

Forward Motion by Hal Galper

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"The more upbeats you have in the music the more it swings" as told to me by Dizzy Gillespie.

The original articles on Forward Motion were published in Down Beat Magazine in 1980 & 1981. Their purpose was to show how melodies work as well as offering a way of practicing scales more in the manner they are used than in the way there are originally learned. Since that time my understanding of the subject has grown and the way I use FM in my teaching has been modified. Originally, I used FM to correct what I saw as a technical and theoretical problem. Now I see FM exercises as being used to correct what are basically perceptual problems. As a matter of fact, I now see all problems with playing music as being perceptual in nature. That to change the way you play, you have to change the way you think.

This discussion of FM is divided into four chapters:

Understanding FM

Rhythmic FM

Melodic FM

Harmonic FM

UNDERSTANDING FM

While a student at Berklee School of Music in the late '50's, I had become preoccupied trying to understand the nature of "one" of the bar. For some instinctual reason it seemed important to me. During this period I bought the album "Everybody Digs Bill Evans." The title came from the fact that the album cover was filled with testimonials from great jazz musicians about Bill's playing. Cannonball's testimonial hit a nerve. He said: "Bill's melodic lines sound like the best possible lines that could have been played at the moment." Wow! If what Cannon said was true, this meant that there were reasons why some lines sound better than others. Wanting to play the best possible melodies lines myself, I began my research by trying to analyze and understand how to use "one" of the bar. I started with a series of questions and answers.

What defines a 'best possible line?'

Answer: A line that is strong.

What defines a strong line?

Answer: A line that spells out the chord changes, either basic or superimposed.

How are chord changes spelled out by melodic lines?

Using the system of Tension and Release analysis the obvious became clear:

Answer: By synchronizing the strong beats of the bar with the strong tones of a chord scale.

The Release beats of a bar ("one" & "three" and the "on" beats of every quarter note) are the strong beats for the bar. The Tension beats of the bar ("two" & "four" and the "ands" of each quarter note) are the weak beats of the bar.

The Release tones of a chord scale are the root, third, fifth & seventh. They are the strong tones of the chord scale. The non-chord tones are the weak tones.

Note: When analyzing alterations of a chord scale: 9, b9, #9, 11, #11, b13, etc. the notes that fall on the release beats will be found to be either the root, third & fifth of a superimposed triad. For example: The c# on a C7 can be called a b9. In FM, it could be called the third of an A triad.

Because they are the stronger beats and tones of the bar, the "on" beats of the bar and the chord tones have a natural emphasis within them that are enhanced when synchronized. They then spell out changes. When chord tones (basic or superimposed) are synchronized with the "on" beats of the bar, the chord changes are being "spelled out" by the melodic line. The melodies

become so strong that even without a chord being played behind them, you can hear the movement of the chords as they progress through a tune.

For example: Every musician knows that the F major scale is common to the II-V-I of the key of F. Many beginning improvisers use this understanding to improvise scale wise. They realize that as long as the piano or guitar player is playing the G-7- C7-Fmaj., they can just run the scale and sound more or less like they are improvising in the key. However as soon as the accompanying chords are removed from the background, the melodies sound weak because they are unsynchronized.

After many years of research, the articles on FM became the result of these studies. When FM was first published, I was sure I had come upon some original research that no one else had duplicated. It wasn't until I read Albert Schweitzer's biography of Bach (J.S. Bach, Volumes 1 & 2, by Dover Books) that I realized that the musical laws inherent in FM were universal. Anyone exploring this subject would come to the same conclusions that Bach and I did: that the rules that govern music are universal and are not affected by the passage of time, place or genre. There are concrete reasons some music sounds better than others. The last sentence at the bottom of page 312, in Book 1, is a description and an example that is pure Forward Motion, and, although not titled as such, it was obvious that they describe Rhythmic Forward Motion. The example clearly corrects the most common misunderstanding about "one" of the bar: that "one" of the bar is the first beat of the bar! When looked at in terms of the theories of Tension and Release, this is found to be an untruth.

Also see the first paragraph on page 375 in Book 1, where Schweitzer quotes Rudolf Westphal's metric study of The Well-tempered Clavichord as follows" .."those who regard the bar-lines in Bach's music as borders of the rhythmic factors are bound to play him unrhythmically."

On pages 396-397 of Book 2, we see another reference to Forward Motion, this time by Schweitzer himself: "All the earlier notes strive as it were towards the principle accent. Before its entry we have the impression of chaos; when it comes it relieves the tension and makes everything clear in a moment; the restlessness is at an end; the theme stands before us in plastic outlines: we perceive the musical period as an organic whole. If we do not experience this sense of tension followed by relief, the theme has not been properly played; it has been phrased in the ordinary rhythm of the bars; instead of in its fundamental rhythm."

There is a tacit conditioning that occurs to most music readers from an early age who eventually perceive music as moving in "chunks" of bars as opposed a continuous flow of music. They play the bar-lines as if they existed as actual musical notation rather than just scratches on a piece of paper who's only function is to count the passage of meter by. The end result of all this is the realization that we have, from our earliest musical instruction, been conditioned to perceive music backwards from the way it is really played!

We see "one" of the bar before we see any other beat or note in a bar because that's the note we count from.

We have also named it the first beat of the bar. From years of perceiving music this way, we have become conditioned into thinking of "one" as the first beat of the bar. It would then seem logical that melodic ideas begin at the beginning, on the first beat of the bar, or "one."

However, Tension and Release Theory states that "one" of the bar is the strongest beat of the bar and as such, is the ultimate resolution beat in the bar. As "resolution" means that something has ended, then "one" of the bar is not the first beat of the bar, it is the last beat of the bar. It is the beat at which melodic ideas end!

FM is based on the laws of the physics of music. The laws of physics are immutable and are as applicable in Bach's time as they are in ours.

FM is also based upon the physiology of how the ear works, another universal. The mind loves logic!

The mind has an innate tendency to want to make sense out of chaos. When faced with a problem or something that doesn't make sense, it automatically tries to make sense out of it.

Such is the case, for example, when looking at a modern abstract painting of Klee; the mind tries to force the eye into making sense out of it by looking for ways to make the painting's content fall into recognizable representational objects: cars, trains, houses, animals, etc., as one does when looking at clouds.

This same tendency is present in the ear as well. The ear doesn't like chaos and automatically tries to make sense out of the sounds it hears.

To the ear, tension is intolerable and needs to be resolved. Have you noticed that sometimes you might have problems going from one melodic fragment to another? That you have a hard time "hooking up" your ideas? That's probably because you are starting your melodies on "one" and/or "three" of the bar. Since "one" is a resolution beat, it stops the line, it is a point of rest. When starting on any of the tension beats, the ear wants to resolve the tension by jumping ahead of where you are in the music to its nearest resolution beat. If you start on the "and" of "two," your ear will want to hear towards the resolution on the up-coming beat, "three" of the bar.

FM is a technique for practicing that takes advantage of this innate tendency to hear an idea in motion toward resolution points coming up in the future. This ability can be developed to an incredibly sophisticated degree.

For example: All art is the projection of an illusion created by the artist. No less so for the musician. When you listen to a jazz solo, you are hearing it as it is being played, in a static fashion. You are being subjected to an illusion. However, the player is hearing his/hers melodic lines differently than the listener, as a melody in motion to future resolution points, i.e., hearing ahead of where they are in the music at the moment.

The ear can be trained to hear: two beats, four beats, two bars, eight bars ahead. The great jazz drummer, Billy Hart, once told me that he "hears" his whole chorus in approach to "one" of the next chorus. Since this is a natural innate ability, anyone can learn to hear and play in FM!

It can be argued that all practicing is ear training of one sort or another. The question is then, am I training my ears to work properly? Is my practice time being used in its most efficient manner?

Most exercises, especially scales, are written without forward motion. They tend to start on "one" of the bar and are usually practiced starting on the root, which is the strongest note in the scale and is therefore the last note of the scale, not the first! Because it's the strongest beat of the bar, it's the safest, most secure beat of the bar to start ideas on. The goal in FM is to use the strength and security of these beats as target notes, notes that you are approaching with your melodic line. Getting used to starting melodies on off beats may feel insecure at first but when you give the ear the information it needs to function naturally, the ear does the work for you and actually carries your line to its resolution.

Most practicing is backward from the way the ear works. Musical ideas are harder to learn if they don't make sense to the ear, if they're not being played logically. The ear gravitates toward logical (strong) musical ideas and retains them quicker and tends to reject ideas that are weak.

Someone once said that intelligence is measured by a person's ability to perceive patterns in life. I used to wonder at the proliferation of practicing patterns in exercise books. Why patterns? One of the functions of FM is to insure that you are practicing music in its most logical way. To the ear, patterns are logical. One of our goals as musicians is to develop patterned hearing. The problem

is not that there is patterned practicing but that the patterns are not in FM. They are illogical and difficult to retain.

Be advised that the ear has it's own dynamic. Once you begin practicing in FM you can't go back to the earlier way of hearing because the ear wants to hear this way. You won't hear music the same way you did before, especially your own playing. Until you've changed your playing around to FM it will sound worse to you than it did before because now you'll be hearing in a natural manner.

My definition of hearing is: The development of one's hearing to the degree that you are hearing mistakes on increasingly sophisticated levels.

Most students become unhappy when first learning how to play in FM. Their playing sounds worse to them. This is not, however, an un-happy occasion. It means that you are now hearing mistakes in your playing that you'd never heard before. It means that your hearing is more sophisticated. They also notice that they are hearing other people's playing differently as well. This is very important because this is a music that is based on learning the music by listening to it 28 hours a day. If you're not hearing it right, your not absorbing it right either.

Learning how to improvise is also based on a process of absorbing the language and vocabulary of jazz by copying it from records. Most transcriptions ignore FM and present misconceptions about how melodies work. Using FM notation puts melodic line into their proper perspective, making them more understandable.

Most transcriptional analysis is also incorrect because the melodies are not analyzed by applying Harmonic Forward Motion to them. This subject will be dealt with in a later article.