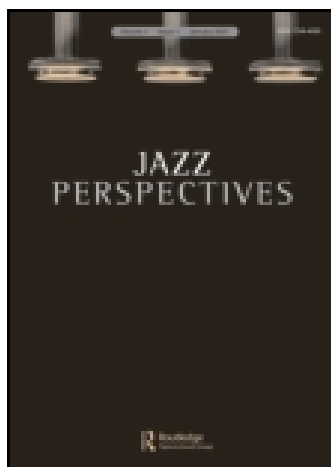


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# Pat Metheny's Finger Routes: The Role of Muscle Memory in Guitar Improvisation

James Dean

This essay explores the relationship between instrumental technique and improvisation. Beginning to understand how a player navigates their instrument when soloing may provide clues about the process of improvisation itself while illuminating details of style and the unique musical vocabulary used by the improviser.<sup>1</sup> The principal aim of this paper is to investigate how an improviser's idiolect might begin to be analyzed through an examination of muscle memories, particularly in relation to the guitar. In order to do this, the analysis examines some of the improvisations of guitarist Pat Metheny; through this study I aim to explore the ways in which a study of repeated physical movements and mechanical concepts can inform us about Metheny's approach to playing the guitar when improvising, and to consider if such findings might offer an explanation of the creative approach at particular stages of the improvisation.

Recognizing the significance of the role of muscle memory in improvisation, guitarist Wayne Krantz expresses concern with developing technique that breaks away from an over-reliance on such memory. In his manual *An Improviser's OS*, his use of the term "formula" is atypical when discussing how a set of two thousand and forty eight formulas might be considered as a tool for improvisation.

[I]n contrast to how chords and scales are usually taught and learned, formulas are not played as patterns. Patterns are shortcuts that rely on mechanical memory rather than the underlying theory to access specific sounds. They indicate where to put the hands to get a desired sound and as such they work fine. ... [P]laying patterns generally falls under the category of compositional playing; a category that includes any preconceived music such as scale or modal patterns, arpeggio patterns, chord forms, licks, habitual hand moves, tunes, pieces, songs or riffs—in other words, anything previously learned.<sup>2</sup>

Krantz does not use the term "formula" as it is most often used in academic literature on jazz, where it is normally used to describe aspects of playing, which Krantz refers to as "patterns." Typically the term "formulaic improvisation" refers to playing which, as

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<sup>1</sup>The term *vocabulary* is often used by improvisers as a way of referring to the stock of ideas used when improvising. While a vocabulary would include standard devices such as scales and arpeggios, for instance, a player might be recognized by the individual way in which such a vocabulary is individually applied and by the range of the vocabulary that is used.

<sup>2</sup>Wayne Krantz, *An Improviser's OS* (Self-published, 2004), 45.

described by Barry Kernfeld, "is the building of new material from a diverse body of fragmentary ideas . . . . The fragments may be called variously, and often interchangeably, 'ideas,' 'figures,' 'gestures,' 'formulae,' 'motifs,' and so on; in jazz parlance they are often referred to as 'licks' and in early jazz specifically as 'hot licks.'" <sup>3</sup> Henry Martin uses the term "formulas" similarly to define musical ideas that are "duplicated from solo to solo." <sup>4</sup> Martin also goes on to state that "a player's formulas are a library created as an artistic statement, a personal signature, within a chosen stylistic tradition . . . . As a result, improvisers are often recognized not only by their sound (in the most general sense: phrasing, articulation, tone etc.), but also by the formulas they play." <sup>5</sup>

Paradoxically, Krantz's formulas, based on all the possible combinations of the chromatic scale, are actually derived as a result of attempting to be liberated from a type of playing that might more conventionally be described as "formulaic." Krantz defines formulas as

pure, untouched. They have no connotation, no melodic or harmonic obligation. They rely on no particular groove, make no ethnic reference, have no stylistic allegiance. They have no history. They are abstractions, until they are touched by the musician. In human hands they become tonal filters, through which musical energy can be channelled and subsequently shaped and shaded, melodically and harmonically. <sup>6</sup>

Despite the unconventional use of the terminology, Krantz's point is clear here: "improvisation" is heavily influenced by mechanical memory, and in order to improvise more purely, the improviser needs to find a way to break free from these habitual movements.

Lars Lilliestam briefly discusses the topic of muscle memory in his essay *On Playing by Ear*, recognizing the significance that fingering technique might play in directing musical possibilities:

A melody or a chord becomes a series of movements or a pattern of finger positions that are stored as muscular memories. A musical piece is thus stored both as visual figures and as tactile-motoric patterns. When we learn an instrument we learn scales and chord shapes as *finger routes*, which are programmed into the brain and set frames for what we can play. Music that employs movements that lie outside these finger routes can be hard to play and demand extra effort. <sup>7</sup>

This concept of finger routes is a useful one when considering the guitar, suggesting a collaboration of both left-hand fingering (assuming this to be the fretting hand) and fret board positioning (the route). As both Krantz and Lilliestam imply, some note choices and phrases within an improvisation may perhaps be explained principally as a result of such finger routes, which have been learned and used repeatedly,

<sup>3</sup>Grove Music Online, s.v. "Improvisation: Jazz," by Barry Kernfeld, accessed August 25, 2010, [http://www.oxfordmusiconline.com/public/book/omo\\_gmo](http://www.oxfordmusiconline.com/public/book/omo_gmo).

<sup>4</sup>Henry Martin, *Charlie Parker and Thematic Improvisation* (Lanham, MD and London: Scarecrow Press, 1996), 1.

<sup>5</sup>Ibid., 116.

<sup>6</sup>Wayne Krantz, *An Improviser's OS*, 40.

<sup>7</sup>Lars Lilliestam, "On Playing by Ear," *Popular Music* 15 no. 2 (1996): 202.

becoming signifiers of a player's style. The more individual these finger routes, the more unique a player is likely to sound, and possibly more innovative; the greater the library of finger routes, the more options available to the improviser at any given point in the improvisation.

Given Barry Kernfeld's assertion that Pat Metheny is "the central figure in a transformation of the basic instrumentation of jazz from the mid-1970s onwards, in which guitar has attained a stature in jazz equal to that of the tenor saxophone,"<sup>8</sup> surprisingly little has been written about Metheny's approach to guitar playing and his improvisations, Andy Bennett and Kevin Dawe comment that Pat Metheny's music is amongst a range within a "largely unexplored musical terrain traversed by the guitar."<sup>9</sup> More generally, critical analytical studies that focus specifically on the improvisations of particular jazz guitarists are also relatively few and, since they tend to focus on melody in regard to its supporting harmony, they typically concentrate on details such as formulaic and motivic development, areas of tension and resolution, the use of licks, sequences, patterns and scale choices, and they typically use author transcriptions as the raw material for the analysis. One such work is Howard Spring's examination of formulas used by Charlie Christian in a selection of Christian's solos. Spring suggests that:

a detailed examination of this [sic] formulas seems pertinent to an understanding of his style because formulaic activity accounts for more than half of the measures I have transcribed. Christian uses formulas

- to establish coherence
- to delineate the harmonic structure of the tune
- to develop tension
- to produce areas of motion
- to create his characteristic fluid phrasing and flexible use of arpeggios.<sup>10</sup>

Although the formulas are clearly shown in this study, the analysis describes little about how Christian achieves the effects mentioned above, rather focusing on the intervals used in the formulas and pitches in relation to their harmony; Spring treats the music largely in isolation from Christian's technique. The analysis is based on the notes themselves; for instance, Spring describes the "first tonic formula" as "a descending line which becomes progressively less variable as it approaches what I call the 'core' of the formula. It often outlines an octave from the lowered third of the accompanying harmony, where it changes direction. It can also contain the lowered seventh and sixth of the chord."<sup>11</sup> Examining the likely fingering used in the "core" formula reveals that a

<sup>8</sup>*Grove Music Online*, s.v. "Pat Metheny," by Barry Kernfeld, accessed December 10, 2009, [http://www.oxfordmusiconline.com/public/book/omo\\_gmo](http://www.oxfordmusiconline.com/public/book/omo_gmo).

<sup>9</sup>Andy Bennett and Kevin Dawe, eds., *Guitar Cultures* (Oxford: Berg, 2001), 4.

<sup>10</sup>Howard Spring, "The Use of Formulas in the Improvisations of Charlie Christian," *Jazzforschung/Jazz Research* 22 (1990): 11.

<sup>11</sup>Used in the more conventional sense, Spring's concept of "formula" is quite different from Krantz's. Spring states that "by the term 'formula' I mean repeated groups of notes that are variable and persistent in their appearances. Although formulas are somewhat stereotypical, Christian's formulas exhibit a great degree of variability in detail so that even though they are persistent, they are not repetitive" (12).

similar pattern is applied in each case, but while Spring comments on the use of “pattern-forms” and “localised finger patterns” as a reflection in the essay’s endnotes, Christian’s guitar technique is not investigated more fully, and although it is not Spring’s primary purpose in this paper, his analysis begs a fuller accounting of Christian’s guitar technique too.<sup>12</sup>

Based partly on Spring’s formulas, John Finkelman’s paper “Charlie Christian and the Role of Formulas in Jazz Improvisation” aims to “present a methodology which relates Christian’s formulas to his overall style and way of thinking.”<sup>13</sup> The article’s concern with Christian’s “way of thinking” suggests that it does more to address the process by which the improvisation was conceived, examining the formulas as derivations from “three basic fingering positions.”<sup>14</sup> Finkelman provides more insight in regard to Christian’s movements on the guitar neck, but a fuller understanding remains elusive. While common movements are discussed within particular positions on the guitar, the actual fingering is not clear and the navigation of the instrument is limited in its consideration. Finkleman himself points out that “since all we have to go on are the sound recordings Christian left us, we cannot assert with complete assurance which fingering position was being used at any given time.”<sup>15</sup>

Rob Van Der Blik’s study of how Wes Montgomery maintains a sense of unity in his improvisations seeks “to explicate coherence, which in its broadest sense, may be understood to be a balanced composite of unity and variety, [which is] achieved through the establishment of relations between identical, similar and contrasting musical events.”<sup>16</sup> Van Der Blik observes that “it is evident that ideas which fall under the fingers play a discernible role in improvisation” but does not address the issue in detail, as it does not form the main focus of the analysis.<sup>17</sup> While each of these studies appreciates the influence of muscle memory on the process of improvisation, they face analytical limitations: the transcriptions used are necessarily based on audio recordings. None of these authors could actually *see* what was being played, and therefore any theory offered in regard to fingering or movement would be speculative, and possibly misleading.

In order to provide an accurate visual representation of left hand technique, I include guitar tablature in this essay. Tablature is able to show finger routes much more effectively than staff notation; it offers details about position, fingering and the navigation of the guitar neck clearly and at a glance. On the guitar, the same sequence of notes can be played in a variety of ways, using different strings and frets, leading to differing combinations of left hand fingerings, fret board positioning and right hand

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<sup>12</sup>Ibid., 36

<sup>13</sup>Jonathan Finkleman, “Charlie Christian and the Role of Formulas in Jazz Improvisation,” *Jazzforschung/Jazz Research* 29 (1997): 159.

<sup>14</sup>Ibid., 163.

<sup>15</sup>Ibid., 163.

<sup>16</sup>Rob Van Der Blik, “Wes Montgomery: A Study of Coherence in Jazz Improvisation,” *Jazzforschung/Jazz Research* 23 (1991): 153.

<sup>17</sup>Ibid., 118

picking technique. Example 1 demonstrates some of the possible fingering and positioning choices for an E major scale in the same octave, represented by tablature versions a–e.

The image shows five examples (a-e) of an E major scale in the same octave, presented as musical notation and guitar tablature. The musical notation is in treble clef with a key signature of two sharps (F# and C#). The tablature consists of six lines representing the guitar strings, with fret numbers written on the lines. Below the strings, the left hand fingering is indicated by numbers 1-4. An arrow points to the first finger (index) on the low e string. A note above the strings reads: "In tablature, each line represents a string on the guitar, and each number a fret".

Examples (a) through (e) show different fingering and positioning choices for the E major scale in the same octave. The tablature for each example is as follows:

- (a) T: 4-6-7 4-6-8 5; A: 7-4-6-7 4-6-8 5; B: 7-9 6-7 4-6-8 5
- (b) T: 7-9 11 8-9; A: 7-9 11 8-9; B: 7-9 11 8-9
- (c) T: 2-4 1-2-4 2-4-5; A: 2-4 1-2-4 2-4-5; B: 2-4 1-2-4 2-4-5
- (d) T: 12-14 11-12-14 11-13-14; A: 12-14 11-12-14 11-13-14; B: 12-14 11-12-14 11-13-14

### Example 1.

Therefore, when transcribing from an audio recording only, determining exactly where a passage is played on the guitar is almost always open to interpretation (an exception to this might include the recognition of an open string on the guitar which has a clear tonal characteristic and can provide a clue as to the general position of the phrase). Additionally, a transcription which includes details of position and fingering (such as a tablature example) is in danger of presenting the preferred technique of the transcriber, rather than the player. A study of finger routes from audio only that hopes to examine individualized technique and related muscle memories would be unsatisfactory; the fingering and fretboard positions could not be presented with necessary certainty. Accordingly, the original transcriptions used for analysis in this essay have been produced with reference to live DVD footage. In transcribing the improvisations as they are both heard *and* seen, Metheny's technique is presented as fairly and as accurately as is possible from this type of footage, in order that some meaningful conclusions might be drawn.

### Terminology

Terms used in this discussion are mostly consistent with standard guitar descriptors, but a few are noted below for clarification:

#### i) *Along and across*

Since it is possible to move in two directions on the guitar, I have drawn a deliberate distinction in the analyses. *Along* refers to horizontal movement, movement "along one string" for example, while *across* refers to vertical movements, movements "across three strings," for instance.

#### ii) *Position*

*Position* simply refers to a particular place on the guitar neck. If a phrase is played consistently around the tenth fret, for instance, it is being played in tenth position, normally determined by the positioning of the first finger on the left hand.

## iii) Fingering

Left hand fingering is indicated by using numbers 1, 2, 3, 4 underneath the tablature staff, where 1 is the index finger, 2 is middle, 3 is annular and 4 is little.

## iv) Shapes

Guitarists commonly visualize scales as physical “shapes” on the guitar neck, rather than as separate, individual pitches. A shape may be thought of as a group of frets containing a set of pitches from a particular scale, which is moveable across the guitar neck, and is therefore easily transposable. The diagram below represents a pentatonic scale shape (in this case A minor pentatonic): the frets are shown on the left of the diagram, each vertical line of boxes represents a string, and the ‘O’ shows the frets that are used to play the scale: the shape. The small numbers in the boxes show which left hand finger would most likely be used to depress each fret, corresponding to the description of fingering above.

	6 <sup>th</sup> string (low e)	5 <sup>th</sup> string	4 <sup>th</sup> string	3 <sup>rd</sup> string	2 <sup>nd</sup> string	1 <sup>st</sup> string (high e)
5	O1	O1	O1	O1	O1	O1
6						
7		O3	O3	O3		
8	O4				O4	O4

Once this shape is learned, it is then easy to transpose the shape to Ab, for instance, simply by moving the shape down the fretboard by one fret: the shape remains the same, but the note set is uniformly adjusted by a semitone. In his book *Blues Shapes*, Herb Ellis constructs a way of soloing based on shapes, stating that “you need no longer to be consumed with countless modes and scales because virtually anything can be played using the principles set forth in this book.”<sup>18</sup> While this claim might seem rather ambitious, it demonstrates that shapes are a common concept and way of thinking on the guitar.

Since the concern here is partly with the way in which Metheny navigates the guitar neck, one way to analyze this is to refer to shapes, and to the movements between them. For each scale, five shapes can be used to cover the entire neck of the guitar. For the purpose of this analysis, these shapes have been labelled as -1, 1, +1, -2, 2. The main shapes are based on two main chord-shapes, shape 1 with the root on the low E string (sixth string) and shape 2 with the root on the A string (fifth string). Example 2a shows how shape 1 is derived in the case of Dm7, based on a chord-shape that has its root on the low E string. The chord is displayed on the left of the

<sup>18</sup>Herb Ellis, *Blues Shapes* (Van Nuys, CA: Alfred Publishing, 1987), 3.



stave in chord frame style, notation and tablature. The D Dorian scale is shown on the right of the chord based on the position of the chord (tenth position). The example also shows the corresponding chord tones within the scale using dashed lines, while the other notes complete the D Dorian scale.

DMin7

Shape 1 (tenth position)

T  
A  
B

10 10 10 12 10

10 10 10 12 10 9 10 12 9 10 12 10 12 13 10 12 13

**Example 2a.**

The diagram below shows an alternative representation of this shape. In this example the pitches are shown in the boxes.

*Shape 1*

	6 <sup>th</sup> string	5 <sup>th</sup> string	4 <sup>th</sup> string	3 <sup>rd</sup> string	2 <sup>nd</sup> string	1 <sup>st</sup> string
9			B1	E1		
10	D1	G1	C2	F2	A1	D1
11						
12	E3	A3	D4	G4	B3	E3
13	F4				C4	F4

Shape 2 is shown in example 2b, derived in the same manner, though this time with the chord root on the A string (fifth string and in fifth position).

DMin7

Shape 2 (fifth position)

T  
A  
B

5 6 5 7 5

5 7 8 5 7 8 5 7 4 5 7 5 6 8 5 7 8

**Example 2b.**

Shape 2

	6 <sup>th</sup> string	5 <sup>th</sup> string	4 <sup>th</sup> string	3 <sup>rd</sup> string	2 <sup>nd</sup> string	1 <sup>st</sup> string
4				B1		
5	A1	D1	G1	C2	E1	A1
6					F2	
7	B3	E3	A3	D4		B3
8	C4	F4			G4	C4

The remaining shapes are those found “either side” of these two main shapes, in other words in a lower or higher position on the neck, hence -1 (lower than shape 1), +1 (higher than shape 1), and -2 (lower than shape 2). If one imagines holding the guitar as if playing, with the left hand on the guitar neck, a higher shape would be to the right of the original shape, and a lower one would be to the left. These are shown in example 2c.

Shape -1 (seventh position)

Shape +1 (twelfth position)

Shape -2 (second position)

Example 2c.

Shape -1

	6 <sup>th</sup> string	5 <sup>th</sup> string	4 <sup>th</sup> string	3 <sup>rd</sup> string	2 <sup>nd</sup> string	1 <sup>st</sup> string
7	B1	E1	A1	D1		B1
8	C2	F2			G2	C2
9			B3	E3		
10	D4	G4	C4	F4	A4	D4

*Shape +1*

	6 <sup>th</sup> string	5 <sup>th</sup> string	4 <sup>th</sup> string	3 <sup>rd</sup> string	2 <sup>nd</sup> string	1 <sup>st</sup> string
12	E1	A1	D1	G1	B1	E1
13	F2				C2	F2
14		B3	E3	A3		
15	G4	C4	F4		D4	G4

*Shape -2*

	6 <sup>th</sup> string	5 <sup>th</sup> string	4 <sup>th</sup> string	3 <sup>rd</sup> string	2 <sup>nd</sup> string	1 <sup>st</sup> string
2		B1	E1	A1		
3	G2	C2	F2		D1	G1
4				B3		
5	A4	D4	G4	C4	E3	A3
6					F4	

Thus, for each chord or key center a series of shapes can be derived, enabling scales to be played “across” and “along” the guitar neck. In the case of Dm7 these are as follows: shape –2 (position 2), shape 2 (position 5), shape –1 (position 7), shape 1 (position 10), shape +1 (position 12). The sequence then repeats up twelve frets (one octave), though the shapes remain the same (e.g. shape –2, position 14 etcetera).

**“Cantaloupe Island”**

The intention in this first analysis is to extract some examples of Metheny’s finger-  
routes from the transcriptions and to discuss some of the common mechanical concepts and related musical devices. The analysis is not concerned with pointing out licks, although these may be identified as a secondary concern, but more broadly with the navigational devices that Metheny uses (how he gets from “A to B” on the guitar neck) and therefore more generally to give a sense of his individual approach to playing the guitar.

Now a jazz standard, “Cantaloupe Island” by Herbie Hancock was first recorded in 1964 for the album *Empyrean Isles*. In this version Metheny plays the main melody

using a favored guitar-synth patch blended with the natural sound of the electric guitar. Performed for a concert in June 1990, and featuring Jack DeJohnette (drums), Herbie Hancock (piano) and Dave Holland (bass), this version is a more modern and faster interpretation of the original recording.<sup>19</sup>

Harmonically, "Cantaloupe Island" is based on a sixteen bar repeating chord sequence that uses just three chords, as follows:

Fm7 (4 bars)    D $\flat$ 7 (4 bars)    Dm7 (4 bars)    Fm7 (4 bars)

Conventional scale choices for these chords would be:

Fm7 – F Dorian or F blues scale

D $\flat$ 7 – D $\flat$  Mixolydian

Dm7 – D Dorian or D blues scale

Excerpts from the solo are shown in examples 3–12.

**Example 3.** Bars 11–13, 5:18 (1:34:06).

**Example 4a.** Bars 19–20, 5:33 (1:34:20).

**Example 4b.** Bars 19–20, 5:33: interpretation one – incorrect.

<sup>19</sup>DeJohnette, Hancock, Holland, Metheny in Concert (Berlin: Euroarts, 1990), DVD.

Example 4c. 'Inside and outside' – original example.

Example 5. Bars 25–27, 5:44 (1:34:32).

Example 6. Bars 28–32, 5:50 (1:34:43).

Example 7. Bars 38–40, 6:10 (1:34:58).

Example 8. Bars 43–44, 6:18 (1:35:06).

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Example 9. Bars 47–49, 6:25 (1:35:13).

Example 10. Bars 54–56, 6:39 (1:35:27).

Example 11. Bars 64–67, 6:57 (1:35:45).

Example 11. Bars 64–67, 6:57 (1:35:45).

Example 12. Bars 71–74, 7:10 (1:35:58).

Example 12. Bars 71–74, 7:10 (1:35:58).

The first passage, where muscle memory might be expected to play a role in this improvisation because of its pace, is shown in example 3. This is a dense phrase consisting almost entirely of sixteenth-notes rising and falling in pitch.<sup>20</sup> The ascent is mostly played in position 7, but as the phrase descends Metheny moves downward across the neck through positions 8, 6, 5, 4 and 3. The example also shows the use of D minor shapes. There are two main points of interest here: the first is the method by which Metheny changes position, initially from shape –1 (position 8) to shape 2 (position 5) indicated by the larger square bracketed areas. The smaller square brackets are used to indicate a repeated fingering as the hand moves across the neck. In this case there is a repeated first–second fingering at the end of bar 11 and the beginning of bar 12, used to move position, shifting through positions 8, 6 and 5. Phrases such as this are a common feature of Metheny’s playing and will be referred to throughout the essay as *transitional* phrases. Transitional phrases are described as such because they are short passages that act as points of transition from one position on the neck to another. They are also often links between musical ideas or phrases. A second transitional phrase is played in bar 12, again using a repeated first-second fingering through positions 5, 4 and 3, which provides some chromatic interest and forward momentum into bar 13 (Fm7) where Metheny plays a fairly typical blues-based melody.

The second important feature at this stage is the notes marked in parentheses. These notes are played by the left hand and are clearly articulated, but the string is not struck by the right hand pick, sounded only by the force of the left hand pressing down on the string. This is an unusual and personalized technique, which is relatively uncommon among guitarists, particularly in the jazz fraternity.<sup>21</sup> Such features as hammer-ons and pull-offs, as indicated by the slurs in the notation, are more common though; here, Metheny strikes the first note only with the right hand pick, either “pulling-off” (in the case of a lower pitch), or “hammering-on” (in the case of a higher pitch) to the subsequent note with a left hand finger, the force of the plucked note in combination with the left hand technique providing enough strength for the second note to sound. Playing a note without using the pick at all on the fretted string, as in the case of the mentioned pitches in bar 11 and 12, is a rarer technique, one which Metheny has clearly adopted though, given its prevalence in these transcriptions, and perhaps driven by the philosophy behind his approach to guitar articulation:

You know, after all these years, I still think in terms of trumpet most of the time. I think in terms of how I would tongue a phrase in the back of my mind all the time. Back then as well as today, many jazz guitar players often sound stiff and wrong in terms of articulation. I still have a hard time accepting traditional jazz guitar articulation as being OK, when processed through my horn playing aesthetic. I have worked very hard to simulate the kind of articulation that rings true as a horn player.<sup>22</sup>

<sup>20</sup>Wayne Krantz suggests that “generally speaking, the faster soloing gets, the less improvisational it tends to be.” Krantz, *An Improviser’s OS*, 45.

<sup>21</sup>An exception to this would include Stanley Jordan, for instance, who has developed a technique based almost entirely on such a concept.

<sup>22</sup>Interview by Joe Barth in *Voices in Jazz Guitar* (Pacific, MO: Mel Bay Publications, 2006), 314.

Further examples of transitional passages can be seen in examples 9 and 11.

Example 4a provides a good example of Metheny's approach to playing "*through-positions*" on the fretboard, using simple physical movements that result in a sophisticated sound, effectively weaving in and out of the harmony by moving chromatically across the neck. This phrase includes a number of outside notes (non-chord tones) which are indicated by asterisks, but the melodic complexity of the phrase that is achieved by playing outside of the harmony is the result of a fairly straightforward technique. Typical of Metheny, this is a good example of a trademark finger route and an entryway into understanding the manner in which he approaches playing the guitar. For comparison, example 4b shows an alternative interpretation of how this phrase could be played.

Example 4b is very playable, and a transcription from the audio might suggest this tablature interpretation to be correct. However, the DVD footage shows that example 4a is correct, and that it is notably different from example 4b. The phrase begins and ends in a different place on the neck and shows the fingering which Metheny uses, revealing truths about his technique and use of the fretboard which the incorrect version does not. A consideration of technique is surely important when trying to understand how an improviser improvises: an understanding of the mechanics provides a fuller picture of the improviser's approach. Also of note in this example is (1) the way in which the position change occurs every beat and (2) the symmetry of the phrasing, resulting in a descent in beat 1, an ascent in beat 2, a descent in beat 3, an ascent in beat 4. The correct version is simpler to play and demonstrates how position changes are being used to play outside of the harmony in a way that the alternative interpretation fails to take into account. One can easily imagine how simple it would be to move a pattern of notes, perhaps with a little variation, "inside and outside" of a fretboard shape by one fret at a time in order to move in and out of the harmony (see example 4c).

In example 4c the first four notes from shape 1 are moved up by one fret at a time and the finger pattern is inverted on each occasion, using a fingering pattern similar to Metheny's. Using a repeating first-third fingering, the phrase incorporates some notes that belong to the Fm7 harmony and others which could be considered to be outside. When analyzing this phrase as a physical technique, these outside notes are easy to explain, and while it is true to say that this phrase sounds the way it does partly due to the tension created by the flattened thirteenth, flattened fifth, major third, and a minor ninth against the Fm7 chord, this is probably not the simplest means by which to understand how it is conceived. Rather, an understanding of the finger route is far simpler, the physical gesture resulting in the overall sound and effect of the phrase. This mechanical concept is typical of Metheny's vocabulary. A proper understanding of the finger route is important in explaining the note selection, and more importantly perhaps, why Metheny chooses to play the phrase this way. Exact transposition is easily accomplished on the guitar due to its inherent symmetry, and example 4b over-complicates, leading to a wrong understanding of the fretboard mechanics. Disregarding this symmetry, the fingering and positioning shown in example 4b misrepresents Metheny's technique, and the logic of the phrase moving smoothly through positions is missed. In addition, the subtleties of the articulation such as legato and tone quality of different strings and differentiations between down and up strokes of the pick



(issues not fully considered in this paper) are wrongly suggested. Also importantly, the first interpretation ends in a different place on the neck from the second, and it is likely that the subsequent phrase will also be incorrectly understood, leading to further errors in the analysis, if not of pitch, then certainly of movement and technique. These are some of the potential flaws of analyzing technique based on transcriptions from audio only: analyzing the incorrect version may well inform us correctly about the pitch and rhythm relationships, but it would tell us almost nothing about Metheny's own approach to playing the guitar and would therefore do little to help us understand why Metheny plays what he does, or how he plays it. Although this phrase sounds complex, it is actually achieved by simple and logical finger movements, which can be principally understood as a finger route concept consisting of a pattern of physical movements which Metheny knows will result in a desired overall sound.

In example 9 an  $A^b$  major triad shape begins another through-position phrase which ascends through positions 4, 5, 6, 7, and then falls back again through 6, 5, 4, 3, again demonstrating a chromatic approach to the fret-board. The triad shape used in this example is another common feature of Metheny's playing. In the notated transcriptions, triad shapes are used in examples 4a, 7 and 12, where they occur within through-position phrases as a device to set up a change in position as well as for their melodic function. In example 5, triads are used over the  $Dm7$  harmony moving up the neck comprising F, G (implied), C, F (implied) and E minor; chords III, IV, VII, III and ii of D Dorian mode. Metheny uses the first-second fingering pattern again to move from shape +2 to 2, playing a *tail* to close the idea out. A tail is a device that is similar to a transitional phrase, where the finger movements are identical, except that rather than linking one musical idea to another it functions as a means of completing a phrase. The tail always descends down the neck, and usually concludes with a slide, giving the effect of the note falling away at the end, or of a blurring of the final pitch. Further examples of a tail can be seen in examples 6 and 8. Example 6 also shows how Metheny develops an idea using different combinations of four pitches and rhythmic displacement (see figs. A-I). An analysis of motivic development and its connection with finger routes is more fully considered later in this paper in the analysis of "Proof."

Example 7 shows another example of Metheny playing through-positions 7, 6, 5, 6, 4, 5, 4, and 3 over a  $D^b7$  harmony. In a similar manner to example 4a, this phrase changes position mostly on each beat; therefore there are eight alterations of position across the eight beat span. Also in common with example 4a, symmetry is evident (the phrase in the first position rising, the second falling, the third rising, the fourth falling, and so forth.) and a mixture of inside and outside notes are played, achieved by the chromatic movements across the fretboard. Although the finger route is not identical, the concept is the same and a similar sound is achieved, resulting in a phrase that is melodically sophisticated, and typically Metheny. The fingering is quite consistent, mainly using the first-third combination, and a *pivot note* is used by Metheny in order to move down the neck smoothly. A pivot note is defined here as a note that is used to connect one position to another below it, and which is used in order that the hand can move position while playing a fluent and uninterrupted melody. Although the note (or fret) belongs to both positions, the fingering always anticipates the second position and thus automatically, perhaps habitually, sets the

hand up to play a phrase in a lower position. In the case of this example, the pivot note (D $\flat$ ), acts as the link between fourth and third positions, the fretting of the fourth fret acting as a connector between the two and enabling Metheny to move into position in anticipation of the next phrase, which ascends from the F. Along with transitional phrases and through-position playing, pivot notes further demonstrate how Metheny plays the guitar in a linear fashion (along the guitar neck rather than across), and shows how the phrase construction in the considered examples is allied to the technique. Further examples of pivot notes can be seen in examples 8, 10 and 12.

Example 10 demonstrates how the realization of these techniques can inform an analysis of Metheny's approach to improvising. In this example, the techniques that have been discussed have been applied to a section of the improvisation where it is not possible to see Metheny, due to the camera angle, but where it seems reasonable to assume that the same techniques examined so far are being employed (where Metheny is out of view the fingering below the staff is included in parentheses). The example includes a chromatic prefix, as well as the use of a pivot note and through-position playing, to create a melody that is both inside and outside of the harmony, shifting chromatically through positions 7, 8, 6, 5, 6, 5, 4, 5 and 4. The ascent–descent–ascent symmetry evident in example 4a is also used here in beat 4 of bar 55 and beats 1 and 2 of bar 56.

Metheny often plays chromatic lines as prefixes to trademark devices such as the previously-discussed transitional passages, tails, and through-position phrases. Often these characteristic devices are chromatic ideas themselves, using a fingering pattern that is repeated while being moved across the neck, usually downwards. The phrase shown in example 11 is a good example of Metheny's use of chromaticism in three forms, as (1) prefix, (2) chromatic scale, and (3) chromatic pattern. The prefix comes before a chromatic through-position type phrase (in positions 9, 8, 7, 8, 6, 7, 8, and 9), within which is incorporated a chromatic ascent. There is then a chromatic descent from D $\flat$  down to B $\flat$  one octave lower, which is followed by a chromatically descending transitional phrase (in positions 8, 7, 6 and 5) using the first-second fingering. As is also often the case, this transitional phrase precedes an immediate ascent that leads into a new musical idea. Further evidence of the use of the chromatic scale can be seen in examples 4a, 8, 9 and 12.

A consideration of these chromatic figures reveals a common finger route used by Metheny for chromatic passages. Thus far, five such phrases have been considered: bar 21 (rising), bar 44 (falling), bar 48 (falling), bar 67 (falling), bar 74 (falling), each shown in example 13a.

Although the first example is rising, each of these examples is the same in that the chromatic scale is played using three notes on the first (top) string, and four notes on the second string. The finger route is almost identical in each case, usually using fingers one to three on the first string and fingers one to four on the second. The position change is also identical in each case, the top string position being one fret lower than the second, so that in bar 20 the top string is played in position 4 and the second string in position 5; in bar 44 the top string is played in position 10 and the second in position 11, and so on. Each of these ideas might then be reduced to the finger route in ex. iii, shown in example 13b, occurring over two beats as with all of the examples above.

Example 13a shows two systems of musical notation for guitar. The first system includes bars 20, 44, and 48. The second system includes bars 66 and 74. Each system shows a treble clef staff with notes and a guitar fretboard staff with fingerings. Arched lines labeled 'chr.' indicate chromatic runs. Below the fretboard, 'position:' is indicated with arrows showing the fret number for each system.

System 1: bar 20 chr. (position: 5), bar 44 chr. (position: 10), bar 48 chr. (position: 6).

System 2: bar 66 chr. (position: 6), bar 74 chr. (position: 5).

Example 13a.

Example 13b shows three different fingerings for a sequence of notes. The top staff is a treble clef staff with notes and accidentals. The bottom staff is a guitar fretboard staff with fingerings. The three options are labeled (i), (ii), and (iii) as Metheny.

(i) 5-4-3-2 | 6-5-4 | 5-4-8-7-6-5 | 8

(ii) 5-4-3-2 | 6-5-4 | 5-4-8-7-6-5 | 8

(iii) 5-4-3-2 | 6-5-4 | 5-4-8-7-6-5 | 8

Example 13b. Original example.

Examples (i) and (ii) are shown to demonstrate two other possible finger routes that might be used for this sequence of notes and to highlight Metheny’s preference for option (iii), showing that such passages are played using a habitual finger route.

“Proof”

Examining finger routes can be useful in illuminating motives in these improvisations since they identify recurring patterns, and therefore comparable pitch relationships. In the following discussion the term *motive* is used as a way of describing the development of an idea in this improvisation only (even though it may be the case that identical motives can be found in other Metheny improvisations). Barry Kernfeld’s definition of motivic improvisation is pertinent here, as that in which “an intervallic or rhythmic idea recurs with modifications as a partial basis of a particular improvisation or set of improvisations. Harmony shapes pitch selection in the modifications.”<sup>23</sup> In the same article, Kernfeld describes formulaic improvisation as that in which “a melodic response to a particular harmony or structural context recurs among several improvisations.”<sup>24</sup> Although, as Kernfeld suggests, the distinction between “motivic” and “formulaic” is often a difficult one to

<sup>23</sup>Barry Kernfeld, “Two Coltranes,” *Annual Review of Jazz Studies* 2 (1983): 12.

<sup>24</sup>Ibid., 12.

clearly define, and there is an “inherent confusion” of the “implicit and explicit definitions of ‘motive’ in jazz literature,”<sup>25</sup> the concern at this point is not to compare the identified motives with other improvisations. Rather, I mean to consider the repetition and variation of the mechanical ideas used in this section of the solo and to demonstrate the way in which these repetitions create some common musical ideas through the improvisation. Kernfeld’s definition of motivic improvisation might be thought of in the following way when thinking about finger routes, whereby a finger route recurs with modifications as a partial basis of a particular improvisation.

Example 14 is an extract from an improvisation on “Proof,” an original composition by Pat Metheny and Lyle Mays recorded in 2001 for the album *Speaking of Now*. This transcription has been produced from a live performance taken from DVD footage of a concert in September of 2002, and as a more recent performance it should provide a useful comparison with the earlier performance of “Cantaloupe Island.”<sup>26</sup> The first thirty-three bars of the solo are discussed here in order to demonstrate how an analysis of finger routes can provide a useful starting point for an analysis of motivic development, and to examine how some of the other devices identified thus far are incorporated in the improvisation. In this extract it is possible to identify “motivic” finger routes as well as the more general “navigational” finger routes which are often used as links between the motives (such as the previously discussed use of pivot notes, transitional and chromatic passages, and through-position approaches).

In the first four bars, three finger routes are used to set up the melodic motives which are developed through the first part of this improvisation. The first, labelled A, is also used in a varied form in bars 18–19, marked as A’. A further variation of this finger route, beginning with the second finger can also be found in bars 60–61 of the solo (see example 15), labelled A”.

The second motive, labelled B, can be seen in bars 3, 13 and 15. Although the pattern of intervals is the same in each case, the starting pitch in relation to the harmony is different; the phrase played over the Bbmaj7 chord beginning on the second, and over the F#m7 chord from the fourth. However, the finger route is identical in each of the three examples, simply moved around the fretboard to present it in different contexts. The third motive, used in bars 4, 10, 14, 26 and 27, incorporates repeated notes played as part of a descending scale. This motive is labelled in the example as C with C (ext), showing the slight variations in the extended part of each repetition. The similarity is clear here: each iteration of the motive is a mechanical duplication.

The repetition of motive D in bars 9 and 10 creates a question-and-answer effect, the first statement responded to by the second. A slight variation of this motive, which incorporates the same fret spacing but which is played across a pair of adjacent strings rather than on a single string, is used in bar 17. The effect is similar to the phrase in bars 9 and 10, although here motive D is answered by motive E which is also used in bar 12, both

<sup>25</sup>Ibid., 10.

<sup>26</sup>Pat Metheny Group, *Speaking of Now Live* (London: Eagle Vision, 2002), DVD.

1  
 T 3  
 A 4  
 B 4  
 Bbmaj7 A B C C(ext)  
 9 10-12 9 10-9 7 10-7 8 7 10-8 7 0 5-7 8 5-7 7-5 5 8-7 5 4-5 7 8-7 5 7-8 5

7  
 T  
 A  
 B  
 scale F#m7 D (question) D (answer) C C(ext)  
 7 8 5 7 5-6 8 10-11-13 10-12-13 12-9 9 12 11-7 7 7 9-10 7-9 9-7-7 10-9 7-9 9

12  
 T 5  
 A 4  
 B 4  
 E B C  
 9 10 7 9 9 (8) 8-9 7 9 4 7 8 9 6 (5) 9-6 7 6 9-7 6 (7) 5 (6) 4 6 7 4-6 6 4 4 7-7 6 6 4 4

15  
 T  
 A  
 B  
 C(ext) B F Dm7 D (question) E (answer) A'  
 7-6 4 7 4-5 4 7 5 4 2 4 4 2 5 5 2 2 4 5 3-3 5 (4) 5-7 4-5

19  
 T  
 A  
 B  
 F#m7  
 4 8-7 6-5 4 3 5 5 3-5 7 3 3 3 3 5 7 4-5 4-7 9 11-12 9 11-12 11-12 11 13 12 10 12-12 12-14

24  
 T  
 A  
 B  
 pentatonic F#m7 decorated arpeggio C' chr C C(ext)  
 9-12-9 12-9 11-9 11 9 11 12 9 11 8-9 7-9 7-9 10 7-9 8-7 11-10 9 8 9 7-9 10 7-9 9-7-7 9 5 5 6

28  
 T  
 A  
 B  
 trans. pivot chr trans.  
 5 11-12 (11) 16-14 12 14 12 (10) (11) 9-12 11-9 10 8 9 7-9 10 11 7-8 9 8-7 9 7 8 5 6 4 7 4 6

31  
 T  
 A  
 B  
 trans. p.s. p.s. p.s. p.s. p.s. p.s. destination Dm7  
 4 (6) 3 (5) 2 2 (5) 4 4 (6) 5 5 (7) 6 6 (8) 7 7 (9) 8 8 (10) 9 9 (11) 12 10

Example 14. Bars 1–33, 1:38 (19:03).

Downloaded by [Georgian Court University] at 18:57 04 April 2015

The image shows two systems of musical notation for guitar. The first system covers bars 60-63. It features a treble clef with a key signature of one sharp (F#m7). The notation includes fingerings (1-4) and patterns (A, B, C) indicated by brackets and arrows. Annotations include 'trans. (pitches: F# G# D# G# E)', 'p.s. (pitches: C# F# D E B E C#)', and 'p.s. (pitches: C# E F#)'. A note at the bottom reads 'preparation notes prepare the hand for the next position'. The second system continues the notation with similar annotations and fingerings.

**Example 15.** Bars 60–63, 3:04 (20:28).

finger patterns incorporating the fall of a perfect fifth. Motive F is used in bars 16 and 19 where an arpeggio is played using first and third fingers on adjacent strings across the neck. Some standard devices are used in bars 6–8 (ascending scale passage), 13 (major triad using the previously noted shape), 24 (pentatonic scale descent), and 25 (decorated F# minor arpeggio), which act as connecting passages between the motives, and other previously identified navigational devices are also apparent. Transitional phrases are used in bars 13–14, 19, 29, 30 and 31, chromatic patterns can be seen in bars 26 and 30, and a through-position phrase is used in bars 28–30.

To link motives A and F in bar 19, Metheny makes use of a transitional phrase using the first-second fingering. In these transcriptions the overall melodic shape in which a transitional phrase occurs is almost always consistent with this example. The transitional phrase is approached by a descending prefix of some type: in this case the descent is part of a chromatic scale. The transitional phrase itself is always played on adjacent strings, normally the fourth and fifth, or third and fourth strings, and continues to move chromatically down the neck using a repeating pattern of either the first and second fingers, or the first and third. Following the transitional part of the phrase there is usually an ascending suffix, which tends to develop into a new musical idea, in this case an Fmaj9 arpeggio. A glance through the previous examples of transitional phrases will confirm a similar approach in other instances, suggesting that this concept is a well-established element of Metheny's vocabulary. A previous transitional phrase occurring in bars 13 and 14 also follows this model, the prefix being motive B and the suffix motive C. The movement achieved using the transitional here is from F# minor shape –2 to +1, which also, similarly, is one shape lower than the starting point.

A through-position phrase in bars 28–30 followed by a chromatic passage is incorporated in bar 30, and transitional phrases are played in bars 29 and 30. The complete phrase descends through positions 12, 10, 9, 8, 7, 5, 4 and 3, before a *pattern-shift* is used to ascend through positions 2, 4, 5, 6, 7, 8, 9 and 10. Pattern-shifts, which use a left hand finger shape, shifted up or down the neck, comprise another common feature of Metheny's playing. The pattern is maintained throughout but is usually adjusted where necessary to accommodate scale notes, although here the transpositions of the pattern are mostly chromatic. In the case of the pattern shift in bars 31 and 32,

the interval of a major seventh is used, played by the first and fourth fingers and shifted up the neck arriving at its destination in bar 33, where the tension created by the repetition, the chromaticism and the imminent chord change resolves on the Dm7 chord. Once again, a finger pattern moving across the neck results in a sophisticated-sounding musical effect achieved by a simple concept, although the technique employed in order to play this technically challenging, characteristic phrase is once again rather specialized. Within each beat the right hand pick plays the first three sixteenth-notes as downstroke, upstroke, downstroke, but the fourth sixteenth-note is not struck, sounded only by the pressure of the left hand placement on the fret, in this case played by the third finger. The last sixteenth-note can often be rather difficult to distinguish, but the speed of such phrases creates a dense, contrapuntal effect, three melodic lines creating the overall sound while providing a contrast of texture within the solo.

Another example of a pattern-shift can be found in bars 61–63 (example 15), which is again approached by a transitional passage, and which uses a similar finger route. The pattern-shift moves down the neck before progressing upward, and the upper two melodic lines are adapted to use notes within the scale, remaining diatonic throughout while retaining the basic position of the left hand. On the notation, pattern-shifts are marked by a bracket spanning each beat in order to demonstrate the transposition of the pattern across the beats and bars. It is likely, though, that Metheny is thinking of each four note pattern beginning on the last sixteenth-note of each beat. On the transcriptions I've referred to these notes as *preparation notes*: notes which are used to change position and to prepare for the next iteration of the pattern. In example 15 the first group of notes in the pattern-shift (thinking of the demarcation in terms of beats) is G♯, D♯, G♯ and E, and the second group is transposed down a tone to F♯, C♯, F♯ and D. The fingering suggests that Metheny might be thinking of the grouping as F♯, G♯, D♯, G♯ and E, F♯, C♯ and F♯, though, because of the way in which he moves position on the neck. In each case, the transposition of the pattern requires a change of position in order to set up the hand to play the next group of notes, which Metheny achieves using a preparation note. In this case, the first preparation note is the E (fourth sixteenth-note, beat 2), which acts a link between the first pattern, played in ninth position, and the second pattern, played in seventh position. When the pattern is ascending, as in bar 62, the preparation note C♯ (fourth sixteenth-note, beat 1) acts as a link between the fourth and fifth position. The E in beat 2 acts as a link between fifth and seventh position, and the F♯ in beat 3 as a link between seventh and ninth position. Each of these shifts requires the left hand to leap up the neck to the preparation note from the previous position in order to set the hand up for the next pattern. Combined with the fact that these notes are not struck with the pick and the speed with which pattern-shifts are played, preparation notes have a tendency to sound like they are sliding both to and from the actual note, explaining why they are usually difficult to hear clearly and precisely.

Some further examples of pattern-shifts are found in a performance of “How Insensitive,” played in the same concert as the version of “Proof” just discussed. Taken from “How Insensitive,” example 16 shows a pattern-shift that is played using the repeated first–fourth–first–second fingering (as in example 15), where Metheny moves the shape

Example 16 shows a guitar finger route for  $E_b$  major 7 and  $E_b$  minor 7 flat 5. The notation is divided into sections: a *prefix* for  $E_b$  major 7, a *trans.* (transitional passage), several *p.s.* (pattern shifts), another *trans.*, and a *suffix* for  $E_b$  minor 7 flat 5. The strings are labeled T, A, and B. Fingerings are indicated by numbers 1-5. A note (6) is marked as a preparation note for the next position. The rhythm is 3:24 (30:49).

**Example 16.** Bars 45–47, 3:24 (30:49).

both across and along the neck while using notes from the  $E_b$  major scale. Following this a transitional passage is played leading into a suffix, which outlines the E half-diminished harmony of the chord progression.

In bars 49 and 50 of “How Insensitive” another pattern-shift is used, which has much in common with the previous examples (see example 17). Placed three bars later than the phrase in example 16, this phrase is heard as a continuation of the previous idea that was played in bars 45 and 46, and although the intervals are different, the similarities in the grouping of the pitches, rhythm, and movement are obvious, guided by the picking of the right hand and by the underlying harmony. In the case of example 17 the top two lines use the D Dorian scale to outline the chord; the middle line playing a section of the scale from F to D, and the top from A to F. The fingering of the pattern adapts to accommodate the scale accordingly in both parts, either using the first–fourth fingering where a

Example 17 shows a guitar finger route for D minor 7. The notation is divided into sections: a *prefix* for D minor 7, several *p.s.* (pattern shifts), and a *tail*. The strings are labeled T, A, and B. Fingerings are indicated by numbers 1-5. A note (6) is marked as a preparation note for the next position. The rhythm is 3:29 (30:54).

**Example 17.** Bars 49–50, 3:29 (30:54).

span of two frets is required, or the first–second where a span of one fret is used. The example concludes using a tail, played by the first–second fingering, descending chromatically to begin a new idea in bar 51.

The last example of a pattern-shift occurs in bars 87–90, shown in example 18. Here, the pattern-shift is played again by a first–fourth–first–second fingering, changing to a first–second–first where necessary, to alter the shape of the pattern. Mostly in D natural minor, the major third of the A7 is included, temporarily moving into D harmonic minor, before reverting to the natural minor scale in bar 89. As with the other examples, the top two lines of the counterpoint follow the chord progression and the pattern is adjusted in order to remain consistent with the harmony. The lower melody usually follows the harmony less closely, but perhaps it is not pitch that is of primary importance here. The lower line adds rhythmic intensity and harmonic density to the passage, and is articulated much less precisely than the middle and top parts because of the technique used to play it. In the case of pattern shifts particularly, the pitch choice of the lower part seems to be set mainly by the



Example 18 shows two systems of guitar fretboard diagrams. The first system covers bars 87-90 and features chords Bbmaj7, Em7b5, and A7alt. The second system covers bars 91-94 and features chords Dm7 and Cm7. Each diagram includes fingerings for the top three strings (T, A, B) and a corresponding bass line. Above the diagrams are labels for 'p.s.' (pedal point) and 'trans.' (transition), with arrows indicating the flow of the solo. A 'prefix' arrow points to the start of the first system, and a 'suffix' arrow points to the end of the second system.

Example 18. Bars 87–90, 4:30 (31:55).

requirement of the hand needing to get into position for the start of the next pattern, rather than by scale choice, which seems to be a secondary concern. Outside pitches in this type of passage are rarely heard as such and they are probably not intended to be by Metheny, for their presence is fleeting. Arguably, the effect of this type of phrase would be no different if the bottom line were shifted by a semitone in either direction, as its effectiveness partly lies in rhetoric; the insistence of the repetition and the sense of the place toward which such a phrase is heading each has an important role to play here.<sup>27</sup>

Although this analysis of “Proof” has only focussed on the first 33 bars of the solo, more examples of identified Metheny-isms, used further on in the solo, might also have been shown. For instance, an example of a finger route not previously discussed occurs in bars 67 and 81 (see examples 19a and b). Although the pitches are different, being played over different chords, the similarities are clear and the fingering

Example 19a shows a guitar fretboard diagram for two systems of chords: Dm7 and Cm7. The diagram includes fingerings for the top three strings (T, A, B) and a corresponding bass line. Above the diagrams are labels for 'p.s.' (pedal point), 'trans.' (transition), and 'suffix', with arrows indicating the flow of the solo. A 'prefix' arrow points to the start of the first system, and a 'suffix' arrow points to the end of the second system.

Example 19a. Bars 66–68, 3:13 (20:38).

Example 19b shows a guitar fretboard diagram for two systems of chords: Db/Eb and Fm7. The diagram includes fingerings for the top three strings (T, A, B) and a corresponding bass line. Above the diagrams are labels for 'p.s.' (pedal point) and 'trans.' (transition), with arrows indicating the flow of the solo. A 'prefix' arrow points to the start of the first system, and a 'suffix' arrow points to the end of the second system.

Example 19b. Bars 80–82, 3:34 (20:59).

<sup>27</sup>A consideration of rhetoric and its use in analysing musical performance is explored much more fully in Robert Walser, “‘Out of Notes’: Signification, Interpretation, and the Problem of Miles Davis,” in *Jazz Among the Discourses*, ed. Krin Gabbard (Durham and London: Duke University Press, 1995), 165–188.

identical. The shape of the phrase is also repeated with a fall at the end of the passage, and the grace notes are played in the same parts of the phrase.

### Micro Finger-Routes

Example 20 shows an extract from an improvisation on the Metheny/Mays composition "Minuano."<sup>28</sup> In this example many of the notes are decorated in some way by using slides, hammer-ons and bends, and these left-hand techniques that might be thought of as "micro" finger routes are significant. Much of Metheny's individual

The image displays two guitar tablature examples. The first example shows a sequence of notes: 4-5-7, 7-9, 7-5, 9-10, 9, 10, 7, 5-4/5, 5-9, 8/10, 7-9, 5-7, 5. Techniques indicated include 'pull-off' (between 7-9 and 7-5), 'semitone slide' (between 5-4/5 and 5-9), 'grace note hammer on' (at the start of 4-5-7), 'grace note slide' (at the start of 7-9), and 'grace note hammer on' (at the start of 8/10). The second example shows notes: 10-12, 11-12, 12-13, 10-12, 12-7, 5, 5-7-8, 10-10, 7, 7-8, 8/10, 10, 8, 7-8. Techniques indicated include 'semitone slide' (between 10-12 and 11-12), 'fall' (between 12-13 and 10-12), 'hammer on' (between 12-7 and 5), 'grace note hammer on' (at the start of 10-12), 'grace note slide' (at the start of 12-7), and 'hammer on' (between 7-8 and 8/10).

**Example 20.** Bars 2–9, 1.36 (1:14:03).

sound is a result of these characteristic left-hand techniques that pervade his playing; the use of such effects becomes particularly obvious where lyricism is of prime importance, during improvised passages that might be thought to rely less on habitual larger scale finger routes, and where the rhythms are less dense.

Most of the main melody notes in this example are embellished in some way. While these techniques are generally conventional guitar techniques, perhaps the unique way in which Metheny incorporates them into his playing is the result of trying to remedy some of the concerns expressed in a previous quote in regard to the difficulties he perceives with jazz guitar articulation (as sounding "stiff and wrong"), and due to the previously mentioned "horn playing aesthetic" that has been one of the guiding principles behind Metheny's approach to phrasing and articulation. Further evidence of this philosophy is provided in an interview in *Jazz Improvisation*.

In my case, as I told you, I started out on the trumpet. I still breathe like I play the trumpet. (Inhales.) And when I'm out of breath, I stop. I don't do it consciously, but I've always done that because I'm actually thinking in terms of trumpet most of the time. Even to the point of fingerings. So, that's huge for me, that element or

<sup>28</sup>Pat Metheny Group, *Imaginary Day Live* (Metheny Group Productions, 2001), DVD.

way you can evoke that feeling of breathing, is really, really important for the players of those instruments.<sup>29</sup>

Unfortunately, Metheny's comments about fingerings in this quote are not pursued further in the interview, and it is not clear quite what he means by this. Perhaps when he says that he thinks of trumpet "even to the point of fingerings" he is alluding to a process of visualizing an equivalent phrase as it would be played on the trumpet, both in terms of the breathing and the fingering; that he is thinking about a complete trumpet technique when he is playing, not just one part of it.

Metheny comments on his "sound" in an interview with Richard Niles discussing a three-note melody which he played during the interview:

... that idea, translated through a touch, a way of hearing sound and a general conception of music, could communicate my personality. I don't know if those three notes on a record would carry my total identity, but it would come pretty close, especially if I played it on the guitar. It's the sound, the touch, the dynamics, the nature of the instrument all working together to create whatever thing exists that's in my part of the world.<sup>30</sup>

Such articulations are important details of Metheny's sound, and of course, to appreciate the sonic qualities fully they need to be listened to. For instance, Metheny plays a slide in a particular way, leaving one note and arriving at the next with an individual time relation, a particular pressure placed on the string during the slide, and an individual attack by the pick. Similarly with grace notes, each player will play with a different force and duration, and vibrato is also a very personal element of any player's phrasing.

The use of the grace note hammer-on is a particular stylistic effect and is used throughout these solos. In example 20, slides are also used as grace notes, approaching from both above and below. An example is also shown of a *fall*: a slide down the string to an indeterminate pitch, solely for effect; in this case, the fall is from the high E in bar 6 of the example. Pull-offs and hammer-ons are also important considerations, since they impact on the fluency of a phrase considerably, creating legato-type phrasing, meaning that notes can be played without the need to pluck the string for each note. An idiosyncratic device that Metheny often uses at the end of a phrase is a slide to a semitone (or less often, a tone) below the melody note. Sometimes the slide returns to the original pitch, but often it is left on the lower note, reminiscent of the way a trumpet player might fall off of a pitch at the end of a phrase. The slide is always played very discreetly, and without sustain, almost thrown away. This micro finger route is a small detail in the context of a full phrase but it has a significant impact on the resulting overall sound and is a very characteristic and important part of Metheny's style. In example 20, this technique is used in bars 3 and 5, and can also be seen in examples 6, 8, 14 (bars 13 and 18), 19a and b.

<sup>29</sup>Pat Metheny, "Jazz Improvisation Magazine Interview," *Pat Metheny* [website], accessed October 20, 2009, [http://www.patmetheny.com/writings/full\\_display.cfm?id=10](http://www.patmetheny.com/writings/full_display.cfm?id=10).

<sup>30</sup>Richard Niles, *The Pat Metheny Interviews: The Inner Workings of His Creativity Revealed*, (Milwaukee, WI: Hal Leonard, 2009), 119.

## Conclusion

There's this "Hollywood" version of improvisation that I read about, even in magazines ... even by guys who haven't done 200 nights in a row. I don't care if it's John Coltrane, or the Art Ensemble of Chicago, or the greatest or the worst improvisers that ever lived, if you play 200 nights in a row, you are not going to be playing different shit every night. You're just not. There's this mystical version of what jazz improvisation is that implies that every single time you play, that you're going to go to this far off mystical place and you're going to discover this universe ... Going back to my Gary Burton days, he was what I would call a real durable improviser, in the sense that, yes, he had his material. He had his language and his language skills were so finely developed, that he could talk about the same subject, night, after night, after night, using the same words and almost in the same order, but it was new at the time. That quality of durability, or that kind of hardened skill as an improviser, is one that's really rare now, as players don't really get the opportunity to play that much. I feel like the last connected part of a long breed of guys. I know Gary got it from Stan Getz and George Shearing. You have to develop a skill that is deep enough that you can talk about the same subject thousands of times, and find a new window to it every single night, without being afraid of not completely reinventing the situation.<sup>31</sup>

Analyzing some of Metheny's finger routes in these improvisations has shown how the method of navigating the guitar impacts the resulting melodies in the solos, illuminating details of Metheny's guitar technique and improvisational processes in a way that analysis based purely on the notes themselves might not have revealed. In doing so, the essay has offered an explanation of some aspects of Metheny's approach to soloing, highlighting some of the physical techniques used to construct the improvisations, and showing how these concepts run as a common thread between them. The analysis has also demonstrated that faster passages can tend to be less purely improvised, the technique often relying more on variations of a set of muscle memories in rhythmically denser passages of music, and has shown how these muscle memories impact on the melodies. While the analysis in this essay has revealed that some sections of the music are reliant on well developed finger-guided phrases, there is of course much in Metheny's playing that defies this type of analytical approach too—much that is original and inspired in the moment of the performance itself. As with any analysis I have stripped away some details in order to focus clearly on others; this analysis offers a window into some of the techniques that contribute towards Pat Metheny's overall guitar style.

## Acknowledgement

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<sup>31</sup>Pat Metheny, "Jazz Improvisation."

## **Abstract**

Based on transcriptions taken from footage of Pat Metheny's live performances, this analysis examines a selection of Metheny's guitar solos in order to investigate the relationship that exists between improvisation and instrumental technique, with a particular focus on left-hand (the fretting hand) muscle memory. Through the examination of four solos it is hoped that stylistic features of Metheny's playing will be discovered in terms of demonstrating some of his unique vocabulary, but primarily the analysis aims to go beyond simply presenting licks, and to begin to demonstrate the way in which Metheny navigates his instrument whilst improvising, and to show how the mechanical movements impact on the musical ideas and the construction of the improvisations themselves.