

The Art of Tone

Understanding Our Love for Music

*A series of discussions on how sound affects every aspect of our lives,
combined with philosophy, approaches to occupational considerations,
and studies on sound techniques.*

By

Joseph Vincelli

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In writing this book, I have discovered things about myself as well as how our world is affected by sound. An appreciation for my art has always been evident to those that have witnessed my performances; however, as I wrote The Art of Tone, I deepened my purpose as a musician. Writing this book and discovering so much about sound and its effects has given me an incredible joy.

This book has been a wonderful source for both my musical and personal growth. However, without the help of certain individuals, I would not have been able to write this in the manner that I desired. Thanks to Dee Blye for her never-ending encouragement for writing the book. To Marianna Rosado, you are a part of this book because you believed in me enough for the both of us. Thank You! I thank my brother, Paul, for his technical assistance in developing this book. I thank my friend and editor, Sarah Jones, for her continued support and encouragement to believe in my music and also in me.

I thank my parents, Dominic and Mary, for their continued parental and spiritual support throughout my life. I thank my family, Lisa, friends, and listeners for their ongoing support so that I may sustain the important aspects of my life.

Most importantly, I am thankful for the talent that I have received. I am appreciative that I have awakened the gene that exists inside all of us to question everything, which provokes a more profound level of individual thought. It is my desire to learn about immense subjects, such as sound, that has given me great satisfaction in life and has helped me to understand the information you are about to read.

FORWARD



Dear Mr. Vincelli:

You present an intriguing view of the many aspects of music in *The Art of Tone*. I find your presentation and style to be absorbing and thought provoking. How we perceive music as students, practitioners or listeners is the most fascinating part of the puzzle. I appreciate your obvious romance with the intellectual and "glandular" responses music elicits. And, I believe non-musicians could certainly gain insights from your words. Several of my own colleagues are not musicians, but are drawn to it nonetheless. Several are scientists who cannot find a "formula" to explain how Beethoven created his works, or how Tchaikovsky fashioned melody.

This is a good book for all, but anyone that values the art of human thought and creativity would especially benefit from your work.

Thanks for the opportunity to read it.

A handwritten signature in purple ink that reads 'John W. Thomson'.

John W. Thomson, Chair
School of Music
Wichita State University

PREFACE

As a composer and a performer, I experience the joy that music bestows quite often. I am continually compelled to expand my musical experience and share my discoveries. Music has an intense power that is truly a mystery. As we begin to understand music in a more profound way, we experience a passion that helps us to perceive life differently.

Our current society is constantly challenged with new technological advances that all too often diminish our creativity, rather than enhance it. The purpose of this book is so that we may all understand why music is important in our lives. My primary goal is that we attain a deeper satisfaction from music's creative element.

While writing this book, I have been given an opportunity to view all facets of life with a unique perspective, experiencing life through musical tone. It has been mentioned to me that I touch people with the music that I create. Keeping that in its context, I understand that I am only an instrument of the phenomenon of music. It has added so much to my life that I continually attempt to explain the vastness of its effects on us, individually, and on our surrounding world.

The Art of Tone contains discussions on music's history and its affects on society. These philosophies not only represent the capability of music's intensity, but it also explains reasons as to why music should be taken seriously. Because some of this material is philosophical, it might be best comprehended over time allowing it to be digested properly.

The chapter, *Elements to Performance*, is directed to anyone who performs in some capacity, whether or not it is an art form. I added *Anecdotes for Living* because

those of us who experience a passion to achieve in life understand that there is a particular pattern that is established in order to succeed. Naturally, you read this book because you have a passion for music. Therefore, read this chapter as a complement to what you have already experienced in life.

Outside of my personal satisfaction, my hope for you is that The Art of Tone will provoke thought and a new interest in the things in life that you may have taken for granted in the past. My good friend, music, has enriched the quality of all of our lives. If you are reading this book, you already know what pleasure comes from it. However, these discussions will help you to look at your personal, theological, and social philosophies a little differently. It will help you understand the effects that come from the wonderful art of tone.

Joseph Vincelli

EDITOR'S PROLOGUE

Joseph Vincelli continues to touch lives everywhere he goes, both through his music and through his personal example of a sincere, passionate human being who cares deeply about his music, his friends and family, and about life. With all sincerity, I have never met anyone quite like Joseph, and I am grateful to God for bringing him into my life. His passion and his desire for everyone to feel music and its intrinsic power as he does are truly inspirational, even for those who may not feel as passionately as he does—yet. He once told me that to feel the beauty and passion of music while you are creating and performing is like touching God, and I honestly believe that is true.

While assisting Joseph with the editing and compilation of this book, I learned many things from him and about him that I will keep with me forever. He has reminded me that one of the greatest virtues truly is patience, and that the most important goals in life are worth waiting and fighting for. He has shown me that if you genuinely hold a desire or dream in your heart, you should pursue it passionately and never let it go. His friendship has truly blessed my soul and he has inspired me to keep the passion alive; not only for music, but also for life. My desire is for Joseph, his music, his passion, and his book to touch your soul in such a way that you, too, carry a part of them with you always.

For the two people on this earth who are my heart and soul, I would like to thank them, my husband and our son, for their enduring love and patience while I assisted Joseph by editing this book. As always, they provided an unending amount of love and support, for which I am, and will always be, eternally grateful.

Sarah E. Jones

*For Dad, Mom, and
my entire family*

**MUSIC AS A
FIRST LANGUAGE**

*~"Those that don't hear the music
think the dancers are mad."~*
~ Anonymous

Music is like breathing; we take it for granted.

Only when our breathing is noticeably difficult does it come to the forefront of our minds. Music is the same way; it is necessary to our lives.

In our society, generally, music's primary purpose is to entertain. Its secondary intent is to enhance advertisements and industrial presentations. It is less popular for us to utilize music for its original intent, which is to be a vehicle toward higher morals, personal awareness, and self-expression. Culturally speaking, we do not encourage music's employment any more than simply to entertain, yet few of us would deny the passion we feel when we experience the joy of music.

*"Music has charms to soothe
a savage breast, to soften rocks,
or bend a knotted oak."*

~William Congreve, 17th C. British dramatist

Aside from entertainment, music comforts, stimulates and guides. However, the original intent for music was to help us attain wisdom while growing in spirit so that we might sustain high moral standards by which to live. Only later in history was music identified as an art form of self-expression by the Greek civilization.

In our world today, we have placed much less significance on music. Few of us listen to music that is valued for its reflective qualities. It requires a disciplined person to seek things of this level of value. Music is one of those valuable intangibles worth seeking. It is those of us that place great importance on enjoying music with a disciplined heart that are enlightened by it the most.

Music as a First Language

When you have been touched by music, have you not ever questioned why it feels so good? The reason is that music is an invitation to experience personal intimacy, your own perspective of life. It offers all of us reflections of our beautiful inner beings.

Through life's adversities we experience wisdom, which leads to the discovery of peace. All of us want to encounter peace. However, if we encounter peace through intangibles such as music, we discover a deep richness within ourselves and observe those that surround us in a most unique way.

Life is filled with personal choices. When it comes to music, most of us spend our days listening to what lightens us, and not necessarily what enlightens us. It bridges divinity and man; it helps us find inner peace, while it encourages us to contemplate our actions in life. It raises our personal level of consciousness and perspective on life. Music improves our society and stimulates our intellect; it improves our memory and is therapeutic. It also represents celebration and lastly, it entertains us. Although music's purposes vary, all of them point toward intimacy, that private place inside us all.

*"Without music life would be a mistake."
~Nietzsche*

Music is meant for all of us, individually, and our surrounding environment that we influence. It is not only an expression of the artist, but an expression of those of us that take the listening journey. Music enriches our life experience, bringing each of us greater beauty. It encourages us to think because it initiates a path towards greater well being, if we are only willing to search.

The Art of Tone

Music encourages us to encounter our innermost core by stimulating our own spirit. Through it we find all of the qualities that we strive to include in our lives such as peace, joy, and love. These rich qualities bring our spirit tranquility. Music is valuable not only to us, but to our entire society. Generation after generation, civilizations' greatest thinkers have understood music's power as a tool for solitude, and have expressed their discoveries.

*"Life is a mystery to those who trouble
to think about it, but merely a fact
to those who do not;
the same may be said of music."
~ Cyril Scott, 20th C. British composer*

Throughout our history, attempts have been made to define music, just as attempts have been made to define life; however, even the most profound philosophers have not given any more than a modest definition of music. Music outlines our existence, inside and out. Music is emotional, powerful, motivational and therapeutic. Above all, music is mysterious. It is as difficult to define as life itself. After twenty-eight years, my love for music continues to be a mystery, yet it continues to grow in passion.

My intense joy for music stems from its constant existence in my life. From it, I experience an intimate discovery about myself like I would with a good friend. It is only when I decided to examine music deeper that I began to understand its magnitude. I was no longer satiated with the mere fact that music is a part of us. I needed to investigate a reason for my unending passion toward it. My discussions, here, only scratch the surface as to how our lives are interwoven with music vibrations. Composers, philosophers, and scientists of all disciplines

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concur that music is much more potent in our lives than what we experience on the surface. If we choose to investigate music further than what our ears perceive, we identify its immense power. We gain confidence knowing that music is a passage to comprehend all that exists.

Music is apparent by its sound and how it affects our emotions. However, in doing so, its abstract qualities become evident when it penetrates our souls. If we accept music at a deeper level, we find that it is as profound as originally thought. Whether our mission for music is to celebrate or contemplate by returning inward, we will experience its beauty and depth along our paths. It is inevitable. See music deeper and discover a new way to experience greater enjoyment from it.

Human Needs

"The creation of real music is not merely a question of making sounds, or of playing or singing the notes, but the establishment of an attitude which will allow a live rhythmic flow of sound images. These images channel a symbolic mythical content which orients us towards a sacred reality by turning our attention inward."

*~ **Dorothy Ling**, musicologist*

There are four things that people, especially impressionable youngsters, desire for satisfaction in life: freedom, love, peace, and music.¹ We need freedom to discover, fortify our individuality, and realize our creative potential. We need love because it satisfies our need for communication and immutable affection in our relationships. We need peace. It is our desire to attain serenity, deterring competition. Finally, we need music to reincorporate natural spontaneity through musical

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sound in our daily lives. However, if these sounds are not in harmony with our mind and body, they will affect us in a less than desirable manner. In addition to the four characteristics mentioned, I like to add self-expression as a fifth quality because it helps us attain balance.

*"Everything that throbs, or moves, or stirs,
or palpitates sunlit summer days,
night when the wind howls,
flickering light, the twinkling stars,
storms, the sound of a bird...
blood moving in the veins
in the silence of the night.
Everything that is, is music."
~ Romain Rolland, Jean-Cristophe*

Aside from utterances of speech, music is found to be one of the oldest forms of expression; one of its original intents was to mold cultural standards for mankind. In fact, the earliest evidence of the use of instruments was of the drum and the flute. The world's oldest musical instrument, a bone flute, unearthed in the mid-1990s in Slovenia, dates between 43,000 to 82,000 years ago.² Past civilizations used music as a vehicle to bring communities together for planting and harvesting crops, celebrating seasons (which had spiritual significance), and marching tribes into battle. Among its most pronounced uses, then and today, music is an integral part of celebrating birth, marriage, and even death. In the earliest of civilizations, dance and song preceded speech, indicating that music was not only mankind's original language, but also was an early form of prayer.

The Shaman, an extremely broad term for an ancient medicine man, used sounds to heal and to protect spirits, and also to bring the worlds of heaven and earth together. Civilizations around the world have used early

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instruments to call down the voices of the spirits and to bring together their community.³ In ancient civilizations, music and any type of instrumental performance (including singing) were not art forms, but were ways to attain the spirit and elevation. In China, the music of the Ch'in was not a fine art; rather it was a path to wisdom.

It was the Greeks that were the first Europeans to see music as an art form and not just a way of living. They related emotion with thought through the use of musical expression. Before this discovery, music was used in more practical ways for the community, including religion. This might seem difficult to understand because, at our current stage in history, we are distanced from the original purpose of utilizing music. We are bombarded with so much noise in our lives that it is difficult to perceive music as anything more than what it appears to be on the surface. Many of us hear music, but listening to music is truly a challenge.

Listening to music brings us to a level of consciousness where greater wisdom is not only desired, but achieved. It is not enough to hear music; listening to music is what harmonizes us — body, mind, and spirit. Art and other forms of self-expression are inspired by our emotions and organized by our willingness to imagine without reservation. Only the listener, not the hearer, achieves harmonization of emotion and imagination. In this case, it is the listener of music that will prevail in finding a place from which to imagine. Listening refreshes us and helps us feel more whole and centered, which permits us to express freely.

Music in All of Us

There are many different philosophies that I will present, but I will begin with my definition so that it is understood how I perceive music. My analysis of music

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more closely resembles a formula than a definition.
Music is the combination of sound and emotion.

Most music listeners, including musicians, seem to confine music to audible sounds created by musical instruments, which includes the human voice. This is one category of music, but certainly is not the only one. Without question, music is tasteful noise; however, it is much more. Music should not be limited to sounds on the radio or ones that are pleasing to our ears. Music covers a larger spectrum than just pleasing tones. Generally, music is associated with harmonious sounds. However, my formula includes all sounds, even displeasing ones.

Not all sounds are in harmony. Noises, especially of great amplitude, affect our emotions and not just our ears. When we hear and feel discordant sounds that irritate us, we become disturbed, making it difficult for us to remain serene and clear-minded, unless of course, that is the intent of the disrupting sound. Surely we have all heard a passing car's extremely loud music, seemingly using only bass tones, or have felt the roar of a train's engine as it passes which gives us an uneasy feeling. These sounds affect our ears, hearts, and other parts of our anatomy. Moreover, they affect our emotional state. Often, we feel uneasy after such an experience. Nonetheless, it is still music. Discordant sound vibrations are dispersed into the atmosphere just as much as harmonious sounds, but most of us would agree that we do not find them pleasing.

Sound and emotions have the same physical properties. Vibrations are found in everything that exists. Therefore, vibrations that make sound waves deeply penetrate us through our emotions. Sounds are vibrations that we can hear and feel. These sounds speak to our emotions, then to our minds, eventually penetrating our deepest cores.

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Sounds that are pleasing to our bodies and minds create a sense of peace, which permits us to think more clearly, and more boldly giving way for greatness through our imagination. Incorporating harmonious music into our daily practice helps balance us by relieving tension and encouraging creativity. Pleasing sounds are vehicles for reaching our souls, encouraging positive attitude change. Just the same, dissonant sounds only confuse the mind creating less opportunity for any such peace. The sounds we should focus on are the ones that bring harmony to our environment and to us.

Levels of Music

"One day man will have to combat noise as he once combated cholera and the plague."

~ **Robert Koch**, discoverer of the cholera bacillus

Older generations refer to undesirable music as "noise." Such a statement is a matter of opinion and not a fact of science. Most of us react to music that we enjoy in a positive way and react to music (or sound) that we do not enjoy in a less than positive way. However, if we dig deeper into our understanding of music and realize the emotional and psychological effects of sound, we see that it influences all areas of life. Through sound, music influences our emotions, which make impressions on our minds. Musical expression encourages us to think by releasing images that characterize our views on society and on our culture.

Understand that music is a potent form of expression, possibly more influential than other art forms because of the additional element of sound. Therefore, distorted, dissonant music and mass amounts of noise (or dissonant sounds of great amplitude) are

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going to have as much impact on society's views of culture as harmonious sounds.

Music has a consistent affect on every part of our being. Generally, sounds affect us from the grossest (or the least defined) matter to the finest (highly defined) matter. Respectively, they are physical, emotional, psychological, and spiritual.⁴ The physical body (grossest matter) is encountered by music first. It then penetrates our emotions (less gross), where musical imagery takes place creating an array of moods and emotions. After establishing an emotional status, it then triggers our minds (finer), where this imagery creates opportunity for establishing character, views, and attitudes. Finally, when we find comfort in the inner placement of our attitudes we begin sensing peace in our spirit (finest matter). These attitude changes will direct positive or negative actions to occur. It all depends on how the sounds affect our emotional and psychological status. In either case, the result is a steppingstone toward our personal perspective of life. Seemingly somewhat dramatic, but understand that sound (not just music) surrounds us in our modern age. How we choose to use or misuse these continual sounds will affect our attitude towards things important to us.

Just as our bodies have different levels of matter (gross to fine), music projects several stages of quality matter. Exhibited here is what I consider the five levels of music:

Music	Matter
Silence	Finest
Tone (a single note: <i>Aum, om, or humming</i>)	More Fine
Harmonious music	Fine
Disharmonic music	Less Gross
Noise	Grossest

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*"After silence, that which comes nearest
to expressing the inexpressible is music."
~ Aldous Huxley*

Silence is a form of music; it is our golden music. When we achieve outward silence (no external sound distractions) and inward silence (achieving a peaceful state of mind), we attain a boundless spirit. Music of silence helps us achieve happiness and purpose. It is the ultimate avenue for seeking wisdom. Only when we are silent can we listen to our hearts. There is so much noise in our modern world that it is very difficult sometimes to listen. Disciplining ourselves to practice silence allows us to hear the music within. When we practice silence, our highest form of music, we discover solutions to our most profound adversities, thus finding peace.

*The old culture of listening depended on
something else that is no longer easily
obtainable: silence. Modern people are afraid
of silence, and they try to fill it with noise.
A new kind of music has therefore emerged,
designed not for listening but for hearing—
music whose principal device is repetition,
which employs only pre-digested harmonies
and fragmented tunes, and which relies on a
monotonous "back beat" to propel it into the ear
and the soul of those who overhear it...We owe
it to young people to turn off the noise. We must
re-create silence, so that silence can turn to
song. If we do not do this, then our musical
culture will die. It is not we, but our children,
who will be the losers.*

~ Roger Scruton, Harmony and History5

Learning how to listen to silence is a form of art itself. Our lives are distracted simply by the task of maintaining an income that is sufficient for our lifestyle.

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At the same time, we are required to learn technological advances relevant to the many options of cultural entertainment at hand that we have little time to listen to anything much less practice silence.

Much of pop culture has introduced video and special effects to its music experience, creating as much impact on the music as the music itself. As a result, experiencing silence is often never found.

*"Silence is very important. The silence
between the notes is as important
as the notes themselves."
~ W. A. Mozart*

We live at a time in history where silence is our challenge. We have sounds (noises) that distract us, cluttering our world: jet airplanes, computer printouts, cellular phones, and so on. Although these are helpful elements to our society, they also scatter our world with more sonar distractions. Musical tones are disparaged in our modern society. They have been added to our daily routine in ways that are seemingly unavoidable such as computers booting up, car doors being ajar or cellular phones alerting us to messages. Finding silence is a feat in itself. Striving to find silence becomes more difficult in our world because there is less and less of it.

The second level of music is found in the singular tone (the hum and the original single-tone music of ancient civilizations). It adds harmony to both, our inward and outward foundations. First, we must experience silence in order to make the single tone most effective. Afterward, humming one note at a time helps to heal our physical bodies as it permits us to search within, finding our "inner tone."

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The hum or Aum (used in eastern religions) adds a simple beauty, purifying our minds and spirits through the power of musical tone. As parents, we observe that our infants are comforted greatly by being held and also by simple songs being sung with a closed mouth or hummed. When we combine these single tones, we experience musical harmonies, creating a more desirable environment.⁶

*"I cannot listen to music too often.
It makes me want to say kind,
stupid things and pat
the heads of people."
~ Lenin⁷*

Most music of harmony has many wonderful uses, but at times this type of music has been used too often and in the wrong context. For example, we have learned that relaxing, harmonic music will add to our workplace, relieving us of stress. Unfortunately, we have added it to every facet of our everyday lives. In our daily routines, it is heard in retail stores, while on hold during a phone call, and in elevators. As well, it is found at every level of media. We find it on the Internet, television, and radio enhancing promotional products and so on. Like consuming a sweet fruit pie, too much of a good thing can have adverse effects.

Advertisers use music so much that it makes music have less value. Music in the cinema can enhance a movie to greatness. It is a powerful and useful tool that links emotion with thought. However, like all entities of power, there is an obligation for us not to abuse it while utilizing it. In other words, all music is not of value and even valuable music can sometimes be used too much.

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*"The public must love bad verse,
it reads so much of it."
~Christopher Morley^s*

Dissonant music creates tension and disturbs our body's natural flow. Music that displays tense harmonies, large unnatural interval jumps in the melodies and strong pulsating rhythms constrict the body's flow, deterring any sense of harmony. Through the process of unappealing dissonant sounds our spirits are tainted, affecting our attitudes towards others and ourselves.

*"It burned not only my skin,
it burned also internally."
~ Arnold Schoenberg, 20th C. composer
(On the discovery of Atonality, a dissonant form of music)*

The following is a list of genres of music that indicate harmonious and dissonant trends. Understand that styles of music are not this finite. These are only generalizations and not all styles and artists will be represented. When reviewing this list, remember that it is only music that we are evaluating, not lyrics.

Harmonious Music	Dissonant Music
Baroque/classical	Some 20th century classical
Classical	Some avant-garde jazz
Romantic/classical	Some rock music
Most folk tunes	Some classic rock
Popular from any era	Most heavy metal
Most country	Some alternative
Most blues	Some blues
Bluegrass	
Reggae	
Most swing, contemporary and traditional jazz	
New age, Gospel and most international music	

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Levels of intensity differ within the categories of harmonious and dissonant music. I would not consider traditional jazz as serene as new age music, but both share pleasant qualities. Discerning the music to which we choose to listen is a personal choice, similar to our individual ideas on religion. However, making a conscious educated decision will add confidence toward our choices. Let me emphasize that all music brings enjoyment to us if we perceive it in its specific context and, in some way, most music adds to our lives. Whichever styles of music we choose, listening at adequate volume levels allows less opportunity for stress and disturbed physical and mental functions.

The Spirit of Music

*"Music should kindle the divine flame
in the human mind."*

~Ludwig Von Beethoven

Beethoven believed that music helped us capture an understanding of deity. He accepted it as an important element toward spiritual and human growth. Throughout history, religions around the world have used music to help provoke thought and induce contemplation about life, extending our search for wisdom and serenity. For millennia, music has been considered more as an understanding of life rather than as an art form.

*"Humanity needs the beauty of music
which interprets the spirit, relaxes the soul,
raises the sensibility, and helps to lift
our gaze with sentiment of joy."*

~Pope John Paul II

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Elements of life that are not bound to space and time comfort us the most, propelling us to deeper personal applications. For example, a burning candle or a babbling brook adds comfort and serenity. These and other elements encourage our spirits to be silenced. It is during these moments in our lives that we achieve intimacy. When we are intimate, we eliminate external influences and are silenced in order to hear our inner voice speak. Achieving intimacy is what we should strive for. Sounds of distinction (such as harmonious music) fall into the category of elements that help us achieve intimacy. They are direct vehicles toward our intimate nature, which lead us to our most personal thoughts. Harmonious music soothes the body, bringing us serenity, comfort, and peace. It creates harmony within, allowing us to be stable in our environment.

We usually associate intimacy with a loved one and even with ourselves through meditation and prayer. Music is also very intimate and personal for each of us. This is why each of us perceives music differently. When we are intimate with our music, we understand how it affects us personally, not only as a society. It is extremely important to practice intimacy in everything that we do in order to achieve a sense of inner harmony. Music is no exception. We must practice intimacy with our music because it helps us achieve greater joy and peace in life.

Plato, in The Republic, understood that "musical training is a more important instrument than any other, because rhythm and harmony find their way into the inward places of the soul, on which they mightily fasten, imparting grace, and making the soul of him who is rightly educated, graceful." The human spirit is drawn to music just as metal is drawn to a magnet. In some way, we are all touched by the awesome power of music. Plato added, "The introduction of a new kind of music (including poetry and dance) must be shunned as

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imperiling the whole State; since styles of music are never disturbed without affecting the most important political institutions." Historically, when civilizations changed their music intensely, it disturbed its current society, adding weight to the progress of its culture. Many of the great thinkers of early civilizations strongly believed that music helped to purify and cultivate a nation while directing itself to the spirit. Therefore, any major change to a society's music if not carefully planned would create disorder, harvesting unsettled souls.

There are two elements of life that Plato designated to be utterly important for balance: music was designed for the training of the soul and gymnastics was designed for the training of the body. He believed that there should be a balance of the two: harmonious music yielding soft and effeminate qualities for intimacy, and gymnastics adding fervor to us. Gymnastics would give courage, but if too intensified resulted in a harsh and brutal person. (Remember that there were far fewer external influences in the world of Plato's day.) Music would create gentleness, but if too intensified would result in softness. The balance would be gentleness in moderation.

As Plato stated, the harmonious balance would produce "courage, gentleness, and overall, moderation." It is without question that if music is used properly, it can motivate someone to tranquility, calming the spirit and bringing greater peace and a pleasurable state of mind.

The Art of Tone

Expressing Our Experience of Life

*"Everything you do is music
and everywhere is the best seat."*

~John Cage, twentieth century composer

John Cage's composition, 4:33 (*four minutes and thirty-three seconds*), puts his theory into practice. He performed this piece in Harvard Square outside of Boston, Massachusetts. He began the piece by starting an egg timer for four minutes and thirty-three seconds. During the entire piece he did not play one note of music, but allowed the surrounding noises to create the music. When the timer's bell went off, the audience cheered excitedly because they never perceived music in such an interesting way.

*"Everybody has their own melody
and when these melodies are brought together,
perfect harmony exists."*

~Ornette Coleman, avant-garde jazz saxophonist

When I perform, I am sincere about my choices of notes because I have discovered my inner voice and melody; my performances embody my love and purpose for my life. Those of us that relate to our inner being surpass the outer influence of music, communicating directly to our own spirits. These experiences in life define us. They display a peaceful satisfaction because we are projecting our inner melody. When we, the listener and the artist, communicate at such a level, we join together our individual melodies creating perfect harmony. That magic is evident when we see an audience relate to what is happening on the stage.

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*"Music is your own experience,
your thoughts, your wisdom.
If you don't live it,
it won't come out of your horn."*

~Charlie "Bird" Parker, bebop saxophone great

Expressing inner feelings and experiences through music is our determination as artists. As listeners, we experience the expressions of the artist. We share in the same joy and sorrow as the artist that encourages us to ponder our own expressions of thought. I honor the days that I perform, improvise and compose. It is so much more than simply enjoyment. Creating improvised music while attempting to perfect each execution is the performers' ultimate spiritual experience. I believe that all artists who strive for mastery share this common philosophy. It is what carries a musician over the threshold to artistry.

For each of us that take on its challenge, repeating this sensation helps us reveal our personal story. As I spend more time with music, I understand a deeper desire to incorporate all of the styles of music and the experiences of my life into every note that I play. Developing individual methods of expression elevates us so that we may encounter deeper levels of the human experience.

Music Forms Character

"...Music has the power to form character..."
~Plato

All cultural arts help mold our society because art is a vehicle for self-expression. Music changes as societies change because it expresses our emotions and thoughts. However, music is the most direct form of art because it penetrates our emotions through sound eventually

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leading to higher realms of life, our spirits. Many of history's greatest thinkers, Plato, Confucius, and Aristotle, professed a similar philosophy in that changing the music of a society would have a great effect on changing the society itself. There are many impressionable sounds in the world; some unify us while others distance us by their loud or distorted amplitude. However, most music unifies. It encourages global unity because it surpasses lingual and cultural boundaries by its commonality of man's appreciation for pleasing sounds. Such widespread reception for music comes from the fact that we are emotional beings.

*"Emotions of any kind are produced
by melody and rhythm. Therefore, by music
a man becomes accustomed to feeling
the right emotions; music has the power
to form character, and the various kinds
of music based on the various modes,
may be distinguished by their
effects on character."
~ Aristotle*

Plato and Aristotle believed that a nation's music could not be altered until the customs and institutions of the State were changed. Plato also considered music, as one of the first elements of education and its loss or corruption was the surest sign of decadence of empires⁹. In Politics, he mentions that rhythm and melody affect both ends of the emotional spectrum and that anger and meekness alike could be expressed through music. If guidelines were not maintained, it would put a serious strain on the mind and soul, impacting personality traits. The great Greek thinker explains, "Enough has been said to show that music has the power to form character, and should be therefore introduced into the education of the young."¹⁰

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The music of ancient societies limited the addition of tones, making each tone have greater significance. Changing the music or adding tones to an already established music created discord if not done carefully. The soul underwent a change, which affected the importance of life values to the individual.

*"If you wish to know if a kingdom
is well governed, if the morals are good or bad,
then look to the music that is current there."
~ **PanKu**, China's most famous historian*

Chinese philosopher Confucius proclaimed certain styles of his time to be morally dangerous. He stated, "The music of Chang is lewd and corrupting, the music of Sung is soft and makes one effeminate, the music of Wei is repetitious and annoying, the music of Chi is harsh and makes one haughty."¹¹ At the same time, Confucius understood that harmonious music helped perfect character. "The noble-minded man's music is mild and delicate, keeps a uniform mood, enlivens and moves. Such a man does not harbor pain or mourn in his heart; violent and daring movements are foreign to him...If one should desire to know whether a kingdom is well governed, if its morals are good or bad, the quality of its music will furnish the answer."¹²

Victor Zuckerkandl, in Man the Musician, explains that "Words divide, tones unite. The unity of existence that the word constantly breaks up, dividing thing from thing, subject from object, is constantly restored in the tone. Music prevents the world from being entirely transformed into language, from becoming nothing but object, and prevents man from becoming nothing but subject...what the tone expresses is not the subject but the interpenetration of subject and object. Music does not thrive at the expense of rationality.

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Music originates, grows, and reaches its culmination within human rationality, together with it, not outside it or against it. Music penetrates through the ear to the innermost self; we do not have to recover ancient Greek music and its mysterious modes to know that it serves not only to express our emotions but also to direct and train them. Suzanne Langer in Feeling and Form has shown us that music symbolizes that particular part of the human soul that no other art can touch so directly; it is what she calls "our myth of the inner life."

Music adds to all of us— now, and always. It brings us closer to each other. Through music, we discover a more profound purpose to living.

"(Music) makes us feel something of the insignificance and powerlessness of man in the face of the inscrutable workings of destiny. Perhaps we may identify this same tension more specifically with the sound of the plucked string, grasped, released, and then responding only to fade into emptiness and silence."

~Leonard B. Meyer, Emotion and Meaning in Music

A final note to add to this chapter is that I have found that elements of time are eminently existent in inventions such as the Internet, television, and cellular phones. We place great importance on these things of tangible qualities (things we know to be defined rather than indefinite). Ironically, it should be the other way around. It is the timeless elements in life such as fine arts, literature, imagination and creativity that should be emphasized. Music is one of those timeless elements that encourages discovery through imagination without the boundaries of time. Throughout our modern age

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technology will continue to develop us, however, it is the understanding of the power of creativity itself and the interpretation of music (and other arts) that will reverberate deeply in the attitude of our lives, resulting in a more profound society of people.

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**THE ART OF
CREATIVITY**

*"Not life is to be valued, but the good life."
~ Aristotle*

The Importance of Creativity

Aristotle furnishes a statement that not only life is of importance, but also those things of value experienced during life. It is the intangible beauties of life that mostly enrich us and motivate us to grow. On these occasions, we find creativity to be a part of it. As I continually grow in music, certainly a creative outlet, I find that creativity is one of life's greatest pleasures and so I celebrate it wholeheartedly. To create is to discover, cultivating self-expression and invoking us to continually practice self-awareness.

Imagination, beauty, self-expression, and artistic inventions are only some ways of describing creativity. It adds value to our lives, collectively and individually. Practicing creativity is one of the most important aspects to enjoying the life experience and is found in all arenas of our lives. In the fine arts, creativity is described as cultural invention. In the corporate world, creative thinking is exemplified by the invention of products that satisfy customer's needs. In politics, adopting policies and laws that maintain a higher quality of government displays creativity. In science, it is shown by the innovative medical advancements that produce a more desirable environment and quality of life. In athletics, creativity is found in the strategy of the sport.

Creativity is a phenomenon of the human experience that constantly needs nourishing. Any human intangibles, including love and self-expression, must be continually exercised in order to satisfy our existence. In fact, the more these intangibles are nurtured and satiated in us, the more we feel complete. Creativity is one of the distinct privileges of being human. It is not required to survive although, if we desire an abundant life, it is essential. It is a joy that cannot be purchased

nor substituted by anything else. For example, when we give of ourselves to others we feel an overwhelming joy that cannot be substituted. Creating something offers a sense of giving and so it triggers a similar sensation. I sincerely believe that it is not possible to encounter true contentment without first realizing the influence of self-expression and personal creative discovery.

From such discovery comes great power. It generates adrenaline. Expression without boundaries, intimidation, or inhibitions is what unleashes true greatness in our world. It yields no restrictions and invokes us purely to imagine as far as our minds wish to travel.

*"The best and most beautiful things
in the world cannot be seen or even touched.
They must be felt from the heart."
~Helen Keller*

Expression is often associated with artistic context, such as painting, creating music, and writing poetry. However, this describes only one type of expression. Expressing love to a child or a spouse, showing appreciation for a gift, or stating an opinion are certainly ways of expressing ourselves. Any form of expression becomes our arena from which to speak. When we express ourselves, we affirm our thoughts and feelings, helping us to feel whole. It is our privilege as humans; therefore to ignore self-expression for fear of feeling any inadequacies is an injustice.

*"Great spirits encounter violent opposition
from mediocre minds."
~ Albert Einstein*

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It is the creative, imaginative people that make up a large majority of great spirits. We live in a society that does not encourage us to think, rather supports ideas be brought to us. Many of us choose to live life in a conventional way, which encourages uniformity and not individualism. Submitting to societal patterns, rather than looking inward, challenges nothing. The people who surround us may influence our ideals, but it is we, ourselves, who project them. It is those of us who pioneer personal discovery that add richness to our world.

The world's most influential people understand the power of the imagination because it is personal, implying that it is different to each of us, and potent, as it entails great levels of depth. Albert Einstein explained imagination to be "worth more than knowledge" whereas Napoleon implied that imagination is what "rules the world." Through it, we build inner strength and generate empowerment. Once we have captured its magnificence, we observe that it brings more benefit to us than any accumulation of information.

*"Be happy, happy, happy,
and seize the day of pleasure."
~ Robert Frost*

Our energy levels are greater and life appears to be more meaningful because it is filled with higher levels of passion. We are most happy when we are motivated by our own thoughts of inspiration. When we condition ourselves to develop inspired thought we enjoy the opportunity to "seize the day" (carpe diem). From this experience, nothing is more pleasurable.

Creative expression solicits the search for wisdom while conformity only discourages our minds to explore, giving creativity little chance to form. Human nature

generally conforms rather than initiates because initiating requires more courage and energy. However, if we remain disciplined to think on our own, we find that the extra work is well worth the reward.

For instance, many years ago I was given the opportunity to observe how individual expression worked. I knew of a jazz saxophonist that was technically masterful when he improvised. I asked him what he thought about during his solos. He replied by saying that he thought of eating apples in the Caribbean. Being only twenty years of age, I was expecting him to tell me technical answers such as what scales he played on top of certain chord progressions. Instead, his answer was quite unorthodox, yet profound. After that experience, I saw music more conceptually than ever before. With his indirect answer, he helped understand that conforming to orthodox methods would only limit my creative opportunities, instead of helping me search for my own answers.

Bear in mind, our personalities determine our identities – not our physical traits. Years after we have passed on, the legacy we leave behind is based on our ideas and beliefs not our physical makeup. When we express our ideals, especially in art form, we identify our personalities. Case in point, there are countless paintings of the Madonna and the baby, Jesus. Even though the painters' techniques, on the whole, are similar, their work remains identifiable, personalizing each painting. When we achieve this level of expression, we have discovered our voice within.

Solitude, clarity, discipline, and absence of fear are keys in developing creativity and outward personal expression. Developing our voice happens from practicing many hours of solitude. Many people spend little time doing this sort of daily routine because, as a whole,

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people are afraid of examining themselves. This is an unfortunate thing because creative thinking is the ultimate form of escape from our daily lives and it is only achieved with the help of solitude.

When our minds are clear from daily thoughts is when we think most intensely and can develop our strongest individual philosophies. Eventually, these attitudes become outward expression. Being alone encourages us to be undisturbed and unexamined by others, which I consider an important step if we want to relinquish our creative side.

*"No amount of education can
cure natural dullness..."*

~Edward Bellamy, Looking Backward 2000-1887

Education is important for understanding techniques toward any discipline; however, nothing replaces our instincts to search inside so that our ideas can be nurtured. Even though we use technique, it does not provide original thought. Technique only furnishes the tools necessary to make ideas tangible. Inspiration supplies ideas generating motivation and passion.¹³

Simply put, inspiration leads to motivation. Being inspired ignites our passion to create further, but such a process does not come without effort. Like our bodies, our minds need to be exercised. The more we exercise our minds creatively, the more intensely our minds will expand and explore. Like most things of value, creativity requires courage, energy and discipline. Initially, it takes courage to create. We challenge little if we only adhere to established knowledge, never expanding our desire for greater depth. How can we admit to enjoying life to the fullest if we do not risk knowing what treasures exist?

For example, if we never risk loving then we never know to what degree our love can reach, which usually establishes a life with little passion. The same is true of creativity. Creative imagination comes from the inner core of our being, our place of solitude. As we experience its power, we are encouraged to use it more and hesitate less to approach the unknown. The inner struggle exists between conformity and courage. In other words, the more we conform, the less we discover. On the other hand, the more courageous we are, the more we experience our creative side.

Never be afraid of pioneering new levels of personal thought. Remember, it is our own fears that make us hesitate. Fear gets in the way of personal ideas blossoming to fruition. Fear is our way of condemning our own ideas before anyone else has the chance to do so. We need to challenge fear and overcome it. Once we accept fear for what it is (in other words, keeping it in its powerless perspective), we can challenge it and defeat it. As a result, fear affects our psyche less and less, becoming insignificant over time.

*"Fear is the little darkrooms
where negatives are developed."*

~Michael Pritchard

~~~~~

***False***

***Evidence***

***Appearing***

***Real***

**~Anonymous**

Simply put, creativity counteracts fear. The creative process works like this: we must, first, be disciplined to find a place of solitude for our minds to become clear,

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almost without thought so that intimate images have a place to blossom. In this place of clarity we discover that there is no room for fear to exist, therefore fear and hesitation have little effect on us. Such clarity opens up our world of imagination.

Not our outer world, but from the world of images, is where we develop ideas, which adds great pleasure to our lives. The more we utilize our creative side, the more encouraged we are to imagine and so we are less inhibited by fear. We begin witnessing that the imagination is boundless which eliminates opportunity for fear to grow altogether.

Just the same, our personal beliefs are affected by our ability to see "outside of the box" (outside of our mindset) which is manufactured in the imagination. If our imagination is permitted to run freely, it develops expressions of individual ideology from our personal experiences in life, not from any type of previous knowledge or group conformity. Ideals are expressions of our personal attitudes and experiences. Any time that you have displayed outward expression (whether it be artistic or not, i.e. freedom of speech), I am sure that you have found it satisfying because you have given deeper meaning and clarity to your life. However, as we get used to each level of satisfaction over time, our ideals become broader in meaning. As our personal attitudes broaden so must our expressions of these thoughts and feelings. This is when we have truly realized the vast capabilities of our imagination. It is this sensation from the imagination where our spirit becomes awakened and a new perspective for life begins.

*"One of the gladdest moments in human life,  
me thinks, is the departure upon  
a distant journey into unknown lands."*

**~Sir Richard Francis Burton**

*(Journal Entry, December 2, 1856)*

Visualize the imagination as a separate world from the one we encounter, as if it were another planet in the solar system. When we explore our imagination and develop ideas, we experience an extraordinary peace, a feeling of satisfaction. Every time this sensation occurs we establish a feeling of completeness. Over time, we develop a craving to feel such deep satisfaction as often as possible. We begin to increase a strong desire to find what got us here in the first place so that we might experience the sensation time after time. And so, our personal discovery of the creative cycle has begun... The extraordinary cycle of imagination never ends; it is infinite.

### **Creativity and the Creative Mind**

The creative process is beautiful. It is the public display of our most inner emotional secrets. Someone can only appreciate the joy and satisfaction that creating can bring by experiencing it. However, creative inspiration does not just "happen." It is charged by emotion. In fact, it is dominated by emotion; it is not a purely intellectual process.<sup>14</sup> The usual process of creativity begins by being emotionally inspired.<sup>15</sup>

We must be inspired by something in order to create—whether it is a cloud formation, a song, someone's opinion, etc. We must have flexibility and sensitivity, observing everything around us, gaining knowledge along the way if we expect to create original ideas.<sup>16</sup>

When this knowledge is digested and accepted we advance to the point of making the image real. Artists

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become inspired by what is visualized privately. Then, it is a desire to make the image tangible that motivates the artist to display it through their abilities. When one of the five senses is triggered in a way that excites the mind, inspiration has begun. Formulating these ideas into an organized pattern is the point when inspiration becomes tangible.

*"The unconscious mind seems to select  
and arrange and correlate these ideas  
and images into a pattern."*

*~E. W. Sinott, American biologist*

One definition of creativity is that it is simply a new combination of order.<sup>17</sup> Quite often, a creation entails combining existing elements in a new fashion. Orchestrating elements together while showing expression is our main exhibition for creativity.

Creative ideas are often derived from our past perceptions. It is the unconscious mind that forms and stores many images. Only later on does it combine and organize images to actually create new combinations of images into existence when called upon. Many times, it is not necessarily new images that we create, but new combinations of images. Understand, however, that patterns of images are limitless if we express our personality in everything that we create. There are no rules or regulations; it is not restricted.

Our creative capability reaches as far as it is challenged; it is immeasurable. For the strongest level of self-satisfaction, it should be our goal to achieve individuality by questioning the orthodox standard of living and stretch our personal limits. The greatest ideas are not found on the surface level, rather, at the deepest layers of our minds.

Psychologist Carl Jung agreed with E. W. Sinott and other great thinkers that creativity is a manifestation of life and those ideas are derived from past experiences.<sup>18</sup> However, Jung categorized them differently. He believed that there is psychological art and visionary art. Psychological art deals with material that is accumulated by the lessons of life—love, family, environment, and the conscious experience. Visionary art deals with images of events that are beyond the grasp of human understanding—dreams, fantasies, and dealing with the unknown and immortal.<sup>19</sup> An example of visionary art is when Einstein realized the distortion of time and space by envisioning a ride on a ray traveling at the speed of light. It is believed that these unique images come from the subconscious mind, which by itself creates order.

It is the imagination that permits the mind to orchestrate combined images in an altogether new way. Such imagery is sparked best when there are no distractions. Remember, it is when we find our inner place of solitude that we unlock our imaginations. Therefore, discovering images within us requires external influence to disappear. Concentration is an internal practice, disassociating us from external sources. It is not unusual to be perceived as eccentric by others surrounding you while practicing intense concentration. Unconventional behavior is common with creative minds. It is a way to focus on imagination. Such mannerisms shield us from reality, which seems illogical; however, it is at these moments that we provoke personal thought, thus creating a better platform from which to create.

Artists often use creativity as a form of catharsis. Creativity often compensates for our own inadequacies.<sup>20</sup> Some creative people actually feel most comfortable avoiding reality and dwell in the imagination. Obviously, a balance must be maintained in order to live in a

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civilized world. However, since these feelings of insecurity are present, it makes creativity the ultimate platform from which to build confidence. For example, during the latter part of his life when Beethoven became deaf, he used composition as his ultimate form of self-acceptance. Through creativity, Beethoven atoned for what he considered an inferior handicap.

Van Gogh was a psychotic; Edgar Allen Poe was an alcoholic; Virginia Woolf had periods of deep depression. Such psychological disturbances are common as creative people search to feel accepted while they are often misunderstood by society. This does not mean that creativity is a product of neurosis. It shows, however, that creativity can compensate for what we think we lack.

Whatever our reason for creativity, the sensation remains similar. Dr. G. Wallis, a psychologist, theorized the creative process in four stages, based on famous people's experiences. Prepare. Find the tools and raw material that will create excitement and perplexity. Incubate the experience. Release the conscious mind so that any images are allowed to appear, be produced, and be organized. Illuminate. Spontaneous inspiration has to occur accompanied by certainty and joy while the discovery happens. A feeling of correctness, surprise, and completeness will occur. Finally, revise and verify. Organization takes place. Our ideas will become manifested in a form or structure.<sup>21</sup>

### **Inspiration and Meditation**

People's motives for inspired thought differ, but the most common denominator is passion. Psychologist, J. Rossman performed a study on those who invent. Of eight hundred fifty-four inventors studied, their main reason for inventing was a passion for invention and self-



improvement.<sup>22</sup> These valuable reasons were prominent over financial gain as motivation.

*"The germ of a future composition  
comes suddenly and unexpectedly."*

**~Peter Tchaikovsky**

Inspiration comes in all forms. Simple aspects of life, such as a walk on the beach or a horse ride, inspire us. Mozart wrote in a letter in 1789, "When I am...completely myself, entirely alone, and of good cheer—say, traveling in a carriage, or walking after a good meal, or during the night when I can't sleep; it is on such occasions that my ideas flow best and most abundantly."<sup>23</sup> His genius ability permitted him to hear separate parts, but the entire piece collectively when he was inspired.

Natural beauties, such as the Grand Canyon, inspire us. The common ingredient for inspiration is providing opportunity to visualize a creation. Very common influences on artists' inspiration include riding in a vehicle of transport such as an auto or plane, walking at leisure, bathing, reading, listening to music or watching a movie, napping or walking at night, dreaming, being under the influence of alcohol or drugs, meditating, or staring at an object.<sup>24</sup>

Some less orthodox methods include Beethoven pouring cold water over his head to stimulate his brain and Rossini covering himself with blankets as he composed. Kipling used jet-black ink in order to write and Dickens would always turn his bed to face the north. We are most easily inspired when we are in a reposed state. The key to inspiration is being relaxed.

Inspiration occurs best when we meditate; reaching an inner source that encourages our spirit to be unveiled. If we desire to tap into our place of inspiration, it is

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essential that we find time to be completely free from those elements that interrupt our creative flow. We are inspired when we invite things that provide us a sense of tranquility and comfort. Anything that helps us become meditative will encourage intimate thoughts of inspiration. Being silent with meditation helps each of us discern what things will help us personally toward inspired thought. This is a crucial aspect of developing creativity.<sup>25</sup>

Each individual has a tone, a place where inspiration not only speaks, but grows. When silence is felt inside, bringing us to our center, we will hear the voice of inspiration. When this voice is heard, creative possibilities arise. Meditation is a wonderful medium for inspiration because it surrenders to our creative impulses inside the mind of the sub-consciousness.

Although meditation is primarily used to enlighten, its vehicle is relaxation. Michael Samuels has adopted a simple form of meditation called 'programming visualization' for creativity: Close your eyes. Breathe in and out slowly. Allow yourself to relax. Go to a level where you can visualize freely with many images. Let an image come to mind, scan the image and get a clear-cut outline of the image and allow it to change. If the new image feels "right," retain the new form. If it does not feel "right," then go back to its original form. Continue this until you finalize the image or images. Return to your ordinary conscious state and gently start moving your body again.<sup>26</sup>

While meditation encourages creativity, "writer's block," the opposite of creativity, is caused by our egos getting in the way of inspiration. Our egos act as a defense mechanism. If we lose our defenses we become vulnerable. The more vulnerable we are, the more likely we will be inspired to develop original ideas. Inspiration

can only be achieved from relaxation and vulnerability. This part of the creative experience relates to our personal intimacy. It is not that we are sexual, but in a sense we are caressing our souls. When we achieve vulnerability, we become intimately comfortable with ourselves.

Many creative people believe this theory that sensuality manifests creative flow. If we wish to increase our creativity, we might try increasing our sexual energy.<sup>27</sup> Creativity comes from the very core of our being. Intimacy is the union of spiritual and sensual energies. I know, myself, that creativity can feel sensual, yet divine. At first, I thought it to be unusual for me to experience both, sensuality and spirituality, at the same time. However, after my research on this subject, I have found that this sensation is common for those that practice creativity regularly. If you can accept that the two energies can work together you can experience wonderful levels of creativity.

### **Art**

In art, it is not so much the finished product that is interpreted, but the attitude and intent within the artwork itself. Art and music reflect our lives and our society; they are expressions of the human life experience. Art develops character because it provokes thought in each of us, bringing our interpretation of life to the forefront of our minds. Artistic creativity allows expression from our deepest personal existence to be exposed. In general, society perceives art as a source of beauty in the world; however, it combines all aspects of life, good and bad.

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*"Art and imagination are often  
taken as the frosting to life  
rather than the solid food."*

*~Rollo May, My Quest for Beauty*

Art expresses our faith, culture, morals, and how we perceive the development of society. The strongest attribute of art is that it stems from our imaginations. We are influenced by the experiences in our lives, but they are interpreted and expressed through our imaginations.

Each individual sees their experiences differently and so, creative expressions of similar incidences will differ. As we develop our own thoughts and ideas, we are encouraged to stretch the imagination further. In turn, we experience greater levels of satisfaction creating more individualized artwork.

Art entertains us, but its usage is much greater than mere entertainment. To the artist and appreciator alike, its intent is to counteract our own inadequacies that we might consider damaging to our spirit.<sup>28</sup> It is cathartic. Through the use of creative expression it brings a peace to us because it dissolves the emotional corrosion accumulated by society's acts of violence.<sup>29</sup>

Rollo May explains that art is the only human institution that is never destructive. "Religions turn into wars. Economic systems set country against country. But art—not its economic status, but art itself—is always a win-win situation, the only human institution which never turns persons against persons." May continues by saying, "For art...is an inseparable part of our precious capacity to be conscious, to think..." and "art was invented, I surmise, out of the necessity of those original men and women to regenerate, to propagate, to renew the race of humankind."<sup>30</sup>

*The Art of Creativity*

*"Art! Who comprehends her?  
With whom can one consult  
concerning this great goddess?"  
~Ludwig Von Beethoven*

Art persuades us to explore ourselves and deepen our personal wisdom. It expresses our personal beliefs as well as represents how we perceive our experiences in life. The nature of art separates the expressively elite from mainstream and nothing is more sacred than expressing personal identity. It is the very essence of living fully. Through the use of art we are invited into the world of imagination, which is an important aspect of the human event.

Essentials such as art and creativity add beauty to a difficult world. To be aware of this knowledge and to choose not to utilize it, I consider saddening, not only for those artists and appreciators that do utilize creativity, but also for those individuals that might discover their own passion as a result of observing those that value the art of creativity.

*The aim of art is to represent,  
not the outward appearance of things,  
but their inward significance: for this,  
and not the external mannerism  
and detail is true reality.  
~Aristotle*

*The Art of Tone*

## THE SPIRIT

*"The highest mission of music  
is to serve as a bridge  
between God and man."  
~ Dorothy Retallack*

**M**usic is considered the universal language.

This type of communication is not confined to our tongue or to our intelligence. It touches our emotions and our souls, deepening our search for wisdom. Tones reverberate long after they are inaudible, although we are usually not conscious of this phenomenon. It is after the music dissipates that we are affected by it the most because it enters our minds and spirits through emotions.

There are two entities in our human makeup: our external body and our internal body. Our external existence consists of the physical, emotional, and psychological aspects. The less tangible aspect of the human is the spirit. Our human spirit forms the foundation upon which we build, molding our character. It establishes who we are.

Most often, we experience life through our external existence and spend little energy on the spiritual aspects of our lives, which are our personal beliefs and passions. This level of existence is difficult to reach in our daily routines. Without question, it is something that must be practiced like any other discipline. However, if we desire to develop personal growth we must first be aware of our spirits.

Developing personal growth, wisdom and character often occurs when we are challenged in life by tragedies. For example, when a loved one dies unexpectedly or if we lose our financial security, we frequently ask ourselves "Why did this happen?" and begin the search for a deeper meaning to life. Such questions develop our character. The more we ask, the deeper we become in wisdom. Everyone's desire for wisdom is different, however. Quiet moments of thought leave us vulnerable and alone only



### *The Spirit*

to be examined by no one but ourselves. Many people are uncomfortable with such ambiguity and cease the search.

For those willing to meet the challenge and extend his or her own growth, vulnerability becomes natural. As a result, the inner voice speaks strongly and deep personal beliefs and levels of wisdom are achieved. Each level of wisdom gives our spirits a place from which to blossom and grow. Each additional level we reach satisfies us with a stronger sense of peace. Deeply religious people and highly creative people, such as artists, often feel comfortable with this level of vulnerability. Such vulnerability is necessary for discovering creative inspiration.

Simply put, our ego represents our external existence; it defends our position of feeling adequate and for being heard. Our spirit, on the other hand, represents our vulnerable side, permitting us to listen.

The spirit does not care about the superficial substance in our lives, such as owning material things or being the victor during a passionate debate. Our spirit only cares about one thing: peace. It does not seek peace; it knows peace. The ambition of our spirit is for us to discover the beauty of peace, and then experience it as often as possible. It is the secret to realizing greater serenity. It is the reason for our love of music.

Music satiates the soul by guiding the spirit to such inner peace. Through the use of musical tone, the spirit is awakened to speak solely to us while our ego is dampened, even if only for a moment in time. The more we experience serenity through music, the more often our spirit rises to the occasion.

*The Art of Tone*

*"(Music) speaks straight to our heart  
and reaches the very core and root of Soul...  
it is the language that, by itself, is divine."  
~ Sri Darwin Gross, of Eckankar  
(a spiritual organization)*

~~~~~

*"The universe of music presents then a life
before and behind a unique 'partition':
one without dimensions and
of unfathomable spirituality."
~Lazare Saminsky³¹*

Music is a direct vehicle for experiencing peace. Through tone, our spirits become peacefully satiated, making us more vulnerable and willing to deepen our character. Both our imagination and the human spirit are unbounded because they reside in the same space within us where endless opportunity is offered. That is one reason for the connection between spirituality and creativity. As we tap into our spirit, we discover the imagination and we are inspired to create ideas. On the other side of the coin, the ego is restricted because it is satisfied with mere adequacy and nothing more. The more we expand our imagination the less impact the ego has on us.

*"Wherever God reigns, be them one or many,
the physical character of music is indeed based
on mechanics, and explained by mathematics,
but its origin is in the heavens."
~Julius Portney, musicologist*

One of the most dynamic functions for the use of music is to provide an overall higher quality of life. It gives us great enjoyment to hear pleasurable music; we

feel serene and content. An example of this type of use is found in organized religion.

Worship of all types is a celebrated practice of the spirit and music plays a significant role in worship. Pleasant-sounding music invites friendship and unity, generating balanced relationships. If it is associated with religion, the result is socially responsiveness combined with religious devotion. Many religious denominations are very selective when it comes to their music because they believe that music has great influence on its followers, especially for young people. Favoring a pleasant atmosphere during times of worship is common. Soothing music is a key ingredient for promoting a sense of peace and unity within a congregation.

Although we are exposed to the serenity that music can portray, its effects are felt stronger in places that nurture vulnerability. Religious worship is one of those places.³²

Sweet, sonorous music aids us during prayer, meditation, and contemplation. It has been utilized as a tool for ages. Originally, when high priests were designated to minister, they designated songs of worship as the primary focus of their ministry.³³ It was the high priests who, by degree, improved the primitive type of song for religious fervor.³⁴ In fact, the first priest who was considered selfless enough to serve humanity, believed that melody is man's cry to God and harmony is the answer from God to man.³⁵

During this time period in history, music was simply a melody much like the Gregorian chant. When two melodies were combined they created the simplest form of harmony. It was considered that the aesthetics (or the harmony) in music is the link between our journey of existence and the discovery of God and of love itself. In

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essence, sonorous music encourages us to experience love of great magnitude.

*"What love is to man, music is to the arts
and mankind. Music is love itself –
it is the purest ethereal language of passion,
showing in a thousand ways all possible changes
of color and feelings and though only true
in a single instance it can be understood
by thousands of men, who all feel differently."
~Karl Maria Von Weber, composer*

Music is significant in religion because it not only celebrates our spiritual beliefs, but our culture and the realization of love. Many master composers recognize the relationship between love and music and express it through their art form. However, each composer portrays love differently.

Eighteenth century composers Bach and Handel represented divine love. During the Baroque era of (what we call now) classical music, the church was the predominant source of steady income for musicians. Therefore, the affect of religion was compelling to those who were absorbed by its hierarchy. Western religion was undergoing great change, which lead to the formation of several denominations within Christianity known as the Reformation. It was an appropriate time to display divine love.

Later in history during the Romantic era of classical music, Beethoven portrayed human love because he was compassionate and sensitive to the inadequacies of humans, including his own. For several master composers, part of creating music is to satisfy feelings of ineptness. Beethoven considered himself nothing more than adequate, and yet he demonstrated genius.

As artistic philosophies developed, music developed. Composer Wagner portrayed simply that God is Love.³⁶ Twentieth century composer, Karl Maria Von Weber, went one step further. He believed not only that music portrayed love, but also that music is love itself.³⁷

Music in the Church

From the earliest chants to the most recent contemporary songs, the church has given music an important role in its worship services. In religion, it is used for celebration and as a conduit to bridge mankind to the divine. In ancient times, it was believed that words, music, and religious intonation combined would keep civilization in harmony with the heavens, much like prayer.

*"If we have listening ears, God speaks to
us in our own language,
whatever that language is."
~Ghandi*

*"Every faith has its appropriate music,
and the difference between the creeds
might almost be expressed in musical notation."
~ Frazer Bough, The Golden Bough*

Tuning In Within

When each of us grows in wisdom by discovering something new in our own character, we usually find it difficult to keep it a secret amongst ourselves. As you would expect, we want to publicly expose our newfound insights. This is quite evident in the artwork of many master composers. Each artist unveils his personal revelations through his or her artwork. In fact, if you study a composer's views of life in chronological fashion, it is possible to know when the art was created based on what is revealed in the artwork.

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What defines the artist is the message depicted in the artwork. The master composer becomes timeless when he combines his love of music with his own strength of mind. When this type of message is conveyed, it fuels strong and lasting impressions. Remember, it is the intent of the composer that is evident in his music, not only the combinations of the tones themselves. Passion and wisdom help develop lasting quality ideas, which add richness to all who appreciate it.

*"It is in the stillness that we find God,
the kingdom of heaven coming from within,
making one little room an everywhere."*

~Valerie Dawson, poet

Master composers find greatness by practicing humility, silence, and reverence, thus focusing on their inner voice of inspiration. Elements, such as these, help explain the enduring quality of certain pieces of music. Bach's "Mass in B Minor," Handel's "Messiah," and Mozart's "Requiem" all have great depth, which makes them ageless compositions.

Often, it is deep religious devotion (of any sort) that encourages vulnerability and helps an artist find his inner voice of inspiration.

Famous for his chorales and numerous other compositions, Johann Sebastian Bach devoted his works to God before writing each piece of music. He would write on the manuscript paper, as a prayer, "Jesus, help me." After finishing the work he gave recognition by stating, "Soli Deo Gloria" (Glory Be to God Alone). During his life, Bach was not revered as an innovative composer. It was only after his death that composers of status, including Mozart and Mendelssohn, proclaimed his genius, generating worthy interest and popularity.

The Spirit

Many of J.S. Bach's sons were composers. The compositions of Bach's offspring were very popular and considered innovative during their own lives. Alternatively, J. S. Bach himself used traditional techniques that his contemporaries considered passé. However, his religious dedication more than likely helped him tap into an existing inner voice where genius resided but needed opportunity to be exposed. His spiritual devotion generated an interest to discover and cultivate the genius that existed inside.

Conventional with the current culture, religion, and musical ideas of his lifetime, Bach established a new level of perfection with the traditional techniques of western music. When we analyze his music, we find that it is mathematically proportionate; little music displays similar systematic perfection. Moreover, Bach's application of music composition has become our endowed method for composing and improvising. It is now considered the cornerstone of western music. This may never have occurred without his devoted personality.

Although Bach has had great impact on the development of music for the last three hundred years, most composers of note have been affected by the realization of their own spirit and passion. When writing the "Messiah," George Frideric Handel was noted for saying that the entire piece had been revealed to him. The entire "Messiah" was given to him in a dream and all he had to do was write it down on paper. He stated, "I think I did see all Heaven before me and the great God Himself."³⁸

Ludwig Von Beethoven became deaf near the end of his life, however, regardless of his physical challenges, he continued composing. Before he wrote his Symphony #9, The Choral Symphony, he said this prayer, "With

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tranquility, O God, do I submit myself to changes and place all of my trust in thy mercy and goodness." Beethoven achieved a deep level of vulnerability, which permitted greatness to be unearthed, existing deep within his spirit. Symphony #9 was not only his last symphony, but also his most brilliant, most profound, and consequently, his most famous symphony.

Alexander Scriabin believed that he had a message to convey to the world. He wanted to translate the "essence of the soul and spirit into musical notation."³⁹ He furthered his ideas by creating a new method of composition, which combined musical sound with specific colors designated to each musical tone.

Four months before Johannes Brahms' death, he confessed that he felt himself inspired by an alternate power.⁴⁰ He believed that only when a creative artist was receptive to deity could he and would he write immortal work, and not otherwise. In other words, we are an impression of a much bigger spirit. Before the end of his life, Robert Schumann wrote music that, he perceived, was given to him by angels.

With humility, Gustav Holst silenced himself to hear revelations. He claimed to hear divine messages connected to his study on sciences. In relation to his composition, it resulted in his very popular and intense suite, "The Planets."

One of our purposes in life is to experience our spirit, expanding our perception on life in order for discovery to occur. When we open ourselves for discovery, expressing our knowledge to others genuinely becomes our passion. Composers, such as these, came to a realization of personal identity that was passionately expressed through their music.

The Spirit

*"The final mystery is oneself. When one
has weighed the sun in the balance
and measured the steps of the moon
and mapped out the seven heavens star by,
star there still remains oneself.
Who can calculate the orbit,
of his own soul?"*

~ Oscar Wilde de Profundis

Each individual has the capability to add something that can change how we view certain things. Some contributions are more influential than others; nonetheless, all contributions make lasting impressions if the effort is made. No one will ever be considered mediocre if they have consciously searched for their own inner voice and destiny.

*"The highest aim of our music is to reveal
the essence of the universe it reflects
and the ragas are among the means by which
this essence can be apprehended.
Thus, through music, one can reach God."*

~ Ravi Shankar, My Music, My Life

As discussed earlier, music is a source for attaining wisdom and building character for a stronger society. In Japan, the shakuhachi flute is considered an instrument for well-disciplined musicians. As a flutist myself, I can attest to the difficulty of the instrument. However, its adversity is not found primarily in its technique, but in its ability to development character through the use of discipline. The shakuhachi flute player is encouraged to play publicly only after several years, in fact, decades of practice. It would not be uncommon for a student to be invited to perform after finishing his thirtieth year of study. The purpose is to educate the student about character, not technique. This type of personal growth

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stems from some of the original concepts for music's purpose in society.

This is true in India, as well. The sitar player is highly respected, similar to a high priest, for two reasons: they attain both discipline and spiritual harmony through the disciplined practice of the sitar. As well as other cultures, India regards music as very sacred. They exercise music as a strong path to purification, wisdom, and harmony. The sitar player and the shakuhachi player are revered both for their technical ability and for their journey to enlightenment.

*"Music being intimately connected with the
essential relations of beings and the vital spirits
of man tuned to the tone of heaven and earth,
they thus express all the frequencies
of heaven and earth, as several sitars
all tune to one tonic."*

~Li-Chi

In the Chinese canonical book Li-Chi, music is the expression and image of the union of heaven and earth.⁴¹ It determines the state of all things, acting directly upon the soul and putting man in touch with celestial spirits. Through the Li-Chi, Chinese culture believes that the standard of morals and the governing of a nation can be influenced by the music that is current within it. An unaware society will hinder growth to its nation and to its people.

*"I had no need for conventional religious exercises
because music filled my spiritual needs.
Any ecstasy my spirit needed
was just a song away."*

~Liz Gilpatrick

The Spirit

Some people do not find it necessary to practice orthodox religion because calming music acts as a guide to a state of tranquility for which they seek. The goal in our search for wisdom is not to challenge our current state of emotion. Rather, it is to experience the eternal state by freely exposing our souls. Music encourages this experience, regardless of what religious, language, or cultural boundary exists. If music speaks to you, then it could entirely be sufficient for your level of peace. Conversely, each person's development for peace is different.

It must be understood that religious practices do not teach us on their own; they guide us to our inner voice and tap us into our source of inspiration similar to the effect of music. Music channels its way into the deepest levels of our life experience that we can imagine; it is a map, charting us to our spirit.

Regardless of our religious traditions, all of us, inevitably, must direct our attention inward to experience peace and insight. The silence that exists inside each of us is where we find wisdom, which develops our beliefs and morals. It is the forum for clarity and accountability. Without regard to how it is spoken, make sure to listen and hear the message of your own spirit. That is significant. It is our spirit that will teach us more than any outside influence if we only choose to listen.

The Influence of Music

There is no denying music as an art form. However, we must consider that music contains such intense influence on us that it is not only a form of expression, but also a method of living.

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Tones of expression encourage us to correlate our personal principles and morals. Music penetrates the human core by making us think at deeper levels; it reflects our human ideals. Most of us understand that music is an expression of our culture. However, this powerful tool for expression can work in both directions. It is a venue where frustration and joy can be articulated at equal levels.

There are effects that certain sounds have on our lives that are not beneficial to us, including particular types of music. For example, music that has a combination of negative lyrics, highly distorted sounds, and strong pulsating rhythms stresses the body, physically, emotionally, and psychologically. In turn, this tension filters into our spirits. The music and sounds that we direct toward ourselves should enhance our lives, not bring more turmoil.

We are not to disallow certain current pop cultural forms of expression. However, sounds and rhythmic patterns that represent discord in some repetitious fashion can strain our bodies because of the lack of organization. Self-expression should never be discouraged; however, if the purpose of such intensely distressed music is merely for shock value, then those of us that create it should examine our artistic expression more closely. We witness enough distracting sounds just living our everyday lives. It is not necessary that we add to the problem. First and foremost, it is the intent of the music that is being represented when we listen to a piece of music, not the specific combinations of tones. Music's effects are broader than the particular rhythms and notes that our body feels and hears. Each style, each song, and each artist represent certain feelings and spark different thoughts within us.

"As in music, so in life."

~Confucius

There is a question that seems to pop up among musician, philosophers, and historians, alike: "Does music influence society or does society influence music?" The answer is both; they are symbiotic. Like other art forms, music expresses the ideals and emotions of our society. At the same time, it helps us understand the social order and perception of life. However, not often enough is an emphasis placed on the fact that music is sound. It is the only original art form that is constructed of audible vibrations and frequencies. For the fact that music is composed of tones and vibrations, we can experience it physically and mentally, directing itself into the core of our existence. We do not need an entire song to represent these effects. We can be influenced simply by the execution of a few tones.

Music is a high form of discipline because it uses sound as its medium for expression. Sound is linear. However, music combines emotion with its sound, giving its linear quality less definition. From this effect, music produces vibrations that affect the emotional biorhythms in each of us.

Vibrations and biorhythms are in every living thing; therefore, music affects everything. Music vibrations trigger emotions and memories that send messages to our spirit. It is the choice of music (and therefore sounds) to which we listen that determines our reaction.

Any time music is played, or when a sound is released, its vibrations are added to the universe and felt in very subtle ways. Regardless of where these musical vibrations are produced, its effects are impressed on all of life simply by the ripple effect.⁴² This will be discussed in greater detail in later chapters.

Matter of Geography

Geographical boundaries seem to describe much of the cultural evolution of our world. Music is no exception to this theory; it seems to follow certain patterns based on its geographical induction. Generally, each hemisphere represents music that is opposite of the other hemisphere. For example, music of the northern hemispheres tends to represent cerebral inflections (representing fine matter) while music of the southern hemispheres energizes the loins (representing gross matter). Music of the western hemispheres contains more harmony and complex texture (representing gross matter) whereas music of the eastern hemispheres, focusing on single notes, tends to concentrate its music on melody (representing finer matter). This theory is better understood in the form of a table:

Hemisphere	Matter	Body	Music
Northern	Fine	Cerebrum & Head	Melodic
Southern	Gross	Loins	Rhythmic
Eastern	Finer	Spirit	Melodic
Western	Gross	Center of Body	Harmonic

Excluding extremities, our body is characterized in a similar fashion as the world itself. Along the same lines as the system of the Chakra, the mind consists of fine material and, the lower we go on our bodies, the less defined is its substance. Therefore, music consisting of fine matter affects our cerebrum and spirit. Music that is less acute will affect the areas of the body that consist of less fine matter. Matter that is not fine, in other words, gross (or less sophisticated) matter, will be affected most by music that is strong and deliberate.

Music that is composed of gross matter, lacking distinction, is going to greatly affect our physical bodies because our physique relates to gross matter. Highly rhythmic or low-pitched music (which correspond to gross

matter, especially in combination), affects our loin area or base. Continents residing in southern hemispheres, such as Africa, Central, and South America, celebrate with music of vigor.

Much of the music from these areas is highly rhythmic and several songs contain large ranges of melodic intervals. It follows, then, that the celebration of their spirit in religion and ritual worship is no different; it is also very dance-like. These practices in music do not make spiritual worship any less desirable, just diverse. In fact, it may add more enthusiasm for a person to seek this type of worship if their religious worship is more traditional.

Folk music, which affects the center of the body, is an example of music that signifies fine matter. The psyche, which is composed of even finer matter, is affected by music of greater distinction such as classical music. Additionally, the tonal scales of each region of the world seem to affect different components of our bodies. For instance, western European and American music seems to affect the physical body more than other components because of the lessened subtleties of the half-tone music method. Egyptian and ritualistic music affects the emotional body (a component of finer matter) more because of the third-tone music method. Eastern Indian music affects the mental body because of subtleties of the quartertone music method. Music, composed of finer matter, mostly affects our spirit because it is our spiritual component that possesses the highest amount of fine matter. It is believed that both Eastern Classical and Western Classical music, being filled with fine matter, display the highest degrees of disciplined music and sophistication. Many ancient philosophers believed that the more disciplined the music, the more spiritually aware we become.

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Classical music (composed of fine matter) affects our crown or cerebrum. Classical music, in both Western and Eastern cultures, is the highest degree of disciplined music. Listening to music of distinction edifies our inner character, individually as well as collectively. Disciplined music enhances positive thoughts and actions. This does not mean, however, that less distinctive music such as jazz, pop, Cajun and so on, is to be disregarded. We need all types of music to balance us, inside and out.

Music and Morality

"If used correctly, music can show mankind the beauty of true morality and those higher purposes for which our lives were intended."

~David Tame, The Secret of Power of Music

All music has something to offer our spirit. Despite the fact that there is much more liberal thinking in our present day, history has shown that many religious communities have made music the impetus for the destruction of morals. At the turn of the twentieth century, ragtime became the popular music of the day, developing into the music we know as early jazz. Much of the music had to do with the origination of its unique rhythm. "Jazz" and "rock and roll" are terms that express excitement and lighthearted attitudes and behavior toward sexual interaction. Jazz, also spelled "jaz," "jac," "jas," and "jass" was a Creole term used in New Orleans (one of the founding cities for jazz music), which referred to sensual actions and moving in a carefree way.⁴³ Consequently, jazz music is extremely cerebral.

The term "rock and roll" was contributed by Cleveland disc jockey, Alan Freed, who paraphrased the song "My Baby Rocks Me with a Steady Roll."⁴⁴ The origination of the phrase "rock and roll" meant to 'rock and roll your baby all night long.' During its progress in

the twentieth century, rock music was an influence on youth regarding sex and acts of rebellion. However, now many more styles of music have entered the same arena because of the increased accessibility to various types of media that challenge parents and our general society. Currently, popular music has reached a point that it is as much for the eyes as it is for the ears.

"Rhythm and melody supply imitations of anger and gentleness and also of courage and temperance and of all the qualities contrary to these...for in listening to such strains our souls undergo a change."

~Aristotle

Like all aspects of early civilizations, music was not very complex in its practice. Much of the early music generated out of the eastern and northern hemispheres had little textural tendency, representing only single tones, making each tone have much more significance. However, this simplicity may have improved its society's perception on civilized living. Music greatly impacted early civilizations. Aristotle explained that when we change our music, the soul also undergoes a transformation.

Historically, every time a tone was added (creating more complexity to the music) it would influence the stabilization of its environment. If the sounds are strong and invasive, they could create discord within its society rather than harmony. The deterioration of a civilization starts inside each individual, which ultimately affects the unity of its citizens. Although the human race is a durable breed, distorted tonal vibrations that disperse into the air such as music (and many of our loud modern day sounds) affect us, body and spirit, and may contribute to some of the less desirable attitudes in our world.

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During our modern age, not only have many tones been added since earlier empires, but never has a generation raised its sonar level as much as our current society. Our world is polluted with noise that not only is destructive to our ears but also to our minds and souls. It is difficult to be silent if silence is vacant; serenity can only take place if serenity exists.

Our high level of conflicting sounds has become disproportionate by the assembly of loud manmade machines and the overall volume of musical timbres that have overwhelmed our society. It is certainly possible that the music in the past one hundred years or so have contributed to our current society's mind-set, thus dislodging unification. Our culture has accelerated greatly because the world's globalization, nonetheless, the array of distorted, unnatural sounds added to our modern world has increased by leaps and bounds.

We will continue to merge globally from the advancements in technology and communications; however, our struggle for consonance will never cease. It is a double-edged sword. We want to advance in order to achieve greater harmony in our society, yet it is difficult to be unified because of our various cultural and philosophical differences. Our music is advancing in the same manner. In some ways, we are losing our cultural identities as we continue to meld globally, and yet, some of the less sought-after identities of powerful individuals continue to be pronounced.

Remember, our music influences our society as our society influences our music. More than all else, it is the intent of the music that we create and to which we listen that reaches the depths of our souls; everything else is external.

The Spirit

*"In the final analysis, we should strive to realize
more fully, it seems, that when we deal with
sound we are dealing not merely with
the energies of science,
nor with the art of moral minds,
but with God."
~David Tame*

If we deny that there is a link between music and our inner being, we are simply not being honest with ourselves. Our challenge in life is not to live, but to live with quality and to grow. Music challenges us to contemplate and discover personal awareness because it is a tool for expression. Music helps us to experience deeper levels of life.

There is a Chinese proverb that sums up the process of building our character and awareness: Pain provokes thought; thought brings wisdom and understanding; wisdom makes life more endurable. When we gain wisdom we experience more of ourselves. In turn, the challenges in life become easier to conquer.

If we experience every moment of existence and learn from every experience we find that music supports these experiences, both through celebration and through heartache, whether shared with others or in solitude. All of us sense music's power, but few consciously act on it. Music is a part of our spirit; it is eternal. It invites wisdom because it is deep within us; music is truly a guide toward discovering, experiencing, and expressing the spirit.

The Art of Tone

MUSICAL INTIMACY

~ Life without passion is no life at all ~

The two primary elements to music are sound and emotion. Without sounds and rhythms, there would not be any support that music exists. However, without emotions, music would lose its significance. Emotions give it the human element.

Emotions respond to sound because both sound and emotions have similar properties. Sound's properties work externally while emotion's properties work internally. Music is simply the combination of the two elements. It is the intimate relationship that is created by sound and emotion that satisfies us.

The principle relationship of sound and emotions is demonstrated by the Chinese culture. Many ancient philosophers strongly believed that moods are altered by music.⁴⁵ The ancient Chinese philosophy is formulized in that Mode = Mood. They understand that the combination of modes, or scales in music, influence our emotions and attitudes.

*"Music, when soft voices die,
vibrates in the memory."
~ Percy Bysshe Shelley*

Most of us don't give attention to this, but our overall mind-set is broadly swayed by our emotions. For instance, have you ever been so angry with someone that you find it hard to talk to them? Yet in most cases, when they have sincerely apologized, acknowledging your hurt feelings, your anger dissipates. You are capable of moving on from whatever it is that made you so angry in the first place. Music shares that same emotional effect on us. For example, if you are listening to music that is soothing it releases calm emotions, directing your attitude toward positive and warm feelings.

Musical Intimacy

Music spawns emotion just as emotion generates thought. Music and emotions have the same goal. Although both music's and emotions' effects are temporary, they aspire to leave a permanent impression on the mind by filtering their way into our thought processes, creating a memory. Music will set an emotional tone, which establishes an attitude and an impression on our mind. These impressions ultimately influence our overall mind-set.

In other words, every time a song is heard it will trigger the same emotion that was established the very first time it was heard regardless if the experience was a pleasant one or not. After that initial experience, every time we hear a particular song, it prompts the same memory to return. The only time that the memory would not return would be if a stronger impression came along and altered our memory.

Scientist Dr. Oliver Sacks in his book, Awakenings (later popularized in movie form), discovered the correlation between music and memory while working with a group of patients that were unaware of the world around them. He administered drugs that helped them experience life once again, but the music brought back a part of them that had been missing for several years.

Part of the awakening experience was due to the fact that the music that he used was something that helped them to relate to very pleasant memories. Sacks played music from the patients' own era, early twentieth-century pop music, in order to stimulate memories in their minds.

Iso-Moodic Principle

*"We do not want a nation
of prize-fighters and weight lifters.
Perhaps music will solve our problem;
through music the soul learns
harmony and rhythm and
even disposition to justice;
for can he who is harmoniously
constituted even be unjust?"
~ **Plato**, The Republic*

Through music, we have opportunity to sway our emotional perspective altering our viewpoints. Although it is temporary, music alters the direction of our emotions. Music therapists focus on the fact that music has the ability to reflect on our emotions and change our mood. Moods are essentially emotions that have developed through thought.

To change a person's outlook, first an emotion must trigger a thought that will leave a positive impression in the mind. The change of mood helps the mind to think clearly and more positively. The process follows in a respective order: music triggers an emotion that creates a memory. This memory forms an attitude. Following suit, positive attitudes generally lead to positive actions.

Music therapist, Kate Hevner, conducted a study on the relationship between altering moods through music, entitled the Iso-Moodic Principle.⁴⁶ This practical theory demonstrates how music alters mood. She states that first matching the existing mood with music is key in order to change toward the general direction we prefer. After the mood is coupled, we then, can change gradually toward our desired mood.

Musical Intimacy

For instance, if we are sad and wish to be happy, we should start with sad music and gradually change to happier sounding music until we are content. Hevner categorized our moods into eight groups:⁴⁷

1	2	3	4
Spiritual	Pathetic	Dreamy	Lyrical
Lofty	Doleful	Yielding	Leisurely
Awe-inspiring	Sad	Tender	Satisfying
Dignified	Mournful	Sentimental	Serene
Sacred	Tragic	Longing	Tranquil
Solemn	Melancholy	Yearning	Quiet
Sober	Frustrated	Pleading	Soothing
Serious	Depressing	Plaintive	
5	6	7	8
Humorous	Merry	Exhilarating	Vigorous
Playful	Joyous	Soaring	Robust
Whimsical	Gay	Triumphant	Emphatic
Fanciful	Happy	Dramatic	Ponderous
Quaint	Cheerful	Passionate	Majestic
Graceful	Bright	Restless	Exalting
Delicate		Agitated	
Light		Impetuous	

Anger can be the most destructive emotion, but it can be prevented or controlled through music. For example, Brazilian rhythms such as the Samba or Axe (pronounced 'ahshae'), which are upbeat rhythms, can help release tension. Dancing helps relieve stress so that calming music will affect us more effectively.

Music therapy dislodges the separation between emotions and the psyche.⁴⁸ Therapists delegate music on their patients' emotions. Patients react to the music triggering pleasant memories so that they will attain a tranquil state.

Music's Emotional Purposes

One of the challenges to music is to develop intimacy. Whether the music to which we listen is light, intense, happy, or depressing, music's eventual purpose is to comfort us by satisfying the emotional needs inside of us. We require two emotions in order to maintain mental and emotional stability, encouraging intimacy. Love and happiness satisfy our emotion's need for serenity. Music enhances these experiences. Similarly, happiness and love are an integral part of the music experience.

There have been times in my life that I have been touched by music and placed on a higher "stage," sending me to a level of peace that is ultimately gratifying and unique. At these moments, when I have reached such bliss, I feel overwhelmed because everything seems in its proper place; as if nothing unpleasant can affect me. I am experiencing true happiness and contentment.

The first time that I experienced this, it was so intense that it sent me exploring its effects. I needed to know the reasons for my joyful feelings. Consequently, since this experience, I have attempted to repeat the sensation as often as possible because it was not only wonderful, but also quite inimitable.

I had just returned home from college and was teaching music full time. I was asked to play my flute at a distant relative's funeral. There was very little emotional attachment because I did not know the deceased, only the family of the deceased. I performed as comfort to the family. While playing a very familiar hymn, I experienced something altogether new. During the second chorus, I felt an incredible power that surrounded me reaching into my very core. It felt as if I had been lit up by electricity. Unfamiliar with this sensation, I began to weep from fear; nonetheless, I

continued to play. In fact, at times, it felt like I was only blowing air into the pipe and holding the flute for someone else to play. Even though the tears contorted my lips, the flute continued to sound sonorous adding beauty to the room. I knew that I was not capable of producing a sound so brilliant at that early stage in my career. I did not understand the energy that I experienced. However, I made a commitment to frequently return to this place inside of me that has given such unbelievable happiness. This experience has sent me on a lifelong journey to renew this happiness and learn as to why and how music affects all of us so deeply. Consequently, this is the reason for my writing this book.

This is how G. F. Handel must have felt when he authored The Messiah (his most renowned composition). Believing it was brought to him in a dream, he simply transcribed this piece making it tangible for the world to enjoy. On the original manuscript, blots of ink are seen scattered about due to the tears that rolled down his face as he experienced incredible joy knowing that he was chosen, in some way, to compose this work of art.

Happiness

Happiness is not solely an emotion; it represents a state of peace. The moment we feel nothing, remaining quiet and still, we experience this bliss. For example, while viewing a sunset we enjoy the awesome feelings of stillness inside of us. This calming experience is happiness. In like manner, the silence we experience immediately after the last note of a sweet ballad song transcends us. It is in this silence that we can listen.

When we are calm and silent, we can come to experience happiness and imagine the whole world as being motionless. Obviously, we do not feel this emotion every moment of our lives. The times we do feel it, bring us peace. The deeper we perceive this experience, the

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more contentment we feel. Creativity is a channel for such contentment, of which music is a part.

*"If I do not go within, I go without."
~Neal Donald Walsch*

Intimacy provides inner calm, leading us to a higher quality of living. Happiness is a result of living with such passion for the level of calm. Happiness is the fuel needed for us to venture into our journey. The adventure itself becomes the objective because the destination is infinite.

Our ultimate goal is to reach greater levels of passion on the pathway of our life journey. It is through this enthusiasm that we encounter happiness. We enjoy happy moments by losing our defenses, traveling inward for discovery.

*"We must find our own
quiet center of life
and write from that to the world."
~Sarah Orne Jewett*

The golden music of silence is what encourages us to go within in order to discover our personal treasures. Music and other external sources compel us to search inside, but it is we, ourselves, that will find happiness by the use of silence.

*"No trumpets sound when
the important decisions in life are made.
Destiny is made known silently."
~Agnus DeMille*

Music, literature, and art add happiness to both that create and appreciate; however, it is in our silence that we communicate. Only then can we create from

within and express what we are experiencing inside of us. When we have reached this level of creativity and expression, without doubt, we have tapped into the nirvana of which many great people have spoken and which all of us, in some fashion, wish to experience in our lives.

Love

Although this subject is a very complex one about which to write, it renders importance in this chapter. It is significant in relation to music because it has the ability to encase all of the things that are desired by each of us such as passion, happiness, and the opportunity for serenity.

When we experience music, we experience a part of us, where all of the characteristics of love reside. Moreover, it is music and other worthy manifestations that so often send us on a journey to experience love at such high measures.

*"Love is not something we find.
Love is something we are.
It exists within us."
~Valerie Dawson, poet*

Love offers us tranquility. It is automatic and has no conditions attached to it. This is one of the reasons for love's mystique. As humans, we find it difficult to understand anything that does not have a consequence or condition attached to it.

If we permit it to do so, the influence of love acts as a passage to passion and freedom. Using love is a great method toward unlocking truth about us; it frees us from any inhibitions, allowing us to discover. All too often, we become afraid to look deep inside of ourselves. We become afraid of what we might discover about ourselves.

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Instead, we choose comfort over love. When we never take the necessary steps that will free us from our fears, we never experience intense stages of love.

Music empowers us to encounter profound love because music provokes thought. As we deepen our thought processes and begin acquiring wisdom about ourselves, we form an intense inner peace. A more insightful life sets in and we develop a need to act in service to others. Our voluntary service can include a scope ranging from our own family members and friends to providing for others in distant places.

A desire to serve can be as simple as living adequately rather than in excess so that opportunity can be sought after for others less fortunate. A Swedish proverb explains that the person who buys what he does not need only steals from himself. In other words, accumulating rather than giving can have adverse effects.

Genuine love does not accrue. It allows us to seek someone to let go with rather than someone to hold onto. If we close our arms from love, we find that we are left holding only ourselves. Displaying our love to others is a sign of respect and compassion.⁴⁹

*"Only when it is a duty of love,
only then is love eternally and happily
secured against despair."
~Kierkegaard*

Similar to the process of music, love is symbiotic. Passion represents the fuel needed to generate love; just as our desire to experience love repeatedly fuels our passion. If we commit to live with passion, we develop a very strong inward power, which ultimately sanctions our actions.

Through this process, we become magnetic and people are attracted to such magnetism. In other words, our level of serenity is so evident that our charisma becomes noticeable and so, experiencing feelings of peace becomes desirable to others. This kind of magnetism sets a stage for expression. It is much easier to articulate inner thoughts if we begin by feeling peace amongst ourselves. The more inwardly calm we become, the more those that surround us will feel at ease. Our personalities exude definition and character. When we reach this level of self-confidence, regardless if someone likes our persona, they can sense our contentment. As we build this passion-filled charisma, we create higher levels of empowerment all initiated by our original commitment to live with intimacy and passion.

The enthusiasm that love's influence generates is what builds up things; it never destroys. That is fear's job.⁵⁰ When we express love freely we bring power to our own lives, and with such empowerment we develop a level of self-assurance. Through this confidence, we invite others to release their personal reservations that they encounter so that they may achieve personal discovery.

*"Man has no choice but to love.
For when he does not, he finds his alternatives
lie in loneliness, destruction, and despair...
When a man has love he is no longer
at the mercy of forces greater
than himself, for he, himself,
becomes the powerful force."
~Leo Buscaglia*

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MUSICAL IMPRESSIONS

"The creation of real music is not merely a question of making sounds, of playing or singing the notes, but the establishment of an attitude which will allow a live rhythmic flow of sound images. These images channel a symbolic mythical content, which orients us towards a sacred reality by turning our attention inward."

~ Dorothy Ling, musicologist

The Power of Suggestion

Thus far, I have emphasized that music persuades us to reach deep levels of personal intimacy for the simple reason that music provokes thought. Such profound thought develops our attitudes and behavior. Music is a way for us to undergo changes in attitude and emotion as well as respond to our creative sides. Although experiencing music appears temporary, its affects are not. Through the use of sound, music touches our emotions, leading to our minds, which stimulates subjective imagery.

After the audible tones have considerably dissipated, they later reappear in our minds affecting our thoughts, images, and memories. Continuously, the sounds by which we are surrounded encourage us to reflect and initiate new attitudes toward anything we consider of value. The potency of musical suggestion helps develop our own uniqueness and personality, which alternatively adds to the behavior of our society.⁵¹

Music's effect on us is comparable to a fine running machine. Each aspect of the human makeup, our emotions, our psyche, and so on, are affected differently by outside influences (such as music). When the combined elements operate together, our bodies work as a unit. Psychologically, music that sounds organized will encourage harmony. Just the same, music that is cluttered or stressful will disorganize our thoughts, thus preventing us from performing at our best.

If the music to which we listen sounds spacious or organized in harmony, then we will tend to behave in a civilized manner. There are countless ways that music has aided in calming our stressed society, but here is a recent example. In Boston, the use of eclectic, calming

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music as well as music performed by the Boston Pops was piped into the subways to subconsciously pacify students and keep them from fighting and performing illicit acts. Many adults were soothed by the music that lacked a strong beat and any type of aggression, while the young persons were driven out to the streets where they could be better monitored.

Calming music is effective; however, discordant music has its role as well. Music that is unsystematic in its sound can help those individuals that suffer from depression. For instance, as we listen to dissonant music, we relate to our own personal feelings of disarray. Once we have recognized our state of mind through the music, we then are able to change our attitude. This is putting the Iso-Moodic Principle into practice, which was discussed in the previous chapter. The theory behind this principle is to start by matching the existing emotional state of mind with a similar choice of music, and then alter the music to change to a desired mood.

Through repetition, music acts as a vehicle, suggesting change in our attitudes. Aristotle implied that through constant musical repetition we become accustomed to feeling certain emotions. Through repetition, our minds eventually perceive these emotions as correct.⁵² Over time, music reverberates in us, sending us messages that affect our attitudes about principles and other life values. It triggers our memories and trains our minds to believe attitudes that eventually become principles.

Our minds tell us that this new doctrine is acceptable. Any sound will spark memories. However, through repetition memories, initiated by sound, gain greater importance. This is more prominent now than ever before because we are inundated with sound in every phase of our lives. Both pleasant and unpleasant

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sounds are inescapable. Music is a part of this deluge; it activates both pleasing and displeasing memories.

For example, hearing a particular song might captivate a married couple of twenty-five years to spark past romantic experiences. An unpleasant memory might be a car screeching, which reminds a mother of the time that her infant was sent to the hospital due to a car accident.

Our Perception of Music

Often, our perception of time and space can be altered by our choices in music. Listening to music that is slow with a lot of separation between the notes suggests to our brain a sense of more space helping us to feel less confined. For instance, this type of music might be most calming as we experience traffic gridlock. Even though we are limited to our area on the road, we will feel less claustrophobic.

On the other hand, music that is intense with steady pulsating rhythms and staccato notes might suit us better while we drive the open road at a higher speed than city driving; it will help us remain at a constant flow.

Some auto manufacturers have designed their vehicles to automatically lower the speaker volume as the car decreases in speed (i.e. cruise control set at 70 mph; once pushing the brake reducing speed to 35 mph, the volume reduces making the driver's concentration level more easily attainable). Higher volumes of repetitive rhythmic music can motivate a driver to sustain a consistent speed. However, once we exit the highway decreasing speaker volume can help maintain our level of concentration. Driving is only one example of music's effect on our perception of space, but one that all of us can find helpful.

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*"Music...lends itself as therapy because it meets
with little or no intellectual resistance and doesn't
need to appeal to logic to initiate action.
It is more subtle and more primitive and therefore
its appeal is wider and greater."
~ **Dorothy Schullian***

Just as candles and soft lighting encourage intimacy between people, musical imagery encourages self-intimacy. Music is sensual; however, this type of intimacy is not sexual in nature. Extremely harmonious music sedates our minds, helping us to perform tasks with less stress. One of music's most significant roles is to create balance within each of us, and eventually, with each of us.

In general, music that we perceive as spacious and harmonious will decrease stress in our intense lives. Music that is light spirited, displaying rhythms that are consistent at medium volume levels suggests consistency in our minds. This type of music keeps our concentration level even and flowing, making us more efficient.

Alternately, sporadic music that has irregular rhythms played at high volume levels reduces our level of concentration because it tends to draw our focus toward the music and not on our work. This style of music would be a better choice if we used it for tasks that require less concentration.

The spectrum of harmonious and dissonant music is quite vast. Johann Sebastian Bach's music is an example of extremely harmonious and organized music. An example of extremely dissonant music is very energetic avant-garde jazz music. Therefore, making this spectrum of musical sounds personally useful, you must reflect on these two points in order to discern which music will be

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best suited for you as you live and perform your daily tasks: 1) there are several styles and idioms of music in the world. 2) music is very personal and perceived differently by everyone. Always keep in mind that it is up to each of us to decide the degree of purpose for music in our lives.

"We need to learn this language of sound so as to best express our individual creative needs. Creativity cannot be restricted to segmented portions of musical endeavor, but must become a basic part of all musical experience—it is the reason for music's existence."
~**Justin Gray**, *Music Education and Creativity*⁵³

Organized Images

Through the use of sound and emotion, music sends messages to our brain. We respond similarly to the type of music that we hear. If the sounds represent harmony, the brain will work in harmony. The more space within the music (whether it be from a slow tempo, long harmonic phrases, or a lack of intense rhythms) the more the mind will develop and organize its thoughts. For example, music that is distinctive elevates us. Particularly, baroque music (Bach, Handel and early Mozart) increases our memory, which improves study habits. Harmonious music creates images that increase our mental organization and capacity. It stabilizes our brain waves, making opportunity for harmony and organization to develop.

As with all parts of our body, brain waves are affected by sounds. The four types of brain waves are Beta, Alpha, Theta, and Delta. Although all of us use the waves, each person utilizes each wave to different degrees.

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Beta waves, the broadest waves which range from 14–20 hertz, spotlight the events in our daily routine such as our work, daily responsibilities, analytical practices, and so on. *Alpha waves*, fine waves ranging from 8 –13 hertz, increase personal awareness and calmness. *Theta waves*, highly defined waves ranging from 4–7 hertz, focus on creativity, meditation and our sleep patterns. *Delta waves*, ranging from .5–3 hertz, the finest of brain waves, slow down our brain bringing tranquility or a state of serenity.⁵⁴

Primarily, most of our daily efforts are focused on the Beta waves and less on the other three brain waves. Beta waves are the most obvious and are easily attainable because they are less refined. It requires more practice to achieve quality moments with our Alpha, Theta, and Delta waves.

Music works its way into our bodies beginning with our emotions and eventually making its way into our brain waves. As we understand different levels of brain waves and wave patterns, we associate music's path and the course by which it travels to a place of serenity, where our Delta waves are satisfied. When we distinguish these different levels of brain waves, we can see how music penetrates to our most inner core through the use of sound vibration. Such development adds to our value of life.

Depending on its level of distinction, music will affect one or more of our brain wave levels: Beta, Alpha, Theta, and Delta. The more transparent (or obvious) the music represents in style, the less peaceful and spiritual it will be in its effects. For example, the majority of the music of western culture represents the Beta wave, which is easily comprehended by the mainstream public.

Music of distinction affects the Theta and Delta waves more than the Beta waves because it adds serenity

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to our minds. The higher the level of distinction that is represented in the music, the more affect it will have on distinctive brain wave levels, such as Theta and Delta. It equalizes the brain, which deeply penetrates our minds and brings our focus to personal awareness, creativity, meditation, and tranquility.

If reaching a transcendent level is a target for your choice in music, then focus on music of distinction to be your guide. If you want your music to give you enjoyment with danceable qualities, then try listening to music that keeps a bit of fun to it.

Personally, I consider most of my music experience as a spiritual one, whether on stage or in the audience. I devote many hours toward comprehending music of distinction. My personal practice with this sort of music reinforces my self-perception, giving me a sense of calm when I play as well as when I listen. Although not everyone feels a need for this level of devotion to music, keep in mind that it is our own level of comprehension that limits what is achievable. If we only experience music as entertainment, then music that affects our Beta waves will suffice. However, if our intention is to deepen our awareness, personally or spiritually, then music with more distinction will encourage self-improvement at a much faster rate.

Appetizing Dinner Music

All too often, our busy lives prevent us from eating food as a ritual. Mostly, we eat for sustenance. For decades, fast food chains encouraged us to eat faster with the restaurants decorated in combinations of bright colors, such as red and yellow. As well, fast high-pitched music was piped into stores to encourage customers to eat faster, therefore leaving quicker and making tables vacant for more customers.

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Food, just as music, can be extremely romantic. Food and music are not only fundamental, but also enrich our daily lives. For this reason, I like to treat them in a distinguished manner. Although eating comfortably is not always practical, it is something we should attempt as often as possible.

Harmonious music can have a great effect on helping the body digest food properly and with less energy. It aids digestion because we eat more slowly, thus giving us a feeling of relaxation with our meals. Just as certain wines would be suggested for different courses of the meal (the appetizer, entrée, and dessert), certain types of music should be encouraged. Some people would never dream of serving a Cabernet Sauvignon wine with a delicate dish such as trout. Similarly, heavy metal music most likely would not be appropriate at a formal dinner. It just does not create the sort of desirable mood at such an affair.

Instead, you might begin with some light lively music during the appetizer. It will initiate better digestion. During the bulk of the meal, the entrée, music that is calming and harmonious will influence us to eat more slowly and savor our food. Lastly, as the meal is finishing, music that is steady in rhythm will help us remain alert and more content as our bodies begin to digest the meal.

Feminine & Masculine Instruments

Instruments, and their families, affect both genders differently. It is the timbres within each instrument that seemly characterize the two genders. The shape of the instrument's sound wave sways gender similarly to the way music affects emotions. Overall, sounds waves that comfort the mind relate to our feminine side, whereas sound waves that are stronger and more independent interest our masculinity.

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Harsher instruments that have virile waveforms such as the square or saw tooth waves affect the male gender more. For example, percussion instruments seem to spark more interest in men rather than in woman and instruments such as the violin, flute, saxophone, and other sonorous instruments constructed of sine and triangle waveforms generally capture women's attention better.

MUSICAL RESONANCE

*"If you learn music,
you'll learn history.
If you learn music,
you'll learn mathematics.
If you learn music,
you'll learn most all
there is to learn."
~Edgar Cayce, 20th C. oracle*

We have discussed that music penetrates all parts of our beings through sound resonance; however, we haven't discussed how this is achieved. Sound must have a material medium in order to increase in intensity; otherwise it decreases, and eventually, it becomes inaudible. For example, all sorts of metals magnify sound, but air (although it acts as a conduit for sound) decreases sound's intensity because it is not as dense as other metal.

Music travels through vibrations entering our ears and bodies, eventually influencing finer elements such as our emotions and our levels of thought. Just as sound increases through an amplifier, music reverberates inside us, swaying our emotions and persuading our attitudes (as was discussed in earlier chapters).

Sound Resonance

Sound vibrations, or resonance (re-sounding waves), occur when a source is amplified by a vibration's frequency matching the frequency of the source.⁵⁵ When one vibration reaches out to another it causes them both to move and react by amplifying its vibration (causing audible sound). As particular vibration resounds, it causes a reaction from any vibration within its same frequency. Resonance is what causes natural catastrophes. For example, an earthquake is an extreme type of resonance due to its enormous amplified vibrations. In ancient times, it was believed that the role of music and its liturgy (the lyrics used in worship) was to release a form of cosmic energy that would keep civilization in harmony with the heavens.⁵⁶ In turn, this practice would keep us in harmony with the universe, preventing any opportunity for natural cataclysms such as earthquakes, tornadoes, and so on.

Musical Resonance

Catastrophes in our atmosphere occur when resonance is generated by any natural phenomenon. For instance, in 1940, the Tacoma Narrows Bridge in the state of Washington collapsed during a mild gale when wind-generated resonance produced a fluctuating force with the bridge's natural frequency. It increased enough to destroy the bridge.⁵⁷ However, resonance does not always occur by natural cause. For example, in 1831, the Calvary troops of England marched across a footbridge in the same rhythm of the bridge's natural frequency. It was so intense that it caused the bridge to collapse.⁵⁸

As many of us know, high levels of sound volume can affect our level of comfort and create physical ailments such as hearing loss. Sounds higher than 90 decibels, such as a jet airplane at only 100 feet away that creates roughly 140 decibels, add strain to our bodies. Loud amplified music at 120 decibels will also strain our bodies.

Resonance in Plants

Sound resonance is evident in any type of substance that gives sound vibrations an opportunity to increase. Material reinforces sound, whether it is constructed of metal, wood, glass, animals or plants. With this in mind, know that we are affected as well as any other material because we are made of cell tissue. Flesh might not vibrate as much as wood; nonetheless, our systems are affected.

Similarly, plants are another form of cell tissue and constitute another source for sound resonance. It is not the vibrations in music, but the actual chord structure of specific vibrations, which alter the cell structure of plants helping them to grow quicker, greener, and more abundantly.⁵⁹ An exchange between the environment and plants takes place in certain cells, which is called stomata. Stomata must be open in order for the plant

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exchange to occur. It has been expressed that all musical sound stimulates the protoplasm on plants.⁶⁰ Sound stimulation, or music, can trigger these cells to remain open for longer periods of time.

Plants exposed to harmonious music act similarly as to the effects of sunlight. In other words, plants will grow toward the speaker. As with the sun, consonant sounds attract plant growth. Sound and light have the same physical properties. Productive light attracts plants; therefore, should not productive sound attract plants as well?

This became evident when Dorothy Retallack, of Colorado, performed a study on plants and music. Plants were placed into three boxes. One had the music of Bach piped into it; a second box had Led Zeppelin piped into it; a third was kept undisturbed. Keep in mind that both types of music were played at the same volumes and each box maintained the same sunlight and climate. After several weeks of incubation, the experiment concluded. The undisturbed plant continued to grow normally. The plant with Led Zeppelin had died! Dissonant music had stressed the plant to a damaged state. The plant with Bach grew more abundantly and with brighter flowers. After dissecting the plant, the researchers discovered that the chromosomes had actually changed dramatically. Harmonious music had a productive effect, actually altering its chemical balance and making it stronger.⁶¹

She theorized that energy from musical sound waves raised the temperature of the soil.⁶² Gentle music with weak beats has a calming effect and decreases temperature. In the case of plants, the soil is decreased by pleasant harmonies. Music played loudly with strong rhythms will increase temperatures, encouraging cell damage.⁶³ By her third experiment, she had begun to see

Musical Resonance

wider effects that the different styles of music had on plants. Pop music and rock music were used for this experiment.

By the fifth day of the experiment, the pop music plant was growing fine and toward the speaker. The rock music plant was growing tall, but with little fruit or leaves. On the ninth day, the rock music plant stopped growing while the other plant was growing with a large bend towards the speaker. By the sixteenth day, the pop music plant had flowered greatly. The rock music plant was confused and twisted.

Retallack found that jazz, J.S. Bach's music, and eastern Indian music had generated the best responses from the plants; country and western music had little response at all. Rock music affected the plants in a very unproductive, and even disparaging, way. She concluded that not only is discordant music bad, but that harsh sounds throughout our atmosphere, such as heavy traffic, create more confusion in the world. Disharmonic music causes changes the structure of the brain. Harmonic music equalizes the brain while calming it. It is understandable that disharmonic sounds will cause a negative change in the brain.

An experiment similar to the plants took place with mice. Three-dozen mice were grouped together. One dozen mice listened to no music; the second dozen listened to classical waltzes; the third dozen listened to voodoo music. This experiment lasted for eight weeks. After this two-month period, the mice were left alone to learn a maze in three weeks. The results showed that the mice conditioned to dissonant music became disoriented, exhibited more aggressive behavior, and had learning difficulties. Also, their brain tissues showed cells extending almost to the point of invasion to other cell territory. Anytime a cell invades other territories, the cell

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structure will be disturbed and will become disoriented. On the other hand, the activity of the mice conditioned to harmonic music produced similar results to the mice in the controlled environment that had listened to no music at all.⁶⁴

It is difficult to put us in the same quantum as plants or mice, and I am not suggesting that people should stop listening to any certain type of music. However, listening to many sounds of disarray and distortion at high volumes levels for long periods of time will, eventually, affect us all the way through.

Music in Science and Our Bodies

Research has shown that forms of music reside within the atom itself. From elementary science classes, we understand that atoms are placed in the periodic table of elements for purposes of classification. However, the relationship between music and the atom is found in the octave. The atomic number is eight (eight electrons of an oxygen atom shell and eight protons of an oxygen nucleus). In music, eight represents the octave. The atom has been found to form musical scales and spins of particles mark the half and whole tones of the scale.⁶⁵

*"Nature follows certain physical laws.
The universe obeys them, as does the process
of life. Music follows the same patterns..."
~Susumu Ohno, Japanese geneticist*

All atoms vibrate. From the cause of these vibrations, the atom contains rhythm and melody. Susumu Ohno saw a repeating natural pattern while studying the DNA in the genes of a mouse. He took the four basic nucleic acids (adenine, guanine, cytosine, and thiamine) and doubled them so that the two notes could be assigned to each of the four acids, creating a full musical octave of eight tones.⁶⁶

Ohno suggested that the genetic similarities between genes and music could explain the origins of music in man and also in nature. Also, the affect of melodies was similar to genes. The melody within a cancer-causing oncogene would sound grave and saddening. The gene that allows light to flow through the eye sounded happy because it produced airy trills and arpeggios of light. Positive music contributes to a positive attitude, which generates stronger cells and positive genes, combating the oncogene.

Similar to the resonance of natural catastrophes, rhythms can penetrate our bodies' vital organs. Rhythms that are strong and consistently loud will penetrate the body's natural movement. Music that is in harmony with the heart and respiratory system will coagulate with the external rhythms providing a sense of union. If the rhythms are combating the body's natural flow, it will make it difficult to perform correctly.⁶⁷

Music's Physical Effects

As sound sculpts images in our brains, it designs patterns in our bodies. Music determines levels of constancy for our bodies due to the reaction on our bodies' natural flow. In addition to those aforementioned physical effects from musical tone and vibrations, our blood pressure, metabolism, circulation, and nerve endings are also affected. It modifies moods and attitudes, and stimulates the intelligence.⁶⁸ ^A

Food has certain geometrical shapes that give the mouth a physical and psychological sensation. Food that comforts us, such as milk products (ice cream, cheese, and so on), is constructed of round cells, whereas food

^A An intensified study on the physical effects of music can be located in [The Mozart Effect](#) by Don Campbell.

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that is harsh and chiseled in its structure, such as broccoli, will take a bit more effort to enjoy. Sound waves are the same way.

Depending on their shape, sound waves provide different types of physical and psychological affects. Changing the tones changes the shape.⁶⁹ The sine (sound) wave is very smooth giving a sonorous, more tranquil affect, such as the flute and trumpet, whereas the saw tooth wave is rigid with sharp edges giving an uneasy feeling, such as the electric guitar. Instruments' timbres affect us even more when amplified.

Additionally, the fundamentals of music (melody, harmony, and rhythm) affect singular parts of our bodies. Although collectively the fundamentals create complete music, each element has its own personality and affects the body differently. Melody affects the tension of the larynx, which is in the throat area.⁷⁰ When a melody ascends in pitch, more tension in the throat area occurs. Likewise, a melody that descends in pitch decreases tension in the throat. However, if a pitch is extremely low, it might increase tension because of its unnatural lowness. This is somewhat difficult to perceive, but musically sophisticated ears can detect when a sound is unnaturally low.

When any tension is put on the throat, breathing becomes slightly uneasy. Although these effects are only temporary, they do occur. It takes someone who is sensitive to his or body to recognize these changes; nonetheless they still exist.

On the other hand, humming comforts us. Humming relaxes the larynx, which sends a gentle vibration through the rest of the body. The combination of the sounds "ah" and "oh" also become comforting to our body, even as adults. It is in this comfortable tone that we are

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able to mediate and think more clearly, establishing an emotional remedy.⁷¹ We can see evidence of this in a mother humming a baby to sleep.

However, melodic tone is important in infancy not just from the sounds from the mother's comforting voice, but when an infant cries, he is developing his ability to speak. As he comes into contact with various sounds, styles of music, and life experiences, he develops a richer voice. This individualizing tone becomes soothing, creating uniqueness for the infant.

Harmony, the textural part of music, improves digestion, nutrition, metabolism, and nerve endings.⁷² To what degree depends on the type of music and depth of its texture. Music that is harmonic-sounding and soothing will help food digest easier. As well, it can help keep the body chemically balanced and the body's natural metabolism flowing smoothly.

Music that is dissonant and uneven creates discord within the body, causing it to work harder. Digestion and muscular activity will be influenced if the music is tense; chords that are distorted, dissonant, and disruptive create inner tension. Sounds that are displeasing to our ears will also be displeasing to our body.

Listening to a slow, serene song temporarily decreases our muscular activity. For example, if we listened to this type of song on a rainy day while we are tired, we most likely will experience a temporary depressed mood. However, music that sounds bright and motivating will increase muscular activity.

Music can be an asset to exercise if it is the right kind of music. Music that mobilizes us stimulates a positive attitude, increases our muscle tone and durability, increases our blood circulation, and intensifies our breathing. A good example of mobilizing music could

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be one of Madonna's dance tunes that are fast and repetitious. This helps to keep the blood flowing. Any song that has a constant beat to it is helpful in gaining more muscle tone with a better quality workout. It does not necessarily have to be a fast song, but rather one that is consistent in pulsation.⁷³ Any type of functional music such as workout music is most affective when its importance is placed in the background and not in the forefront; it acts more as a sideline stimulant.

The third fundamental, rhythm, affects our blood pressure and pulse.⁷⁴ Music that is played at an average heart rate of 70-80 beats per minute creates a soothing effect on the body because it is compatible with the natural body pulse. Music played at a slower rate will create some natural tension because the heart will have to slow down its natural rhythm to compensate for the tempo; however this amount of stress is minimal. Music that is played at faster tempos than the normal heart rate will create intensity and excitement because endorphins are released. In many cases, fast paced music can motivate us to accomplish a task.

Rhythms were originally used as a healing mechanism. For instance, the Native American Cherokee Nation used eleven of their thirty formulas for healing snakebites with song.⁷⁵ It is notable that the ancient Indians, Native Americans, Greeks, and Egyptians all used rhythmic music as a tool for healing the body and the mind during the early years of medicine.⁷⁶ Young people were taught to revere rhythms in these cultures. Discordant rhythms were believed to add irritation to their impressionable youngsters. Such rhythms would cause temper outbursts and serious illness to the body and mind. If discordant rhythms were used, the reaction of the children could be negative. Some of the most recent attitudes might be as a result of the multitude of

discordant rhythms and sounds that surround our current everyday lives.

Our emotions and bodies seemingly react best to music if we use our common sense. Music that is happy, refreshing, light, calming, soothing, organized, and even strong at times, will add harmony to our bodies. Music that is dissonant, disorganized, loud, and punchy will create some disarray to each of us that listen to it. Using music that is excitable will best suit physical and mobilizing tasks. Music that is soothing will be best for achieving better attitudes, exercising memory, and preventing the accumulation of stress.

Effects of Harmonic and Dissonant Music

*"The same patterns that govern
the movement of planets and galaxies
also appear in genes and in music."
~Susumu Ohno*

The vast majority of our music spectrum is harmonious and pleasing, adding beauty to our world. There is not all that much music that is damaging. Subsequently, it is the high volume of noise pollution in our modern world that has become the main problem we must combat.

Music is to stimulate positive effects on our bodies and prevent distorted sounds and utter noise from disrupting our daily lives. This goal becomes more difficult the more we are surrounded by noise.

If we observe all of the sounds surrounding us, we can discern if they will promote comfort in our lives or not. However, most of us do not monitor such surroundings at an intense degree. Examining the world in this way might help us realize that there are many

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sounds that distract and annoy us, hindering our level of focus and comfort.

The following is a chronological view of how different styles of western European music are represented and how they can be used effectively. Pre-seventeenth century Gregorian chants represent space because the music is only single tones sung one at a time; it is perfect for promoting stamina, quiet study, and meditation.

Other sources of sacred music (eighteenth century through today) help us attain spiritual awareness. Baroque-classical (seventeenth century/J.S. Bach, Handel) music encourages order, predictability and mental stability. Classical (eighteenth century/Mozart) improves concentration and memory while it adds elegance to our lives. Romantic-classical (nineteenth century/ Beethoven, Wagner) encourages individualism, compassion, sympathy and love. Impressionistic-classical (early twentieth century/Ravel, Debussy) induces impressions and images on our subconscious mind.

Most music originally from North America and its regions (twentieth century), such as jazz, blues, soul, calypso, and reggae, inspires passionate feelings, whether of joy or sadness. Some forms of these styles that display less dominating rhythm, such as smooth jazz and new age music, relax our minds and bodies with less adamant emotion. Pop songs, including early rock and roll, by the most popular of artists reveal passion and release tension. At the same time, they can add stress and pain.

Music and the rhythms of Latin America, such as the Salsa, Rhumba, Maranga, and Macarena, increase the heart rate and exercise our respiratory system primarily because of the multitude of rhythms within the

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styles of music.⁷⁷ However, the traditional Samba from Brazil soothes and inspires individuality and awakens the mind.

This effect could quite possibly occur because Brazil is independent from the other Latin-American countries culturally, and is also the only South American country that speaks the Portuguese language rather than Spanish. Brazilian independence is evident in their music as well. It is a combination of Latino, African, European, and Indian influence.⁷⁸

"Music is a reflection of the times..."

~Burt Bacharach, American composer

As I mentioned before, dissonant music at high volume levels, puts pressure on our bodies. Any music with distorted shrill sounds at high decibel levels are capable of constricting blood vessels, making our hearts pulsate faster and dilate the pupils of our eyes.⁷⁹ Although styles that fall under this category, such as heavy metal, rap punk, hip-hop and grunge, do merit some positive qualities. These styles can excite the nervous system. As we dance to the music we relieve stress. This is only effective if it is used at a reasonable volume level. Keep in mind that any dissonant music is not as hazardous if it is displayed at proper levels of amplitude. It becomes most taxing when it is combined with high volume.

The main concern we face with strong dissonant music such as modern rock music is that when discordant, shrill sounds are displayed loudly, and are projected into a liquid medium, they coagulate the liquid's proteins. In other words, any liquid protein substance potentially hardens due to loud, dissonant, and distorted sounds.⁸⁰ A fad for many years with young rock music fans was to bring to the concert a raw egg and

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place it on the stage. Because of the dissonant chords and high volumes of the music, the egg would become hard-boiled. Midway through the concert the egg could be eaten. The egg consisted of the necessary liquid protein and the loud music provided the shrill sounds. The loud, harsh music coagulated the proteins within the egg causing it to harden.

The pattern we continue to see in plants, mice, and eggs is that loud music with strong beats and distortion raises temperature, which leads to liquid proteins being "cooked." The human body is full of protein. It makes for a good argument that our bodies are being affected in the same manner.

A personal example of this occurred one time while I was drinking coffee from a Styrofoam cup. I placed the cup near a stereo speaker. When I reached for the cup, I realized that it was shaking. The music I happened to be listening to was classical music. It was not shaking a lot, but the music's vibrations were definitely affecting it. Think of the Styrofoam cup as the cells of the human body. If the classical music was shaking the cup, imagine what disharmonic music at high volume levels would do to us.

Final Points of Discussion



Music or noise with extreme volume levels and intense sound waveforms are going to pressure the body just as with any other living matter. Liquid proteins, whether found in humans, plants, or animals, will be affected by dissonant music. Music that is filled with a strong beat, especially with high volumes, will raise the body (and even soil) temperature, which leads to cooking the existing proteins. It cooks eggs; it cooks the proteins

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in plants. Without question, it is quietly influencing our human makeup as well. At the same time, music that is harmonious, gentle, and displaying a weak beat will provide mental stimulation and promote organization.



Although certain music is more distinctive and balanced than others, it is the decibel level that provides much of music's harmful affects. Extremely high or low frequencies and volumes play a role in the amount of damage inflicted on ourselves.

Loud volumes of sound damage our audio capability first. Hearing loss is the first evident damage to us because ears are more sensitive to high frequencies than any other body part. Just as an audiocassette tape, when played constantly, begins to wear and its high frequencies fade, our ears grasp less high frequency when exposed to great volumes of loud sounds. Also, if we listen to a large amount of music with intense bass at high volume levels, we raise our bodies' temperatures, not only damaging our ears, but also vital organs, such as our hearts.



A balance of harmonious music listened to at comfortable levels of volume will bring the most pleasure from our music experience and should be our focus. In other words, if our lives are primarily exposed to manmade sounds such as jackhammers and other very loud sounds compiled with loud dissonant music, we are exposing our quality of living to the less desirable end of the spectrum.

Loud, dissonant music is like smoking. Perhaps, once in a while, it will not affect us very much, but smoke one or more packs a day every day for twenty years and what happens? Remember that silence is the golden

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music and noise is the opposite. Making time for silence and choosing to listen to harmonious music will invite a little more peace within ourselves and allow it to be practiced in our everyday lives.



Although music is an external source, it is not any different from our internal composition. Elements in harmony that surround our body compliment us, attracting serenity. Music is one of those daily influential elements. Dissonant music and noise contribute to subnormal health, whether it is mental and emotional stability or physical ailments. Moreover, harmonious music and times of silence invite unity in us—body, mind, and spirit. Comforting music promotes energy and positive thinking while dissonant music influences negatively and promotes disorder to the mind and body.

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*"He who knows the secret
of the sounds knows the mystery
of the whole universe."
~ Hazrat Inayat Khan*

*"It becomes clearer and clearer
to me that the actual structure of tone
in music and the actual structure
of matter are the same."
~Gary Peacock, jazz musician*

I found this chapter to be the most interesting about which to write because it centralizes so many aspects of our lives. Although my perspective is seen through the eyes of a musician, I think that you will find an acceptable understanding of the relationship between tone and everything else. As we deepen our awareness of music, we observe that a relationship occurs between several phenomena, helping us to grasp the mysteries of life a little better.

If we choose to accept our comprehension of life as it is, then we remain no different. However, pondering our existence makes us more conscious about decisions in life, whether they are life-altering decisions or not.

A unified source for all of existence is vibration. Vibration simply means *"an oscillating motion."* It represents the energy that is in every element in the universe. Vibration forms energy; energy forms matter. Matter is in everything that is tangible. All forms of matter resemble the overtone structure in music.

The secret to music (and overall sound itself) is established in its impact on all energy-formed matter existing in the universe. I believe that it is not life that controls music; rather it is music, or sound, that transmits life through vibrations.

Audible sounds are just a portion of the rhythmic frequencies that exist in the universe. An illustration of

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this is evident in the deaf community. They are quite aware of vibratory movement even without the use of their ears. Remember, vibrations are found in everything.

*"As I get more involved and
more advanced as a musician,
I see that everything I do
has the potential to be music
and vice versa."
~Pat Metheny, jazz guitar great*

Our physical bodies are masses of energy whereas music is not. It is intangible, and yet we most certainly feel it and experience it at all levels of existence. Music is not exclusive to the human race. It communicates to all living beings as a tool of influence. Tone is notably recognized as the initial source for our evolution, identifying deity, itself, as a vibration.

*"...We are finding that the universe
is composed not of matter,
but of music."
~ Donald Hatch Andrews, Symphony of Life*

Within our universe, we witness a pattern that connects a single source to all things. That source is vibration. Sound (or music), light (or variations of color), theological philosophy, proportions (or intervals of numbers), and other phenomena in the universe are woven together through our understanding of vibration.

For instance, music is simply tones and rhythms that are composed of vibration. Tones are an arrangement of vibrations that contain mathematic proportions. These numerical proportions are evident in all sorts of other aspects of life besides music. Understanding the dynamics of numbers helps us to gain

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perspective on topics such as physics, color, astronomy, theology, and other phenomena.

Our grasp of numbers in association with vibration (both of which depict sound and music) aids in defining physical law. Physical law was formed so that fundamental moral law could become realized. Because of its strong association with vibratory movement, music exhibits one of the highest forms of physical law. As discussed in earlier chapters, music is a bridge connecting our earthly life with the one outside of our comprehension and, ironically, with the life existing within us.

*"Among the various experiences of our senses,
tone is the only one that belongs
exclusively to life.*

*Light and color, sound, odor, and taste
solidity, fluidity and gaseousness,
rough and smooth, hot and cold—
all of these are to be found in
non-living nature. Only life can produce tones.
Living beings out of themselves add tone
to the world that confronts them. It is the
gift of life to non-living nature."*

~Victor Zuckerkandal, Sound and Symbol

Creation and Music

During the history of civilization, we observe various societies and religions existing at separate times and in different geographical locations all lean toward a similar theory. Most of society believes that vibratory tone of some sort (in other words, sound), initiated the universe's evolutionary pendulum into motion.

In his dialog, Timaeus, Plato stated that the cosmos were constructed according to musical interval and proportion.⁸¹ The ancient Indians, Egyptians, Greeks, and Latin American cultures acknowledged that the highest conceptions of Symmetry and Beauty (being mathematics and art, respectively) were based on musical proportions.⁸² In India, the creator-god, Prajapati himself, was considered hymn and song.⁸³ Many religions including Judaism, Christianity, Hinduism, and cultures including the Polynesians, Japanese, Africans, Europeans, Hawaiians, and Latin Americans assert that the formation of our existence began through sounds and tones.^B

*"For the power of music
and the enunciated Word
rules everything, Vibration being
the creative force of the Universe."
~David Tame*

The Aztecs of Mexico believed that the Creator was motionless and in silent meditation while He/She waited for the exact moment to break the silence, His/Her greatest aspiration. The Creator sounded, "This world shall be!" which broke the silence.⁸⁴ Similarly, the Christian and Jewish faiths believe that the sounded word was the beginning of time, as we know it: "...and

^B For further research on this subject, read Chanting by Robert Gass, Broadway Press.

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God said, 'Let there be light.' "⁸⁵ "...And God said, 'Let there be an expanse between the waters'..."⁸⁶

The ancient Egyptians also implied that through the "tongue of the creator...all Gods and everything in existence were born..." In addition, the Egyptians believed that the god of the word, the god of scripture, and the god of dance and music created the world by repeating the 'laughing word' seven times. That word was "Ha." Therefore, "Ha, ha, ha, ha, ha, ha, ha" created the world.⁸⁷ In Hinduism, the original cosmic energy vibration is known as the OM (or Aum).

In Quecha Maya, the gods Tepeu and Gucumatz formed the earth with their commands by saying, "...Let the emptiness be filled...Thus they spoke...Then the earth was created by them."⁸⁸ The Sumerians believed that gods created the universe with their mighty commands.⁸⁹ As well, the Celts, Native American Indians, Pythagorean Greeks (music of the Spheres), the Chinese (celestial energies of perfect harmony), also share the concept that the creation of the world was by the use of tone. Sounds, through the cosmic tones, were revered as creative forces; a preserver and a destroyer.^{90;91} In fact, many cultures and societies have shared this philosophy.

Numerous religions, past and present, believe that sound vibration was not only the instrument used for creation, but that it also emitted specific tones and colors, breaking into seven major tones (the cosmic tones), seven major colors (the spectrum), and seven major energy centers (Chakras), giving the number seven significance [which will be discussed in larger detail later in this chapter].

Music of the Spheres

Pythagorean Greeks associated planetary movement with music that was called Music of the Spheres.⁹² They inferred that planets make music, too. Everything that vibrates makes a sound. Although we may not hear these frequencies, they exist. Each planet orbits at a particular frequency with the emphasis on its position in the solar system. These frequencies create a tone. Our solar system exhibits a correlation between its planets and the seven diatonic notes of music, making planetary chords. As well, the Pythagoreans denounced that the vibrating gleams from the stars and planets were accompanied by synchronized musical sounds. For example, the planet, Jupiter, joins the sun and the Earth every 398 days, a little over one year. It comes into conjunction eleven times in twelve years. That eleventh meeting is exactly on the twelfth year. Therefore, this occurrence will repeat again on the twenty-fourth year, the thirty-sixth year, and so on. While Jupiter is joining with Earth, on certain years it also unites with Mercury and Venus creating a four-planet music chord. Keep in mind that each planet vibrates at an inaudible tone frequency.ⁱ

During the time of the Pythagoreans, Nichomachus believed that through the strings of a lyre, with the Moon at the treble of the instrument and Coronus at the bass of the instrument, planetary voices could be heard. Using the Greek Aeolian mode, the notes are explained in the form of ancient planets (music tones in bold): D - moon, C - Aphrodite, Bb - Hermes, A - sun, G - Ares, F - Zeus, E - Coronus.⁹³

Much after the Pythagoreans, the relationship between music and planetary movement was embarked upon once again. The eighteenth century scientist, Johann Bode, illustrated that when the rhythm of each

ⁱ Full Table of Planet Chords represented in Appendix

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planet's movement was calculated, it exhibited separation by perfect octaves (with the exception of Neptune that is one and one-half octaves away from Pluto).^{94 ii}

Many ancient societies understood this close relationship between music and the planetary movement. Case in point, the Egyptian timetable matched the seven days of the week with the seven diatonic notes. Using the seven tones as a clock produced certain moods for specific hours of the week (shown in sequence in the table). Notice that the Daily Tone (shown in bold) of each day moves in fourths, which is one of the most consonant ratios in music. Consonant ratios encourage harmony, balance, and union.

Egyptian Timetable⁹⁵

Daily Planet	H o u r s o f t h e W e e k											
D a y s a . m . / p . m .	1	2	3	4	5	6	7	8	9	10	11	12
S a t u r n												
S a t u r d a y a . m .	B	C	D	E	F	G	A	B	C	D	E	F
S a t u r d a y p . m .	G	A	B	C	D	E	F	G	A	B	C	D
S u n												
S u n d a y a . m .	E	F	G	A	B	C	D	E	F	G	A	B
S u n d a y p . m .	C	D	E	F	G	A	B	C	D	E	F	G
M o o n												
M o n d a y a . m .	A	B	C	D	E	F	D	A	B	C	D	E
M o n d a y p . m .	F	G	A	B	C	D	E	F	G	A	B	C
M a r s												
T u e s d a y a . m .	D	E	F	G	A	B	C	D	E	F	G	A
T u e s d a y p . m .	B	C	D	E	F	G	A	B	C	D	E	F
M e r c u r y												
W e d n e s d a y a . m .	G	A	B	C	D	E	F	G	A	B	C	D
W e d n e s d a y p . m .	E	F	G	A	B	C	D	E	F	G	A	B
J u p i t e r												
T h u r s d a y a . m .	C	D	E	F	G	A	B	C	D	E	F	G
T h u r s d a y p . m .	A	B	C	D	E	F	G	A	B	C	D	E
V e n u s												
F r i d a y a . m .	F	G	A	B	C	D	E	F	G	A	B	C
F r i d a y p . m .	D	E	F	G	A	B	C	D	E	F	G	A

ii Complete graph of Johann Bode's Law represented in Appendix

Tones in ancient history played great importance in society since the sustained tones were believed to alter attitudes. As well, it was important for each nation to be in harmony with the tones of the planets because the planetary tones were considered to maintain spiritual and physical health, individually and collectively.

Consonant Music and Number Relationship

*"...Music is the hidden arithmetic exercise
for the soul in which the soul counts without
being aware of it...Although the soul is not aware
of this counting, it nevertheless feels the effects
of this unconscious counting."
~Liebnitz, 17th C. mathematician*

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*~The smaller the number,  
the more consonance is being demonstrated.~*

It is a general consensus among the world's great thinkers that small numbers attract consonance and harmony. In fact, at the time of Confucius, Chinese philosophers regarded small numbers as the source of all perfection.<sup>iii</sup> This was especially true in many early societies as they suggested a strong correlation between music, numbers, and morals. This association was examined much more closely in past civilizations than in our current society.

Pythagoras expressed that, through numerical ratios, musical notes that are opposite in pitch could actually complement each other, creating harmony. When the distances between the notes are

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<sup>iii</sup> Full graph of Note Intervals represented in Appendix.

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complementary, they will create a consonant sound, if they are not, then they will create a dissonant sound. Pythagoreans expressed this theory of consonance through the tetraktys. The tetraktys looks like this:<sup>96</sup> .❖❖❖. Pythagoreans discovered it as the symbol for space and time. Ancient civilizations had great confidence with the tetraktys, or pyramid. It is believed that things can be preserved that reside under a pyramid, which is what the tetraktys represents.

The Egyptians made this evident by constructing pyramids for the Pharaohs and other members of their nation. These dots are represented in their respective order: 1 dot represents the point, 2 dots represent the line, 3 dots represent the plane, and 4 dots represent solids. With the use of the numbers from the tetraktys, we find another connection between mathematics and music, as the following information demonstrates.

#### **Division**

##### Numbers from the Tetraktys & Representation in Music

|     |        |
|-----|--------|
| 1:1 | Unison |
| 2:1 | Octave |
| 3:2 | Fifth  |
| 4:3 | Fourth |

*These ratios are the four most consonant sound ratios in music.*

#### **Multiplication**

|            |                                                                           |
|------------|---------------------------------------------------------------------------|
| 1 x 2 = 2  | The interval, which is the distance between 2 notes, representing harmony |
| 2 x 3 = 6  | The 6 Whole Tones, representing wholeness                                 |
| 3 x 4 = 12 | The 12 Chromatic notes, representing completeness                         |

#### **Addition**

|           |                                |
|-----------|--------------------------------|
| 1 + 2 = 3 | The 3 Notes in a Triad         |
| 2 + 3 = 5 | The 5 Minor Tones of the scale |
| 3 + 4 = 7 | The 7 Major Tones of the scale |

Using the five major tones in the ancient music of China, each musical ratio can be dissected into numbers of the tetraktys by squaring or by doubling the numbers.

The Koung is 1:1; the T'Chi is 3:2; the Shang is 32:23; the Yu is 33:42; the Kyo is 34.<sup>iv</sup>

*"Like in metaphysics, it is given to music  
to for sense the salient,  
the ultimate realities of Being."  
~ Charles W. Hughes*

In Christianity, the tetraktys has been described in the New Jerusalem.<sup>v</sup> In Hinduism, the tetraktys is displayed in the four worlds, or Yugas. A Yuga is an age or an era of the world in which each era is shorter, darker, and less righteous than the preceding one.<sup>97 vi</sup> The first Yuga, Kali Yuga, is considered the Dark Age. The final year of the Kali Yuga, 432,000, was believed to be the Babylonian Great Year. After which, would begin a Yuga period of greater awareness.

Each Yuga that follows, representing another of the four elements to the tetraktys, becomes closer to enlightenment and perfection as it doubles in length. The sum of all four Yugas creates the Maha Yuga, the era of perfection. The tetraktys is believed to empower with the precept that the number ten signifies perfection.<sup>98vii</sup> The final mathematics summation of the Yuga formula is to calculate the existence of the universe.

### **Music and Color Relationships**

A friend of mine used to delight in her four-year-old daughter's concept of associating light with sound. The youngster implied that the sun made so much noise as it went down, observing the many changes in color as it disappeared from the horizon. Although stated with

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iv Full graph of Proportions in Relation to Chinese Tones represented in Appendix

v Full graph of Tetraktys and the New Jerusalem represented in Appendix.

vi Full graph of Yugas and the Tetraktys represented in Appendix.

vii Full graph of the Lifespan of the Universe represented in Appendix.

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innocence, its implication was correct. Sound and light are not two separate elements, but are associated. Sound and light complement each other; sound is audible light and light is visible sound.

In ancient times, sound was considered an earthly reflection of vibratory activity that takes place beyond the physical world.<sup>99</sup> The early civilizations revered the power of sound and considered it an important force, regardless if it was for productive or destructive means.<sup>100</sup> Vibrations of light travel at 186,000 miles per second.<sup>101</sup> It is the five senses that recognize different speeds of vibrations through wavelengths, or the frequencies, of vibrations.

These differences in the wavelengths enable us to acknowledge that a concrete substance, such as a rock, is solid. Through our sense of touch, we understand that the vibrations in the rock are slow enough to bind molecules together, forming a very hard surface.

Additionally, a newborn baby represents a softer substance than the rock because the molecules are not bound so tightly. Material that is less substantial than the baby such as music and light will become more difficult to determine. Even more so, our sight recognizes frequencies that are vibrating so fast they are no longer heard, but are seen.

Everything evolves from vibration. Frequent motions, or what we know as vibrations, create a tone, whether they are audible to us or not; for the reason that we cannot hear the tone does not mean that it does not exist. Our ability to perceive vibration in the world of light waves happens because of the element ether. Similar to emotions and sound having parallel properties, sound and light have the matching properties as well. Sound is distinguished by the ear and

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transmitted by air. On the other hand, light is distinguished by the eye and transmitted by ether. Therefore, the relationship of air and our ears correspond to ether and our eyes, both placing images in our minds. One phenomenon governs the other and vice versa; simply put, tone and color govern each other.<sup>102</sup>

Since ether exists throughout the world, light and sound can be transmitted for great distances, producing mental images. Additionally, since sound vibration dissipates, but never ceases from vibrating, we can conclude that music heard and felt in one place may affect people in another place at another time, placing mental images onto them as well. For example, a Beethoven Symphony being performed in Rome could be carried to the outskirts of England by vibrations through ether. Consequently, Confucius' philosophy applies here. Music is not an expression of society; rather, music makes impressions on life.<sup>103</sup>

*"Colors may be mutually related like musical  
concordances for their pleasantest arrangement."  
~Aristotle, De Sensu*

Sound (or music) and light (or color) draw a parallel with relation to their properties. Equated into a formula, the distinction between sound and light is its speed of frequency. Sound, through its speed of frequency, can transform its vibration into light if its velocity greatly increases. In this sense, music and color are interconnected. This is to say that each musical tone has its own color of the spectrum.

The notion that each color represents a particular tone has attracted a consensus among several artists and scientists who have studied on the subject. However, not all theorists agree on the same tone with relation to its color. Regardless, we will start with Edward Maryon,

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who has devised a system of tone/color relationships that has reached some common ground. Maryon, the creator of the Marcotone tone-color chart, displays a systematic approach toward the affiliation between tone and color. Marcotone is an acronym (Ma-R-Co-Tone): "*Ma*" in Hindu means *to measure*; "*R*" represents the word for the Hindu melodic interval, *Raga*; "*Co*" stands for *color*; "*Tone*" is simply *tone*.<sup>104</sup>

**The Marcotone Tone-Color Chart**

| 1                  | 2                | 3                             | 4                      | 5                    | 6                       | 7                |
|--------------------|------------------|-------------------------------|------------------------|----------------------|-------------------------|------------------|
| DIATONIC<br>LETTER | TONIC<br>SOLFEGE | TEMPERED<br>TONE<br>FREQUENCY | WAVELENGTH<br>OF TONES | STONE-COLOR<br>NAMES | WAVELENGTH<br>OF COLORS | COMMON<br>RATIOS |
| B                  | Ti               | 483.5                         | 27.5"                  | Violet-Red           | 3976 mm                 | 53               |
| A#-Bb              | Li=Tay           | 456.5                         | 29.75"                 | Violet               | 4104 mm                 | 56               |
| A                  | La               | 430.5                         | 31"                    | Blue-Violet          | 4241 mm                 | 60               |
| G#-Ab              | Si=Lay           | 406.5                         | 33"                    | Blue                 | 4555 mm                 | 63               |
| G                  | Sol              | 384                           | 35"                    | Green-Blue           | 4737 mm                 | 66               |
| F#-Gb              | Fi=Say           | 362                           | 37"                    | Green                | 4919 mm                 | 70               |
| F                  | Fa               | 342                           | 28"                    | Yellow-Green         | 5233 mm                 | 75               |
| E                  | Mi               | 322.5                         | 42"                    | Yellow               | 5601 mm                 | 81               |
| D#-Eb              | Ri=May           | 305                           | 44.25"                 | Orange-Yellow        | 5865 mm                 | 85               |
| D                  | Re               | 287.5                         | 46.5"                  | Orange               | 6164 mm                 | 89               |
| C#-Db              | Di=Ra            | 271.5                         | 48.25"                 | Red-Orange           | 6472 mm                 | 95               |
| C                  | Do               | 256<br>(Middle C)             | 52"                    | Red                  | 6870 mm                 | 100              |

The first two columns represent tones in note form and in solfege form, which is the established technique to train oneself in order to learn musical intervals properly. The third and fourth columns signify each tone's frequency and its wavelength. Each tone has a color associated with it, shown in column five. Similar to sound, colors are measured in wavelengths, represented in column six. The wavelengths of the color are measured in millimeters. The formula for wavelength,  $L=V/N$ , where  $L$  (Wavelength) =  $V$  (Velocity in meters per



second) / N (Number of vibrations per second)<sup>viii</sup> is the vibration of the tone and its distance in meters will provide the color when it is raised to its twenty-ninth power using the binary number (2).

The last column, common ratios, needs further explanation. The colors of the solar spectrum and the tones of the musical scale have the same ratios of vibrations. Therefore, the number represented in this column signifies the same ratio for both tone and color.<sup>105</sup> For instance, the note "C" (at 256 vibrations per second) is the color red and they both produce the same ratio, which is one hundred (100).

Maryon also explains that our senses perceive each element differently. Our eyes perceive color; our ears perceive tone; our brain perceives numbers. It is the combination of all of these sensations which provides us with images, making each auditory/visual experience so complete.<sup>106</sup>

Colors vary in pitch, just like musical pitches. The distance it takes to return to its neutral position gauges each wavelength. The larger the wavelength, the slower the vibration will become. Red has the longest wavelength and so experiences the slowest vibration. Similarly, violet has the shortest and smallest wavelength, exhibiting the fastest vibration. Therefore, red is on the opposite end of the spectrum from violet<sup>ix</sup> x

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viii Tone/Color Relationship Formula shown in the Appendix

ix A table of the complete color spectrum and its relationship to speed (Speed of Color) is found in the Appendix.

x Other researchers agree with Edward Maryon's tone/color relationship. For further reading, refer to Unified Theories on Tone/Color Relationship in the Appendix.

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*"The spectrum is to the eye what the gamut is to the ear; each color represents a note and the different colors represent different pitches. The vibrations that produce red are slower where violet is fast. All other tones and colors are in between...Color answers to pitch."*

**~ John Tyndall**

*physicist who recognized color and sound relationships*

Tyndall, Gage, and other physicists demonstrated that sounds could be reduced to silence when primary and complementary tones are sounded simultaneously.<sup>107</sup> This also works for colors.

When a color is combined with its complementary color, they cancel each other out and white light is formed.<sup>108</sup> For example, the compliment to the note C (the color red) is G (the color green). In theory, these two notes and their related colors compliment each other.<sup>xi</sup> When a color, through light, is combined with its complementary color, white light is formed, creating color harmony.<sup>109</sup>

Similarly, when a note and its complementary note are sounded together, they create harmony; in essence, they create consonance. The note "C" is the color red. Its complementary note "G" is the color blue-green. These two complementary colors, when combined, create the color yellow.

*"The breadths of the seven primary colors are proportional to the seven musical notes of the gamut."*

**~ Sir Isaac Newton**

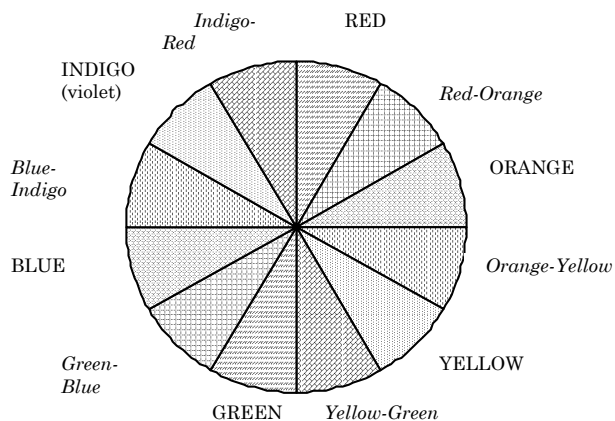
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xi A full list of whole tones and their complimentary colors (Whole-Tone Scale) is shown in the Appendix.

Comparable to the triad or three consonant tones in music, there are three primary colors applied to visible light; they are red, green, and blue (the primary spectrum for painting is different: red, yellow, and blue). The five accidental tones relate to the five shades in between the colors of the spectrum. As well, equivalent to the seven tones of the diatonic scale, there are seven colors in the color spectrum (also known as intermediate or tertiary colors), evident in the rainbow: red, orange, yellow, green, blue, indigo, and violet.

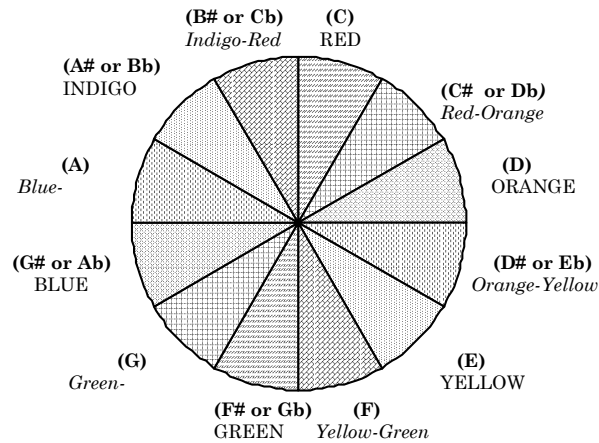
The total of twelve chromatic notes can be associated with the twelve auxiliary shades of the color spectrum. Just as the twelve chromatic notes create an immense capacity for music, multitudes of colors can be accomplished by arranging the twelve auxiliary colors (shown on the following page in Figure 1) into combinations that balance their shades of color.

Figure 1



The twelve combined colors are shown below in Figure 2 as part of the color circle.

Figure 2<sup>110</sup>



The five shaded colors are the accidental notes of the music scale, C# (Db), G# (Ab), D# (Eb), A# (Bb), and so on. The auxiliary colors in respective order are red-orange, orange-yellow, green, and blue, indigo-red. From this circle, color chords can be made. This means that the notes that are complementary to each other will have colors that are complementary to each other.

Here is an example. The *C Major Triad* is represented by the notes C, E, and G and by the colors red, yellow, and green-blue, respectively; *G Major Triad* combines green-blue, violet-red and orange with the notes G, B, and D, respectively and so on.

### Color Imagery and Representation

The Hindu religion not only relates tones to color in the same manner as Maryon, but conveys a relationship between the spirit and the body as well. For instance, the note D, representing the color orange, is considered the

sixth of the seven chakras (body focal centers). In this case, this tone/color signifies creativity.<sup>111 xii</sup>

Visualizing tones and colors as imagery is referred to as visual-auditory synaesthesia (V-A Synaesthesia). Sir Arthur Bliss had experienced this concept represented in his composition "Colour Symphony." The piece of music consisted of four movements, each symbolizing a different color and mood. Purple signified royalty and death; Red represented courage and revelry; Blue expressed loyalty; Green depicted hope, joy and victory.<sup>112</sup>

V-A Synaesthesia is common among artists. Beethoven saw the key of B minor as black, the darkest of all keys.<sup>113</sup> Scriabin also believed that a particular key establishes moods, but this was quite a different experience when it came to colors and the V-A Synaesthesia experience.<sup>114</sup>

Colors, just like musical tones, have character and represent different psychological and emotional effects. As mentioned earlier, when we experience an auditory and visual event, our eyes distinguish the color, our ears distinguish the tone, and our brain distinguishes the associated numbers. When combining these three elements, complete imagery is produced within our mind and imagination. That does not mean that a person must have all senses functioning, but it does make the experience more complete if they are all operating. For example, a deaf person will, nonetheless, experience the music from its vibration and still create images associated with the music vibrations and colors. The tone imagery produced from the music will be atypical of the imagery created by an individual who hears.

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xii A full list of Chakras and their relationship to colors is in the Appendix.

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Certain colors associate certain feelings consistently just as certain melodies and rhythms associate particular moods for all of us. For instance, dark blue represents tranquility and sensitivity while bright blue also signifies peace, but with a brighter perspective. We perceive red as warmth and comfort, yet it can portray aggression as well.<sup>xiii xiv</sup>

Our monthly calendar can exhibit images of color to us. January represents the color black; gray is characteristic of February; March illustrates sea green; April depicts red; May is symbolic to a green similar to March; June personifies brown; the color silver models July; August represents gold; September exhibits orange; Bright green is typical for October; Scarlet red is illustrated in November; and December characterizes sky blue.<sup>115</sup>

Color not only enhances musical tones, but it is a relative of sound. When music is combined with colorful displays, whether they are slides of artwork or a film on nature, it enhances our perceptions through our eyes. Music complements color and vice versa. It is simply amazing how many similarities there are between the two phenomena, creating endless possibilities with our mental imagery.

### **The Significance of Small Numbers**

Earlier in this chapter, small numbers were described as a source of consonance. This source could increase a unique perception of life. Ancient civilizations placed great significance on specific small numbers because they determined that a relationship existed between small numbers and achieving harmony, consonance, and balance.

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<sup>xiii xiv</sup> A full list of colors with emotional and psychological representation, Color Perception, is found in the Appendix.

As we discover these evaluations for ourselves, we begin acknowledging that consonance is within the outline of small numbers in all essentials of life; each essential is unified by a consonant pattern. If we are only willing to explore consonance, we find that it makes us more profound as human beings. And so, we begin to enjoy the simplicity of life, expecting less from it.

My research has helped me to discover that certain numbers including the numbers three, five, seven, and twelve intriguingly have great significance in music and color (as discussed earlier in this chapter), religion, and other eclectic topics. Following is an observation that I have made in my own life regarding the significance of numbers in music and color (the numbers five, seven, and twelve) with regard to personal relationships of influence.

Whether I have experienced a good or bad relationship, my most influential, or learned, relationships seem to sustain for a period of five and seven year cycles. When this relationship of strong influence actually continues past its projected cycle (whether its cycle is five or seven), it then becomes challenged to forego past its five or seven year cusp. If my association with this particular individual forges past this crossroads, then presumably, I have found that the relationship has hit another level of maturity and growth. Some of these influential relationships have lasted for decades while most of them seemed to last for only one or two of its projected friendship patterns.

There is a popular phrase describing that some friends are in our lives for a short time (like two ships passing in the night), while some last for a "season," and yet others remain in our lives until we pass on. My concept focuses on the "seasonal" influential contacts we

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have made so that we might reach ascending levels of maturity and commitment with the other person (and vice versa).

When we pass these personal tests of growth, we discover that these relationships have an opportunity to become life-long ventures. However, interactions of such length should only remain in tact if it is what each person has chosen to do.

These relationships of influence can include spouses, immediate family members, friends, business contacts, and anyone else that we consider being influential in our lives. I call this concept the Musical Scale of Life:

- Five-year relationships that are of influence I consider minor relationships (*i.e. the five minor keys of a music scale, which are the black notes on a piano or the auxiliary colors of the color spectrum*).
- Seven-year relationships having greater impact and influence would be considered the most prominent relationships for growth (*i.e. similar to the white notes on a piano, the major keys of a music scale, or primary colors in the rainbow*).
- The combination of both types of relationships represents the twelve diatonic notes of the musical scale or the full complimentary color spectrum. Both types of relationships seem to be necessary in order to experience balance in our personal lives as well as a stronger harmony with those surrounding us.

Also, I believe that many of us have similar attitudes and desires, but each of us has a unique



pattern for growth. Therefore, these attitudes are guided differently for each individual. It is the intensity we demonstrate regarding our personal development that determines our level of maturity.

Aside from the special distinctions in our own personality, our uniqueness is determined by several factors. Factors that influence our attitudes and behaviors include the type of conditioning we receive as a child, the levels of cultural influence we choose to designate in our lives, the amount of financial opportunities we encounter that change our status, personal evaluations of success, and this rare group of individuals with which we make contact during our lives. It is the people of influence that seemingly remain with us through these major (seven year) and minor (five year) scales (periods) of life that enhance our character.

This final discussion in our chapter on vibration analyzes the bulk of the previous topics. It is a summation of these subchapters illustrating the significance of small numbers. We have distinguished that everything originates from vibration and that vibration (due to its movement) creates tone. Each tone represents proportions. In examining these numbers of proportion, we notice that if the ratio has a small denomination, consonance will be present. Previously, we have determined that consonance leads to advanced harmony and higher points of balance. The following is a synopsis of these fascinating correlations.

### ***ONE (1)***

*In China*, this numeral symbolizes oneness, a place of unity. *In color*, one portrays supreme light, signifying white light. *In religion*, it is the representation of the Father figure in Christianity and other like religions, as well as called the Brahma in Hinduism, and Yahweh in

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Judaism. It is often referred to as the Supreme Being in several religious denominations. *In music*, the number one represents the resolving chord, note, and scale. It is the foundation from which all music is produced. One is a single tone; it denotes melody played one note at a time; it represents resolve. *In the tetraktys*, the point is the pinnacle of the pyramid.

### **TWO (2)**

*In China*, this number is the T'ai Chi, the first differentiation of the One. It is also the symbolic numeral for the earth. As well, the number two, in Chinese terminology, is yin-yang. The yin-yang is a sixth century Chinese concept combining two complete opposites in order to create perfect balance (Yin – feminine; Yang – masculine). Yin represents intuitiveness, receptiveness, passive, gentle, and yielding qualities. Yang represents rational, active, and assertive qualities. *In color*, two is associated with yin-yang, representing the relationship of white and black and all shades of gray. *In music*, the number two represents an interval, which is the basis for harmony. The counterpoint of two notes played simultaneously was the origination of harmony, separating it from the primary characteristic of music, which is melody. *In the tetraktys*, the number two is the line, representing the ratio of the octave. *In India*, two represents our "cycles of barrenness." It preserves and produces, generating octaves and generating life, similar to the tetraktys.

### **THREE (3)**

*In China*, it symbolizes the offspring of the T'ai Chi; it is the child of the marriage of one and two. The Record of Rites shows it to be the symbolic numeral of heaven. The Chinese discovered that when a stringed instrument was plucked one third of the way up the fret board, the

remaining two thirds would sound a fifth or ratio 3:2. The ratio 3:2 (in modern day called the perfect fifth) is considered to be the ratio of perfection. All twelve notes are derived from the 3:2 ratio (or as the Chinese call it, Huang Chung, the sacred ratio). *In color*, there are three primary colors. *In Hinduism and Christianity* and other like religions, the Trinity (representing the number three) is the basis of each religion. In Hinduism, the Trinity is the Brahma, Vishnu and Shiva<sup>116</sup>, and in Christianity, the Father, Son, and Holy Spirit. Hindus believe that the Brahma is the creator, the Vishnu is the preserver, and the Shiva marries heaven and earth, thus bringing the two worlds together. In Hindu music this is extremely important because it is considered the very soul of music's measure, being the "Christ-Consciousness." The Hindus are also great believers in attaining spiritual "oneness" through yoga. *In Polynesia, Hawaii, Samoa, and Tahiti*, represented are three gods each having to do with sound. The names of the gods are Tane, Tu, and Rongo (Lono in Hawaii). Tane is the symbol for the horn, Tu represents the triton shell, and Rongo is the god of sound and tone.<sup>117</sup> *In music*, three is very present. The three fundamental characteristics of music are melody, harmony, and rhythm. The three attributes of musical sound are pitch, timbre, and loudness.<sup>118</sup> The triad is the most essential chord in music because it designates the quality of a chord. As well, the three physical aspects of music are frequency (which corresponds to pitch), wave shape (the overall motion defining timbre), and amplitude (the intervallic distance of the wave).<sup>119</sup> Also, there are three attributes of electronic music: the oscillator, the filter, and the amplifier. *In the tetraktys*, the number three signifies the plane or the ratio of the fifth. *In India*, there the five sounds of bija that significantly represent higher elements; Ram, Yam, Lam, and so on. Each of these is the sound of three letters. As well, three signifies the Father (who creates), the mother (who seals the

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creation), and the offspring. *In the Seasons*, each consists of a three month time period.

### **FOUR (4)**

*In the tetraktys*, the number four signifies solid, which is the ratio of the fourth. *In Hinduism*, there are four Hindu worlds: Kali Yuga, Dvapara Yuga, Treta Yuga, and Krta Yuga. *In physiology*, there are four human bodies to our make up: physical, emotional, psychological, and spiritual (or mystical: *the things in life that are difficult to comprehend*). *In music*, the number four represents the second most consonant interval. It is the complimentary interval to the fifth, the most consonant interval in music. Going the opposite direction of the fifth produces this fourth tone (*i.e. complimentary intervals: up a fifth or down a fourth*).

### **FIVE (5)**

*In China*, the number five represents the pentatonic scale in Chinese music. Along with western culture, the Chinese believe in a twelve-note system, the lu. Much like western culture's seven major tones, seven notes in the Chinese scale are significant, although two of which are rarely played, thus this associates the music of China with the formation of the pentatonic scale. Each note is very symbolic in nature. The number five represents the five major tones of the lu: Koung, T'Chi, Shang, Yu, and Kyo. They also represent six separate categories, politics, seasons of the year, elements such as water and fire, colors, peripheral direction, and different planets. The number five appears again because the lu symbolizes five virtues: benevolence, righteousness, propriety, knowledge, and faith.<sup>xv</sup> *In color*, five represents the five minor colors, known as the auxiliary colors of the color

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xv A graph depicting the Significance of the Lu, is found in the Appendix.

spectrum. In essence, they are the shades of the seven spectrum colors. *In music*, five represents the five minor tones of the twelve-tone chromatic scale, i.e. in solfege form: Ra, May, Say, Lay, Tay. Also, the number five represents the primary consonant interval in music. It is the compliment interval to the fourth, i.e. *complimentary intervals: up a fifth or down a fourth*. *In India*, the number five is represented by the five Bija sounds of India. Each of the tones represents an element of life. The LAM represents the Earth; VAM signifies water; YAM is representative of air; Fire is the symbol for RAM; HAM depicts ether. The consonant "m" represents the sound for mother or "ma"; the vowel "a" represents the father or the Alpha; the changing first letter of each sound, L, V, Y, R and H denote offspring.<sup>120</sup> *In science*, all branches of science have exact similarities. Proportions and ratios all coincide in musical form.<sup>121</sup>

### **SEVEN (7)**

*In China*, there are seven musical tones, but only five are used. The pure fifth was very useful when this system for music was designed. Examining the fifth in relation to the twelve-note scale, they figured out that twelve fifths completes seven octaves. Going around the clock 7/12 distance twelve times completed seven octaves.<sup>xvi</sup> Although this method was sufficient for understanding the relationship between the five, seven, and twelve-note scales, later in history the ancient Greek musicians devised a system by which the entire twelve-fifths could be completed within one octave. Using the ratio 3:1, they could go up 3:1, then down 1:3, and so on. Consequently, this ratio represents the musical proportion of the number twelve.<sup>122</sup> <sup>xvii</sup> The only imperfection to this system is when it returns to its

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<sup>xvi</sup> The Chinese Chord Circle is found in Appendix.

<sup>xvii</sup> Using the twelve notes of music, a Scale of Proportion is shown in the Appendix.

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initial point of entry; there is slight excess. Its proportional difference is 80:81. Each fifth must be flattened 1/48th of a semitone in order to remain constant. Signifying the use of small numbers, the Greeks expressed the formula mathematically as  $(3:2)^{12} < (2:1)^7$ . The slight intervallic variation was named *the Pythagoras comma*. The ancient Greeks assessed this proportionate flaw as a manifest symbol of man's fall from grace. Since there was this slight imperfection, the comma had to be written into their physical and mathematical laws of the universe. It was imperative that music harmonized with the eternal laws. *In the body*, there are the seven Chakras, or focal points, as it is believed through Hinduism. As well, there are seven holes in the human skull, two for the eyes, two for the ears, one for the nose, one for the mouth, and one for the neck. *In measure of time*, there are seven days in the week. As well, our life cycles approximately every seven years (which coincides with my concept of the *Musical Scale of Life*). *In color*, seven represents the seven primary colors of the spectrum: red, orange, yellow, green, blue, indigo, and violet. A color triangle is shown that all color combinations can be formed. It shows that pure color plus white forms a tint, pure color plus black forms a shade, and color plus black and white forms tone of color.

*"All color variations and modifications  
will be classified as one of the seven forms."  
~ **Faber Birren**, author of the color triangle<sup>xviii</sup>*

*In world religions*, certain world religions believe in the philosophy that there were originally seven gods that were the living embodiment of the first differentiation of the One Tone. In Hindu teachings, it is believed that there are seven gods. Five of which are working and the

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xviii A full graph with explanation is depicted in the Appendix.

other two are concealed. The five active gods are Indra, Vayu, Agni, Varuna, and Kshiti. *In music*, the number seven represents the seven diatonic notes. In western music represented by solfege, the notes are do, re, fa, sol, la, and ti; in eastern music, it is the Hindu scale, sa, ri, ga, ma, dha, and ni. *In the concept of creation*, it is believed that sound and light created one very strong force that vibrated masses whirling together, forming the universe. As they orbited, they were differentiated into seven entities from which we have attained the seven major tones (the Cosmic Tones), the seven major colors (of the spectrum), and the seven focal points on the body (Chakras). *In Judaism*, seven is the number that represents God and the forces of God. The world was created in seven days, the seventh day being the day of rest. In the story of Noah, the number seven is mentioned several times: God commanded Noah to bring seven of each type of animal (including male and female) onto the Ark. Seven days after His command, the rains began (Genesis 7:2). In the conquest of Jericho, the Israelites were commanded to march around the city for seven days with seven priests. On the seventh day, they marched around the city seven times. Afterwards, the city's walls fell and they were able to regain power (Jos. 6:1-20). *In Christianity*, in the book of Revelation, the number seven is used many times. The seven sealed scrolls are mentioned, each symbolizing something that the believers will have to conquer: death, war, anarchy, and so on. The seventh seal revealed seven trumpets, which announced the seven bowls (Rev. 6:1). The Seven Trumpet Judgment coincides with the prophecy of the "New World" (Rev. 8:1). There are many other references to the number seven in this book of the Holy Scriptures. Not coincidentally, the number seven is considered to be the number of "perfection" in Christianity. *In the atom*, seven, five and twelve are evident, as well. Scientist Wilfred Kruger (previously mentioned) observed in his studies on music and DNA that the nucleus of the oxygen

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atom with its protons has twelve steps. In its normal state, seven of these intervals are filled and five are empty.<sup>123</sup> *In physics*, there are seven types of geometrical forms of crystals: cubis, rhombohedral, hexagonal, triclinic, monoclinic, trigonal, and orthorhombic. The seven mineral forms are related to the seven basic universal frequencies.<sup>124</sup> The periodic table of elements represents seven rows: hydrogen, helium to fluorine, neon to chlorine, argon to bromine, krypton to iodine, xenon to astatine, radon to element 117.<sup>125</sup>

***EIGHT (8)***

*In the atom*, Wilfred Kruger dissected atoms and discovered that there were eight electrons of oxygen in the atom's shell and eight protons of oxygen in the atom's nucleus. He stated that the element, oxygen, constructed an octave and that the protons and electrons formed a musical scale. He went on to state that the spins of particles marked half and whole tones. A spin marked  $-1/2$  symbolized a semitone. A spin marked  $+1/2$  symbolized a full tone.<sup>126</sup> *In Astronomy*, the number eight is evident in the distances between each planet, being an octave apart.<sup>127</sup>

***TWELVE (12)***

*In China*, the twelve musical tones we hear are divisions of the twelve Cosmic Tones. *In Color*, there are twelve auxiliary colors. From the combinations of the original twelve colors, all other colors are generated. *In Music*, the twelve-note system is used in western music. Also, the Pythagoras comma (as explained earlier) shows that the number twelve is used to complete the cycle of fifths. *In science*, the nucleus of the oxygen atom with its protons has twelve steps.



*The Universal Sound*

*"It had a great high wall with twelve gates,  
and with twelve angels at the gates.  
On the gates were written the twelve tribes  
of Israel. There were three gates on the east,  
three gates on the north, three gates on  
the south, and three gates on the west.  
The wall of the city had twelve foundations,  
and on them were the twelve apostles of the Lamb."  
~ **John**, author of the book of Revelation (Rev. 21:12-22)*

*In Christianity*, the number twelve appears throughout the New Testament. There were twelve disciples of Jesus, who were also called the twelve apostles of the Lamb (Rev. 21:14). The names of the twelve tribes of Israel are stated in the book of Revelation, as well. It also mentions that there were precious stones decorating each of the twelve foundations. *In Judaism*, in the Holy Scriptures, the number twelve represents the twelve tribes of Israel (Gen. 49:28). Each tribe was to be led by one of Jacob's sons, each symbolizing something different. One would represent strength, another temptation, and so on. *In the measure of time*, there are twelve months in a calendar year, both in the solar and lunar timetables; a day consists of two twelve- hour periods. One represents the morning while the other period represents the evening.



After extensive research, I see that there are several apparent connections among these many mystical and profound subjects; yet, I have only begun to scratch the surface of what I believe is comprehensible. While exploring these areas of interest, I find it difficult to refrain from believing that some type of affiliation is linked to one general core. Vibration itself might be such

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a centralized source; however, it is too vast a subject for me to examine, much less to reveal.



All in all, music helps to bridge the space between those things that we understand and those things that are beyond our comprehension merely by provoking new personal thought so that the moral laws existing within each of us can be discovered and established through our words and actions in daily life.



Music touches us in ways that not only help determine our direction for living, but also help us realize the grandiose scale of effect that sound has on our lives.

*"Life governed by number transforms  
motion into emotion, creating time so that  
life produces love...Physical law is created  
to evolve moral law."*

~ **Edward Maryon**, *inventor of the Marcotone System*



*"Two things continue to fill the mind with ever  
increasing awe and admiration: the starry  
heavens above and the moral law within."*

~ **Immanuel Kant**, *Critique of Pure Reason*

## THE CODA

*~"Food and breath are our sustenance for life just as music and  
art are our provisions for quality living.~"*

**I**n the course of my previous discussions within this book, I have shared several characteristics of music and the power that is displayed by it. Whether it was through research or personal observation, I have been exposed to information demonstrating the enormous contributions that music makes in our daily lives.

Through music, we are offered a deeper understanding of areas in our lives with which we may not normally identify. Such subjects include self-awareness, the influence of creativity, and the intense appreciation for passion. All of these areas are brought to a more meaningful measure of depth through the experience of music. This would be as true for any valued fundamental where an intense passion is recognized. Unfortunately, so few of us take the time to grasp such a strong degree of how such essentials enhance our lives. How is it then possible to achieve our greatest potential as humans if we are not willing to examine what culminates our existence?

A general attitude in our world is to accept things for what they appear to be, never really searching for more profound ways of thinking. It is the distinguished subjects in our life that exercise our minds (such as books, music and the utilization of creativity) that take great measures of self-discipline in order to achieve satisfaction. All too often, people in our culture are fatigued from their daily schedules; therefore, accepting life for what it is becomes an adequate method for living. Unfortunately, this sketch for a daily existence leaves much to be desired, as it enhances so few things in an individual's attitude for life. Passion is what generates our energy toward life. Music is a tool that helps us discover our inner passion. Whether we intentionally listen to music or have it in the background, there are

### *The Coda*

many subtleties that do not reach out and grab us, nonetheless, still exist.

It is a mixture of two traits that determine a generality for many of us in our approach to living: a necessity to survive and the intensity we desire for a higher quality of life. Basically, mainstream society exists merely for sustenance. The way of life for many people is purely to make a living in order to provide for themselves and their families. Little energy is left to experience other life essentials on some level of importance.

For most people, outside of the job and family responsibility, which coincidentally is a very necessary essential, any remaining energy is devoted to entertainment. From the many options available for times of leisure, sports and music are usually the first choices that are added to a person's lifestyle. However, for most people, music's value does not go any deeper than for purposes of entertainment.

On the whole for our society, music is viewed in two ways. It is considered a source of enjoyment and it is utilized as a type of diversion. Within our current world, especially among those amused by the pop culture, entertainment is considered the primary function of music. People attend concerts as a form of escape from the repetition in their lives. The established perception is that to be entertained is to become relaxed. For instance, current live concertgoers must have all of their senses entertained. The theatrics on stage have become equally important to the music. During many live performances, we find that the loud volumes and visual effects enamor the audience as much as the actual music and lyrics. Regrettably, these accents augment the entertainment experience, but lessen the impact of the actual music.

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An illustration of music's method as a type of diversion is detected in forms of media. The enhancement of musical sound is used on television and radio ads as a kind of sonar distraction. In other words, our culture portrays music as merely being offered to fill the void of silence that would normally occur. Amusement and diversion are the most common uses for music in our everyday world, yet they are on the low end of the scale among the existing opportunities for music.

Music consists of sound and emotion. Vibrations create the tones while our human element, emotion, establishes feelings and attitudes that inevitably affect our actions. Overall, we experience all types of emotion through sounds. However, we are especially affected by music because we accept it as a form of expression that is pleasing to us. Even if we feel that the music is disturbing, we will still accept it as art.

Throughout history, several notables have discovered the significance of music in daily life. Composers, including Beethoven, Bach, Brahms, David Tame, Cyril Scott, Mozart, Handel, and countless others throughout the ages, have been given a unique opportunity for self-examination because of their love for music and their desire to develop personal character through creative expression.

Great philosophers, such as Confucius and Aristotle, as well as ancient cultures including the Egyptians, the Greeks, and the Chinese, came to realize how music placed emphasis on certain aspects of life, such as morality and character building. Through the use of musical tone, we are encouraged to think. In turn, we react from our thoughts and attitudes. Regardless of our personal beliefs, thinking about such valuable facets of life help promote a civilized society, setting standards by which to live.

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Religious philosophies have exhibited that music is a pathway towards seeking divine peace. Music not only relieves the spiritual needs within us, but also harmonizes us with our surrounding environment. It is a channel for us to develop those aspects of our lives that are difficult to comprehend without first, having a strong desire for self-evaluation.

*"Music is the vehicle for the "image" of the True,  
the nature or "dimensions" of which we  
do not know: subliminal dimensions."*

*~ Charles W. Hughes*

Through intense research, we have come to realize that music is capable of quite powerful effects. In previous chapters, it was discussed that musical tone is evident in an array of the world's most phenomenal aspects of life, including its symmetrical relationship with colors, genes, DNA, and even the atom. As well, it displays evidence within the subjects of physics, astronomy, botany, only to name a few. Although some individuals may consider these findings with some skepticism, it is truly without question that music deserves the same reverence of anything else that we consider incomprehensible with relation to our entire world as we know it.

*"The highest aim of our music is to reveal  
the essence of the universe it reflects and  
the ragas are among the means by which  
this essence can be apprehended.*

*Thus, through music one can reach God."*

*~Ravi Shankar, My Music, My Life*

Music, as with all of the expressive arts, is a critical part of life because it cultivates life, nurturing us individually and collectively with every passing tone.

### *The Art of Tone*

However, the key component differentiating music from the other arts of distinction is sound. Tone infuses us inside and outside of our being whether we hear the tones or not.

Sri Aurobindo, an East Indian teacher, explains life in musical terms. He states that Love is the keynote; Joy is the music; Power is the strain; Knowledge is the performer; the Infinite All is the composer and the audience.<sup>128</sup> He considers that our entire lives have been orchestrated through music and its subtle inflections induce the cosmos to compose while constantly listening to the composition. Music should be revered as one of the greatest creations because it plays such an integral role in the entire life experience. Music, like life, is a great creative idea, a dynamic and pulsing spirit.

*"Music is a beautiful creation from which stems love. Like love, music is passionate and helps soften the hardest heart by its innocent beauty. One of the joys in the art of music is that it is individual and different to each person. What love is to man, music is to the arts and humanity. Music is love itself—it is the purest ethereal language of passion, showing in a thousand ways all possible changes of color and feelings: and though only true in a single instance, it can be understood by thousands of men, who all feel differently."*

**~Karl Maria Von Weber, 20<sup>th</sup> C. classical composer**

Music gives us an opportunity to express our individuality in a selfless manner. Similar to the effects of love, it can be given away an infinite number of times without diminishing in its intensity or in its quality. However, regardless of the outreach of efforts during the creative process there is one stipulation, one boundary that should be maintained. There is an ideal that must be a part of the mindset of the creative individual at all



### *The Coda*

times. Our responsibility to society is to continually evaluate our ideas of expression. It is a wonderful feeling to achieve a level of freedom where not only ideas are formed, but created through a source of expression that individualizes us. However, without taking some responsibility with what we create, our musical freedom can go beyond the boundary of what is necessarily good for humanity.

If music is taken beyond its proper intentions it will diminish the quality of the art itself. On one hand, we should never ignore opportunity to articulate ideas because our intentions for using any creative expression will be conveyed by the power of musical tone, whether we facilitate it or not. However, we should always use discretion with anything that we presume to be expressive. Our creativity should be used with good intentions and not for shock value.

It is only a select group of musical styles that represent any type of uncertainty that adds little value to our society. Remember, we are discussing forms of artistic expression. What seems to be our primary concern is the overall level of noise and volumes of manmade, distracting sounds that exist in our modern world. As we continue to advance with technology, we will be involved with faster and louder ways of doing everyday tasks. In turn, we will add more collective sound to an already noisy world.

Find time and a place for listening to silence. In silence, there is beauty. It will help you think and breathe more easily. It is the golden music.

Above all, music adds beauty to our lives because it balances the world with an array of pleasurable sounds. It makes life more endurable. Music is a distinct form of self-expression, complementing inspiration through the use of tone.

### *The Art of Tone*

Musical tone is important because we need harmonized sound in order to exist with a sense of balance. The absence of quality music in our lives can leave a feeling of emptiness. In fact, an individual might not even notice this feeling is vacant unless music was all of a sudden to reappear again. At that point, when his sense of balance is raised, then he could rediscover a deeper consciousness. It is music that relates to passion because, inevitably, it is music that stirs the soul, unveiling inner beauty where love and passion reside.

Music's greatest beauty lies in its ambiguity, giving it mystery. Each of us hears music differently and each of us interprets music in our own way. One hundred people may hear the same song and even though all of them may sense a similar message from the song, each person will focus on something different—both within the piece of music and within themselves. These personal effects develop separate responses, making the music experience unique to all who encounter it. Among this uncertainty lies an attractiveness that gives music its highest level of mystique.

*"See deep enough and you  
see musically; the heart of nature  
being everywhere music  
if you can only reach it."  
~ Thomas Carlyle*

The following two chapters have less to do with developing a love for music and more about living with significance. However, anyone who enthusiastically experiences passion will want to read these chapters in order to develop stronger levels of performance and accomplishment in their lives. **Elements of Performance** is directed to anyone who performs in some capacity, whether it is an art form or not. **Anecdotes for Living** was added for anyone who experiences a passion to simply achieve.

**ELEMENTS TO  
PERFORMANCE**

*"Only Passions, great passions, can elevate  
the soul to great things."  
~ Denis Diderot*

**E**arlier I mentioned that it is passion that fuels our energy for life and that music is a tool for acquiring passion. Certainly, creative expression comes in many capacities; it is not just limited to music. Regardless of the tool of direction, once passion and the use of imagination are encountered, a craving is developed to experience more passion. This craving for passion enhances performance, in whatever capacity.

Besides passion, performance of any sort requires discipline and a balance of particular components. If mastered, these components can cultivate greatness. These elements include synchronicity, momentum, concentration, and energy. As we gain an appreciation for each of these elements' characteristics, we increase our perspective of how they work collectively, which eventually improves our level of performance.

### **Synchronicity**

All things that are in motion have a natural rhythmic flow. These rhythms lock up at times creating a *synchronized* effect. As rhythms synchronize, they develop a stronger and bolder rhythm. If the motion is disrupted, however, a disturbance will occur, causing change to the rhythm. In other words, as rhythms lock up they become stronger. If the rhythm is affected by an outside source, the synchronicity can be disrupted.

For example, if there is change in the moon's position and rhythm, the ocean tide will change, as seen during high tides and low tides. Also, the rhythmic beat of our hearts works the same way. The rhythm must remain constant. If the rhythm is changed, our hearts beat irregularly. If conditions are fitting, such irregularity could result in a heart attack.

Every moving object has a frequency of rhythm that permits an object to work smoothly. If something disrupts the object's ability to perform naturally, the object will presumably become "*out of sync*". This natural flow is found in performances, as well.

### **Synchronicity in Performance**

Outside of the many great musical performers, I love to study those particular athletes that have achieved greatness through their performance. Regardless if we study Miles Davis or Tiger Woods, Vladimir Horowitz or Michael Jordan, we find that each master performer has one common component. They all become unified with their instrument of choice in order for great performances to occur.

The primary key to performing at a masterful level is maintaining focus. First and foremost, you must concentrate strongly enough to block out anything that might add an element of distraction. Once your focus level reaches this intensity, you will begin to sense that the audience and any fellow performers are non-existent, assuring you that any distractions will have little effect on you. When you have achieved this level of focus, your attention will not be diverted by anything. In turn, it will be easier to focus on the performance at hand.

This level of concentration transcends time and space. Only when this occurs can we achieve synchronicity. It is this feeling of buoyancy we are experiencing that separates us from any distractions, keeping us apart from any inhibitions. When we reach such levels of concentration, we become sensitive to the direction of the performance's natural rhythmic flow. Once synchronized, our momentum builds rapidly carrying us to our *final note*. Our final note is the satisfaction that occurs when we finish a strong performance.

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*"Each of us has a tiny spark of light  
that illuminates the darkness of  
our consciousness. This is the divine spark  
of awareness which keeps our  
connection with God alive."*

*~Paul Ferrini, Love without Conditions <sup>129</sup>*

*Personally, I have reached this level of performance on occasion. It has given me an intense feeling of satisfaction, in a sense, a feeling of peace. Often when I perform, I have found a place existing inside of me that I consider a private place for me to visit. This place is quiet and motionless. When I reach this pinnacle of performance, I sense that the audience and my surroundings become distant for a moment. I feel as if I am in a cocoon, by myself, experiencing an incredible passion and solitude, transcending me to a place meant only for me. Although I can sense everything and everybody around me while I am in this isolated shelter, I feel content as I permit myself to be vulnerable. At this point, I am thinking little about technique.*

*The existing shell is dark, yet I sense this black wall in front of me. On the wall peering through is a very small spot of white light. This small light, I believe, is a place where my inner serenity resides; I feel a deep awareness of genuine inner peace. While I perform improvised music for the audience, my personal experience is being furthered as I gain greater levels of quietness during this performance. I begin chipping away at the dark wall bringing more light onto me. While the light continues to grow, I gain confidence that the luminescence will not disappear, and so, I start taking steps backward so that those surrounding me (whether they be audience members or fellow performers) that are willing to go on the journey with me can experience the sensation, as well.*

*Only speaking through music, I invite the audience members and musicians to go on the ride. This magnitude of performance is awesome for anyone that encounters it. The entire experience is magnetic because it draws our human spirits together through the use of performance.*

As I have observed this event from the stage, I believe that this is one of the main things that draws people to musical performers. This magnetism happens for other performers as well, but I can only associate such an event with musical performance. People are drawn to performers because it places all of us at a higher level of consciousness. Although this experience does not always occur, I believe that it increases the more we practice it.

### **Momentum**

Much like a snowball, momentum during a performance, of any kind, increases in mass. Learning to sense when to increase momentum becomes vital in regards to any performance. For example, performing with energy is not so difficult when momentum is evident. In fact, it is easy to increase your level of intensity if you feel that the momentum is flowing in your desired direction. However when it is non-existent, that is the time when it becomes important for you to decide when to increase your flow of energy and by how much. Furthermore, if you force the flow of energy you can actually decrease your chances of any momentum flowing naturally.

For example, the pendulum of momentum is very evident in sporting events. During a game, the lead may change several times because momentum often changes. When momentum is lethargic (in other words, slowing to a halt), a good team will drive the pendulum of momentum in the direction of their favor. The athletes increase their energy, supplying greater momentum. As long as time does not run out first, the team that builds the most momentum usually wins the game. You will find this pattern is true in all types of performance. The more types of performance you attempt, the more you will observe a similar pattern, regardless if the

### *The Art of Tone*

performance is a sport, a fine art, an occupation, or any other type.

While attempting to increase the momentum and direction toward your preference, it is important to be sensitive to the current level of momentum that is already exhibited. Momentum tends to increase on its own, but a performer can most definitely facilitate its direction and pace if he is aware of how it is currently reacting. On the other hand, never force momentum if it is not present. Be patient. Like all things, momentum will change. Wait for it to change toward your desired direction and then guide it the way you would like to see it.

The interesting thing about momentum is that it enhances any type of performance, especially if we become aware of how to utilize it. It was Ben Hogan, the master golfer, who implied that the more he practices the luckier he becomes. Not every golf shot can be "textbook." Therefore, learn to feed off of the good shots. It will build confidence and a sense of momentum so that performances will get better. Point being, by practicing we build confidence in our abilities and in ourselves. With this confidence, we extend our level of patience, which makes us much more sensitive to facilitating the timing to build energy rather than simply forcing it.

### **Momentum in Performance**

I have observed a technique in musical performance that seems to be very effective. It is only one use of momentum in a world of countless opportunities; nonetheless I find it an effective way to approaching performance by "building steam". When a percussive rhythm, short in length, is played repeatedly it tends to build intensity. The energy increases as the momentum increases. If it is released only after many repetitions, a



strong emotional effect will occur. This musical statement builds passionate intensity.

### **Concentration**

Earlier I discussed the importance of concentration. We achieve it when we block out all external influence in order to find the focal point from which to create and build momentum.

During a typical day, our minds probably go through hundreds, if not thousands, of thoughts. It is important to focus in on the ones that have priority over all others. However, focusing on leading thoughts is often difficult considering the many distractions we encounter. Ignoring any such distractions that deter our ability to focus works as a barometer for our level of performance. As we continually exercise our minds to focus, we will find that it becomes easier to sustain longer periods of focus, thus achieving what we want from any type of performance.

### **Concentration in Performance**

While performing, concentrate only on the performance...

### **Energy**

Energy is the very essence of everything in life. Life has energy and energy has life. For example, oxygen is a form of physical energy that acts in a symbiotic fashion. Air gives breath to all living plants, yet plants generate more oxygen.

### **Energy in Performance**

Each of us has a different level of intensity. Our intensity level is what determines our degree of passion, and fervor for commitment toward performance, regardless of our type of performance. This intensity

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level establishes our individual capacity for life-producing energy. As we develop our capacity for energy, we learn how to channel it directly into our performances.

Channeling our energy is somewhat similar to a spiral staircase. It continues to go around and around, just at deeper levels of success. As we achieve more profound degrees of intensity, we enjoy a more gratifying level of energetic individuality. The greatest performers are those that have become aware of their own intense energy and have learned to how channel it properly for their own benefit. This is a crucial step to mastering performance.

### **Balancing the Four Elements**

All of these elements act as a family because they intertwine with their close relationships, yet they are uniquely separate. Moreover, they compliment each other. Your own level of understanding how great an impact these elements have on performance, in general, is what will determine your success with each performance. Balancing these elements gives us opportunity for mastery. Remind yourself, frequently, what each element represents:

***SYNCHRONICITY:*** *time & rhythm*

***MOMENTUM:*** *directional speed*

***CONCENTRATION:*** *power*

***ENERGY:*** *life-giving force*

When we perform, our aim is to *concentrate* on *synchronizing* our *momentum* in order to attain higher degrees of *energy*. Once this balance is felt, nothing is encountered but pure enjoyment from each and every performance.

## ANECDOTES FOR LIVING

*"Our greatest glory  
is not in never falling,  
but in rising every time we fall."  
~ Confucius*

**A**side from the obvious elements such as perseverance and discipline, achieving greatness in any capacity of life requires strength and depth of character. Since I began my journey with music, I have always wanted to strengthen my abilities with my music. I have found that the same principles by which I live are evident in all fields. With this in mind, I have written on such principles as it applies to all of us who wish to build upon their foundation.

As we live our lives, we encounter challenges that build our character. Character building develops a sturdy foundation in order for us to attain significant levels of achievement in our lives. Simply put, the way we perceive ourselves will determine the way we act in life. Therefore, if we expect big things from ourselves then we must first desire wisdom to build our character. This chapter takes into consideration several subjects that you might find helpful in attaining a strong foundation from which to succeed.

### **Words of Wisdom**

I have collected a variety of wise quotes and phrases that I have found to be very valid in my own life. All of these ideals and principles relate to my personal growth, which has led me to a higher level of artistry. My hope is that you find them useful, as well:

*In order to find something, you must first be looking for it.*

*How you handle differences among others and yourself defines your level of maturity.*

*Love things for what they are and not the way you want them to be.*

*Take time for things of great value.*

## *Anecdotes for Living*

*It is not the destination that makes you grow;  
it is the journey.*

*Allow things to happen in their due time.*

*Follow your instincts.*

*Set goals with high standards, but do not  
pressure yourself.*

*Listen to your heart.*

*Do not take for granted that which is  
important to you.*

*Ask for whatever you desire with the intention  
that it has been received. However, you should  
really want it because most likely you will get  
it.*

*From your deepest depressions can come your  
happiest times.*

*Pain is the difference between the way it is  
and the way you wish it to be.*

*Give of yourself to others unceasingly.*

*Experience is the best teacher.*

*Think first. Act second.*

*Learn from your mistakes.*

*Real success does not include placing  
emphasis on money first.*

*The way you treat yourself is the way you will  
treat others.*

*The closer to infinite power you become, the  
simpler life becomes.*

*Continually motivate and challenge yourself.*

*Use it or lose it.*

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**Character Building:** *Think of God as the potter and you are the clay. Often, you are melded into shape causing pain with every squeeze of His hand. After you think it is over, you are then put in the kiln so that you will stay that way!*

## **Rules by Which to Live**

*"Whatever we plant in our subconscious mind  
and nourish with repetition and emotion  
will one day become a reality."  
~ Earl Nightingale*

Of the various ways to live, I have found that there are seven fundamentals that help each of us to live fully. These fundamentals are strongest when combined and they offer a place of completion. Among this list are several aspects, each representing a separate fundamental that establishes a higher quality of life:

***Family***  
***Friends***  
***Finance***  
***Fun***  
***Fine Arts***  
***Philosophy***  
**+ Fruits of Our Labor**  
***Fulfillment***

*Family* presents us an opportunity for bonding. Our inherit connection is what brings us together. *Friends* help us acknowledge a need for each other. They give us a chance to debrief from our daily lives as well as offer us support in our times of need. Also, in general, people become important to us because we develop a bond by enjoying similar outlets and principles. Keeping our *finances* in tact offers us a sense of security that is fundamental in order to establish a point of comfort. *Fun*

is our form of release from life's daily challenges. *Fine Arts* offer us a form of sophistication and distinction. *Philosophy*, whether religious or cultural, culminates our attitudes of life, which evolve into forms of behavior. *Fruits of Our Labor* are determined by our measure of desire to succeed. An individual must foresee each accomplishment inside of himself before he can establish it to those that surround him.

As a conclusion, we must continually evaluate our daily progress: do we feel that we live a complete life? Are we only living to work and play or do we live a balance of these seven essentials in order to experience *fulfillment*? Where does our humility rate with regard to our level of satisfaction? If we are satisfied, we find little purpose in personal growth, which usually means that some level of arrogance exists, not leaving any room for growth. Often enough, it is humility that establishes growth and a desire to achieve greatness. Feeling fulfilled and complete make it possible to succeed.

The only way to be successful is to think successfully. True success simply can be defined as someone who has discovered his life's purpose, whether it is work related or personal. Anything else after this discovery is supplementary, like the proverbial "cherry on top of the cake."

We achieve success as we build our character. It is a well-rounded attitude that develops the proper behavior for success. Building character requires some sort of painful challenge. It is these occurrences that cause us to grow and expand. Do not ever disregard these feelings of discomfort. Welcome them so that you can build up your increasing character. Realize the power that exists from it. Becoming familiar with this process balances our human spirit and our perspective on life. From these experiences we learn to remain levelheaded during any

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crisis and we are able to focus on the things that help us reach success.

Aim your life towards practicing constancy. The practice of learning and growing is what gives us a strong attitude during difficult times in our life. Inevitably, everything in life has a cycle. Similar to the ebb and flow of the tides or the volatility of the stock market, life's cycles have highs and lows. The way we determine our human growth is by observing our reactions to each and every cycle. Cycles of upward motion too often increase attitude and self-importance. Downfall cycles usually invite depression and low self-worth. Focusing on personal growth will present an overall feeling of constancy relieving us from feelings of pain, keeping us unhindered during these cycles in life.

Constancy can be enhanced by the use of thought provoking subjects. For example, learning about various cultures and history deepens our perspective of life and how it should be lived. Focusing on subjects of substance such as a desire to grow personal wisdom and build character rather than generating a fascination for money and the power we receive from having large amounts of it keeps us balanced. Things of substance equate to a deeper level of objectivity, which adds constancy to our lives of uncertainty.



## **Realizing Dreams**

*"There is nothing worse  
than a brilliant beginning."*

**~Pablo Picasso**

Success starts with a dream. Achieving a dream or vision requires work...a lot of work. Anything in life worth receiving must begin with a strong work ethic. Any dream brought to fruition has components of a written agenda, patience, determination and persistence.

Visualizing our dream is the first stage.<sup>130</sup> Writing it down is the second stage. Describing dreams in written form increases their opportunity for success dramatically. Writing out goals makes dreams become visualized, therefore becoming a reality. Visualize specifically every achievement. The clearer the picture is, the easier it is to realize. This is similar to the concept of prayer. Religious leaders of sorts explain that by praying with a spirit of thankfulness (as if the prayer has already been realized), it creates a stronger mental direction for it to happen.

There is a procedure to follow in order to achieve goals: *Meditation, Visualization, Exploration, and Creation*. First, *meditate* on an idea so that your mind will be clear of any hindering thoughts and so that you are vulnerable and available to accept fresh ideas. Next, *visualize* the idea in your mind as if it has already been accomplished. Third, *explore* all of the avenues so that the best opportunity can be achieved. Finally, *create* willingly, unencumbered by extraneous thoughts and distractions.

Encouragement and persistence greatly assist in achieving success. Those who receive encouragement have been given a great gift. Whether an individual

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receives encouragement from a spouse, a family member, or a friend, the feeling of knowing that someone wants wonderful things to happen for us is an awesome gift. Those that encourage us guide us in ways that we do not perceive ourselves. Encouragement fuels persistence which leads to the realization of dreams. Accept encouragement from others without reservation. Our dreams are motivated by the encouragement and persistence to achieve our final destination.

*"Nothing in the world can take the place of persistence. Talent will not; nothing is more common than unsuccessful men with talent. Genius will not; unrewarded genius is almost a proverb. Education will not; the world is full of educated derelicts. Persistence and determination alone are omnipotent."*

*~Calvin Coolidge*

All too often, superficial components of life distract our dreams. When opportunities arise which include money, fame, or power, dreams that were originally sought after often go astray. If the dream means more to you than the immediate reward of money or popularity, and more than likely it will, then remain directed. Aim towards the objectives of your choice and never lose focus on them.

Personally, my dreams with music have been realized primarily because of the determination, zeal, and passion that I have for music. Everyone's level of persistence is different. Regardless of your level, it takes an intense degree of wisdom, courage, respect and sheer love for the dream that you desire to achieve. Mine is music. It is part of me. Passion comes naturally for me because music is so much a part of me. I feel elevated by my passion for music. Therefore, I willingly persist to achieve my dream, which is only to continue experiencing

the feeling of awe I enjoy from my passion towards music. At this stage, my dream is cyclical.

Nothing can replace the act of patience. As with everything, patience is necessary for success. Opportunities that motivate us to achieve are endured simply by being patient.

### **Creating Image**

The external impression we create influences our emotions and psyches. Our surroundings in which we choose to live (the music to which we listen, the clothes we wear, and so on) leave impressions. Such influences motivate and inspire us to create, solve problems and persevere. For example, using the Iso-Moodic Principle (refer to *Musical Intimacy* chapter), music aids us by generating positive energy. Listening to happy, energetic music rejuvenates the emotions and psyche just as calming music relieves the mind from stress. We find this principle being used everyday in retail stores and radio stations. Happy, energetic music is played during morning drive times. Calmer music is aired during the afternoon drive. However, these internal responses are temporary.

Creating image must come from within. The environment around us may influence our image, but it cannot change the image itself. Because music can be both an external and internal source, it penetrates directly into every part of the human being. It will have a strong effect on creating a successful self-image.

The subconscious mind cannot tell the difference between reality and imagination. Therefore, if we tell our subconscious that we are mediocre, then we become mediocre. If we tell our subconscious that we are very good, then our subconscious believes we are very good. We tend to give up on our goals when things get too

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tough. Not handling inner struggles very well often results in feelings of defeat. Often, we feel guilt, frustration, disrespect, and inner anger. It is important that when we set goals we maintain a positive image at all times.

Preachers and politicians seem to move their audiences and capture their attention. They analyze and organize what to say in their mind before saying it. They fill their minds with positive thoughts, discouraging negative thoughts in their subconscious minds.

Notable speakers like Abraham Lincoln and Dr. Martin Luther King, Jr. spoke with great confidence. Our thoughts should never be influenced by negativity. Great speakers simply do not allow unproductive thoughts to affect them while speaking. Negative thoughts left unexamined soon turn into negative actions. Eventually, constructive and positive thoughts will diminish.

The mind is so strong that it can actually change positive energy into negative energy. By scrutinizing our thoughts first, it allows us to choose the direction we desire. The human mind is an extremely powerful instrument.

Think of the human mind as a computer. If a computer is fed correct information, it will achieve results at a quick rate and time will be used constructively. However, if it is fed inconsistent or erroneous data, then the computer will either fail to work completely or will produce incomplete or erroneous results. Basically, this amounts to the difference between constructive energy as opposed to neutral or destructive energy. The human mind functions very similarly.

### **Goal Setting**

While setting goals, think realistically about the preparation that is involved in achieving each goal:

### **Blood, Sweat...**

*(The Physical and Emotional Preparation)*

- 1) Obtain any educational preparation that is necessary.
- 2) Understand all of the options that are placed in front of you before making a decision.
- 3) Spend most of your days (and even years) thinking about, acting upon, and living out what your dream is that you feel so strongly about. Consider how much you are willing to give up of other facets of your life (such as a social life) in order to achieve this goal.

### **...and Tears**

*(The Mental Preparation)*

- 1) Consider all of the struggles that you might encounter along the road to your final destination. The journey is intense, but worth it. Enjoy the journey!
- 2) Be willing to accept negative feedback.
- 3) Learn how not to take rejections personally.
- 4) Handle disappointments in a positive manner.
- 5) Absolutely expect the goal to be achieved.
- 6) After reaching the goal, handle success and all of the financial and reverential rewards maturely.

The only way goals are achieved is when we realize that problems occur and obstacles will be in our paths. It is how we react to these obstacles that will determine our level of achievement. Set the standards by which you choose to follow. Only after setting certain standards and guidelines can goals be pursued and accomplished.

### **Positive and Negative Imagery**

Our perception is very important when expecting to reach goals. The list that follows includes both positive

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and negative tools to help us identify when we are on the right or wrong track as we encounter different feelings and images. Also listed is what I call "Neutral Tools." These tools are neither good nor bad in and of themselves; the way in which we use them determines which side of the line they fall on. Their potential is immense in either direction.

| <b><i>POSITIVE TOOLS</i></b> | <b><i>NEGATIVE TOOLS</i></b>                                    | <b><i>NEUTRAL TOOLS</i></b> |
|------------------------------|-----------------------------------------------------------------|-----------------------------|
| Optimism                     | Pessimism                                                       | Energy                      |
| Faith                        | Disbelief                                                       | Pain                        |
| Trust                        | Jealousy                                                        | Thought                     |
| Love                         | Fear                                                            | Power                       |
| Harmonious music             | Dissonant music                                                 | Attitude                    |
| Dedication                   | Non-commitment                                                  | Communication               |
| Hope                         | Guilt                                                           | Intensity                   |
| Being your best              | Indecisiveness                                                  | Pride                       |
| Enthusiasm                   | Impassionate                                                    |                             |
| Creativity                   | Self-pity                                                       |                             |
| Passion for<br>persistence   | Destruction—<br>inward & outward                                |                             |
| Perseverance                 | Cynicism                                                        |                             |
| Inner peace                  | Worry                                                           |                             |
| Goal setting                 | Distrust                                                        |                             |
| Motivation                   | Self-indulgence                                                 |                             |
| Confidence                   | Ambivalence                                                     |                             |
| Expectancy                   | Prejudice                                                       |                             |
| Objectivity                  | Living through<br>emotions<br>(temporary<br>components of life) |                             |

First and foremost, follow your instincts. Through your instincts you will find more answers than through anywhere else. Harmonious music and the use of creativity help guide us to our instincts. Being aware of our own creativity helps us attain an element of happiness and peace in our lives, regardless of whatever struggles exist. Music and other creative sources bring the heart to its place of center. It is at this place that

individuals find their own truth and feeling of true purpose.

All creative persons, including masters of music, have simply found the path to their true selves. They have achieved personal intimacy. Such intimacy encourages us to be honest with ourselves so that we can develop our goals and dreams. It is important to learn about ourselves so that we can express personal discoveries without hesitation. That is the composition of all of us. Dream-seekers are fortunate in the sense that they have discovered passion in their lives.

### **Final Suggestions**

Finally, use these guidelines toward realizing the dream. Enjoy the journey!

- 1) *Find intimacy through a creative outlet. It will allow you to become vulnerable with yourself, thus permitting creative ideas to flow easily.*
- 2) *Discover your life's ambitions.*
- 3) *Believe in yourself.*
- 4) *Center yourself to understand your desires.*
- 5) ***Go Out There and Do It!***

### **Musician's Corner:**

The following discussions touch on various subjects that pertain to a life in the industry of music. *Musician's Corner* discusses topics including education, performance, composition, and techniques in sound production. Without a basic education of music, the final two discussions might seem challenging, however many of their concepts applies to all professions.

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## OCCUPATIONS

*"It takes three to make music: one to create,  
one to perform, and one to appreciate.  
And who can tell which is the most important?"  
~ Robert Schaufler*

**M**r. Schauffler's statement gives us a true identity of music. Many times I have heard a layman say that they are not musically inclined, yet they will listen to music requiring a vast amount of education. In actuality, all three, the creator, the performer, and the appreciator, are important in the making of music. If a musician creates a true work of art, but no one else perceives it as such, there is less impact. It might still be a beautiful work of art, but what is mostly achieved is the composer's self-satisfaction—which is still a joy in itself!

Unfortunately, this occurs more often than it should due to political agendas in the music industry. Nonetheless, we will discuss aspects of performance, education, and composition both for the musician and for the layman. The performer, the composer, and the appreciator all play significant roles in the creative growth of music.

### **Performance (Including Improvisation)**

*"Learn your instrument,  
then forget all that and just play."  
~ Charlie "Bird" Parker, (king of bebop jazz)*

What Bird meant by this statement was learn everything there is to know about the instrument that you play; learn all of the idiosyncrasies that your instrument has that can make it perform differently than all of the other instruments. After you have achieved proficiency on the instrument, forget all of the knowledge and just play from the heart. Whether you improvise or play written music, the primary concept to playing is keeping the music sounding fresh, new, alive, and exciting. It should sound almost as if you have never

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played the piece before and you are realizing the piece's beauty for the first time, yet making the piece sound polished. This is not an easy concept to understand. Practice it and listen to masterful players. Then the concept will begin to make sense.

I had a friend ask me once what it must be like for James Taylor to perform "You've Got a Friend." He has been performing that song for over thirty years, yet I have heard no one say that he gives a disappointing concert. He would probably be a good example of someone who continues to find a new approach to something that he knows very well.

Learning the instrument proficiently is just the foundation towards becoming a great performer. It goes without saying that you must study a variety of idioms, styles and musical personalities in order to achieve a balanced and well-rounded musicality.

Study the cultures and ways of life that each idiom was a part of because of music's influences on society. When creating music, be conscious of your music's effect on society and the growth of music as a whole. For the best quality music to be created, ask yourself these questions:

- ~ *What styles should I study?*
- ~ *Who should I listen to first?*
- ~ *How long should I study one particular artist before I move on to the next?*
- ~ *When should I stop studying artists and concentrate on my own musical personality?*
- ~ *What impact and legacy do I want to leave for other artists?*

Answers to these and similar questions will come to you over time; nonetheless, they should be asked often until the answers that you receive are adequate. To

### *The Art of Tone*

assure growth in the music to which we listen, refer to these questions as sources of personal examination. The continuation of the art of music can only move as fast as those who create it. All of us, artists and listeners, should continually examine our intentions and direction.

### **Charismatic Players**

An important characteristic that makes musical performers wonderful to watch is the charisma they display when they perform. The performer and his instrument become a single energy and everything that they play sounds innovative. A good test of an intense, charismatic performer is by observing a performance of the simplest of songs such as a folk song, a children's song, or a popular standard song such as "*(Somewhere) Over the Rainbow*." When performers make songs like these not only sound good but also innovative, unique, and truly beautiful, then any other music they produce surely must sound as good if not better. In other words, anything and everything master musicians play sounds musical and original, even if it is a time honored standard.

I could make a list a mile long of musicians who have demonstrated this quality and power, but below I have listed a few musicians and their genre that have influenced me. Luciano Pavarotti performing Bach/Gounod's "*Ave Maria*" and James Galway's rendition of "*O Danny Boy*" represent my influence with classical music. Jazz is represented by John Coltrane's version of "*My Favorite Things*" and Miles Davis playing "*My Funny Valentine*." I was influenced with rock music by Jimi Hendrix's version of "*The Star Spangled Banner*" and Queen's version of "*God Save the Queen*."

In making great performances, there are basic qualities that work for both the reader of legitimate music and also for the improviser. The measurable

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ingredients to making a musician a master at his craft are:

- ♪ *The ability to be proficient on an instrument.*
- ♪ *The level of energy and intensity that can be reached during solos or solo pieces.*
- ♪ *The self-discipline necessary in order to play what will create a great solo.*
- ♪ *Never forcing momentum until the circumstances are "right."*

Part of being a master at what you do is being sensitive to this "rightness." It cannot be attained, but is a gift from birth. This quality separates the masters from the mediocre. Leonard Bernstein, the master American composer/conductor, used to point out that there is a moment between lifting the baton and beginning the music. If that moment is somehow missed, then the magic is lost. I, myself, look for that moment every time I play. It is different in improvisation; however, the magic is the same.

## Education

In approaching education, it is important that all students are taught to understand how influential and powerful music is to society. As a past music educator and current educator of master classes, I see the importance of bringing music out as true beauty and not just entertainment. In my experiences, educators on all levels focus on theory, technique, and an occasional historical outline of music, but not enough on philosophy or the appreciation of music. Realize the validity and the importance of all types of knowledge including not only theory and history, but also philosophy.

As displayed in this book, music has an incredible power. It has the potential to dig deep into every person

### *The Art of Tone*

and generate either dissonance or harmony within each mind and soul. As educators, it is a responsibility that we should be teaching students to appreciate music and revere its powerful potentials.

All musicians teach at some point in their career. Whether it is in schools, seminars, private lessons, or through performance itself, musicians influence their listeners by the ideas they portray in their music. A few artists that have influenced me greatly are Keith Jarrett, Pat Metheny, and Michele Petrucciani.

I have listened to recordings and live performances by these gentlemen, and while not knowing them personally, I feel and sense the depth of these men; that they are great souls. Without a doubt, as performers we teach through the music we play. All musicians are educators in every arena.

It is vital for an educator to show how music can affect listeners in a positive way. There is much more to music than meets the ear. As educators, music's influences and powerful potentials should be the main thrust when teaching.

### **The Learning Process in Music**

Any educator will find the following information useful, common, and practical, but the music educator can concentrate on this information more intensely. The learning process involves two aspects, the retention of information and the development of existing skills.<sup>131</sup> For musicians, that refers to the retention of musical information and the development of individual musical skills. Although training is the key to accomplishing wonders for both the gifted and the non-gifted, learning is an act that must be performed by the learner; the teacher cannot do it for him. Experience is the best

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teacher. The teacher's job is only to assist, to guide, and to motivate.

There are several rules to learning efficiently in music.<sup>132</sup> Read through these often as you journey through different learning stages in your lifetime.

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Fifteen Rules for Learning Efficiently in Music

- 1) Select the area in which you desire to study.
- 2) Give a serious effort to learning about the subject.
- 3) Classify and analyze your thoughts; thinking is the process of discovering problems and solving them through thought.
- 4) Trust your first impression; the greater your impressions of what you are learning, the greater the intensity will be in comprehending the subject.
- 5) Cultivate concrete imagery; all senses can be recalled in the mind with a mental image of something material; the same goes for music. A song, a motif, etc. may be recalled in the mind and can help us retain a mental image of the first time we heard that particular melody.
- 6) Advance your capability and comprehension level by retaining more and more information (as your mind will allow it).
- 7) Practice by recall and/or memory exercises; trust your memory.
- 8) Rest your mind occasionally to allow information to penetrate and create a solid foundation from what you have understood.
- 9) Recognize what is learned through action; put it into practice.
- 10) Review the knowledge in cycles; during the dry spells in learning, the most important reaction is to review what you already know to gain a deeper understanding of this already known knowledge.
- 11) Build each acquisition into automatic recall; each time you learn something make it habit in your mind so that it will be easily retainable.
- 12) Learn at your own pace, but do not rehash material you already know only occasionally. After the initial teaching is done, do not re-teach but practice recall.
- 13) Understand that there are only four categories in musical hearing: time, pitch, timbre, and intensity.
- 14) Do not feel superior or inferior to the other students.
- 15) Feel like an artist, not a student. Give yourself the tools with which to create so that you may express yourself.

Artists, including musicians, live with images to gain greater creativity while other occupations live with



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facts and objects. Musicians perform based on emotional sensitivity: their own feelings and the feelings of others. The musician's intelligence lies within feeling, not objects. Although the musician will acquire knowledge of other subjects, it is their ability to guide and alter the listener's emotion through musical sound that makes the musician unique. Musicians need this journey of emotions so that the intensity level of their music becomes stronger and more passionate.

A musical prodigy is someone who has gross abilities to perform and understand the mechanics of music in their early childhood. There are many prodigies who are in the practical sense considered subnormal, but in the musical realm considered geniuses.

A musical genius is someone who carries that brilliance to a level that it becomes difficult to attain even for the most perceptive individual. Often, the genius type will isolate themselves from society for creative purposes. As a result, they lose out on a lot of practical intelligence. Always remember, as educators, the sensitivity and lack of common sense (practical knowledge) that artists (musicians) have sometimes needs to be encouraged for creativity's sake, but at the same time does not excuse ignorance.

What I am saying is that just because a person may not be able to cope normally with the pragmatics of life does not mean that they do not possess greatness within themselves.

### **Maturity with Talent**

A musical life demands intelligent experience and intelligent behavior. The musician must develop maturation, education, and a strong pursuit of the art. Musicians live largely in a world of feeling and sensitivity and have given up a great deal of common intelligence for the sake of their pursuit of artistic goals. A musician will spend the first third of his life learning the vast majority of his musical knowledge, but the last two thirds learning musical wisdom and maintaining his joy for music through good business decisions, marketing, and careful planning. Frequently, the music educator overlooks the business of marketing music. Change this problem. Become a model for those you influence by explaining dedicated and creative business practices within the music industry. It is a vital part of making the created music viable for the general public, in turn extending the artist's potential.

Business savvy within the music industry is important just as with any other profession. Help students to understand the importance of learning business so that they can sustain their joy for music and not become frustrated with the business aspects of their careers. It is worth teaching all students the importance of marketing and business so that they achieve a career and not just a serious hobby, if that is their intention. If a musician is dedicated and works persistently with passion, the initial goals will be reached, including making a fair living and, sometimes, even a great living. Explain this often so that the young musicians will be guided towards successful careers.

Often, when a young artist realizes his level of talent and proficiency, the first reaction is to flaunt the talent he has attained merely to gain recognition. This is a common first reaction, nonetheless, immature. When educating students, the teacher should advise young

artists to accept their accomplishments and talent with humility.

If a musician makes his career in the field of commercial music (pop, rap, rock, and so on), usually his focus will change from making music that enriches the soul to creating music that will make substantial money. The original intent of most artists is to express themselves through the medium of music. To the avid artist, the money is secondary. Many times that focus changes as musicians start making large sums of money. Mature musicians stay focused on their original intent. Remind students to focus on the lasting qualities of their musical career, not the immediate rewards.

### **The Joy of Music**

Many educators spend a great deal of class time on the history of music and how it is perceived by others, but very little on how they, themselves, appreciate music. Stress the fact that music is an art and that art is a form of self-expression. It is the understanding of self-expression that will spark the student's interest in the world of music, and on a deeper level to the world of art and its place in society. Most children (and adults, for that matter) need encouragement in this area. Music is an integral part of society and it is a very necessary part of daily living. This is true regardless of whether the person is a professional, amateur, or just an appreciator. Music is joyful self-expression and should be recognized as such! Students should never feel hesitant towards self-expression at any stage of musical development. It is said all too often that a person is either musically inclined or not. This is simply not true! As with most concepts, it is not that concrete. Almost everyone has some sort of musical talent. It just becomes a question of degree, kind, and value.

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This list contains questions that are worth asking yourself, as a teacher, to ensure that your students are receiving the education that both of you desire.<sup>133</sup>

- Do I fully realize the magnitude of individual differences in my pupils?
- Do I believe in giving pupils opportunity with their ability to grow with their capabilities?
- Do I always keep the pupil at a high achievement level?
- Do I justly praise or blame the students?
- Do I correctly identify both the limited and the gifted child alike?
- How can I best help each type of child?
- Do I tailor my lessons so that each pupil is motivated?
- Do I help my pupil to find himself?
- Do I take into account the individual as a whole: socially, intellectually, morally, aesthetically, and spiritually?

This set of questions is the basis for understanding your impact on your students and their image of you.

### **Composition**

Multitudes of techniques have been used at various points in the history of music, yet every young composer wants to impress the world with a new approach to music, often attempting to create fresh concepts with the music that they are composing. More than likely this task will be extremely difficult. Most artists may add to the growth of music, innovate and influence colleagues, but rarely does one create an entirely new concept. Only a very small category contains artists that have succeeded with such influential greatness. This list includes the likes of such names as Louis Armstrong, J. S. Bach, and Jimi Hendricks, as well as others.

However, within each of us is greatness - just at different levels. We each need to find our own level of

greatness by finding our own voice. Artists must find new ways to make twelve notes work together differently enough to call it a new song.

It is amazing! Twelve notes. Yet, they are used in new combinations all of the time in our Western civilization. It is in the task of finding ourselves through music that is our greatness. It does not matter at what level we influence other musicians. The only thing that is important is our eventuality of finding our voice and making a statement to all of those that listen.

John "Trane" Coltrane, the mid-twentieth century jazz saxophonist, is a prime example of an innovator with a voice. He used the concept of modes initiated by the Greeks. They theorized modal scales thousands of years ago. The difference between the Greeks and Coltrane was that he used these ideas in a different context—jazz, which was popularized in the twentieth century.

Coltrane is just one example, but many of the truly influential musicians have used concepts that had already been experimented with and put them in different contexts, thus sounding new and innovative. There is still quite a bit of experimentation involved in trying new ideas, but at least these musicians used an educated musical backbone in their original concepts. A composer is purely at the mercy of available materials, competent workmanship, and adequate resources. The composer is only limited to the events of his life, his mastery of techniques, and the limitations of his genius. However, multitudes of expression are created from those ingredients. The musical message is produced by the aesthetic experience of the composer on the first level, and the interpreter (or the audience) on the next level. It is the composer's desire to convey to an audience his ideas through the medium of music. John Coltrane is

### *The Art of Tone*

not only a master of music, but also specifically, a master of jazz and improvisation techniques.

Composers are inspired from experiences in life. Often due to a busy schedule we cannot wait for inspiration. Some techniques that composers use when searching for musical ideas are as follows:

- Use phrases or motifs that are part of your personal library of musical words. After much experience, composers develop a musical vocabulary that works best with their individual personalities.
- Use theory, such as scales or modes, as a basis to create.
- Use a particular structure or form that may be popular.
- Use particular harmonic structures as a foundation.
- Use particular rhythmic structures or forms to create a composition.

### **Steps to Great Composition**

The steps to becoming a well-rounded, influential composer are much the same as the performer's steps:

- Study as many different idioms, styles, and techniques as you possibly can study. Likewise, study the history and cultures of music and the societies surrounding the music of each era.
- Go beyond education. Forget all that you learned, and allow yourself to act upon your emotions, sensitivity, and intuition to create true beauty. This is similar to Charlie Parker's advice regarding improvisation.
- Write everyday! At one point in my career, I was encouraged to practice composition daily. It did not mean that I was to finish writing a song a day. Rather, the practice of daily composition has enhanced my musical personality and development my ideas and improvisation. Devotion to this routine has contributed to my life more than my highest expectations.

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Many of our works will be based on life experiences. These steps are very similar in how performance should be approached. On one hand, this is good because once the formula is mastered; it can be applied to several arenas. Also, we become faster and more efficient with our creativity and production. On the other hand, you will see that there are no short cuts to masterful creativity. It takes a lot of time, work, and dedication to your art. During my last five years, I have found myself composing more than ever before. In turn, my improvisation has become better. That is the beauty of it! Many artists devote time daily to compose so that their performances will improve. In summation, work, work, work, and study, study, study. Then, create, create, and create. Our voice is limited only to our musical vocabulary and inhibitions. If we remain dedicated, we achieve a musical personality with ideas that we can truly call our own.

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## SOUND TECHNIQUES

*~ Sound is Everything ~*

**D**uring my first year in college, I was impressed upon the importance of sound. Sound is an umbrella term that has several meanings. Various definitions include "our musical voice," "personal statements through music," textures in chords, and quality in timbre. In this chapter we will focus on the latter two, which pertain to sound quality.

### Hybrids

Hybrid is a term used in music to describe chords that are void of major/minor qualities. Chords occur when two separate intervals are joined, however, traditional chord's qualities begin with the third (III) being minor or major. For example, if we use a C major seventh chord, it is spelled out, respectively bass to treble, C-E-G-B. The triad C-E-G produces a major quality structure. The triad E-G-B produces a minor quality structure. When these two triads are combined, they create a major quality. The reason for this is that the third (C-E) produces a major third interval. What defines the hybrid is the disappearance of the initial quality from the natural third (III).

A hybrid does not have a major or minor quality, but it does have the textural quality that other chords display. Let us take, for example, the bass note ("F"). If we play it simultaneously with the upper structure triad "C" (its chord name is "C/F" - "C" triad with "F" in the bass), we hear a new sound entirely!

The bass note is the denominator for all chords. This chord is spelled "F" (in the bass), C-E-G (the top chord). If this chord were to sound traditional, it would have an "A" or an "Ab" in the top chord (representing the major or minor third of "F"). Instead, this chord is missing a third. It has a fifth ("C"), a seventh ("E"), and a second ("G"). Its

### *Sound Techniques*

sound is pleasing to the ear, but does not resolve properly without the third.

During the Romantic period of classical music, hybrids were quite popular, but not theorized. Classical composers used them sporadically in the nineteenth century.

Mid-twentieth century jazz composers reintroduced the concept of hybrids by the use of extended upper structure chords, which is the basis to hybrid qualities. Bill Evans, the jazz pianist, demonstrated, with great emphasis, chords supporting upper structure qualities.

Jazz and pop composers from the 1980's to the present have discovered new venues for the hybrids. Modern composers use them in sequence, hybrid following another hybrid, instead of just as passing chords.

Hybrids have unique, refreshing qualities, but do not necessarily sound resolved. Actually, hybrids sound closer to voicings rather than complete chords. Within each hybrid is a Roman numeral explanation of what they may sound like to the musical ear and what scales might be most practical in approaching the hybrid for improvisational performance.

Triads will be used as the base chords and all examples will be related to the key of "C".

### Quality Hybrids

| HYBRID<br>(Triad/Bass<br>note) | ROMAN<br>NUMERAL<br>ORIGIN | DESCRIPTION                            | SCALE                      |
|--------------------------------|----------------------------|----------------------------------------|----------------------------|
| <b>Major</b>                   |                            |                                        |                            |
| G/F                            | V/IV                       | Pretty/suspension                      | Lydian                     |
| G/C                            | V/I                        | Pretty/resolved                        | Lydian                     |
| F/G                            | IV/V                       | Suspended dominant                     | Mixolydian                 |
| Ab/G                           | bvi/V                      | Extreme tension                        | Locrian                    |
| F#/G                           | #IV/V                      | Suspended dominant/<br>extreme tension | Whole / half<br>diminished |
| F#/C                           | #IV/I                      | Suspended tension                      | Locrian                    |
| F/F#                           | IV/#IV                     | High tension                           | Whole / half<br>diminished |
| <b>Minor</b>                   |                            |                                        |                            |
| D-/C                           | ii-/I                      | Suspension                             | Dorian                     |
| D-/G                           | ii-/V                      | Suspended dominant                     | Mixolydian                 |
| F-/G                           | iv-/V                      | Suspended dom. (b9)                    | Mixolydian                 |
| C-/F#                          | I-/#IV                     | Extreme tension                        | Half-whole<br>diminished   |
| Eb-/F                          | iii-/IV                    | Extreme tension                        | Lydian                     |
| <b>Diminished</b>              |                            |                                        |                            |
| Bo/C                           | viiø/I                     | Suspended tension                      | Major                      |
| Abo/C                          | bviiø/I                    | Pretty tension                         | Major b6                   |
| Fo/C                           | IVø/I                      | Tension filled                         | Major b6                   |
| Abo/G                          | bviiø/V                    | Dominant (b9) triad                    | Half-whole<br>diminished   |
| <b>Major b5</b>                |                            |                                        |                            |
| A(b5)/G                        | bvi(b5)/V                  | High-tension suspended                 | Half-whole<br>diminished   |
| F(b5)/C                        | IV(b5)/I                   | Major suspension                       | Major                      |

Some of these hybrids might sound like they could never be used in a subtle way. Surprisingly, all of them are useful, even used as passing chords.

### **Suspended Chords**

The following list contains hybrids created from suspended triads:

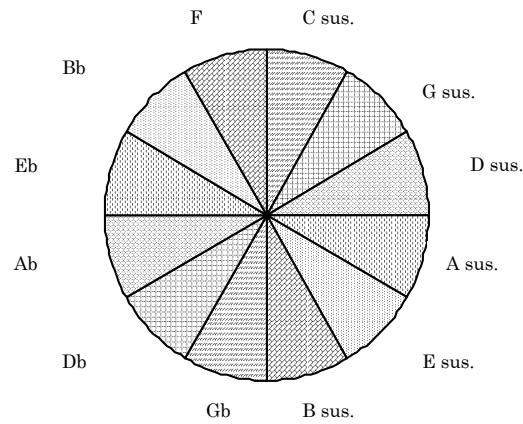
| <b>HYBRID<br/>(Triads/Bass<br/>note)</b> | <b>ROMAN<br/>NUMERAL<br/>ORIGIN</b> | <b>DESCRIPTION</b>        | <b>SCALE</b> |
|------------------------------------------|-------------------------------------|---------------------------|--------------|
| <b>Suspended Fourths</b>                 |                                     |                           |              |
| Dsus4/C                                  | Isus4/I                             | Suspended tension         | Major        |
| Csus4/Gb                                 | Isus4/bV                            | Sustained /<br>unresolved | Chromatic    |
| Csus#4                                   | Isus#4                              | Empty sound /<br>tension  | Lydian       |
| Fsus#4/C                                 | IVsus#4/I                           | Empty sound /<br>tension  | Major        |
| Gsus4/F#                                 | V#IV                                | Suspended tension         | Lydian       |
| <b>Suspended Seconds</b>                 |                                     |                           |              |
| Csus2/F                                  | Isus2/IV                            | Sustained<br>suspension   | Lydian       |

Suspended chords are symmetrical. Therefore, not many suspended chords sound unique enough to be considered a hybrid. In studying suspended chord structures, understand that tensions are added to suspended chords and triads. The suspended chord circle (Figure 3) will demonstrate the order in which tensions are added.

### **Suspended Chord Circle**

The suspended chord circle works just similar to the circle of fifths:

**Figure 3**



Suspended fourths are in a counter-clockwise direction by fourths. Suspended seconds are in a clockwise direction by fifths.

### **Contrapuntal Use of Hybrids**

While practicing hybrids, remember that bass notes should move separately from the triads, much like counterpoint. Many times bass note movement can sound very melodic, enhancing the sound of counterpoint. When working extensively with hybrids, contrapuntal movement becomes essential.

Figure 4

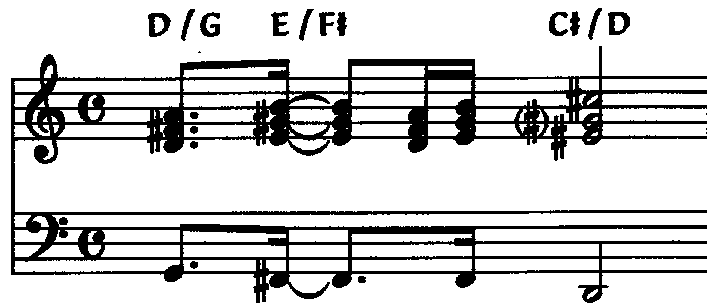


Figure 4 shows the practice of contrapuntal motion from a pattern that I composed. This progression was used as a cadence for the introduction of a song. The counterpoint was primarily focused on the upward motion of the melody and the downward motion of the bass line, but the hybrid in between allows a unique sound to occur. The final chord (in Fig. 4) creates enough harmonic tension to give a feeling of unrest. This harmonic tension is sufficient for an introduction. Due to this sensation, the chord, C#/D is strongly felt as a dominant chord. My intention for this particular use of hybrid quality is dominant, unresolved quality.

A composition from my 1996 CD release, I Will Wait for You (Breakaway Records), entitled "New England Bound" (in Figure 5) displays hybrids in practice. I use hybrids to add a unique, less traditional sound quality.

**Figure 5**

**New England Bound**

♩ = 132 Joseph Vincelli

The musical score for "New England Bound" is written in 4/4 time with a tempo of 132. It consists of five staves of music. The first staff has chords F, C/E, Dmi, C, Bb, C, F. The second staff has chords F, C/E, Dmi, C, Bb, C, Dmi. The third staff has chords Bb7, Ami7, Ab7, Dsus7. The fourth staff has chords Gb/Ab (labeled 1), Ab/Gb (labeled 2), Bb/B (labeled 3), Bb/C (labeled 4). The fifth staff has chords F/A, Bb, Csus/B (labeled 5), F/C, Db, Eb, F. The sixth staff has chords Bb, C, F, F.

There are five hybrids in this song. On stave four, the first four hybrids are sequential, directing the composition toward less traditional sounds. The first hybrid, Gb/Ab, is spelled, respectively bass to treble, Ab-Gb-Bb-Db. It represents a suspended dominant sound that leads to the next chord. The bass line, "Ab" to "Gb", creates a dominant sound. The second one spelled out, respectively bass to treble, Gb-Ab-Cb-Eb. It consists of a second, a fourth, and a sixth. This chord sounds pleasing (because of the second and sixth intervals), but should be considered dominant because of what follows. "Gb" is in the bass (which is also F#).

From a theoretical view, this chord resolves to the next chord smoothly because V-to-I resolution is



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represented in the bass line ("F#" to "B" is a V-to-I resolution). The next chord is B $\flat$ /B and is spelled out, respectively bass to treble, B-B $\flat$ -D-F. The quality of this chord represents a B minor major seventh flat five [B-maj.7(b5)]. In and of itself, we might stand-alone for giving a name to a chord this complex. This chord sounds awful by itself; nonetheless it is practical as a passing texture.

The next chord in this progression is a B $\flat$ /C. It is spelled out, respectively bass to treble, C-B $\flat$ -D-F. The "F" and "B $\flat$ " create the suspended dominant sound and the "D" is simply used as a tension. It is a terrific chord to use when approaching a dominant quality. It is at the end of a section (in this case, a bridge), and it resolves smoothly into the next passage.

I chose to use triads at this point in the song because the bass motion consistently rises. The final hybrid is used in this progression is Csus.4/B. It is spelled out, respectively bass to treble, B-C-F-G. This hybrid is full of tense quality, but it is only heard for a very short time.

Hybrids replace traditional dominant chords, passing chords, and resolution chords. Its difference is in its textural quality. However, maneuvering hybrids present more challenge than traditional chords. Because they represent a different quality than traditional chords, they pose difficulty in weaving a successful combination between traditional and untraditional chords.

Typically, when changing direction with textural patterns, the tendency is to remain towards the new direction. Textures do not usually switch back and forth. Switching midstream to hybrids might send the composition headed toward finishing with hybrids. Using our ears to guide us will lead to creativity with which we

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can feel comfortable. All the same, be assured that once you practice using hybrids, you will not want to resist them.

Pat Metheny is one of the most prolific composers on hybrid qualities. His "Lakes" is a perfect example of how to make practical use of hybrids in a composition (Fig. 6). His ascending and descending diatonic bass motion mixed with triadic progressions gives the song a very simplistic quality, yet remains texturally complex.

**Figure 6**

**Lakes**

Pat Metheny

numbered chord represents hybrid

The musical score for "Lakes" by Pat Metheny is presented in a single staff with a key signature of one sharp (F#) and a common time signature (C). The score consists of 16 measures, each containing a triadic progression. The chords are numbered 1 through 16, indicating a sequence of hybrid chords. The chords are: 1. D, 2. A/D, 3. G/D, 4. A/D, 5. D, 6. F#7, 7. Bmi, 8. E/G#, 9. G/A, 10. D, 11. F#7, 12. Bmi, 13. Emi, 14. G/A, 15. A/G, 16. D/F#, 17. Emi9, 18. G/A, 19. Bb/A, 20. A7, 21. Bb7, 22. Bmi, 23. D/C#, 24. A/C#, 25. C/D, 26. G, 27. A7, 28. Dmi7, 29. C9, 30. Bmi, 31. D7, 32. G, 33. F#mi, 34. F#7, 35. Emi7, 36. F#mi7, 37. F#7, 38. E/G#, 39. E/A, 40. D/Bb, 41. C/Bb, 42. Bb/C, 43. A/C#, 44. C/D, 45. D/Eb, 46. Emi, 47. F, 48. F#, 49. G, 50. G/A.

(Solo section is different. It is based on "Coltrane" changes.)

**Figure 6a**

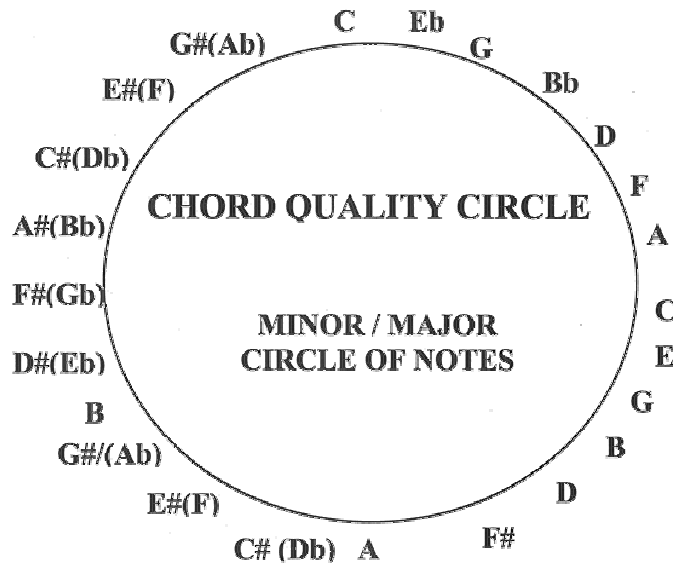
| NUMBER | HYBRID | ROMAN<br>NUMERAL<br>ORIGIN | USAGE                   |
|--------|--------|----------------------------|-------------------------|
| 1      | B-/A   | vi/V                       | Passing chord           |
| 2      | G/A    | IV/V                       | Dominant                |
| 3      | G/A    | IV/V                       | Dominant                |
| 4      | A/G    | V/IV                       | Dominant / Passing Bass |
| 5      | G/A    | IV/V                       | Dominant                |
| 6      | Bo/A   | ovii/IV                    | Tense Dominant          |
| 7      | D/C#   | I/vii                      | Tension Chord           |
| 8      | C/D    | bvii/I                     | Dominant                |
| 9      | F#/G   | iii/IV                     | Passing Chord           |
| 10     | Eb/A   | bii/V                      | Passing Tension Chord   |
| 11     | D/Bb   | I/bvi                      | Tension Chord           |
| 12     | C/Bb   | bvii/bvi                   | Tension Building Chord  |
| 13     | Bb/C   | bvi/bvii                   | Passing Tension Chord   |
| 14     | C/D    | bvii/I                     | Resolution Chord        |
| 15     | D/Eb   | I/bii                      | Passing Tension Chord   |
| 16     | G/A    | IV/V                       | Dominant                |

This composition is impeccable in its use of hybrids. The sound is natural and defined. Contrapuntal movement is evident in the melody/harmony relationship. Metheny's use of hybrids is very natural. Interweaving them through the common chords marks its genius. Also, it creates a truly different sound whether it is played acoustically or electrically.

### Minor/Major Circle of Notes

Jazz of the mid-twentieth century best represents the practice of the major/minor circle. All upper structure triads, hybrids, and common chords are derived from this system of alternating minor to major thirds. I recommend musicians at all levels to study this circle. The symmetry of this circle explains much of the theory derived from our twelve-note system of Western music.

#### MINOR / MAJOR CIRCLE OF NOTES



Every triad, common chord, complex chord, and hybrid is derived from this circle. These notes alternate, creating all intervals and chords. Let us start one third of the way down the wheel (around four o'clock), beginning on the note "C." Following counter-clockwise around the maj/min circle: C-E-G produces a "C" triad; C-E-G-B produces a "C" common chord ("C" maj. 13). The first

noticeable hybrid is C-G-B-D (omitting the natural third). Alternating the intervals is what develops each chord. Hybrids simply omit the natural third. There are twenty-four notes to this circle, two revolutions of the diatonic scale. The exact opposite from each note is its tritone interval. The circle is symmetric. Much of the Western harmonic theory is derived from this circle. Studying this system, we come to understand many harmonic and theoretical concepts. Moreover, with much practice, we can initiate a new system of performance and composition. I find this wheel more fascinating the deeper I study it.

In improvisation, we understand that any note can be played with any combination of notes, if it is done tastefully. For example, on a major seventh chord the common tensions accepted are the ninth (9<sup>th</sup>), sharp eleventh (#11<sup>th</sup>), and the thirteenth (13<sup>th</sup>). During performances, I have used flat ninths (b9ths) on occasion. Approaching this idea is as follows:

Using the major/minor circle, the next tension after the 13<sup>th</sup> (which, in the key of "C" is "A") is the b9 (C#). Ending on a major seventh chord of a luscious sounding ballad, I play intervals of fifths starting on "E" (which is the natural third in the key of "C") and gradually work my way up to the b9(C#)- in sequence of fifths, respectively, is E-B-F#-C#. When blended properly, the sound adds a unique flavor.

### **Timbral Qualities**

Having good sound is essential for quality music. With acoustic instruments, the task is long, but simple in philosophy: practice and more practice. Practice whole tones. Spend time with the instrument. Find the center of each tone while discovering your own voice. Execute the center of the tones with every performance. After time, you will find the center of the tone and be able to make each tone "sing."

Electronics in music extend the creativity of the musician by changing sound through the use of parameters. However, for electronic instruments, understanding sound wave construction is what creates a unique personality.

### **How Sound is Created**

Like everything in life, the more we comprehend a subject the better we are at making use of it; by understanding sound we are capable of achieving more with it.

Sound is mechanical vibration.<sup>134</sup> Vibrations are the interactions between restoring force, displacement, and momentum, which cause a cycle of motion.<sup>135</sup> Restoring force is the neutral position that sends vibrations back to its original position. Displacement is the force distance from its original position. Momentum is what prevents the vibration from returning to its origin. Sounds and their vibrations can be amplified when the initial vibrations are mounted to a material medium, such as an amplifier. A more primitive amplifier is the tuning fork. If we took a tuning fork and set it on a wooden table, the fork's vibrations would intensify the table enough to create an audible sound. This amplification is called *forced vibration*.

These vibrations in sound are what cause media such as solids, liquids, and gases to vibrate. Because of

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this, sound can be transmitted through material media such as wood and metal. Sound must have a material medium in order to increase its intensity; otherwise it will decrease and eventually disappear. Vibrations of sounds are disturbances that initiate our body's hearing process into motion. Vibrations create frequencies. Frequencies create sound. Sound at certain frequencies creates music. Without these mechanical vibrations of sound, we would not be able to hear. However, as we have learned, on the other end of spectrum, too much vibration causes damage to the physical body.

Sound and light have similar properties and both of these phenomena are types of vibration because they have wave motion. Wave motion is the transfer of energy from one source to a more distant source the does not transfer matter between the two points.<sup>136</sup> A good example of wave motion is a water wave. When a stone is thrown into the water, it disturbs the medium, which is water, and until the disturbance passes it will continue to waver.

Primarily, light is different than sounds because it is composed of electrical and magnetic fields and, therefore, does not necessarily need a material medium to increase its intensity level. All wave motion has energy, including sound and light, however sound energy needs and produces very little power. We hear an array of sounds because our human ears are so sensitive. On the other hand, light requires much higher levels of power than sound. Much more power is needed to light a 30-watt light bulb than to create sound. In fact, it would take about one thousand bass singers to create enough energy to light a 30-watt bulb.<sup>137</sup> The following table lists some common levels of sound and the units of power needed to create them.<sup>138</sup>

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| LOUDNESS                                                   | DECIBEL<br>(db) | UNITS OF<br>POWER NEEDED |
|------------------------------------------------------------|-----------------|--------------------------|
| Ultra ppp                                                  | 10              | 10                       |
| Whisper                                                    | 20              | 100                      |
| Conversation                                               | 30              | 1,000                    |
| Orchestra ppp                                              | 40              | 10,000                   |
| Noisy office                                               | 50              | 100,000                  |
| Brass ppp                                                  | 60              | 1,000,000                |
| Orchestra mf                                               | 70              | 10,000,000               |
| Forte brass                                                | 80              | 100,000,000              |
| Loud truck                                                 | 90              | 1,000,000,000            |
| Orchestra fff                                              | 100             | 10,000,000,000           |
| Heavy traffic                                              | 110             | 100,000,000,000          |
| Rock music                                                 | 120             | 1,000,000,000,000        |
| Maximum capacity<br>humans can discern in<br>volume change | 130             | 10,000,000,000,000       |

Musical notes require different amounts of energy and are not based on volume. For example, low pitches need greater amounts of energy than mid-range notes. High amounts of energy are needed to produce light, high volumes, and low pitches.<sup>139</sup>

The lowest frequency that humans can hear is the fourth "C" below middle "C" (at frequency 16 Hz). It requires 1.5 trillion (1,500,000,000,000) units of energy. This energy usage diminishes rapidly once the notes of the scale are ascending. The third "C" below middle "C" only requires 25 million units of energy. Middle "C" requires just 150 units.

The higher the notes are the less energy is needed for them to be produced. Although, after a certain cut-off note, it begins to require more energy again, but not as much as the low notes. Two octaves above middle "C" (at 1,024 Hz) requires only six units of energy and four octaves above middle "C" (at 2,048 Hz) requires just 1.5



units. I would consider this note to be the cut-off note. Any notes higher than this note will begin to require more units of energy than 1.5 units.

### **Speed of Sound**

The speed of sound in dry air at thirty-two degrees Fahrenheit is about 1090 feet per second or about 750 miles per hour.<sup>140</sup> **We cannot calculate sound at one speed only because the speed of sound is affected by wind conditions, temperature, and humidity. However, the frequency or pitches of the sounds will not be affected, only the speed; all musical notes, themselves, travel at the same speed.**

Different gases change the speed of sound as illustrated in the table below.<sup>141</sup> Once again, the notes are not affected:

| <b>GAS</b>        | <b>TEMPERATURE<br/>(Degrees Fahrenheit)</b> | <b>SPEED<br/>(Ft / Second)</b> |
|-------------------|---------------------------------------------|--------------------------------|
| Hydrogen          | 60                                          | 4340                           |
| Carbon<br>Dioxide | 60                                          | 850                            |
| Dry Air           | 60                                          | 1120                           |

Air is probably the poorest conductor of sound because it has no material medium. However, an important point to remember is that without air molecules, sound would not travel at all; hence, a soundproofed room.

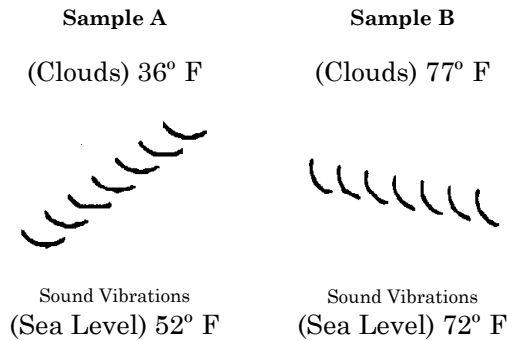
Liquid is one of the best conductors of sound because sound travels much more quickly through a liquid than through any other medium.

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The speed of sound is affected by several different variables:

- 1) Water vapor or humidity increases speed slightly.
- 2) Sound also travels faster in warm air rather than in cold air. (The reason for this is that warm molecules bump into each other more frequently causing speed to increase.) For each degree rise in temperature, sound in air increases by two feet per second.
- 3) In water, sound travels four times as fast as it does in air.
- 4) In steel, sound travels fifteen times faster than it does in air. That is the same for most wood. Oak and other hard woods are the best wood conductors of sound because of their density.
- 5) When air is warmer on the ground than in the atmosphere, the sound will be attracted to the warmer air and travel farther.
- 6) When the air is cooler on the ground than in the atmosphere, the sound will not travel as far.

Refraction of sound is when the sound bends away from warmer air and leans towards colder air as shown in samples "A" and "B" below.<sup>142</sup> Sound will not travel as far or as fast.



### **All Types of Sounds**

All sounds have vibrations. These sound waves' vibrations are the traveling disturbances in the air.<sup>143</sup> The air is the substance and the sounds are the vibrations displaced through the substance. Because there is constant pressure in the air and a balance of displacement and restoring forces, vibrations will always return to their original spacing. Essentially, sounds waves are vibrations that are constantly compressing the air back and forth. This back and forth friction is what causes the sound. Even though our ears hear a variety of sounds, our audible sound wave range is quite limited with regard to all of the sounds that exist. The human ear can comfortably hear frequencies between 16 Hz and 20,000 Hz. Sound waves that are below 16 Hz are called infrasonic sound waves. Sound waves that are above 20,000 Hz are called ultrasonic sound waves.<sup>144</sup>

Because all sound is vibratory, noise and pleasant music are one and the same. However, noise is vibrations that have irregular sound waves that travel through the air. Music is vibrations that have regular waves or sustained tones travel through air; what we refer to as musical notes.

Dissonant music is not the same as dissonant sounds. Music that dissonant is simply music that is not in harmony, regardless of its amplitude. However, sounds that are extremely displeasing to the ear, body, or mind, especially when they are loud in volume, are what we refer to as dissonant sounds or noise. Dissonant music will appear more bearable if it is listened to at comfortable volume levels. Ordinarily, noises at any level disturb our natural flow.

### **Sound Waves**

Higher intensity waves always dominate over all other waves; that is why there are variations in the width of the grooves on a vinyl record. The higher intensity sounds take most of the groove. Each wave's intensity and velocity is calculated by multiplying the number of waves, which is the disturbance itself, by the distance between each wave. The wave velocity formula is:

$$\frac{\textbf{Frequency (number of waves)}}{\textbf{X}} \\ \textbf{Wavelength (distance between waves)}$$

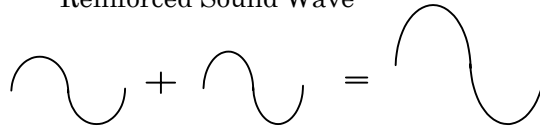
Wave motions could be broken into simple sine waves (the purest wave) having only one frequency. When the fundamental tone and all of its overtones are combined, the full quality of the tone can be achieved, designating the tone quality of an instrument. A wave's size, intensity, and frequency determine tone quality. Certain instruments such as the piano and clarinet have the same fundamental tone, relatively speaking. (The fundamental is the lowest frequency, which is the sine wave.) Although these instruments may have the same fundamental tone, their overtones and intensities differ. (The overtones are the higher frequency sine waves and the intensity is the power represented by the sound wave's amplitude.) This is why each instrument sounds

different and unique, even if the same fundamental tone is represented.<sup>145</sup>

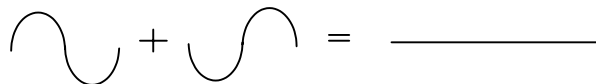
Synthesizers work in this manner. A programmer may have a certain number of fundamental waves to work with on his synthesizer. Creating different sounds performed by combining those fundamental tones or fundamental waveforms on the synthesizer.

Although the amount of waveforms on a particular synthesizer may be limited, changing frequencies and intensity levels can create hundreds of sounds. As well, the synthesizer programmer can create sounds by taking waveforms and combining them with any of the other waveforms that can either reinforce the sound or cancel the sound:

Reinforced Sound Wave



Cancelled Sound Wave



These are two ways of making sounds that work well. It is simply a question of what kind of sound you desire.

### **Three Attributes to Musical Sound**

Musical sound is constructed of these three attributes: *pitch*, *loudness*, and *timbre*. *Pitch* is the highness or lowness of a frequency. The pitch (the key or tonal center) of a song enhances our moods because each tone determines a pitch itself. Each pitch varies in quality and the key in which played will create a particular mood.

*Loudness* determines the intensity and volume of a sound. Because it deals with quantity of sound and not quality of sound, it is not directly related to the waveform. However, its purpose is just as significant as timbre. Some sounds display more quality at low intensity levels (such as an oboe) and others may sound better at high intensity levels (such as an electric guitar).

*Timbre* is the tone quality, or the color of a note. It is directly related to waveforms. While pitch and loudness are more quantitative, timbre is more qualitative. The combination of the original base waveform and the intensity of its harmonics define an instrument's timbre. For example, a tuba may play the same note as a saxophone, yet its timbre is much different than a saxophone's timbre. This is the reason for each instrument sounding unique. Timbres are endless because the combination of waveforms and the intensities of its harmonics are infinite.

In general, the more complicated the waveform, the richer the tone color. A sine wave will appear to be the dullest waveform because of its simple shape. The tuning fork has this dull sine waveform. This is the reason for the tuning fork's blandness of tone; comforting, but bland. Therefore, a sound that is more complex will have a greater combination of waves.

### **The Sound is Everything**

Each era and idiom of music has an unmistakable personality. However, we might consider the classic rock era to be the most unique because of the array of timbres that were created. During the 1970s, electronics in music was popularized giving artists an opportunity to invent and experiment through the use of analog parameters. When listening to groups like Led Zeppelin, Queen, and Yes, a distinct sound is heard immediately. The trademark in their music was their individual timbres created by the electronic instruments, not just the traditional instruments such as the guitar and bass. You may be able to hear just one or two notes and know exactly what group it is because of the uniqueness in the sounds that they produced.

This may not be as evident in classical or jazz (except the late 1960s –1970 with groups such as Weather Report and Herbie Hancock) since these idioms use acoustic instruments supplying timbres that are generally consistent within each idiom. We know an artist by his musical voice, but a piano, no matter how it is played, is still a piano.

Acoustic styles of music have certain instruments that are traditional for that type of music. Instruments that are usually associated with jazz are the piano, bass, drums, saxophone, and the like. Instruments that are associated with classical are violins, oboes, flutes, French horns, and so on. Cajun music usually has the washboard and accordion associated with it. The sitar usually represents Eastern Indian music. When a pipe organ is heard, it is often associated with Western civilization religion. However, this is not as valid for rock music during the early 1970s.

At this time in music history, technology brought on an entirely new element to music. This surge of musical

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development is not even as evident in the most recent contemporary groups. Rock music of the 1970s sounded unique because of its vast qualities in timbre. The groups' sounds were unique because the artists were doing the programming. Electronic instruments changed the development of rock music. A new concept in music soon followed.

All too often, we take for granted the large library of sounds that are available to us. Instead of creating our own sounds, we use sounds that have been previously programmed or what the music industry calls "factory" sounds. I will not predict if this attitude toward programming sounds will change, but constantly developing our music in all facets is crucial if we expect it to grow.

### **Changing Sound**

Like anything else, experimenting with synthetic sounds requires a basic understanding of how the sounds are produced and created. It is best to learn the fundamentals of how tones are produced by electronics. Afterward, it is our own experimentation that determines what sounds we will then create. The following are a few different techniques to adjusting sound.

*Wave mixing* is when two or more different wave shapes are combined together to create a new shape and sound.

*Noise generators* add noise as an effect to make the sound have a "dirtier" quality. Synthesizers have settings that add noises. The noises are usually wind or running water. Essentially, they are pitchless sounds.

Before we can proceed with any more techniques, it is important to comprehend tone frequency range and frequency ratios. Musical intervals are based on the



proportional distances between notes. The following table (Table 1) lists the frequency of tones in Hertz. Although audible tones range as high as 20,000 Hz, this table stops at 7700 Hz. However, it will help detail how notes are established by the differences in interval. It is then possible to construct frequency ratios.

**Table 1**  
**Frequency of Tones in Hertz (Hz)<sup>146</sup>**

|           | CCCC | CCC | CC  | C   | C'  | C'' | C''' | C'''' | Cv   |
|-----------|------|-----|-----|-----|-----|-----|------|-------|------|
| <b>C</b>  | 16   | 32  | 64  | 128 | 256 | 512 | 1024 | 2048  | 4096 |
| <b>C#</b> | 17   | 34  | 68  | 136 | 271 | 542 | 1085 | 2170  | 4340 |
| <b>D</b>  | 18   | 36  | 72  | 144 | 287 | 575 | 1149 | 2299  | 4598 |
| <b>D#</b> | 19   | 38  | 76  | 152 | 304 | 609 | 1218 | 2436  | 4871 |
| <b>E</b>  | 20   | 40  | 81  | 161 | 323 | 646 | 1290 | 2580  | 5161 |
| <b>F</b>  | 21   | 43  | 85  | 171 | 342 | 683 | 1367 | 2734  | 5468 |
| <b>F#</b> | 23   | 45  | 91  | 181 | 362 | 724 | 1448 | 2896  | 5793 |
| <b>G</b>  | 24   | 48  | 96  | 192 | 384 | 767 | 1534 | 3069  | 6137 |
| <b>G#</b> | 25   | 51  | 102 | 203 | 406 | 813 | 1625 | 3251  | 6502 |
| <b>A</b>  | 27   | 54  | 108 | 215 | 431 | 861 | 1722 | 3444  | 6889 |
| <b>A#</b> | 29   | 57  | 114 | 228 | 456 | 912 | 1825 | 3649  | 7298 |
| <b>B</b>  | 30   | 60  | 121 | 242 | 483 | 967 | 1933 | 3866  | 7732 |

The note "C", at 16 Hz is in unison by multiplying the frequency by 1 (16 x 1 = 16). The octave ratio is two to one (2:1) by multiplying the frequency by two (16 x 2 = 32).

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The following descriptive examples follow the same format:

Major Third—ratio is 5:4. Five notes of 16 Hz equal four notes of 20 Hz.  $16 \times 5 = 80$ , same as  $20 \times 4 = 80$ . The ratio 5:4 equals Major Third.

Perfect Fifth—ratio is 3:2. Three notes of 16 Hz equal two notes of 24 Hz.  $16 \times 3 = 48$ , same as  $24 \times 2 = 48$ . The ratio 3:2 equals Perfect Fifth.

Minor Third—ratio is 6:5. Six notes of 16 Hz are equivalent to five notes of 19 Hz.  $16 \times 6 = 96$ , while  $19 \times 5 = 95$ . The equivalent ratio is 5:3.

Major Sixth—ratio is 5:3. Five notes of 16 Hz are equivalent to three notes of 27 Hz.  $16 \times 5 = 80$ , while  $27 \times 3 = 81$ . The equivalent ratio is 5:3.

Detuning is a sound method that represents a fraction of the above ratios. Taking an in-tune oscillator and purposely placing it out of tune is what causes *detuning*. For example, if we used middle "C" (256 Hz) and raised one oscillator slightly to 257 Hz, the two frequencies would rub against each other, creating extra tension that enhances a sound. Keep in mind that each octave increases detuning frequencies by two. The higher octave should sound correct at 512 Hz. The detuned oscillator will sound at 514 Hz.

It is not good to have the separate frequencies too far apart. They tend to sound uneven, which is noticeable. If the frequencies are more than a semitone apart, they are independently heard. This is called beating, which no longer constitutes a detuned note.

The chorus effect is similar to the detuning process. When two or more frequencies of close distance are combined it creates a small intonation problem that sounds good together. This occurs because the frequencies are very close to each other.

The amplifier, obviously, changes the loudness of the overall sound. *Filters* are the tone controls that allow certain partials to pass through and stop others from passing. When these partials are allowed to pass, there is a certain frequency that stops them from passing which is called the *cut-off point*.

Low pass filters allow the partials through until the cut-off point and then fade until they are inaudible. High pass filters are just the opposite. This filter has partials that begin inaudible, increase up to the cut-off point frequency, and then remain in full force. Band pass filters allow the partials to increase up to the cut-off point and then decrease. Notch filters start the wave partials in full force, decrease to the cut-off point, and then increase again.

### **Secrets to Analog and Digital Synthesis**

Just as there are three attributes to musical sound (pitch, loudness and timbre),<sup>147</sup> there are three compatible attributes in electronics: the oscillator, filter, and amplifier. The oscillator is the frequency or pulse width and it controls the pitch. The filter is the cut-off point (discussed above) that controls the timbre. The amplifier is the output level that affects the loudness.

Envelope generators change timbre and loudness. There are usually two on a synthesizer; there is one for the filter and one for the amplifier. Probably the most effective generator is the one seen on synthesizers that have ADSR on them, which is an acronym for "Attack, Decay, Sustain, and Release." During its gate time (or its entire cycle), it goes through three changes in level: starting level, peak level, and sustain level. The attack signifies how much pressure has been placed on the note. It also represents the change between the starting level and the peak level. Decay represents the change between

the peak level and the sustain level. The Sustain is the rate of change from the sustain level to the release. The Release is the amount of time from the end of the sustained note before it returns to the original starting level.

There are three basic ingredients to understanding sound making. Understanding basic timbre, tone production, and style emulation gives us options from which to create sounds. Timbre of any musical instrument can be classified into one of four categories. The chart in Figure 7 helps identify an instrument's proper category.

**Figure 7**

| TIMBRE CATEGORIES |                |                                                                                                                           |
|-------------------|----------------|---------------------------------------------------------------------------------------------------------------------------|
| Harmonic Partial  | Instrument     | Wave shape                                                                                                                |
| ALL               | Brass          | Saw tooth                                                                                                                 |
|                   | Strings        | Narrow Pulse                                                                                                              |
|                   | Guitar         | Saw tooth                                                                                                                 |
|                   | Woodwinds      | Sine                                                                                                                      |
|                   | Bass           |                                                                                                                           |
| ODD               | Clarinet       | Square                                                                                                                    |
|                   | Recorder       | Triangle                                                                                                                  |
|                   | Whistles       | Sine                                                                                                                      |
|                   | Organ          |                                                                                                                           |
| NON               | Electric Piano | Audio Modulation—sounds that do not have any harmonic partials and are produced by controlling an oscillator's frequency. |
|                   | Bells          |                                                                                                                           |
|                   | Vibes          |                                                                                                                           |
|                   | Cymbals        |                                                                                                                           |
|                   | Tympani        |                                                                                                                           |
| RANDOM            | Breath         | Noise Generator—These pitchless sounds are produced by a synthesizer.                                                     |
|                   | Drums          |                                                                                                                           |
|                   | Wind           |                                                                                                                           |
|                   | Thunder        |                                                                                                                           |

### *Sound Techniques*

Most orchestral and traditional instruments fall within the first two categories. The last two categories are for percussion and the less traditional instruments.

There are two basic methods for producing tone. Tone production is classified as either continuous or momentary excitation instruments. Continuous excitation occurs when an instrument needs a constant force, such as breathing or bowing. It takes a slight decay in producing the sound because partials need time to accumulate in order to create the tone. This happens no matter how quick the attack of the note. The same happens for the release. It takes a slight decay for the tone to disappear because the partials need to break apart in order for the sound to stop vibrating.

Momentary excitation occurs when an instrument is plucked or struck. Its attack and release time is very short. For this reason, it is named "momentary." Its brightest and loudest tone is at the time of attack. Its decay is determined by the instrument's percussive nature. In Figure 8, instruments have been classified in one of the two methods. Remember that continuous excitation instruments are bowed or blown into and momentary excitation instruments are plucked or struck.

**Figure 8**

| CONTINUOUS EXCITATION<br>INSTRUMENTS                                                                                                                 | MOMENTARY<br>EXCITATION<br>INSTRUMENTS                                  |
|------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------|
| Brass<br>Woodwinds<br>Bowed strings<br>Voices<br>Whistles<br>Organs<br>Electronic have an instantaneous attack<br>Pipe have a slight delay of attack | Plucked strings<br>Pianos<br>Pitched percussion<br>Pitchless percussion |

### *The Art of Tone*

Adding ornaments and expression are parts of our personalities. These things help create the styles that we want, but do not reflect the instruments. *Style Emulation* represents the nuances that instruments have categorizing their uniqueness. When emulating an instrument properly, add articulations and subtle expressions so that it is characteristic to the instrument. Each instrument has little trademarks identifying its difference. For example, an electric guitar is known for bending a note with ease. That must be part of the sound when emulating an electric guitar on a synthesizer. Finally, be conscious of phrasing and the range of the instrument.

### **Instruments' Ranges**

Knowing the practical ranges of the most traditional instruments ensures a better level of emulation; otherwise the instrument sounds unnatural. There are differences of opinion in an instrument's range; therefore I have compiled a list of instruments' ranges (Figure 9) from two sources. They have come from "The Secrets of Analog and Digital Synthesis," by Steven De Furia, and also from "The Physical Basis of Musical Sounds," by Joseph Morgan, Ph.D.

**Figure 9**  
**TABLE OF INSTRUMENTS' RANGES**<sup>148 149</sup>

| INSTRUMENT       | RANGE (Cycles per second in Hz) |
|------------------|---------------------------------|
| Violin           | 190-3200                        |
| Viola            | 145-1900                        |
| Cello            | 65-850                          |
| Double Bass      | 41-380                          |
| Harp             | 28-4000                         |
| Guitar           | 80-700                          |
| Electric Guitar  | 80-2000                         |
| Banjo            | 110-800                         |
| Oboe             | 233-1568                        |
| Bassoon          | 58-640                          |
| Piccolo          | 587-3900                        |
| Flute            | 261-2093                        |
| Saxophone (Alto) | 130-2000                        |
| French Horn      | 62-698                          |
| Trumpet          | 160-1000                        |
| Tuba             | 43-349                          |
| Trombone         | 80-750                          |
| Whistle          | 1800-2100                       |
| Grand Piano      | 27-5000                         |
| Harpsichord      | 43-2800                         |
| Synthesizer      | 16-20,000                       |
| Tambourine       | 600-20,000                      |
| Tympani          | Random                          |
| Snare Drum       | 200-Random                      |
| Soprano Voice    | 262-1046                        |
| Alto Voice       | 116-698                         |
| Tenor Voice      | 146-440                         |
| Bass Voice       | 73-294                          |

These ranges will not be exact measurements, but merely act as a guide for performance, arrangements, and recording sounds from the synthesizer.

### **Principles in Music Science**

This last section on sound is a method by which experimenting in the science of music is generated. In learning about sound, it is best to start with an education on the subject which follows these principles as a standard source for acquiring greater knowledge through experimentation:

#### **Principles of Experimentation in Science<sup>150</sup>**

1. Each variable must be isolated and adequately defined.
2. All independent variables must be kept constant and controlled.
3. All observed facts must be recorded.
4. The situation must be repeatable for verification (validity).
5. The conclusion must be validated in relation to the person or situation (dependent variable).
6. The conclusion must be limited to the factor under control (must be in terms of the effect on the dependent variable).



## *Sound Techniques*

### **Principles in the Psychology of Music**<sup>151</sup>

- 1) The environmental factors surrounding the music affect the music, but are not the music.
- 2) Sound waves are measurable with four characteristics:
- 3) *Pitch*
- 4) *Loudness*
- 5) *Time*
- 6) *Timbre*
- 7) Compounds of these are:
- 8) *Rhythm*
- 9) *Harmony*
- 10) *Volume*
- 11) *Tone Quality*
- 12) Music is illusive because mental and physical facts are not direct.
- 13) There is zero point for each of these four categories:
- 14) *Pitch*—standard zero
- 15) *Intensity*—silence
- 16) *Duration*—zero duration
- 17) *Timbre*—pure tone
- 18) All measurements may be represented graphically which symbolizes the language of scientific measurement in a graph that has musical meaning.
- 19) Artistic performance can be measured from normal to superior.
- 20) We must constantly experiment to bring music to higher standards.
- 21) Musical aesthetics will be built upon the basis of scientific measurements and experimental analysis.
- 22) Musical talent can be measured as related to the total personality.
- 23) Successful performance rests upon the mastery of fundamentals.
- 24) Instrumental aids can facilitate musical skills greatly.

*The Art of Tone*

- 25) Psychology of music is only a part of the full spectrum.
- 26) Although a psychologist can record the facts, one must still have an intimate knowledge of music and a feel for it.

## APPENDIX

### Graphs in Order of Appearance

#### I Planet Chords<sup>152</sup>

| PLANETS                                   | Do | Re | Mi | Fa  | Sol | La  | Ti (Si) | Do  |
|-------------------------------------------|----|----|----|-----|-----|-----|---------|-----|
| Saturn                                    |    |    | 29 |     |     |     |         |     |
| Jupiter                                   | 22 |    |    |     | 33  |     |         | 44  |
| Asteroids                                 |    | 21 |    |     | 28  |     | 35      |     |
| Mars                                      |    |    | 14 |     |     |     | 21      |     |
| Venus                                     | 15 |    |    | 20  |     | 25  |         | 30  |
| Mercury                                   | 75 |    |    | 100 |     | 125 |         | 150 |
| Years that the planets line up with Earth | 24 | 27 | 30 | 32  | 36  | 40  | 45      | 48  |

#### II Planetary Movement in Octaves Johann Bode's Law<sup>153</sup>

| PLANET                                               | DISTANCE IN PERFECT OCTAVES |
|------------------------------------------------------|-----------------------------|
| Mercury                                              | 0                           |
| Venus                                                | 1                           |
| Earth                                                | 2                           |
| Mars                                                 | 4                           |
| Asteroids<br>(Group of planetoids in the same orbit) | 8                           |
| Jupiter                                              | 16                          |
| Saturn                                               | 32                          |
| Uranus                                               | 64                          |
| Neptune                                              | 96 (64 x 1 ½ = 96)          |
| Pluto                                                | 128                         |

### III Note Intervals and Their Ratio Proportions

| NOTE<br>INTERVAL | FREQUENCY<br>RATIO |
|------------------|--------------------|
| Unison*          | 1:01               |
| Minor Second     | 27:25:00           |
| Major Second     | 9:08               |
| Minor Third      | 6:05               |
| Major Third      | 5:04               |
| Fourth*          | 4:03               |
| Tritone          | 36:25:00           |
| Fifth*           | 3:02               |
| Minor Sixth      | 8:05               |
| Major Sixth      | 5:03               |
| Minor Seventh    | 9:05               |
| Major Seventh    | 15:08              |
| Octave*          | 2:01               |
| Tenth            | 5:02               |
| Twelfth          | 3:01               |

\*Most Consonant Ratios

### IV Proportions in Relation To Chinese Tones<sup>154</sup>

| NOTE  | RATIO    | PROPORTION | RATIO*   |
|-------|----------|------------|----------|
| Koung | 1:01     | 81/81      | 1:01     |
| T'Chi | 3:02     | 81/54      | 3:02     |
| Shang | 9:08     | 81/72      | 32:23:00 |
| Yu    | 27:16:00 | 81/48      | 33:42:00 |
| Kyo   | 81:64    | 81/64      | 34:25:00 |

\*Simplified Numerical Form

### V Tetraktys and The New Jerusalem<sup>155</sup>

| Tetraktys |         |                   | The New Jerusalem            |
|-----------|---------|-------------------|------------------------------|
| 1         | (point) | 12                | tribes (or gates) of Israel  |
| 2         | (line)  | 12,000            | side = 12 x 1,000 (stadia)   |
| 3         | (plane) | 144,000,000       | area = 12,000 <sup>2</sup>   |
| 4         | (solid) | 1,728,000,000,000 | volume = 12,000 <sup>3</sup> |

## VI Yugas and the Tetraktys<sup>156</sup>

| YUGA                                         | TETRAKTYS | YEARS OF YUGA    |
|----------------------------------------------|-----------|------------------|
| Kali Yuga (Dark Age)                         | 1         | 432,000          |
| Dvapara Yuga                                 | 2         | 864,000          |
| Treta Yuga                                   | 3         | 1,296,000        |
| Krta Yuga                                    | 4         | 1,728,000        |
| <b>Totals: Maha Yuga (Era of Perfection)</b> | <b>10</b> | <b>4,320,000</b> |

## VII The Lifespan of the Universe<sup>157</sup>

Berosos, the last priest of Marduk (c. 300 BC), believed that the year 432,000 was the Babylonian Great Year. The following is the mathematical equation that explains the existence of the universe, according to Hindu belief.

|                           |                                             |
|---------------------------|---------------------------------------------|
| 4,320,000                 | Sum of the four Yugas                       |
| X 1,000                   | Cycles (number of times pattern will occur) |
| <hr/> 4,320,000,000       | Kalpa (sums up one day for the Brahma)      |
| X 360                     | Days of the lunar year                      |
| <hr/> 1,555,200,000,000   | One year of the Brahma                      |
| X 100                     | Years (lifespan of the Brahma)              |
| <hr/> 155,520,000,000,000 | The universe's lifespan                     |

## VIII Tone / Color Relationship Formula

The Marcotone theory to achieving tone/color relationship is shown in the formula below:<sup>158</sup>

$$L = V / N$$

Where:

**L = Wavelength**

**V = Velocity in meters per second**

**N = Number of vibrations per second**

If a tuning fork, middle "C" (at 256 vibrations per second), reverberates at a temperature of 20 degrees Celsius, it will travel a distance of 344 meters per second. This will give us the wavelength of the note:

$$344 \text{ m/s (V)} / 256 \text{ (N)} = 1.34375 \text{ m (L)}$$

When this number is raised to its 29th power using the binary numeral (2), it gives us the spectral color it represents. The Angstrom unit for the spectral color red is .68 microns or 6870 millimeters. That means that fundamental "C" (at 32 vibrations) can be seen as the color red in the thirty-second octave.

## IX Speed of Color<sup>159</sup>

| COLOR            | VIBRATIONS<br>PER SECOND* |
|------------------|---------------------------|
| Red (slowest)    | 477                       |
| Orange           | 506                       |
| Yellow           | 535                       |
| Green            | 577                       |
| Blue             | 622                       |
| Indigo           | 658                       |
| Violet (fastest) | 699                       |

\* In Millions

## **X        Unified Theories on Tone / Color          Relationship**

I. J. Belmont as well as Charles Henry Wilkinson also agreed with Maryon on the tone-color scale.<sup>160</sup> In 1891, Wilkinson concluded similar remarks on sound and color relationships, stating the same color representation as Maryon. Moreover, he found that an octave is mathematically divisible into twenty-four sections, which were completed by the chromatic notes and auxiliary colors. He stated, "by means of this system notes can be transported into color by drafting the notes and chords from the scales or constructing them from the keyboard; and the colors thus set from music, harmonize in consecutive order as they are written or played."<sup>161</sup> Dr. Donald Andrews of Florida Atlantic University performed an enhanced version of this theory by constructing a keyboard that signaled the color of the note that is performed.<sup>162</sup>

## XI Whole-Tone Scale

| Note | Complementary Note | Related Color | Related Complementary Color |
|------|--------------------|---------------|-----------------------------|
| C    | G                  | Red           | Blue                        |
| D    | A                  | Orange        | Indigo/Violet               |
| E    | B                  | Yellow        | Red-Violet                  |
| F#   | C#                 | Green         | Violet                      |
| G#   | D#                 | Blue          | Orange-Yellow               |
| A#   | E#                 | Violet        | Yellow-Green                |

## XII Chakras & Their Representations<sup>163 164</sup>

| Key | Frequency | Color  | Representation of Each Chakra               | Our Body's Focal Center Representing Each Chakra |
|-----|-----------|--------|---------------------------------------------|--------------------------------------------------|
| C   | 261.2     | Red    | Harmonizes affinity with earth              | 7 – Base                                         |
| D   | 292.1     | Orange | Represents creativity                       | 6 – Navel                                        |
| E   | 329.1     | Yellow | Induces independence                        | 5 – Solar plexus                                 |
| F   | 349.2     | Green  | Regulates intimate relationships            | 4 – Heart                                        |
| G   | 392       | Blue   | Increases spiritual awareness and intuition | 3 – Throat                                       |
| A   | 440       | Indigo | Questions motives                           | 2 – Third Eye                                    |
| B   | 493       | Violet | Relationship with deity                     | 1 – Crown                                        |



### XIII Light and Tone Frequencies<sup>165</sup>

*Alternate Graph to Study*

| KEY | RATIO TO<br>MIDDLE C | LIGHT<br>FREQUENCY    | COLOR                           |
|-----|----------------------|-----------------------|---------------------------------|
| C   | 1:01                 | $4.40 \times 10^{14}$ | Red                             |
| D   | 9:08                 | $4.95 \times 10^{14}$ | Orange                          |
| E   | 5:04                 | $5.50 \times 10^{14}$ | Yellow                          |
| F   | 4:03                 | $5.86 \times 10^{14}$ | Green-<br>Yellow                |
| G   | 3:02                 | $6.60 \times 10^{14}$ | Blue                            |
| A   | 5:03                 | $7.33 \times 10^{14}$ | Indigo-<br>Violet               |
| B   | 15:08                | $8.25 \times 10^{14}$ | Ultra-<br>Violet<br>(invisible) |

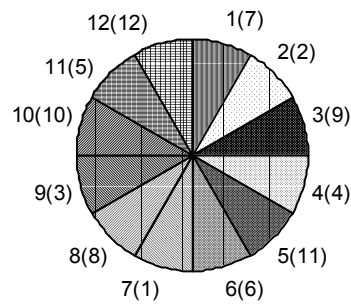
**XIV Color Perception**<sup>166 167</sup>

| COLOR       | EMOTIONAL ASPECTS                                                  | PSYCHOLOGICAL ASPECTS                                                        | REPRESENTS                                                                                                                       |
|-------------|--------------------------------------------------------------------|------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------|
| Dark Blue   | Tranquility<br>Contentment<br>Tenderness<br>Sensitive<br>Affection | Subjectively concerned<br>Passive<br>Incorporative<br>Perceptive<br>Unifying | Depth of feeling                                                                                                                 |
| Bright Blue | Peaceful                                                           | Brightness                                                                   | Summer<br>Water<br>Sky                                                                                                           |
| Blue-Green  | Persistence<br>Self-asserted<br>Obstinacy<br>Self-esteem           | Defensive<br>Retentive<br>Possessive<br>Passive                              | Elasticity of will                                                                                                               |
| Green       | Tranquility                                                        | Fecundity                                                                    | Fertile growth<br>Fields                                                                                                         |
| Black       | Fear                                                               |                                                                              | Death<br>Blindness                                                                                                               |
| Orange-Red  | Desire<br>Sexuality<br>Excitability                                | Eccentric<br>Competitive<br>Offensive-aggressive                             | Force of will                                                                                                                    |
| Red         | Warmth                                                             | Aggressive<br>Self-regulating                                                | Danger<br>Fire<br>Blood                                                                                                          |
| Yellow      | Expectancy<br>Exhilaration<br>Active                               | Expansive<br>Projective<br>Eccentric                                         | Sun (associated with life, the center of the highest luminosity in the spectrum);<br>Protection against disease;<br>Spontaneity. |
| White       |                                                                    |                                                                              | Cleanness                                                                                                                        |

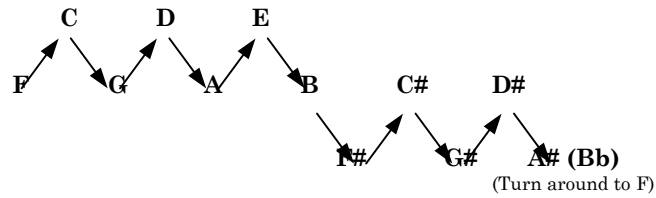
## XV Significance of the Lu<sup>168</sup>

| CATEGORY  | THE NOTES AND THEIR SYMBOLS |              |          |                 |               |
|-----------|-----------------------------|--------------|----------|-----------------|---------------|
|           | Koung                       | T'Chi        | Shang    | Yu              | Kyo           |
| Political | Emperor                     | Public Works | Minister | Material Things | Loyal Subject |
| Season    | --                          | Summer       | Autumn   | Winter          | Spring        |
| Element   | Earth                       | Fire         | Metal    | Water           | Wood          |
| Color     | Yellow                      | Red          | White    | Black           | Blue          |
| Direction | Center                      | South        | West     | North           | East          |
| Planet    | Saturn                      | Mars         | Venus    | Mercury         | Jupiter       |

## XVI Chinese Chord Circle<sup>169 170</sup>

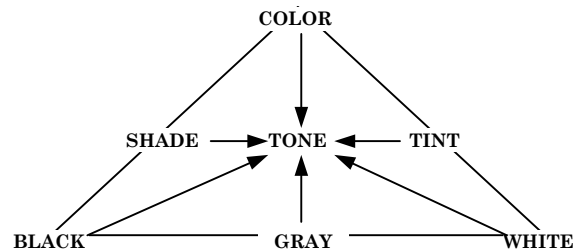


## XVII Scale of Proportion<sup>171</sup>



## XVIII Color Triangle

The significance of the Color Triangle is in the symbolism of the numbers seven, three, and one. The number seven represents the entire triangle/pyramid, much like the Greek tetraktys. The number three represents the three points of the triangle: color, black, and white. These three all point towards the center (one) of the triangle, which therefore represents unity.



## AUTHOR PROFILE

Joseph Vincelli was educated at the prestigious Berklee College of Music in Boston, where he studied under the late Joe Viola. After many years of teaching and recording in the studios of Los Angeles, he pursued a career performing his own music. During his nine years as a recording artist, Joseph has created an extensive discography including twelve CDs: *Touché*, *Hello Again*, *This Life*, *Passages*, *Holiday Rhythms Around the World*, *In Concert*, *Touch*, *After Five*, *I Will Wait for You*, *The Night is Ours*, *Christmas with You*, and *The Time Has Come*.

Joseph currently records and performs extensively throughout the United States with occasional tours internationally. As well, Joseph continues to give master classes on the significance of music in our lives.



## END NOTES

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- <sup>1</sup> Dorothy Ling, *Original Art of Music* (Lanham, MD: Aspen Institute, 1989), 63
- <sup>2</sup> Don Campbell, *The Mozart Effect* (Avon Books, 1997), 134
- <sup>3</sup> *Ibid.*, 135
- <sup>4</sup> Cyril Scott, *Music* (Northamptonshire: Aquarian Press, 1958), 111
- <sup>5</sup> *Wall Street Journal*, Editorial, December 28, 1999
- <sup>6</sup> Campbell, 198
- <sup>7</sup> *Ibid.*, 72
- <sup>8</sup> John Bartlett, *Familiar Quotations, Eleventh Edition*, (Garden City Publishing, 1944), vi
- <sup>9</sup> Fabre D'Olivet, *Music, Explained as Science and Art* (Rochester, VT: Inner Traditions, 1928), 46
- <sup>10</sup> Dorothy Retallack, *The Sound of Music and Plants* (Santa Monica: 1973), 63
- <sup>11</sup> David Tame, *The Secret Power of Music* (Rochester, VT: Destiny Books, 1988), 34-35
- <sup>12</sup> *Ibid*
- <sup>13</sup> Edward Bellamy, *Looking Backward 2000-1887* (Houghton Mifflin & Co., 1888)
- <sup>14</sup> Dr. William Easton, "Creative Thinking and How to Develop It," *Mechanical Engineering* 68, 8 (Aug. 1946)
- <sup>15</sup> John Haefele, *Creativity and Innovation* (Reinhold Publishing), 21
- <sup>16</sup> Easton, 121
- <sup>17</sup> Rollo May, *My Quest for Beauty* (Dallas: Saybrook Publishing, 1985), 238
- <sup>18</sup> Mike Samuels, *Seeing with the Mind's Eye* (NY: Random House, 1975), 242
- <sup>19</sup> *Ibid*, 246
- <sup>20</sup> Rollo May, *The Courage to Create* (NY: WW Norton & Co, 1975), 132
- <sup>21</sup> Samuels, 239
- <sup>22</sup> J. Rossman, *The Psychology of the Inventor* (Washington Inventor's Publishing, 1931)

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- <sup>23</sup> Samuels, 146
- <sup>24</sup> Ibid, 256
- <sup>25</sup> Samuels, 255
- <sup>26</sup> Ibid, 146
- <sup>27</sup> William Feezler, PhD, *Imagery for Healing Knowledge and Power* (Fireside, NY: 1990), 155
- <sup>28</sup> May, *Quest*, 215
- <sup>29</sup> Ibid, 217
- <sup>30</sup> Ibid, 220
- <sup>31</sup> L. Sminsky, *Physics and Metaphysics of Music and Essays on the Philosophy of Mathematics*, (Netherlands: 1957), 10
- <sup>32</sup> Scott, 181-182
- <sup>33</sup> Ibid, 152
- <sup>34</sup> Ibid
- <sup>35</sup> Ibid
- <sup>36</sup> Ibid, 97
- <sup>37</sup> Retallack, 68
- <sup>38</sup> Tame, 269
- <sup>39</sup> Ibid, 260
- <sup>40</sup> Scott, 28
- <sup>41</sup> D'Olivet, 47-48
- <sup>42</sup> M. Davis, "The Role of the Musician in Society," *ECK World News*, July, 1978
- <sup>43</sup> *New Webster's Dictionary* (NY: Simon & Schuster, 1991), 724
- <sup>44</sup> Tame, 191
- <sup>45</sup> Ibid, 61
- <sup>46</sup> Kate Hevner, "An Experimental Study of the Effective Value of Sounds and Poetry," *American Journal of Psychology*, 1937: 419-434
- <sup>47</sup> Ibid
- <sup>48</sup> Scott, 40
- <sup>49</sup> Leo Buscaglia, *Many of the Following Statements are from Love* (NY: Fawcett Books, 1972), 94
- <sup>50</sup> Ibid, 126
- <sup>51</sup> Scott, 40-41



- 
- <sup>52</sup> Scott, 41
- <sup>53</sup> "Music Education and Creativity," *Music Educators Journal* 46, 4 (Feb-Mar 1960): 58
- <sup>54</sup> Campbell, 65-67
- <sup>55</sup> Paul Hewitt, *Conceptual Physics* (Little, Brown, & Co Publications, 1977), 293
- <sup>56</sup> Tame, 24
- <sup>57</sup> Hewitt, 294
- <sup>58</sup> Ibid
- <sup>59</sup> Retallack, 38-39
- <sup>60</sup> Tame, 145
- <sup>61</sup> Ibid, 143-144
- <sup>62</sup> Retallack, 19
- <sup>63</sup> Campbell, 71
- <sup>64</sup> Harvey Bird, Farleigh Dickenson University, (NJ: Associated Press, 1987)
- <sup>65</sup> Joachim-Ernst Berendt, *The World is Sound* (VT: Destiny Books, 1983), 68-69
- <sup>66</sup> Guy Murchie, *The Chemistry of Music* (Old Farmer's Almanac, 1991), 215
- <sup>67</sup> Campbell, 71
- <sup>68</sup> Edward Podolsky, *Music Therapy* (NY: Philosophical Library, 1954), 22
- <sup>69</sup> Campbell, 33
- <sup>70</sup> Podolsky, 22
- <sup>71</sup> Ibid, 87-95
- <sup>72</sup> Podolsky, 22
- <sup>73</sup> *Muscle and Fitness Magazine*, June 1988: 15
- <sup>74</sup> Podolsky, 22
- <sup>75</sup> Henry Schumann, *Music and Medicine* (NY: 1948), 33
- <sup>76</sup> Retallack, 62
- <sup>77</sup> Campbell, 195
- <sup>78</sup> Ibid
- <sup>79</sup> Tame, 138-141
- <sup>80</sup> Ibid
- <sup>81</sup> Berendt, 175

- 
- <sup>82</sup> Edward Maryon, *Marcotone* (Boston: CC Birchard & Co, 1924), 75
- <sup>83</sup> Berendt, 174
- <sup>84</sup> Ibid
- <sup>85</sup> Genesis 1:3, New International Version
- <sup>86</sup> Genesis 1:6, New International Version
- <sup>87</sup> Berendt, 174
- <sup>88</sup> Tame, 206-207
- <sup>89</sup> Ibid, 206
- <sup>90</sup> Maryon, 8
- <sup>91</sup> Tame, 23
- <sup>92</sup> I. J. Belmont, *Modern Dilemma in Art* (NY: 1944), 220-221
- <sup>93</sup> Flora R. Levin, *The Harmonics of Nichmachus and the Pythagorean Tradition* (PA: The American Psychological Association, 1975), 42
- <sup>94</sup> Tame, 237
- <sup>95</sup> D'Olivet, 108
- <sup>96</sup> Earnest McClain, *Myth of Invariance* (NY: Nicholas Hays Ltd., 1976), 6
- <sup>97</sup> *New Webster's Dictionary*, 1551
- <sup>98</sup> McClain, 6
- <sup>99</sup> Tame, 22
- <sup>100</sup> Ibid
- <sup>101</sup> Ibid, 220
- <sup>102</sup> Maryon, 13
- <sup>103</sup> Scott, 33
- <sup>104</sup> Maryon, 12
- <sup>105</sup> Ibid, 80
- <sup>106</sup> Ibid, 97
- <sup>107</sup> Ibid, 27
- <sup>108</sup> F. A. Taylor, *Color Technology* (London: Oxford University Press, 1962), 11
- <sup>109</sup> Arthur L. Gupitill, *Color Manual* (NY: Van Norstrand Reinhold Co, 1962), 118
- <sup>110</sup> Tame, 222
- <sup>111</sup> Scarantino, 77-78

- 
- <sup>112</sup> Terence McLaughlin, *Music and Communication* (London: Faber & Faber, 1970), 63
- <sup>113</sup> Ibid, 97
- <sup>114</sup> Ibid, 95
- <sup>115</sup> Taylor, 83
- <sup>116</sup> Tame, 171
- <sup>117</sup> Berendt, 175
- <sup>118</sup> Steve De Furia, *Secrets of Analog and Digital Synthesis* (NJ: Third Earth Productions, 1986), 2
- <sup>119</sup> Ibid, 23
- <sup>120</sup> Tame, 176-177
- <sup>121</sup> Ibid, 228
- <sup>122</sup> Ibid, 248
- <sup>123</sup> Berendt, 68-69
- <sup>124</sup> Tame, 229
- <sup>125</sup> Ibid, 238
- <sup>126</sup> Berendt, 68-69
- <sup>127</sup> Tame, 237
- <sup>128</sup> Retallack, 67
- <sup>129</sup> Paul Ferrini, *Love Without Conditions*, (MA: Heartways Press, 1994), 8
- <sup>130</sup> Shakti Gawain, *Creative Visualization* (CA: Whatever Publishing, 1978)
- <sup>131</sup> Carl Seashore, *Psychology of Music* (NY: Dover Publications), 149
- <sup>132</sup> Ibid, 150-156
- <sup>133</sup> Ibid, 291-292
- <sup>134</sup> Hewitt, 272
- <sup>135</sup> De Furia, 4
- <sup>136</sup> Hewitt, 275-276
- <sup>137</sup> Jeans, 229
- <sup>138</sup> De Furia, 12
- <sup>139</sup> Jeans, 224
- <sup>140</sup> Ibid, 291
- <sup>141</sup> Ibid, 119
- <sup>142</sup> Hewitt, 291
- <sup>143</sup> De Furia, 10

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- <sup>144</sup> Hewitt, 288  
<sup>145</sup> Ibid, 308-309  
<sup>146</sup> Jeans, 27  
<sup>147</sup> McLaughlin, 95  
<sup>148</sup> De Furia, 14  
<sup>149</sup> J. Morgan, Ph.D., *The Physical Basis of Musical Sound* (NY: Robert Krieger Publishing, 1980), 137  
<sup>150</sup> Seashore  
<sup>151</sup> Ibid,  
<sup>152</sup> Tame, 239  
<sup>153</sup> Ibid, 237  
<sup>154</sup> H. Cowell, *New Musical Resources* (NY: Alfred A. Knopf, 1930)  
<sup>155</sup> Acts 27:28, New International Version  
<sup>156</sup> McClain, 6  
<sup>157</sup> Ibid  
<sup>158</sup> Maryon, 39  
<sup>159</sup> Belmont, 225  
<sup>160</sup> Ibid, 226  
<sup>161</sup> Ibid, 221  
<sup>162</sup> Retallack, 10  
<sup>163</sup> Tame, 258-278  
<sup>164</sup> Scarantino, 77-78  
<sup>165</sup> McLaughlin, 63  
<sup>166</sup> Taylor, 69  
<sup>167</sup> M. Luscher, *The Luscher Color Test* (NY: Washington Square Press), 32-37  
<sup>168</sup> Tame, 61  
<sup>169</sup> Taylor, 69  
<sup>170</sup> Luscher, 32-37  
<sup>171</sup> Tame, 248

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