be recreated to the last detail as the original or the original should be used only as a guideline for a new performance. From a number of writings on rock it can be seen that rock, in many aspects, is floating somewhere in-between classical and jazz traditions.<sup>19</sup>

In *The American Musical Landscape*, Richard Crawford identifies two kinds of written music: “composers’ music” and “performers’ music”. “Composers’ music” is when the “composer invents a piece of music and writes down his/ her instructions in enough detail that it can be played or sung precisely as the composer has conceived and imagined it”.<sup>20</sup> The performer’s goal is to follow the composer’s directions as closely as possible as for example, in sonatas of Classical composers.

The Schenkerian approach to the scores of composers of tonal music can serve as an extreme example of the “composers’ music”. How to treat the score has always been an issue for performers with western traditions. Emotions, freedom or close following are some of the questions posed to performers when interpreting a score. There have been a large number of music publications in the late 19<sup>th</sup> and the beginning of 20<sup>th</sup> century that added elements of music to scores. Editors made these additions to music that had originally been published without them. For example, Augener’s edition of J.S. Bach’s *6 Solo Sonatas for Violin* is full of dynamic markings that originally were not there.<sup>21</sup> In the beginning of the 20<sup>th</sup> century Heinrich Schenker formulated an analytical method for music of the tonal era. According to Schenker, even non-notated elements such as dynamics, normally considered as in the performer’s province, are already determined by the composer. He argues that the “content has its appropriate emotional

---

<sup>18</sup> Walser, 101.

<sup>19</sup> Paul Clarke, “ ‘A magic science’: rock music as a recording art”, *Popular Music* 3 (1983), pp.195-213 (p.197); Walser, *Running with the Devil*, 107.

<sup>20</sup> Richard Crawford, *The American Musical Landscape* (Berkeley, Los Angeles, London: University of California Press, 1993), 64-65.

<sup>21</sup> Johann Sebastian Bach, *6 Solo Sonatas for Violin*, revised by Tivadar Natchez (London: Augener Ltd. 1924).



dynamics”.<sup>22</sup> Therefore, a performer should look for dynamics within the musical structure that is represented in the scores of the composers of the tonal music.

“Performers’ music” differs from “composers’ music” in that the composer invites the performer “to sing or play it any way they like”.<sup>23</sup> In “performer’s music” a performer can simplify or develop, change the order, instrumentation or even the harmony and melody of the song. Crawford presents George Gershwin’s “I Got Rhythm” as an example of “performers’ music”.<sup>24</sup> This song was composed and published with the expectation that performers “will change melody, harmony, tempo, or mood as they see fit”.<sup>25</sup> With time, the changes to this tune by jazz musicians became so extensive that the original tune was abandoned entirely and its new versions were renamed as new compositions. There is no essential feature that would describe the transformation of the piece. Jazz musicians felt free and were expected/encouraged by the genre to change tempo, rhythm, form, dynamics, melody and harmony. The majority of changes are not captured on publications but on recordings, which are the grounds for new performances for new jazz performers.

The recreation of rock very much depends on the audience, musicians and the music itself. A particular number should be played as on the record for a certain audience and for the same fans a different number could be improvised around. Joe Satriani replaced the lead guitarist in Deep Purple for its 1994 tours of Europe and Japan. The band had already been playing for 25 years and had an extensive and close circle of fans. Satriani didn’t know how the fans and musicians would react to his appearance. As Joe Satriani says,

I came in as an anarchist, not really bending at all towards the tone, sound or approach of Ritchie Blackmore. I just thought there are some songs you just don’t mess with; some Deep Purple should be played like they were done on the record, because they’re great, they’re classic and there’s no point messing it up. But there’s a large percentage of the set where the band really wants to do something different and even with Ritchie in the band the live tapes reveal that they never bother trying to recreate the record. They’re a jamming band – they look for a little piece of magic every night within the arrangements and when people are done soloing they give the nod to the rest of the band and go back into the tune.<sup>26</sup>

Why is a certain repertoire of the rock music not recreated live?

<sup>22</sup> Heinrich Schenker, *The Masterwork in Music: a Yearbook*, Vol.1, William Drabkin (ed.) (Cambridge University Press, 1994-96), 50.

<sup>23</sup> Crawford, 65.

<sup>24</sup> Crawford, 213-236.

<sup>25</sup> Crawford, 234-235.

<sup>26</sup> -, “Best Guitarist (Rock) Winner: Joe Satriani”, *Guitarist* (June 1994), 83.

There are two main reasons. Firstly there is as Stith Bennett calls it ‘impossible music’<sup>27</sup> and secondly the performer’s creative approach to the recorded and transcribed music. Jeff Schwartz identifies three forms of ‘impossible music’: ‘mistakes’, overdubs, and extreme technique.<sup>28</sup> ‘Mistakes’ are the notes that are played unintentionally. In a number of cases a performer strikes a string while changing position and this note appears on recordings and transcription. Should it be recreated when performed live or ignored as an accident?

Developed recording technology allows musicians to overdub their parts as many times as they want to. A performer that decides to recreate the recorded performance faces a number of problems because it is possible that the solo part was created with the same sound, same playing technique, by the same player in a number of takes. This means that there are a number of things such as different ornaments and harmonies that are produced by playing a number of tracks simultaneously, which were recorded separately. Which notes, ornaments and other details should be played and which should be ignored?

Schwartz describes extreme technique as “playing that either cannot be produced in real time or that could not be duplicated”.<sup>29</sup> One example is when the performance is on half as fast as the other parts which are running tape-recorded and the actual performance of the solo is double speed. Other things like sounds produced by using different artificial harmonics or tremolo-bar techniques that require a certain set-up are examples of extreme techniques. They are possible only when a certain guitar is used, with certain effects and played through certain amplifiers and loudspeakers at a certain volume. If one of the parameters is withdrawn there is an extremely limited chance of producing that particular sound.

In rock music, as in all popular music, there can be two approaches to the recreation of recordings. According to Bowen there are two phenomenological categories that represent “the dichotomy in strategy of preserving a fluid oral tradition in fixed written form”: sample and summary.<sup>30</sup> A detailed transcription approach to a performance presents a sample of a performance including all minute details. The

---

<sup>27</sup> H. Stith Bennett, “Notation and identity in contemporary popular music”, *Popular music* 3 (1983), pp.215-234 (p.231).

<sup>28</sup> Schwartz, “Writing Jimi,” 287.

<sup>29</sup> Schwartz, 287.

<sup>30</sup> Bowen, 159-160.

general lead sheet approach to a performance presents a summary of basic elements common to performances of a musical work. In a similar way a rock performer can approach a recording by recreating it to the last detail or just by using basic elements of previous performances to create a new performance.

A transcription approach would be as illustrated in Satriani's attitude to some repertoire that should be recreated in full, because it is too popular and too well known to be changed and is not difficult to recreate. Another example of the same approach would be the large number of popular so called "tribute bands". Tribute bands restore the performance of well known popular bands to the last detail of music, behaviour, and image.

A summary approach is the performer's creative approach when the performer emphasises elements such as spontaneity and self-expression. The performer's approach is especially used for music that consists of improvisations. In improvised rock, recordings and transcriptions are used only as a guide to the approach of a particular performer to the musical piece. There are many guitar publications, including journals such as *Guitar Player*, *Guitarist*, *Total Guitar* which are full of lessons of how to approach different guitar solos. The performer's approach illustrates Adrian Clark's teaching how to approach the transcription of Joe Satriani's solo improvisation especially produced for *Guitarist* magazine.

Before you begin ploughing through it, trying to learn every note off by heart, please stop! Remember that this is a loose, bluesy improvisation, not a classical sonata, and by rote-learning the whole thing, you only destroy the element of spontaneity. By all means scan through it for cool licks worth stealing, or loop the passages as technique exercises, but to get the best out of this sort of thing, you must learn to flex your improvisational muscles. So, use the transcription as a guide to Joe's approach.<sup>31</sup>

Clark later introduces scales that should be used to approach this improvisation to stay within Satriani's framework.

### **Listening through experience**

---

<sup>31</sup> Adrian Clark, "Catch some Satch", *Guitarist* (April 1998), 34.

Cook in his book *Music, Imagination, and Culture* separates the two listening experiences: those of listeners and musicians.<sup>32</sup> The listener's experience does not depend on any kind of trained understanding of what is heard. The musician's experience requires time, application and specialised knowledge. Different musicians' experiences will depend on the various productional activities in which musicians are professionally involved. According to Cook musicians are working within a musical culture when trying to describe or recreate musical phenomena. They are operating "within the framework of presuppositions that constitutes a culture".<sup>33</sup> Musicians are involved in the production or reproduction of music and the theorising is a part of the productional process. Cook proposes "that a musical culture is a repertoire of means for imagining music".<sup>34</sup> This means that the way people understand and express music depends on historical, geographical and social backgrounds. The examples in Cook's book shows that students listening to Coleman's improvisation or musicians listening to a Norwegian fiddle expressed themselves differently depending on their musical background.<sup>35</sup> All of them tried unsuccessfully to configure what they heard within the framework that they inherited from their own musical culture.

### **Steve Vai's "For The Love Of God" improvised using the C major scale**

A few years ago in 1992 I was preparing a performance of guitar instrumental music. The performance included the number "For The Love Of God" by Steve Vai<sup>36</sup> from his album *Passion and Warfare*.<sup>37</sup> I had a recording of it, but there was no kind of transcription of the music available for me at that time in Lithuania (where I lived). I needed to recreate it from the recording only. "For The Love Of Good" is an AAB form with the main theme, repetition of the theme and a bridge. After that follows a long guitar solo with an improvisatory feel. The guitar solo was built on the same form and harmony as the head.<sup>38</sup>

---

<sup>32</sup> Nicholas Cook, *Music, Imagination, and Culture* (Oxford: Clarendon press, 1990), 3.

<sup>33</sup> Cook, *Music, Imagination, and Culture*, 3.

<sup>34</sup> Cook, 3.

<sup>35</sup> Cook, 138-141.

<sup>36</sup> See on the video, (Example I) "Steve Vai's 'For The Love Of God' first twelve bars played by Steve Vai." For the full video content see Appendix I.

<sup>37</sup> For full Steve Vai's discography see Appendix II.

<sup>38</sup> See on the video, (Example I.1) "'For The Love Of God' improvised using the C major scale."

When I listened to it I clearly heard drums, bass, sitar and synthesiser strings as an accompaniment under a soloing guitar. My task was to work out the harmony, main theme and bridge, and to decide what to do with the solo: to create my own or to learn Steve Vai's note by note. I decided to follow the jazz tradition; to recreate the main theme and the bridge as closely as possible and to give myself melodic freedom to improvise the guitar solo section, keeping the original form, harmony and rhythm.

Members of the band I was playing with were mainly music students and professional musicians. We all had classical training. The harmony that I heard was Em-F-Em-Am-Em-C-F-Em in section A, with chords changing every two bars; within C major tonality, which is the only tonality to which these chords are diatonic. In the accompaniment of the section A it was possible to hear the sitar playing arpeggios and using F# notes within E minor chord. Despite the F#s, I heard the passage as a iii-IV-iii-vi-iii-I-IV-iii chord succession; in line with traditional harmonic theory I decided that F# notes did not belong to the harmony and treated them as neighbour notes (Example 1).

### Example 1

The image displays a musical score for a melodic line in C major. It consists of four staves of music, each starting with a measure number: 1, 5, 9, and 13. The notation is in treble clef with a common time signature. The melody is primarily composed of eighth and quarter notes, with some beamed eighth notes. The notes are mostly within the C major scale, but there are several instances of F# notes, which are treated as neighbour notes. The overall feel is bluesy and improvisational.

Because of the C major tonality I used C major scale as the primary scale and C major pentatonic and C blues scales as secondary to develop my melodic improvisations. The secondary scales were used for two reasons. First, my main goal was to recreate the bluesy feel in the beginning of the improvisation. Second, neither of them clash with the F# in the accompaniment.<sup>39</sup>

<sup>39</sup> The major pentatonic scale does not use the 4<sup>th</sup> degree of the major scale and the augmented 4<sup>th</sup> and diminished 5<sup>th</sup> are common for the blues scale. Charles Beale, *Jazz Piano from Scratch: A How-to Guide*

Everything was fine and the whole piece sounded fair. There were no complaints from musicians or listeners. Everybody heard it as my interpretation of Steve Vai's music. My improvisation sounded very different from Steve Vai's. Many different aspects such as articulation, guitar sound and phrasing made the improvisation different. I was happy with it, though the harmonic tinge of my improvisation was very different from Steve Vai's. At first I did not devote much attention to it, but after a few concerts and when I listened to Steve Vai's improvisation I wanted my improvisation to be closer harmonically to the original. We had no difficulties creating improvisations with a close harmonic feeling when playing different numbers by different composers. However, this one was very different even though the harmony in the accompaniment was apparently correct. There was something that I could not understand. If I had wanted just to use Steve Vai's "For The Love Of God" as a framework to produce my version of this piece there would not have been any problem. The issue arose when I started to want the new version to be harmonically closer to the original. Why did it sound so different harmonically?

### **Modality in rock**

A few years later in a different geographical, social, and historical context I played Steve Vai's "For The Love Of God" again.<sup>40</sup> My improvisation sounded very different from what I played in Lithuania. This was because by that time from English guitarists, jazz and rock schools and various publications in different magazines for guitarists I had learned about a modal approach to guitar playing. In the beginning when I was introduced to the modal approach I thought, "Why do you need all those different names for scales starting on different degrees of the major scale? Why not just use the major/minor system to explain things?" More complicated things in classical music are explained using this system. Popular music is not so complicated that there is a need for a different system. However, with time my opinion towards modality in rock has changed.

---

*for Students and Teachers* (The Associated Board of the Royal Schools of Music, 1998), 28, 136.

<sup>40</sup> See on the video, (Example I.2) "'For The Love Of God' improvised using the E Aeolian mode."

Moore in the article “Patterns of harmony” introduces a modal system instead of major and minor.<sup>41</sup> In this system major and minor scales are replaced by 7 modes. Modes can be explained in many different ways. One may relate modes to different degrees of major scales for instance the Ionian scale starts on the first degree and the Aeolian scale starts on the sixth degree of the major scale. Another approach understands modes as scales with raised or flattened certain degrees by comparison with the major scale. For example, the Lydian mode is seen as a major scale with sharp fourth, and the Aeolian includes lowered third, sixth and seventh. The seven modes comprise of 5 tones (T) and 2 semitones (S) in a cyclical order:

Ionian	TTSTTTS	C, D, E, F, G, A, B, C - C, D, E, F, G, A, B, C
Dorian	TSTTTST	D, E, F, G, A, B, C, D or C, D, Eb, F, G, A, Bb, C
Phrygian	STTTSTT	E, F, G, A, B, C, D, E or C, Db, Eb, F, G, Ab, Bb, C
Lydian	TTTSTTS	F, G, A, B, C, D, E, F or C, D, E, F#, G, A, B, C
Mixolydian	TTSTTST	G, A, B, C, D, E, F, G or C, D, E, F, G, A, Bb, C
Aeolian	TSTTSTT	A, B, C, D, E, F, G, A or C, D, Eb, F, G, Ab, Bb, C
Locrian	STTSTTT	B, C, D, E, F, G, A, B or C, Db, Eb, F, Gb, Ab, Bb, C

In rock musicology there are a number of different arguments as to why rock needs to be approached with a modal system instead of traditional major/minor.

According to Moore each note within a mode can act as a root for one triad. Each mode yields seven triads built from each degree of a mode in a conventional way. This system, which is widely used by guitar and bass players, permits a player to build different types of triads from different degrees. For example, only Ionian and Lydian modes permit a major dominant triad (triads built on fifth degree). A different example would be the major triad common to rock music, starting on the seventh degree, which is one tone below the tonic, can be built only in Dorian, Mixolydian and Aeolian modes. This makes sense of harmonic sequences that are difficult to explain and understand through the major/minor system.

John Covach argues that some chord progressions cannot be viewed against the traditional major-minor system because the modal approach in rock music has become the norm since mid-1960s.<sup>42</sup> He suggest, for example, in the chord progression A-minor

<sup>41</sup> Allan Moore, “Patterns of harmony”, *Popular Music* 11/1 (1992), 73-106; he also talks about modal system later in Moore, *Rock, The Primary Text*, 49-50.

<sup>42</sup> John Covach, “Progressive rock, ‘Close to the Edge,’ and the Boundaries of Style”, in Covach and Boone (eds.), *Understanding Rock*, 11.

– G-major – A minor – B-minor that occurs in the verse of the song “Close to the Edge” by Yes, that the B-minor chord instead of B-diminished would be considered anomalous in a major/minor system. According to him, if somewhere in rock there occurred the more conventional (as far as European art music is concerned) chord progression i-V-i-ii it would be a significant deviation from norm. Therefore, the chord progression A-minor – G-major – A-minor – B-minor he calls A Dorian i-V-i-ii chord progression to designate a typical rock music harmonic environment.

Middleton suggests that major/minor analysis cannot be satisfactorily applied to much of Afro-American and rock music where pentatonic and modal structures dominate over harmonic structures, which play a comparatively small role. For example, the tapping section in Van Halen’s solo piece “Eruption” sounds as though it is composed in the classical tradition.<sup>43</sup> Influences of classical music on rock musicians can create a false image that their compositions are created using the classical traditions in a classical way. According to Walser, from Vivaldi and J. S. Bach, Van Halen learnt the strategies to energise a relatively slow harmonic change with a rhythmic torrent of sextuplets, to set up, achieve, modify, extend and subvert harmonic goals.<sup>44</sup> Though this section sounds as though it is composed in the classical tradition, it would be misleading to view the harmonic activities in this section against the model of the traditional major/minor system. The borrowed strategies from classical music such as how to set up, achieve, modify, extend and subvert harmonic goals should be seen as a “surface” play of colour. By viewing the tapping section against the traditional major/minor system, changes of chords E major to C major, then suddenly to D major, back to E major and at the end change to the E minor tonality, it is obvious that there is a lack of coherence from a classical perspective. There is a sudden change of G# into G natural within E major tonality and a sudden arrival, through a series of chromatic slides, to a B major chord which could be heard as an establishment of E minor tonality. From a classical perspective there is neither linear nor harmonic coherence in these patterns. Therefore, it can be said that rock musicians are using classical traditions – only in an ‘unclassical’ way.

Some rock journalists see any discussion concerning modes as academic confusion. However, generally guitarists/theorists, mainly publishing their articles in

---

<sup>43</sup> Saulius Trepekunas, “Guitar Innovations: Edward Van Halen’s Technique and Style” unpublished paper.

<sup>44</sup> Walser, 74.



magazines for other guitarists, frequently discuss modes, principally in the context of their affective meanings. Heavy metal musicians widely acknowledge a mode as an important part of the musical production of meaning. They noticed that audiences respond differently to different modes. Rock guitar teachers and players use the modal system to teach and think. According to Walser most heavy metal is played use either Aeolian or Dorian; speed metal uses Phrygian and Locrian modes; and for most of the pop songs Ionian or Mixolydian modes are used.

Walser argues that “modes are not merely abstruse theoretical categories.”<sup>45</sup> Modes serve as a reference to sets of meaningful elements of musical discourse. A description of a mode of a piece of music already informs us how this piece works, because a mode implies a set of functional syntactical relationships and effective potentials. According to Walser “the pitch relations established by modes provide the framework within which harmonic progressions operate.”<sup>46</sup>

Walser argues that popular music is neither simple nor “primitive.” To call popular music simple does not explain its function. According to him the harmony of rock and the analytical discourse used by teachers and players of rock is quite complex. He suggests that cultural critics can use analytical categories provided by the modal system to produce detailed explanation of musical effects.

According to Richard Chapman “Every mode has a distinct series of fixed intervals, with the first note of the scale acting as a *principal note* for both melody and harmony. Each of the seven modal scales has its own recognisable sound and character.”<sup>47</sup> The same note can act as a principal note for a number of different modes within different contexts. In his teaching Chapman suggests playing different modes against a resonating principal note. The resonating sustaining note can be understood as a *pedal* note that persists through a changing harmony. In many areas of folk music the sustained low pedal note is called a *drone*. Drone provides a foundation and a sense of continuity.

According to Peter Van der Merwe, popular music never accepted the major/minor system.<sup>48</sup> The major mode is often used simply as Ionian, but not as the major/minor system. Van der Merwe criticises the description of modes in classical theory. He

---

<sup>45</sup> Walser, 47.

<sup>46</sup> Walser, 47.

<sup>47</sup> Richard Chapman, *The Complete Guitarist* (London, New York, Stuttgart: Dorling Kindersley, 1993), 86.

<sup>48</sup> Peter Van der Merwe, *The Popular Style* (Oxford: Clarendon Press, 1989), 101-106.

argues that just to list notes is not enough to describe the mode, without describing a specific melodic function. For his argument he uses the Indian and Arab approaches to the modes. In this approach the mode is described by the function and pitch of the notes and the order in which they appear. It means that the same notes can serve several different modes when used differently. The list of notes as in classical theory is only the barest outline of the mode.

Van der Merwe states that in popular music three types of modes are used: without tonic, with several tonics and special functions for the other notes, and with notes that have special functions but no tonic. Modes without tonic he calls atonic modes. These are miniature modes of a few notes used for a tune that is repeated constantly, like children's chants.

To describe modes with functional notes that have a special significance reuses the term 'modal frame'. The most useful concept deriving from the modal frame is the concept of *floor note*, *ceiling note* and *central note*. These notes refer to functional constituents of a specific *note frame* on which the melody is constructed. According to Van der Merwe some *note frame* has a well defined upper and lower limit. Those limits Van der Merwe calls *floor* and *ceiling* notes. *Floor* and *ceiling* notes are not the same as lowest and highest notes. They are notes within which the melody rotates. Notes of a melody are drawn towards floor or ceiling notes depending on the melody. Different tunes do not have clearly defined floor or ceiling notes but have a note that acts as a pivot around which most of the tune rotates. This note is called the *central note*.

The principal note on which Joe Satriani links different harmonic settings in "Pitch Axis" compositional theory is called the *tonal centre*.<sup>49</sup> The tonal centre does not need to sound all the time. It is rather felt than heard in a similar way as a tonic. However, in this essay "tonal centre" is not used to mean the tonic. The tonal centre can be described as a note that is shared between successive modes and hence forms the basis of their continuity in sequence. The actual function of the tonal centre is similar to the function of the central note. The main difference is that the tonal centre is a note around which different harmonic settings rotate. It means that *tonal centre* can be used to form various harmonic settings in a similar way in which the *central note* is used to form various melodic settings.

---

<sup>49</sup> Trepekunas, "Guitar Innovations." For more detail account also see: Rich Maloof, *Joe Satriani: Riff by Riff* (New York: Cherry Lane Music Company, 1994), 2-3.

According to Wolf Marshall the principles, or subtle variations, of this theory can be found in the works of post-Romantic and neo-classical periods such as in the works of Richard Wagner and Igor Stravinsky.<sup>50</sup> Jazz guitarists like Allan Holdsworth and Pat Martino used this principle in their compositions. According to Satriani's biography, found on his web page, High School Music teacher Bill Wescott introduced him to this theory in 1972.<sup>51</sup> The main advantage of this theory is that music composed in this way has minimum harmonic movement in the bass, resulting in harmonic and melodic freedom for improvisation. As Satriani notes "the fewer notes you use in your bass area, the freer you are in your harmonic and melodic area."<sup>52</sup> What arrangements are used in Joe Satriani's music?

### **Riff based rock**

Ingrid Monson defines a riff as "short repeated segments of sound, deployed singly, in call and response, in layers, as melody, accompaniment, and bass line."<sup>53</sup> She states that a riff is one aspect of a multilayered set of musical and cultural practices. She characterises riff patterns as monotonous and repetitive patterns that donate non-development quality in a large-scale structural sense.

In the 1930s, riffs, short melodic ideas, became one of the main characteristics of the music made by the Kansas City music makers. Jazz musicians used riffs to open the chorus. The short melodic ideas were repeated again and again by the full ensemble including brass and rhythm sections to support the improvisation. As in blues or jazz, the riff in riff-based rock works as a hook, a musical phrase that stands out and is easy to remember.<sup>54</sup> According to Dave Headlam, in Johnson's "Cross Road Blues" Eric Clapton looked for a riff that acts as the base for transformation.<sup>55</sup> Clapton's guitar riff continually recurs throughout the verse in the bass guitar part in combination with the drums to emphasise continuity in the regular metric drive of Cream's version of "Crossroads". Many rock bands used this procedure of extracting or arranging motives

---

<sup>50</sup> Wolf Marshall, "Introduction: Joe Satriani," in Joe Satriani, *Surfing With The Alien*, Andy Aledort (ed.) (Cherry Lane Music Company, 1988), 7.

<sup>51</sup> [http://www.satriani.com/satch\\_frames/joesbio\\_src.html](http://www.satriani.com/satch_frames/joesbio_src.html)

<sup>52</sup> Maloof, *Joe Satriani: Riff by Riff*, 3.

<sup>53</sup> Ingrid Monson, "Riffs, Repetition, and Theories of Globalisation," *Ethnomusicology* 43/1 (Winter, 1999), pp.31-65 (p.31).

<sup>54</sup> Moore, *Rock: The Primary Text*, 14.

<sup>55</sup> Headlam, "Blues Transformation in the music of Cream", 69.

or riffs from blues songs. Led Zeppelin adopted this idea of a riff in a composition. They used riff covers from blues songs and newly composed riffs, motivic figures, as a base for their songs. Composing songs around a riff became one of the main characteristics of heavy metal. In rock, the riff idea became so widely used that Headlam even stated that riffs are an essential aspect of the transformation from blues to riff-based rock. It is difficult to agree that a riff is an essential aspect of the transformation, but it can be accepted that a riff is an aspect, one of many, that is common to rock, blues and other Afro-American music styles. Many rock bands used blues or newly composed motives and riffs repeatedly within a simplified and regular harmonic and metric framework.

Joe Satriani composes using the riff approach to song writing. A number of songs from different albums could be used to exemplify this. One of the best examples of creating an atmosphere with a riff that repeats through the whole song would be Satriani's "War," third track from the *Extremist* album.<sup>56</sup> Satriani creates strong emotions with his guitar sound such as strife and sorrow, with the rhythms of battle, the tension of enmity and cries of sadness.

As in modal jazz, in riff based rock the general characteristics of modal scales dictate the melody and harmony. According to Middleton, riff based structures have very little sense of leaving 'home' and there is no strong 'return'. The structures without definite closure created one-levelled, open-ended processes. In riff based music time is constructed as 'mythical' without direction to a goal.<sup>57</sup> The riff, like modal, approach slows down harmonic rhythm and weakens the chordal interrelationships. Static harmony created by a riff allows the performer to explore all possibilities and modes of the harmonic setting. The performer's job, as in modal jazz, is to make the improvisation or composition dynamic and interesting.

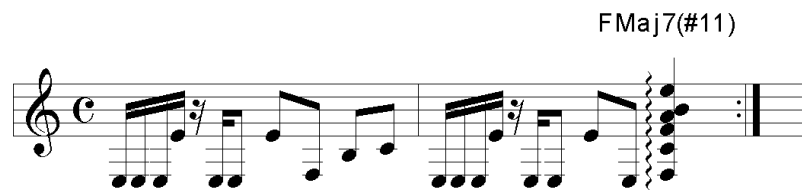
A riff often creates a harmony with an ambiguous tonality. Only from the resulting collection of pitches from the solo or accompaniment or both together does the performer represent the use of a particular mode. The aggressive riff (Example 2) used in the rhythm guitar within the second half of the introduction is fundamental to the whole piece. This riff sets the tempo and rhythm into the war march that drives the whole piece.

---

<sup>56</sup> For full discography see Appendix III.

<sup>57</sup> Middleton, 220.

### Example 2<sup>58</sup>



This riff does not imply any harmony, but it does accent the note E especially in conjunction with the ringing note E in the first half of the introduction. The Fmaj7(#11) chord at the end of the riff forces us to hear a dark Phrygian mode.

Diatonic modes, Indian, Spanish, harmonic, melodic minor or newly created modes like whole tone scale or Phrygian/Dominant were adopted by the riff based rock. Barry Kernfeld separates two types of modes: ethnic modes and ecclesiastical (traditional) modes.<sup>59</sup> Ethnic modes are scales that evoke an exotic flavour of flamenco, Arabic, Oriental or other regional music. Ecclesiastical modes are diatonic scales that were revived from medieval and renaissance music and carry different colours and feelings.

According to Rich Maloof, Satriani plays the E Phrygian/Dominant scale at the end of the introduction (second bar in Example 3).<sup>60</sup>

### Example 3



The Satriani example shows that in the 20<sup>th</sup> century the characteristics of the Phrygian mode haven't changed. To create a war like atmosphere Satriani chose the same ecclesiastical mode that was associated with war and disaster for centuries: the Phrygian mode. According to Maloof, Satriani represents "the strife and sorrow that has torn the Middle East apart for centuries" with this piece. Today this mode is often used to illustrate Asian mysticism. To accent this Satriani chooses not a traditional Phrygian mode (E-F-G-A-B-C-D-E), but its variation Phrygian/Dominant (E-F-G#-A-B-C-D-E). The first tetrachord (E-F-G#-A) of this scale strongly invites the association with the

<sup>58</sup> For examples 2 and 3 from "War" transcriptions made by Paul Pappas are used. Joe Satriani, *The Extremist* (Cherry Lane Music Company, 1992).

<sup>59</sup> Kernfeld, *What to Listen For in Jazz*, 67.

<sup>60</sup> Maloof, 37.

Middle East. The Phrygian mode as a more exotic mode is widely used by modern heavy metal players. This mode is very distinctive, because the Phrygian mode has a semitone interval between first and second degree. According to Walser it makes this mode claustrophobic and unstable. He cites Wolf Marshall stating that one of the most common chord sequences used in this mode is i-II-vii, which today is widely used by heavy metal musicians.<sup>61</sup>

According to Marshall, the majority of Satriani's compositions are fashioned in a very clear-cut formal design with a well-defined phrase structure similar to a vocal pop song.<sup>62</sup> It provides a perfect vehicle for clear, lyrical phrasing.<sup>63</sup> The popular song form is recognised in different ways, depending on the music genre. Satriani compositions consist of a different number of sections, but the main features are common to the majority of compositions. For example, the main theme in the section A is distinguished by an easy to sing and remember melody. Section B in Satriani's music can be described as a secondary theme or bridge, in which the melody is more static and the harmony is more dynamically elaborate. Section C serves as a further variation or the improvised solo. Rock songs and especially heavy metal songs feature at least one guitar solo.

There are many similarities between how harmony functions and how improvisation is approached in riff-based rock and modal jazz. Miles Davis introduced an understanding of modal jazz. Until the late 1950s static harmonies in jazz were unusual. In non-modal jazz of that time (bop, cool jazz, hard bop) chords changed every bar or even a number of times in a bar. In this kind of jazz, soloists created fast moving and ever changing and not very tuneful melodic lines in close relationship to the harmony. Miles Davis was not interested in playing the traditional jazz or swing, however, he wanted to play tuneful melodies. Therefore, he started to introduce solos on

---

<sup>61</sup> Walser, *Running with the Devil*, 47.

<sup>62</sup> Wolf Marshall, "Introduction," in Joe Satriani, *Dreaming #11* Andy Aledort (ed.) (Cherry Lane Music Company, 1989), 2.

<sup>63</sup> Popular song form refers to formal models borrowed from Tin Pan Alley-style ballad. The most common popular song form is a thirty-two-bar form, which is subdivided into four 8-bar phrases, in the pattern *AABA*. There are also other patterns like *ABAC*, *ABA*. Through time section B was known as the bridge, channel, release, middle eight or inside. Section A in most cases is known as the chorus – a repeated theme. For a more detailed account on popular song form see: Paul F. Berliner, *Thinking in jazz: the infinite art of improvisation* (Chicago, London: The University of Chicago Press), 77; Middleton, 46; Kernfeld, 48.

a slow moving harmonic rhythm in his albums *Milestones* (1958), *Porgy and Bess* (1958) and *Kind of Blue* (1959).

A modal improvisation in riff based rock and modal jazz unfolds in a flexible and unsystematic way, which exploits the particular sonorous characteristics of a given ethnic or ecclesiastical mode. According to Kernfeld, modal jazz is commonly approached with motivic improvisations. The static harmony in modal jazz gives an opportunity for the improviser to state and vary motifs. If in some improvisations the pitch is understood as a part of a chord in a horizontal sense, in motivic improvisation a pitch is a component of a large conception, which considers contour, repetition, rhythm and coherence in a vertical sense. An improviser chooses one or a few motifs, which form the basis of the improvisation. Soloists develop motifs lasting from a few bars to more than ten by using ornamentation, transposition, rhythmic displacement, expansion, compression, augmentation, diminution and inversion. To make the improvisation interesting a performer is forced to give a lot of attention to articulation, expression, tempo, rhythm subdivisions, dynamics and timbre. This characteristic of motivic improvisation in modal jazz can characterise the improvisations of Joe Satriani. Examples of this can be found in articles by Wolf Marshall, Jesse Gress or any other guitarist/theorist.<sup>64</sup>

For detail study of improvisations by Satriani and Vai I will adapt the tools used to analyse improvisation in jazz musicology on the grounds that there is strong jazz influence to rock. According to Moore many rock bands looked to jazz to learn working practice.<sup>65</sup> For example, at age 18, after having been self-taught for the last four years, Joe Satriani studied with two modern jazz masters. He took lessons from jazz guitarist Billy Bauer in Glen Cove, New York. The same year he studied with pianist/composer Lennie Tristano, "Cool Jazz's Father", in Queens, New York.

---

<sup>64</sup> -: "The first phrase [in "Cryin'"] shows just how many techniques Joe can bring to bear for a single melodic phrase: reverse bends, pull-offs, compound bends, vibratos, slides, and grace notes." Cited from: -, "Performance notes," *Best of Joe Satriani* (Cherry Lane Music Company, 1995), 3. Jesse Gress: "[Before the solo of "Lords of Karma"] tension is released only for a few beats as a pick slide leads into the solo, an incredible wall of sounds using mostly a sixteenth-note triplet motif to burn through scalar sequences, again based on the shifting A Lydian to A Mixolydian modalities." Cited from Jesse Gress, "Performance Notes: Joe Satriani," in Joe Satriani, *Surfing With The Alien*, 10. For more examples see: Marshall, "Introduction," in Joe Satriani, *Dreaming #11*; Marshall, "Introduction: Joe Satriani," in Maloof, *Joe Satriani: Riff by Riff*.

<sup>65</sup> Moore, *Rock: The Primary Text*, 77.

## Analytical tools

According to Walser and McClary musicologists of popular music are required to deconstruct all the theoretical tools inherited from traditional musicology and develop new tools if needed.<sup>66</sup> The analysis of Led Zeppelin and The Beatles by Dave Headlam and Walter Everett, rightly criticised by Cook, is an example of inappropriate usage of theoretical tools.<sup>67</sup> According to Cook the strategies used on the analysis of score can be adopted on analysis of recordings, but Headlam and Everett treat recordings as if they were a kind of *Urtext*. Cook states that no rock text functions like an *Urtext*, because rock offers a multiplicity of texts. The sum of those texts defines a rock song as a cultural entity. Cook suggests that rock texts should be presenting what the musicians actually do rather than regarding them as what they represent and what they are performances of. Cook suggests “that there is no clear line between composition and performance, and that we therefore have an opportunity to transfer much of what we have learnt about music as composition to music as performance.”<sup>68</sup> He sees that different approaches like insights into compositional choice and strategy, how one choice affects another, definition and solving of problems and how conventional schemata contribute towards these definitions are applicable to analysis of composition and of performance.

Gary Potter in his article “Analysing Improvised Jazz”<sup>69</sup> separates six approaches to the analysis of jazz improvisation. First analytical approach would be relating each pitch of a solo to a root of a chord. This approach is still used in jazz education though it has a number of problems. This approach does not work when one tries to analyse a particular pitch in relation to a chord, because in many cases in jazz there is no chord that can be used as a reference, there can be no authoritative set of changes. At the same time the accompaniment and a bass can play different chord progressions and the soloist might not relate his/her solo to either of them.

It is more useful to show the relationship between a mode in which a melodic passage is played and the underlying harmony instead of dealing with each single note and trying to reduce the improvisation to functional harmonies. Many jazz

---

<sup>66</sup> McClary, Walser, 281.

<sup>67</sup> Cook, “Music Minus One,” 23-41.

<sup>68</sup> Cook, 40.

<sup>69</sup> Gary Potter, “Analyzing Improvised Jazz,” *College Music Symposium* (1994), pp.143-160.



improvisation courses summarise the pitch material of a solo and relate it to chords. For example, a passage of improvisation over E–minor chord can use E-Aeolian mode.

The second approach is finding a relationship between complete melodic patterns or formulas, which fit over a certain chord or series of chords. Most players reuse musical ideas from solo to solo to different extents in different contexts. This approach is a new aspect of improvisation pedagogy, because students learn not only scales and modes but melodic formulas as well. Those melodic formulas can be plugged into different improvisations with appropriate chord progressions. In different texts it is difficult to distinguish between “formula”, “motif” and “lick”. According to Kernfeld in motivic improvisations only a few motifs form the basis for a section. A performer develops a motif by using ornamentation, rhythmic displacement, expansion, compression, augmentation, diminution, and inversion.<sup>70</sup> The recognition of motifs helps us to understand the improvisation processes, coherence and continuity in a solo, or uncreative redundancy in a solo.

A third analytic approach uses Schenkerian or quasi-Schenkerian analytical techniques. According to Potter, applicability of the Schenkerian approach to improvisation proves that improvisers can think in long-range terms in instantaneous compositions. Examples of this applicability can be found in dissertations and articles by Steve Larson, Milton Stewart or Thomas Owens.<sup>71</sup>

A fourth approach applies implication-realisation theories of Leonard Meyer and Eugene Namour to bebop heads. The head is the initial composed melody or ‘the top’. The main argument of this theory is that bebop improvisations are very similar to bebop heads. This approach tries to prove that various musical gestures imply the scalewise motion towards a point of stability. The continuity of this motion can be interrupted with different melodic leaps. The realisation of an implication of scalewise motion can take place or not. Examples of this approach can be found in James Kent Williams’ dissertation.<sup>72</sup>

---

<sup>70</sup> Kernfeld, 143.

<sup>71</sup> Steve Larson, “Schenkerian Analysis of Modern Jazz” (Doctoral dissertation, University of Michigan, 1987); Milton Stewart, “Some Characteristics of Clifford Brown’s Improvisational Style,” *Jazzforschung/Jazz Research* 11 (1979), 135-164; Thomas Owens, “Charlie Parker: Techniques of Improvisation” (Doctoral dissertation, Los Angeles: University of California, 1974) Cited from Gary Potter, “Analyzing Improvised Jazz,” 146.

<sup>72</sup> James Kent Williams, “Themes Composed by Jazz Musicians of the Bebop Era: A Study of Harmony, Rhythm, and Melody” (Doctoral dissertation, Indiana University, 1982) Cited from Gary Potter.

A fifth approach draws parallels between music and spoken language. According to this theory deep, shallow, and surface language structures can be seen to parallel underlying harmonies, different scale possibilities that correspond to this harmony, and the actual solo itself. Common harmonic patterns like II-V-I are seen as embedded phrases in sentence structures. Examples of how to draw parallels between improvised jazz and spoken language can be found in an article by Alan Perlman and Daniel Greenblatt.<sup>73</sup>

A sixth approach is based on pitch class set analysis. This approach is used to show the vertical structures in an arrangement and melodic segments in an improvisation. This approach is based on pitch class set analysis. Effective demonstrations of this approach are presented in works of Jeff Pressing and Steven Block.<sup>74</sup>

In paragraph “Towards a Synthesis” Potter suggests that there is a need for an analysis that draws upon various focused analytic approaches and combines all six approaches into a single presentation. This is because, by applying a single analytic methodology the analyst provides only a single view. This brings a danger that a single particular method will not discover the main characteristics of an improvised solo. Potter uses a four line score for his analysis. The top line is a transcription of a solo at concert pitch with indicated chord changes.

The second line represents a quasi-Schenkerian graph that focuses on pitch continuity, particularly repeated notes, resolutions of tendency notes, and stepwise motion at the “middleground” level. The third line presents motivic patterns. This line can show a number of things: woven into solo motives from the head, new repeated and developed motives and various length formulas, or references to original melody or quotations from different sources that can clutter the top line. The fourth line is optional. This line can display any other musical notation or a brief comment that is clearer than a verbal comment.

A part of Potter’s analysis is a brief narrative, which mentions features that are hard to notate, highlights important aspects and perhaps draws a conclusion. According

---

<sup>73</sup> Alan Perlman and Daniel Greenblatt, “Miles Davis meets Noam Chomsky: Some Observations in Jazz Improvisation and Language Structure,” in *The Sign in Music and Literature*, Wendy Steiner (ed.) (Austin, 1981, 169-183 Cited from Gary Potter, 148.

<sup>74</sup> Jeff Pressing, “Pitch Class Set Structures in Contemporary Jazz,” *Jazzforschung/Jazz Research* 14 (1982) 133-172; Steve Block, “Pitch Class Transformation in Free Jazz,” (paper delivered at the annual meeting of the Society for Music Theory, Baltimore, November, 1988) Cited from Gary Potter, 148.

to Potter the advantage of this type of analysis is the possibility of shifting in an easy to see manner between different analytical tools, thus seeing the solo in different analytical contexts.

Gary Potters' approach to use different analytical approaches on the same piece of music will help us to see and to hear different possible structures and different possible relationships in deeper structures. These structures can be used as a starting point for a development of an improvisation. Sometimes one hears a piece of music but rejects the possibility that it can be heard in a particular way because of the missing theoretical background to explain it. Analytical methods adopted from classical music can be used to reveal something quite specific to the construction and significance of rock like tonal centres, central notes and their different relationships.

### **“For The Love Of God” improvised using the E Aeolian mode<sup>75</sup>**

I approached my guitar performance with this same approach as Clark suggests in *Guitarist* magazine when approaching Joe Satriani's improvisation. I used the original performance as a guideline for my own improvisations. I copied different licks and passages from Steve Vai, but found I could not use them when I thought of the music in C major harmonic framework because they did not fit. However, when I thought about the same improvisation in modal terms the same licks sounded differently in the new context. Why couldn't I use licks and passages copied from Steve Vai in a C major harmonic framework? What difference did the modal approach make to my improvisation? How does the Steve Vai's “For The Love Of God” accompaniment look in the light of the modal system?

One needs to have a starting point in order to start an improvisation. When I thought of the music as in C major, this tonality and the tonic was my starting point. I will now try to find a new starting point. This means that I need to find a primary mode that can be used for improvisation. First, I need to find a note that acts as a tonal centre on which different modes can be joined. It means that I need to find a note that is shared between successive modes and forms the basis of their continuity.

---

<sup>75</sup> See on the video, (Example I.2) “For The Love Of God’ improvised using the E Aeolian mode”.

Example 4 shows the chord reduction of arpeggios from Example 1. In this analysis a note functions in the same way regardless of what octave it appears in. Harmonic units, numbering and the base note (white noteheads that coincide with the number 0) are based on pitch class theory. In Example 4 different chords with their neighbour notes from Example 1 are displayed as different harmonic units. The analysis shows (Example 4) that there are two harmonic units: ① / ③ and ② / ④.

Continuously repeated notes E and B in different octaves provide a very strong foundation and a sense of continuity. Which of these two notes can function as a tonal centre? Both notes are shared notes for all harmonic units, but E pitch class is the base note for ① and ② harmonic units, which are dominating in this sequence. Also it coincides with the note E as the root for the first and the last chords of this sequence. Therefore, we can assume that note or pitch class E is more important than note B in this sequence.

The relationship between harmonic units ① (0237) and ③ (0237) is transposition and between ② (01578) and ④ (0158) transposition and inclusion. From the relationship between the base notes of harmonic units it can be seen that the harmonic unit ① (base note E) is transposed a perfect fourth up (③) and the harmonic unit ② (base note E) is transposed a fifth up (④). Therefore, it can be said that harmonic units form I-IV-I-V-I sequence in relation to the base notes of the first two harmonic units. It can be assumed that the note E in Steve Vai's "For The Love Of God" accompaniment functions as the tonal centre, because of the relationships that pitch class E provides. At this point I can say to some extent that these relationships explain why, when I listen to the accompaniment only, all the chords used in this section were very closely related to the note E. The next thing is to find a mode or modes that can be used for improvisation.

### Example 4

Shared notes: E, B.

In the modal system each chord relates to a limited number of modes; for example, a major chord built on the first degree can only be in three modes Ionian, Lydian and Mixolydian. If one adds an additional degree to the basic triad the usage of modes becomes even more limited. For example an added minor 7<sup>th</sup> degree to a major triad leaves us only with one mode – Mixolydian. What diatonic mode or modes can be used to improvise over “For The Love Of God” chord sequence?

In order to answer this question I will join all four harmonic units in their transposed form to get a diatonic mode. One single diatonic mode cannot be found that will satisfy all four harmonic units together, because of the F in unit ① and the F# in unit ②. Therefore, I join these two units with units ③ and ④ separately. This way harmonic units ①, ③ and ④ form E Aeolian mode and harmonic units ②, ③ and ④ form E Phrygian mode. Therefore, to improvise over this chord sequence at least two modes must be used. Each of them will imply a different harmonic tinge.

The chord sequence starts and finishes with harmonic unit ① that is a part of the Aeolian mode. For this reason I will call the chord sequence Em-F-Em-Am-Em-C-F-Em as E Aeolian i-IIb-i-iv-i-VI-IIb-i succession. It means that the E Aeolian mode can be regarded as the primary and the E Phrygian as the secondary mode. Therefore, Phrygian can be seen as an inflection of the basic Aeolian structure; this relationship can be expressed by the use of chromatics, like i-IIb-i. For an improviser it is explicit that this sequence can be approached with E Aeolian diatonic mode except for the bars with IIb, which have the harmony based on chromatic neighbour note.

What difference does it make to a guitar improvisation by thinking about this chord sequence as a sequence E Aeolian as against C major? In order to answer this question we need to go through the specifics of guitar playing, because there is a

kinaesthetic difference between the instrument with a keyboard and a fretboard. According to Moore, melodic patterns will differ whether they are created at the fretboard or keyboard.<sup>76</sup>

John Baily separates two aspects of the study of musical cognition: the auditory perception and cognition of performance.<sup>77</sup> Auditory perception is the field where most of the study is done. The main focus of this field of study is the perception of music and the cognitive representations of the parameters of music structure through which performance is mediated. The other field of the study of musical cognition, the cognition of performance, receives much less attention because often the study of music and cognition treats music as a purely acoustic or sonic phenomenon. According to Baily, whether the instrument is blown, bowed, plucked, concussed or percussed the active surface of a musical instrument affects the activity of music making. He states that music is the sonic product of human action. This side of musical cognition is more investigated by ethnomusicology. Ethnomusicology “emphasises the study of music-making as a process instead of just music as a product.”<sup>78</sup>

### **Positions and Shapes**

Guitarists can play a scale with a certain shape and can build a chord within the same shape. Each chord has a distinctive shape and is often referred to as a type of voicing. Positions and shapes for a guitarist are very important because it is possible to play the same mode and chord in more than one position and in more than one shape on the fretboard. But as we shall see the sound of the improvisation will differ depending on which shape is used.

#### Guitar basics

Open strings on a guitar are tuned with the interval of a fourth, except that the interval between 2<sup>nd</sup> and 3<sup>rd</sup> strings is a major 3<sup>rd</sup> (Example 5). Example 5a shows the fretboard. The numbers on the left-hand side represent the strings, with each string having its own corresponding note name (thus the 1<sup>st</sup> string is the top E string, the 2<sup>nd</sup>

---

<sup>76</sup> Moore, *Rock: The Primary Text*, 74-75.

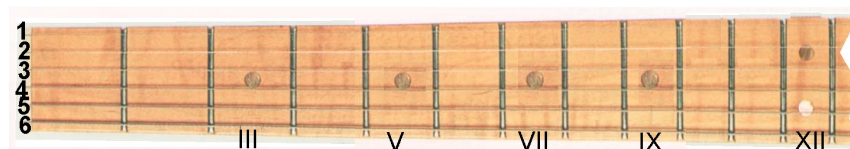
<sup>77</sup> John Baily, “Music Structure and Human Movement,” in Peter Howell, Ian Cross, Robert West (eds.) *Musical Structure and Cognition* (London: Academic Press, 1985), pp.237-258 (237-238).

<sup>78</sup> Baily, 238

string is the B string, and so on down to the 6<sup>th</sup> string or bottom E string). These string numbers appear in Example 5b, which shows the pitch for each open string.<sup>79</sup>

### Example 5<sup>80</sup>

a.



b.



### Position

*Position* is short for hand position. Hand position means how far up/down the fretboard the left hand is positioned. The number of position is described by the lowest fret within reach of the 1<sup>st</sup> finger. For example if the lowest fret to reach with the first finger is 2<sup>nd</sup> the position of the hand will also be 2<sup>nd</sup>. The 2<sup>nd</sup> position contains all notes from the 2<sup>nd</sup> to the 6<sup>th</sup> fret on each string, because that is the normal reach of the finger without moving the hand.

### Shapes

*Shape* is the fingering pattern used to play a chord or a scale on the fretboard. There are two types of shapes: *chord shapes* and *mode shapes*.

### Five basic major chord shapes<sup>81</sup>

The idea of using shapes in guitar teaching derived from jazz guitar education where the basic major chord concept was introduced. Every beginner guitar player learns to play five basic major chords (G, E, D, C and A) on the fretboard in open position. Each of the five basic chords has its own fingering pattern, which is called a *chord shape*. Therefore, it follows for each major chord there are five basic major chord

<sup>79</sup> Notation for guitar is always written an octave above its true pitch.

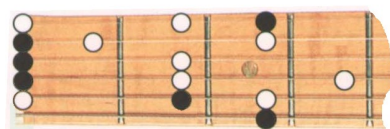
<sup>80</sup> The dots in the middle of some frets represent studs, which are an aid to player in locating 3<sup>rd</sup>, 5<sup>th</sup>, 7<sup>th</sup>, 9<sup>th</sup> and 12<sup>th</sup> frets. These frets correspond to minor 3<sup>rd</sup>, perfect 4<sup>th</sup>, perfect 5<sup>th</sup>, major 6<sup>th</sup> intervals on a string from the open position. Two dots on the fret mark the 12<sup>th</sup> fret and the octave interval on a string from the open position. Between two frets next to each other is a minor second interval.

<sup>81</sup> See on the video, (Example II.1-5) “Five basic major chord shapes”

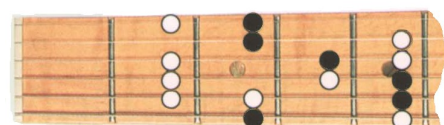
shapes: G, E, D, C and A. Example 6 shows the G major chord in five different chord shapes in different places on the fretboard. By moving the hand up/down the fretboard and keeping the same shape the transposition of a chord can be achieved.

**Example 6<sup>82</sup>**

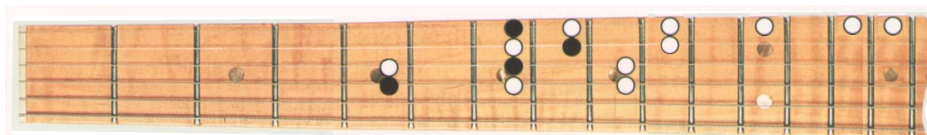
- a. G major chord in open position in G shape



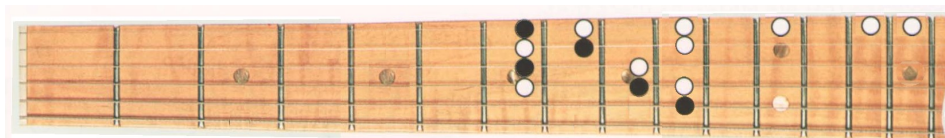
- b. G major chord in 2<sup>nd</sup> position in E shape



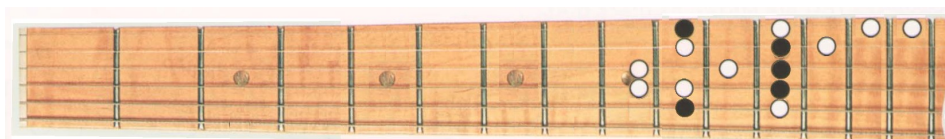
- c. G major chord in 5<sup>th</sup> position in D shape



- d. G major chord in 7<sup>th</sup> position in C shape



- e. G major chord in 9<sup>th</sup> position in A shape



**Seven diatonic mode shapes<sup>83</sup>**

The concept of *mode shape* derived from the idea of the chord shape. From a single note it is possible to play seven diatonic modes. For example, if one places the first finger on the sixth string on note G (3<sup>rd</sup> position) one will be able to play seven diatonic modes Aeolian, Locrian, Ionian, Dorian, Phrygian, Lydian and Mixolydian

<sup>82</sup> White and black dots represent notes from the G major scale; black dots represent notes of the G major chord in different shapes.

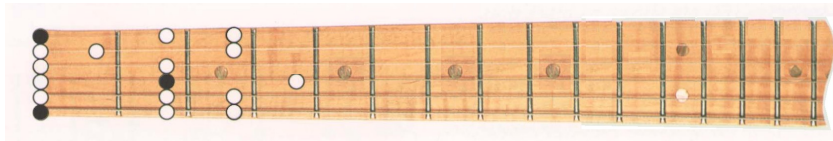
<sup>83</sup> See on the video, (Example III.1-7) “E Aeolian mode in seven shapes”.



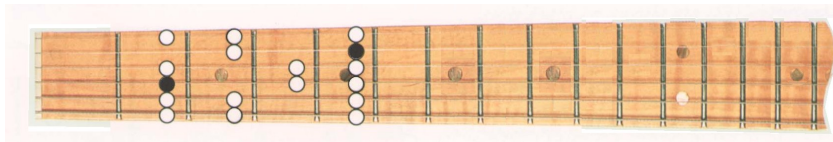
starting on this note. Each of the modes will have its own fingering pattern. A single fingering pattern starting on the sixth string with the first finger and finishing with the fourth finger on the first string is called a *mode shape*, and it can be named after the name of a corresponding mode. Therefore, it follows that there are seven shapes to play a diatonic scale. Example 7 shows E Aeolian mode in seven shapes. By moving the hand up/down the fretboard and keeping the same shape the transposition of a mode can be achieved.

**Example 7<sup>84</sup>**

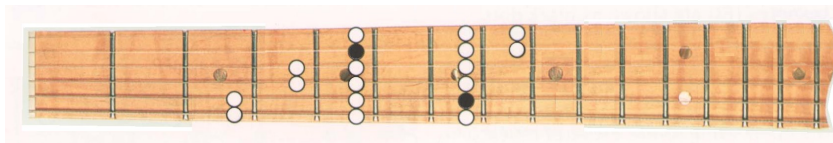
**1** E Aeolian mode in Aeolian shape in open position



**2** E Aeolian mode in Locrian shape in 2<sup>nd</sup> position



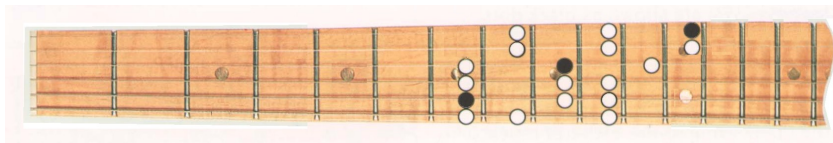
**3** E Aeolian mode in Ionian shape in 3<sup>rd</sup> position



**4** E Aeolian mode in Dorian shape in 5<sup>th</sup> position



**5** E Aeolian mode in Phrygian shape in 7<sup>th</sup> position



**6** E Aeolian mode in Lydian shape in 8<sup>th</sup> position

<sup>84</sup> Black dots represent the roots of E Aeolian; white dots represent the rest of the notes belonging to this mode.



7 E Aeolian mode in Mixolydian shape in 10<sup>th</sup> position



### Relationship between modes, positions and shapes

There is a direct and very tight relationship between modes, positions and shapes. Each position and shape are directly dictated by the mode. If any two are determined then the third follows automatically. From Example 8 it can be seen that there are no notes belonging to the E Aeolian mode on the first fret on 1<sup>st</sup> (F), 3<sup>rd</sup> (G#), 4<sup>th</sup> (D#), 5<sup>th</sup> (A#) or 6<sup>th</sup> (F) strings. By contrast, all notes are available in open position, and all but one are in second position. It follows that to play E Aeolian mode it is possible in open or second position, but not in first.

### Example 8<sup>85</sup>



Each position and the mode dictate the shape. From Example 8 it can be seen that on the 2<sup>nd</sup> fret on the sixth string is the note F#, which is the second degree of E Aeolian mode. A mode starting on this degree is Locrian mode. Therefore, the shape starting on 2<sup>nd</sup> position on the sixth string within E Aeolian mode is Locrian shape (Example 7.2). The Rock School practical examination syllabus<sup>86</sup> and a large number of publications in guitar magazines suggest that beginner guitarists learn to play not diatonic scales or modes as such, but seven diatonic shapes. If a guitar player wants to play a particular mode in a particular position, within a range of one octave (1<sup>st</sup> – 12<sup>th</sup> frets), there is only one shape to play it. In the same way for a particular mode in a particular shape there is

<sup>85</sup> Black dots represents the roots of E Aeolian.

<sup>86</sup> Norton York (ed.), *Rock School: Graded Solo Exams in Rock, Jazz and Pop Grade 8* (Faber music, 1995), 10-11.

only one position to play it on the fretboard. It follows that each mode will have seven combinations between shape and position that can be played in different places on fretboard. Example 7 (see above) shows E Aeolian mode within seven diatonic shapes in seven possible positions. It also follows that in some shapes a mode can be played in two octaves or one octave without changing the shape. For example for E Aeolian mode in Ionian shape there are only two roots so it can only be played in one octave in this shape (Example 7.3). However, for E Aeolian in Aeolian shape there are three roots therefore two octaves can be played in a single shape (Example 7.1).

#### Characteristics of shapes<sup>87</sup>

Although the same mode can be played using more than one combination of positions and shapes, an improvisation played within different shapes and positions will sound quite different. This is because of the characteristics of shapes. As it can be heard from examples on the video an improvisation using the Aeolian shape has the bluesy feel to it or Locrian shape has the major/hard sounding Spanish/flamenco characteristics.

Why do improvisations sound different with different shapes? There are three reasons why different shapes have different sounding characteristics: the different sound of a note on different strings (especially if they played in the open or closed position), central notes and articulation produced by right and left hand techniques like right hand picking, hammer-on, pull-off and bending. According to Frederick M. Noad “there is a distinct difference in tone between the same notes played on different strings.”<sup>88</sup> The same note played on the third string will sound differently from the same note played on the fourth string.

I would like to use Van der Merwe’s concept of the *central note* in production orientated analysis.<sup>89</sup> In improvisations played by guitar it can often be found that the phrase rotates around a particular note. This note is very often the note played with the left-hand’s first finger. The same note will be phrased differently when played in different positions. On many occasions the central notes are aurally not accented but they nevertheless act involuntarily as the focus of the player’s attention. An improvisation will be directly influenced according to which positions and shapes a guitarist uses because different licks or passages can only be performed in certain shapes

---

<sup>87</sup> See on the video, (Example IV) “C Ionian mode and improvisations using two different shapes”

<sup>88</sup> Frederick M. Noad, *Solo Guitar Playing* (London, New York, Sydney: Omnibus Press, 1968), 95.

<sup>89</sup> See on the video, (Example V) “Phrasing around a central note”

and positions. As it can be seen from the Example “Phrasing around a central note” on the video two different positions, two different shapes and two different strings implied two different central notes. The C Ionian mode and Aeolian shape implied that 5<sup>th</sup> position must be used, because this mode in this shape can be played only in fifth position. 5<sup>th</sup> position implied that the notes in this position on any string will act as central notes. The improviser’s choice was that the phrase will rotate around the third string, therefore the C note, played with the first finger on this string, acted as a central note. In a similar way the C Ionian mode in 7<sup>th</sup> position with Locrian shape implied that the central note for this improvised phrase is D.

### *Legato*<sup>90</sup>

As for left hand techniques, Satriani’s guitar solo in “Lords of Karma”<sup>91</sup> (Example 9) illustrates the importance of the left-hand position that dictates the shape used for phrases with hammer-on and pull-off techniques. There are many left-hand techniques such as slide, slide with struck note, portamento, trill, hammer-on, pull-off and bending. I would like to separate two left-hand techniques; hammer-on and pull-off techniques. These are closely dependent on which left-hand position and shape is used. Hammer-on and pull-off techniques are essential in allowing the production of *legato*, which cannot be achieved by picking out every note individually.

Hammer-on technique is used to produce ascending *legato*. This technique is achieved by playing a note in the normal way (by picking it with right hand) and then firmly hammering down with a left-hand finger to play a note on the fretboard. The right hand does not play the second note. The 1st, 2nd, 3rd, or 4th fingers of the left hand can produce this technique in open position. When a *legato* is played in the closed position, the first finger must be in a position on the fretboard. Hammering is then produced with 2<sup>nd</sup>, 3<sup>rd</sup> or 4<sup>th</sup> fingers.

Pull-off technique is used to produce a descending *legato*. Playing a note on the fretboard with a finger of the left-hand in the normal way and then pulling off the finger sideways to produce the sound produces this technique. This technique can be produced in open or any closed position depending on the place of the first finger on the fretboard. When these techniques are used the note played by the first finger of the left-hand works as a *central note*.

---

<sup>90</sup> See on the video, (Example VI) “*Legato*” and (Example VII) “Joe Satriani’s ‘Lords of Karma’”

<sup>91</sup> Joe Satriani, *Surfing With The Alien*, Andy Aledort (ed.) (Cherry Lane Music Company, 1988), 63.

Example 9 shows the relationship in the opening of Satriani's solo from "Lords of Karma" between the modes, positions, shapes, and strings and how it affects central notes. Example 9a consists of a 5-line display: chord line, note transcription stave, mode and shape line, quasi-Schenkerian graph and a tablature. Chord line, transcription stave and tablature are used from Jesse Gress' transcription<sup>92</sup>. The quasi-Schenkerian graph presents the central notes around which the small lick rotates; it is always the note corresponding to the first finger. On the tablature this note is the smallest number that represents the number of the fret (with some exceptions when some notes are played in open position). Example 9b,c,d presents Lydian and Phrygian shapes used to play A Lydian and A Mixolydian modes in this phrase. Number one, that represents the number of the finger, on a particular string on the fretboard (Example 9b,c,d) correspond to a smallest fret number on the same string from the tablature.

According to Jesse Gress' transcription Satriani starts his solo with A Lydian mode in 6<sup>th</sup> position with Lydian shape (Example 9b). Therefore, as can be seen in Example 9a, middle stave, the first finger is placed on the note G# on 4<sup>th</sup> string and later on the note C# on 3<sup>rd</sup> string (the second half of the second beat). From G# Satriani hammers-on into notes A and B. Further licks are based around C#. This position and shape allows Satriani to hammer-on from C# into notes D# and E and pull-off back to the C#. In the last note of the second bar Satriani changes from A Lydian mode into A Mixolydian, but he keeps the same Lydian shape (Example 9c). By sliding the hand from C# into B, he moves the hand into 4<sup>th</sup> position and performs a number of licks around B, F# and C# central notes by using hammer-on and pull-off techniques on 3<sup>rd</sup>, 4<sup>th</sup> and 5<sup>th</sup> strings. Satriani ends this phrase by playing a few licks around central notes E and B on 4<sup>th</sup> and 5<sup>th</sup> strings. To be able to use the same technique and stay in the same A Mixolydian mode he moves to the 2<sup>nd</sup> hand position and changes the Lydian shape into Phrygian shape (Example 9d).

As can be seen from Example 9 the change of the mode dictates the change of the position or shape. The change of the position dictates the shape. The tonal centres are the consequence of the combination between a shape, a string and a position. How would the improvisation be affected if the position would not be changed at the end of the 4<sup>th</sup> bar?

---

<sup>92</sup> Satriani, 63.





and different shapes. Different shapes and positions enable one to use licks and passages that are copied from Steve Vai's solo around different central notes. It enables, as one wishes, an improvisation to sound very much like Steve Vai's or very different.

### **E Aeolian vs. C major**

What difference would the usage of the E Aeolian instead of C major make for my improvisation? As I have mentioned above, the beginning of Steve Vai's improvisation had a bluesy feeling. To recreate the same bluesy feeling I used the Aeolian shape, which is broadly used by blues players and has a bluesy feel to it. I played this shape in 5<sup>th</sup> position, because that's where this shape is played in C major. But the licks that I had copied did not fit. Without understanding Steve Vai's modal thinking I couldn't play the notes of his licks or, if I played them, they sounded different because of the articulation produced by the left hand techniques.

Example 11 shows the analysis of a lick played by Steve Vai in the 2<sup>nd</sup> and 3<sup>rd</sup> bars of the improvisation of "For The Love Of God."<sup>96</sup> Example 11 consists of a 5-line display: chord line, note transcription stave, formulas stave, quasi-Schenkerian graph, and a tablature. Chord line, transcription stave and tablature are used from Steve Vai and Dave Whitehill transcription.<sup>97</sup> The formula stave presents structural pitches of the lick with their articulation.<sup>98</sup>

The main characteristic of the beginning of this solo, as I already mentioned above, is the bluesy feel. The bending technique produces this bluesy feel (Example 11). According to Brian May bending "is the forte of the rock guitar. For this technique, the string is pulled to one side while it is sounding, it being possible to rise the pitch one or two semitones, or with light strings considerably more."<sup>99</sup> Bending in this lick is produced with fourth (15<sup>th</sup> fret) and third (14<sup>th</sup> fret) fingers on second and third strings. This bluesy feel, produced by bending strings, was the main reason why I copied this lick and wanted to incorporate it into my solo.

---

<sup>96</sup> See on the video, (Example I) "Steve Vai's 'For The Love Of God' first twelve bars played by Steve Vai."

<sup>97</sup> Steve Vai, *Passion and Warfare* (Hal Leonard Publishing Corporation, 1991), 131.

<sup>98</sup> The reason for including a formulas stave here is to accent the formulaic and motivic approach to the improvisations on the video. This is to prevent the reader from trying to look for exactly the same lick in the improvisations on the video. Most important are the articulation and pitch relationships.

<sup>99</sup> Brian May, "Rock Guitar," in Michael Stimpson (ed.), *The guitar: A Guide for Students and Teachers* (Oxford, New York: Oxford University press, 1988), pp.158-176 (p.172).





shows the same lick in the context of an improvisation based around the tonal centre E (2<sup>nd</sup> string, 5<sup>th</sup> position). How does the lick from Example 11 change with the change of central notes?

**Example 12<sup>101</sup>**

**Example 13<sup>102</sup>**

From Example 12 it can be seen that the articulation on the same lick (compare the formula in Example 11) changes with the change of the central note into A. The pitch stayed the same, but the bending of strings is replaced by pull-off and hammer-on techniques (first and second notes A and note B in-between). The reason for this is that it is very difficult to bend a string a whole tone with the first finger, therefore the bend of the first string with the first finger must be replaced by ordinary picking with the right hand or with a smother pull-off and hammer-on technique. The pull-off in Example 11 is replaced by ordinary picking (Example 12), because of the need to change the string for the note G. The second bending after the bar line is replaced by the pull-off technique for the same reason as the first. The slide in Example 12 appears because of the need to change position in order to reach the note D on 10<sup>th</sup> fret. Even though in the

<sup>101</sup> The articulation shown on Example 12 is traceable to some extent on the video Example I.1 within a different context. However, the whole formula is not played. In Example 12 the same formula from Example 11 is used in order to notice more easily the difference in articulation for the reader.

<sup>102</sup> See on the video, (Example I.1) “‘For the love of God’ improvised using the C Major scale.”

new context the main pitches stayed the same the articulation, which was the main characteristic of this lick, changed totally.

From Example 13 it can be seen that the articulation on the same lick (compare with the formula in Example 11) stays the same with the change of the central note into E. However, the pitch is transposed a fifth down. This lick keeps the original bluesy characteristics produced by bending strings. However, the sound in relation to the harmony in the accompaniment changes, because of the transposed melodic line. From this analysis it can be seen that, for guitar improvisation, the harmonic framework in which the improviser plays/thinks is of the utmost importance.

### **Conclusion**

For an improviser there is a need to have a starting point in order to organise the action of the hand in relation to the active surface of the instrument. In what form this starting point is expressed depends on the performer's experience and method of thinking. A guitarist/performer can think in terms of tonality, modality, chords, scales, modes, central note, tonal centres, shapes or positions.

This essay shows that any analytical approach used by traditional musicology that has gone through major adaptations is successfully used for analysis of a recorded performance. Traditional analytical techniques like Schenkerian analysis can be successfully applied to rock. By applying these analytical tools it is possible to see that there is a close relationship between modes, tonal centres, central notes, shapes and positions.

From this essay it is obvious that the way recorded rock material should be recreated in new performances depends on many conditions. The question whether this material should be recreated to the last detail or treated as a general guide for a performer's new creation depends on the music performed, for whom and by whom. Also from this essay it can be seen that, in improvised rock, transcriptions are used only as a guide and a different viewpoint of a particular recorded performance. Therefore, a performer is invited not to recreate a whole performance note by note, but to copy licks, passages and techniques that can be adopted for new performances.

It can be seen that the significance of "mode" in rock discourse is not simply a more economical way of representing audible structures (which basically is how Moore

and Covach present it), but is a way of representing the essential productional dimension of the music. When an improvisation is created a performer will approach a chord sequence differently with a major/minor system than with a modal approach. Different approaches inherently imply different ways of hearing, feeling and thinking about the same thing. Each different way of thinking will imply an importance of some notes above others, which will affect the improvisation in different ways, including melodic line, phrasing, or phrase articulation. Which approach is correct depends on the sound required and the music performed, the venue, for whom and by whom.