THE MEANING OF KEY:

REDEFINING TONAL MUSIC

SECTION ONE
THE CONCEPT OF KEY AND BACH'S WELL-TEMPERED CLAVIER

Chapter One
The Concept of Key

From the beginning of the 17th century to the present, tonal music has dominated our musical life in the West and despite the introduction of serial, aleatoric, electronic, modal and minimal methods of composition, when the average listener says "music," he largely refers to tonal music, the music of the keys. Yet, if asked what a key in music actually is, most listeners and many musicians would be hard to put to give an answer. Musicians might refer to the key signature and say that a key is the number of sharps or flats in which a composition is played. However, although the number of sharps or flats in the signature may very well give the key its name, the actual definition of what key is, of what it is really about, is not touched on at all.

To begin with, in music we have individual tones. The distances between the tones are called intervals, and if we arrange the tones in ascending and descending series, the patterns of the smallest intervals, called half steps and whole steps, between the tones serve to identify these series as major or minor scales. The pattern of two whole steps followed by a half step and then three whole steps followed by a half step identify the familiar ascending major scale. All major scales, whether C, G or D flat follow this intervalic pattern, and unless one has perfect of good relative pitch he or she cannot distinguish the major scales from the next - that is, an F scale sounds just like a B flat scale. If tones are sounded simultaneously with certain intervals between them we will hear major and minor chords. Like the scales just described all major chords sound the same, so to most listeners a C chord or a G chord out of the context of the music will sound identical.

Scales, then, are successions of tones in time of fixed intervals whereas chords are simultaneously sounded tones. If chords are played successively in time, certain chord patterns or progressions are set up. By harmony is meant the progression of chords and the study of the laws which govern their orderly movement, one to the next. These progressions, like the chords and scales previously mentioned have their own rules and yet most ears cannot distinguish between two identical chord progressions, say I-IV-V-I, in different keys. Therefore, if

the chords to a simple tune are played, everyone who knows the song will recognize it without the melody being played, yet will not be able to tell whether the chords begin with C, F, or G.

What emerges, then, is that unless one has perfect pitch, the character of a tone, interval, chord, scale or harmonic progression will be the same as any other equivalent unit in its sound.

What we have been discussing is an order of increasing complexity. First we consider the *tone*, the simplest unit. The melodic succession of tones produces a *scale*. The sounding of any two of these tones produces an *interval*, three intervals produce a *chord*. Progressions of chords produce *harmonies* out of which is built a musical composition. These musical nouns: *tone* , *scale*, *interval*, *chord*, *harmonies* are the substantives of music - the whats.

But we have not really discussed the wheres of music, the settings or locations in which the action engendered by these units through rhythm and phrasing takes place. In our analogy with language the melodies and harmonies, built out of scales and chords, are the nouns; rhythms are verbs; and the settings where the passacaglias, gavottes, symphonies and sonatas with their different moods and feelings take place are the *keys.*

Key is nothing more or less than the definition of a musical space, an area or place in which the music happens. The Passacaglia in C minor of J.S. Bach is a passacaglia, that is a set of running variations over a ground bass which is repeated, taking place in the musical space or key of C minor.

Because all perfect fourths, all major scales, all major chords sounded the same and were difficult to tell from each other it has been assumed by many musicians that all major keys are also the same, since, unless one has perfect pitch, one cannot name the key in which a piece is being played. But this assumption is built on the fallacy that there is no qualitative difference between key on the one hand, and chords, scales or tones on the other. As we have pointed out, key is an entirely different and much more complex subject than chord or scale, and, furthermore, it refers to a space where things happen and not to the things themselves.

Take a harmonic progression and study its treatment in the hands of a master like Bach or Beethoven and you will see how the same progression in a different key will take on a totally new character and be treated creatively in a different way. Chords, scales, melodies, and harmonies in the key of E flat are immeasurably richer than those in G major pieces, the latter being lighter, quicker and simpler.

In music, the passage of time is incredibly important in building a mood, emotive state, feeling, direction in the listener. Sounding a given

interval, or chord, or scale and pointing out that all such intervals, scales or chords sound like each other is really a game or logical exercise that has little to do with the actual experience of music. On the other hand listening to a symphony of Mahler, say the Symphony for a Thousand in E flat, and then later hearing another Mahler symphony like the fourth in G major, or even just hearing the first movement of these works back to back, will strike the listener as being entirely different in mood, intention, and scope. The difference is not just between two works of the same composer but is the extreme difference between the keys of E flat major and G minor themselves.

If one spent the afternoon listening to recordings or playing on the piano works all written in the same key by different composers - say, the D minor Chaconne of Bach, the D minor piano sonata of Beethoven, the D minor piano concertos of Mozart and Brahms, one would feel the emotive force of the key of D minor and would begin to understand its characteristics better. Such an understanding of the key would then lead one to a clearer interpretation of all works written in D minor and would become an invaluable tool in learning to play and listen to music in that key. It would also teach some discrimination and eliminate interpretations which were blatantly out of keeping with the character of the key.

A method of teaching the key characteristics could certainly be evolved which would alternately teach the difference between keys by repeatedly listening to and playing works by the same master composer in different keys and exposing oneself to works by different composers in the same key. The former could easily be accomplished by studying Bach's *Well Tempered Clavier*, the Beethoven piano sonatas, and the Chopin Preludes. The latter could be done by a sampling of the same genre (string quartets, symphonies, piano concertos, piano sonatas) by four different composers - an afternoon of listening to or studying D major symphonies of Mozart, Haydn, Beethoven, Mahler and Brahms, for example.

Since key in classical music seems to describe the place or setting of the music, *where* the action take place, we are speaking metaphorically of the setup of a theatre and the play being performed there, or the layout of a garden and the plants being grown there. The setting or place of the musical drama being enacted has an enormous influence on the music being played and conversely the master composers again and again picked certain keys when they had certain feelings or ideas to express. When Mozart felt the mood of the Jupiter Symphony come over him, C major was right at hand as it was for Beethoven in the finale to the Fifth Symphony and as it was for Schubert in his last symphony.

That the choice of the key has not arbitrary but extremely significant in the production of a new tonal work will be appreciated even more if we look at sets of works in the same genre written by a given composer. The keys of Mozart's "Haydn" Quartets are all different and highly diverse, as are the keys of the 6 Bach Clavier Partitas, and the Beethoven Symphonies, with the exception of the sixth and the eighth both written in F. Beethoven avoided writing a second E flat symphony possibly because of the monumental nature of that key which he fully expressed in the Eroica. Mozart in all the 27 piano concertos wrote only two in minor keys, the D minor and the C minor, and these two are as different as night and day from each other. Those who feel that all minor keys are equivalent should study these two minor concertos of Mozart, or the C minor and D minor symphonies of Beethoven, and then notice how the D minor concerto of Mozart relates to the C minor concerto and C minor symphony of Beethoven.

For so many years now the assumption that major is major and minor is minor, that there are only two modes, has been so widely take for granted that it is difficult to dispall. But if one penetrates to the essence of the minor keys and their use by the masters one will find them as different from each other as they are from the major keys. For example, one could listen to the Sibelius First symphony in E minor, with its strong oppressive moods, its deep emotional probings, its diffuse fantasy, and then by the way of contrast listen to the dynamism of the D minor violin concerto of the same composer. Also we can sense the relationship between the brooding quality of this E minor symphony of Sibelius and the Tchaikovsky fifth symphony, the Dvorak New World Symphony, particularly in their first movements, and also to the Brahms fourth symphony in the same key. If we listen to the last three Tchaikovsky symphonies, the fourth in F minor, the fifth in E minor and the sixth in B minor and compare the first movement of each we will not be struck so much by their similarities as minor key pieces but rather by their differences. The fourth symphony in F minor is continually striving to balance, resolve, or right itself from its unbalanced and philosophical opening, much like the F minor Appassionata of Beethoven. Number five, like the other E minor symphonies mentioned above, wallows in a heavy, oppressive, emotional vortex. The last in B minor reaches down into the depths in its opening, much like the unfinished symphony of Schubert in B minor and the great B minor mass of Bach, and then climbs out in a kind of mystical searching.

There is no doubt that certain genres of work are dominated by certain keys such as the Violin Concerto by D major and horn

concertos (notably by Mozart) in E flat and this certainly has to do with the structure of the instruments themselves. Therefore, to study the character of the keys it is sometimes useful to study the character of the keys it is sometimes useful to study the piano works, string quartets and symphonies in which the use of key was not restricted to the physical limitations of one instrument. The piano and orchestral literature are particularly fertile areas for training and development of the key sense. Referring to compositions by their opus or catalogue number is decidedly unmusical and this habit should be avoided whenever possible in favor of referring to the composition as thought of by the composer, that is, by the key. It is more helpful to refer to a late sonata of Beethoven as the late A flat sonata rather than as Opus 110 or to the Moonlight Sonata as the C sharp minor sonata because of the immediate information yielded by the name of the key used.

The number of a given symphony may prove to be important. For example, it is fascinating that Beethoven, Schubert, Mahler, Bruckner and Dvorak wrote nine completed symphonies and so the significance of the number 9 becomes important for symphonic music. Also it is fascinating to compare the huge ninth symphonies of Beethoven, Bruckner, and Mahler as they are largely written around the keys of D minor and D major. A great deal can be learned about these two keys by a study of the similarity of treatment of them in these three gigantic works which are so closely related.

What emerges more and more as our study of the use of the keys by masters deepens is a recognition of families of keys, traditions of key usage, and therefore important influences of works on each other. The study of the 32 piano sonatas of Beethoven is incredibly fertile in the matter of families of keys. It will be found that Beethoven used 4 key groups in the sonatas. The first is the great E flat major, C minor, C major group; the second is the D minor, D major, D flat major group; the third is the F minor, F major, A flat major group; and the fourth is G major-G minor, E major-E minor, and A major-A minor group. Out of 102 sonata movements the first group is the most important and each succeeding group a bit less than the one before, in the order given here. It will also be found the the grandest and most aspiring works, often of great moment and popularity are in the first group (Pathetique, late C minor opus 111, Les Adiux, Opus C early C major); the second group produces highly individual and often bizarre works like the Hammerklavier, Tempest, and early D major; the third group shows works concerned with balance, either preserving this quality as with the A flat sonatas or correcting it with the F minor precipitous ones; the last group is taken up with smaller and less important works which have a strong personal meaning. Similar studies can be done on

other sets of works by the masters and these results could then be correlated between one set and another yielding interrelationships between families of keys and more data on key characteristics.

In many ways, when we deal with a great musical composition we are not dealing just with a work of art but with an alive organism, and the development and evolution of these organisms in a composer's work betokens growth, change, and dynamism, qualities we associate with life itself. Indeed, all the works of Beethoven, Mozart, or Wagner could be conceived of as a single organism, Beyond that, still, all of Western music itself could be seen as a society made up of highly complex individuals (composers) each of whom presents us with a wealth of ideas and characters (their work) much as Shakespeare did in his plays. It is the living aspect of music and a deep understanding of the interrelationships within the works of a giving composer or between the works of different composers that one interpreter of music must strive for repeatedly. Without this understanding we run the risk of presenting a "perfect" performance of a work which bears no relationship whatever to the stream of ideas, the evolution of thought which produced it and of which it is indelibly a living part. The tendency in the past twenty years to present the complete symphonies of Beethoven, the complete piano concertos of Mozart or the complete quartets of Bartok in a series is a very laudable one, whether presented live or in the sets of recordings, since they present a huge living organism which can be experienced in each state or its development and be more completely appreciated and understood.

It is a thorough understanding of the keys, both in theory and practice, which can serve as the basis of interpretation and performance of these great works. This most blatantly obvious characteristic, which for years now has been thought of as only "key signature", the number of sharps and flats placed first at the beginning of each line of composition, may prove to be the real key for the understanding of Western tonal music. It is inevitably chosen by the true master with sound musical instincts, never arbitrary and used with the greatest skill. More important than tempo markings, names, or traditional interpretations, often serving as the propagation of error from one teacher to the next, these keys of music stand unchanged on every page and in every bar of our music.

Chapter Two

Bach's Well Tempered Clavier
And the Keys of Western Music

The character of the twelve major and minor keys is given its first definitive musical form in the Well Tempered Clavier of Johann Sebastian Bach. Often called the Old Testament of Music (the Beethoven Sonatas being the New Testament), the two books of the Well Tempered Clavier have served many purposes for musicians - some have regarded it as the definitive handbook for studying fugal writing, while others have used it as a set of superb exercises for learning to play the piano. What I am suggesting is that Bach wrote it as a kind of basic text which was meant to illustrate what music had done in the new tonal system up to that point in history and to point the way for succeeding composers in the future. Once we accept the premise of the characteristics of the individual keys, which many writers of the 18th and 19th centuries took for granted, and once we see how Mozart, Beethoven, Schubert, and Brahms used them historically and developmentally, each building on previous composers, and once we grow curious as to where the whole tradition of the keys began, then we are led inexorably back to the Well Tempered Clavier as the basic text from which succeeding music developed.

In it, Bach sets up the character of each individual key, suggesting for each not only types of figures, phrasing, development, melodic lines, but also implied tempo, dynamic, and articulative characteristics. In addition, and closely related to these musical characteristics, we find a prevailing mood or emotive state, and even universal concepts and psychological characteristics. It must be remembered by those analytic thinkers who dismiss these ideas as decidedly irrelevant and extra-musical or non-musical, that much of Baroque art, including poetry and music, aimed to paint pictures and tell stories; in the case of music an accompanying text or libretto is illustrated with appropriate musical phrases, Bach's *St. Matthew Passion* and many of the cantatas as well as secular works like the Four Seasons of Vivaldi will provide a wealth of such information. Here music and text, idea and picture, are inextricably connected so that one cannot really be understood without the other. Romantic music was to continue this tendency in the nineteenth century with program music.

Bach's music is especially fascinating to an interpreter because of the lack of tempi, dynamic, articulative, phrase and other instructional markings. Back is regarded as the supreme teacher by many in this respect; he seems to say "each of you may interpret my music as he or she wishes." This often leads to an attitude of extreme license more interested in what Bach omits than what he specifies. Landowska one chided by a contemporary key board player for what seemed to be an unusual approach to the master's music replied "My

dear, you play Bach your way, I'll play him his." One subject we will deal with in this chapter is what "Bach's way" is in terms of his presentation of musical material.

The first piece we will examine is the first prelude of the Well Tempered Clavier. This little piece has been played by beginners for over two hundred years and has not diminished in its perfection of form and expressiveness of content. The simple reason for this is that it is, in my opinion, the single most influential piece of music ever written. When reproduced in an anthology or introduced into a piano method it certainly does not draw attention to itself, often seeming plain and repetitive compared to other more imaginative and exciting shorter works. But when considered as the first work of the Well Tempered Clavier, as the"gateway", as it has often been described, through which the initiate must pass into the wonders of the forty-eight preludes and fugues, then its monumental nature can be seen more clearly. Bach did not write out the 35 bars as they appear in our editions, but rather indicated the repeating figure in the first bar and then simply wrote each bar in a condensed form, as a chord. It is my contention that the simple rules of harmonic progression in Western music are summarized here and that Bach the teacher, under the guise of a simple introductory composition, is instructing us in rudimentary harmony in so convincing a fashion that we carry it with us unconsciously for the rest of our musical lives.

In the past fifty years American and British popular music have penetrated to every corner of the globe. The works of Irving Berlin, George Gershwin, the Beatles, and Cole Porter have become part of the entire world's musical consciousness. Yet, as with any form, there must be a basis for all of this harmonically simple and compelling music and that basis may be termed "Bach Harmony", the same enduring chord progressions which have lasted two hundred and fifty years from Bach to the rock music of today and in many ways can be said to be one of its chief characteristics. Indeed, these compelling harmonies were in formation for a hundred and fifty years before Bach's time, from the hymns of Martin Luther through Monteverdi, Corelli, Vivaldi, Gabrielli, and the French baroque masters. We know that Bach spent night after night copying out a good sampling and studied them for some years before beginning his own works. Bach, then, was not the inventor of these harmonies but was a kind of compiler or editor who have them shape and compressed them in such a magical fashion into the C major prelude. What exactly do we find in this astonishing work?

The supremacy of the tonic, or principal chord of the key with which it shares its name C major, for example, is taken for granted in Western music. The harmony, or progression of chords away from and

towards the tonic, returns to C major several times in the piece. Each of these C major bars is a kind of pillar that gives structure to the work, in a pictorial sense serving as supports to the edifice in a tonal sense whose return is constantly heralded by the use of the dominant chord, G. In bar 11, we feel we have returned to the tonic but in fact have been brought back to a “false tonic” of G ; this little modulation, or move away from the original tonal center to a new one betokens a slight shift in tonality, but the next series of chords brings us back in bar 19 to the true tonic of the C major again. The following diagram outlines the structure of the C major prelude:

DIAGRAM
C MAJOR PRELUDE:

In the following outline of the chords of the C major Prelude I have used the popular chords symbols in common use. Any of you who play guitar or piano and have studied even the most rudimentary chord progressions in C major will recognize the changes found here:

CHORD PROGRESSION
C MAJOR PRELUDE

According to the harmony notation taught in music schools the C chord is called tonic (I), the F chord sub-dominant (V) with D minor the supertonic or II chord, and A minor the sub-mediant or VI chord, the following progressions are immediately apparent:
I-V-I I-IV-V-I I-II-V-I I-VI-II-V-I

The first two of these are found in church, blues and pop music as are the next two which add the II and VI chords which lead us into the cycle of fourths or cycle of Dominants (V chords). In this important chord pathway each chord becomes a dominant for the next tonic, which in turn then becomes a new dominant, and so forth.

DIAGRAM OF CYCLE OF V’s

The movement from C chords (I) to Am chords (VI) is easily accomplished through their relation as relative major and minor of each other. Through the use of bass movement by half steps and diminished chords we are also led to the world of chromatic progressions and through the simple scale of C major to the possibilities of diatonic progressions in the scale series.

ILLUSTRATION OF SCALE SERIES

Bach's possibilities of harmonic progression in this little prelude may be summarized as follows:

1. I, IV, V progressions
2. Relative minor progressions
3. Cycle of dominants
4. Diatonic progressions through the scale series.
5. Chromatic progressions

These five rules, or harmonic possibilities, can be seen to govern the movement from one chord to the next.

If we look at the preludes and etudes of Chopin and the preludes of Schostokovitch the homage to this work from their own C major works is revealed. The first etude of Chopin is a musical restatement and reworking of the little Bach prelude in the musical language of the Romantic piano. The first two bars of the Chopin etude take the C major arpeggio and spread it out over the entire piano keyboard which by that time had expanded considerably from Bach's harpsichord. The repetition of the figure in succeeding bars parallels the general format of Bach's prelude and does not radically depart from its harmonic language. In the case of Schostokovitch the harmonic departures are much more severe, yet the opening chord is the exact series of notes written by Bach.

The straightforward nature of C major is felt in almost every classical composition. The *Wanderer Fantasy* of Schubert, and also his "Great" symphony, the *Jupiter* symphony of Mozart, the last movement of Beethoven's *Fifth*, and the opening of Richard Strauss's *Also Sprach Zarathustra* all bear this stamp. Looking at many C major pieces you will find these same chords and progressions from the first prelude working themselves out.

We might stop for a minute and ask ourselves why this happened, how the influence of the *Well Tempered Clavier* was so pronounced in music history. Most of Bach's works were not published until after a hundred years, but the Well Tempered Clavier was and so Beethoven, for example, was said to have played most or all of it in public before the age of sixteen. His works, which become so influential, then, were guided from the outset by Bach although he never consciously gave expression to that thought in his letters or conversations. Passages from the Beethoven sonatas for piano can be compared to corresponding preludes and fugues in the same key by Bach and shown to derive musically from them. It was the key sense, particularly, the choice of which key to use to express his musical and

emotive ideas, which Beethoven so naturally derived from his early contact with the *Well Tempered Clavier*.

Also, we might observe that Mendelssohn and Schumann literally discovered the works of Bach in the library of a collector of his music, and gave it to the world. Mendelssohn conducted the *Matthew Passion* of Bach in concert one hundred years after Bach first presented it. Beethoven, Mendelssohn, and Schumann, then, may be said to have transmitted Bach directly to the Romantics, and with him the key characteristics on which his music is so squarely based. Dr. Hugo Zelzer suggested to us twenty-five years ago in a music class at the University of Vienna Summer School in Strobl that Johann Sebastian Bach was the first Romantic composer.

In Rita Steblin's astonishing book, *A History of Key Characteristics in the Eighteenth and Early Nineteenth Centuries*, she gives a very clear and detailed impression of how explosive an issue, how widely debated and discussed, this whole question of the character of the keys was during Bach's time. One important reason why the new well-tempered tuning introduced in the 18th century was so desperately fought by so many musicians was that they felt it would destroy the characteristics of each major and minor key which they took for granted. Each defender of these characteristics seems to have had his own ideas of what each key was expressing in terms of mood and feeling, and these ideas appear more to be based on subjective response rather than an empirical examination of the keys themselves and their tradition or usage. Rameau stood as the champion of the new well-tempered tuning which came to be universally accepted and his view was bitterly opposed by Rousseau. In Germany, Kirberger was the champion of the key characteristics and was opposed by Marpurg, a follower of Rameau, who wanted to deny these characteristics and bring in the new well tempered tuning. The interesting point here is that Kirnberger was accused by Marpurg of not being faithful to J.S. Bach, whom Marpurg believed taught Kirnberger to tune in equal temperament. According to Miss Steblin's book, C.P.E. Bach wrote a letter to Kirnberger exonerating him and stating the following:

The Conduct of Herr Marpurg against you is abominable... You may proclaim that my fundamental principles and those of my late father are anti-Rameau.

Perhaps it is possible then, that Bach believed in the characteristics of the keys but realized that the equal temperament was a magnificent idea even though he opposed it with one part of himself, and knew in

his heart that its adoption was inevitable. By writing the *Well Tempered Clavier*, and this is only speculation on my part, he was able to preserve the key characteristics in his music even through the adoption of Well Tempered tuning which he seems to be advocating in writing *The Well Tempered Clavier*.

But what of Mozart? How can Bach be said to have influenced him when we believe that he did not hear the Master's works until just a few years before his death, at the home of Baron von Swieten in Vienna? We must remember that Bach's sons themselves were teachers of Mozart the child, particularly J.C. Bach who taught him in London, and although they regarded their father as old fashioned in many respects, yet had learned their musical lessons well and in a thorough fashion. Indeed, several of Mozart's early works are rewritings of the works of J.C. Bach. So it is quite possible that Bach's feelings about the keys were transmitted directly to Mozart at this most impressionable age. When Mozart was finally exposed directly to the *Well Tempered Clavier* by van Swieten later in life, he immediately transcribed three of the fugues for string trio, indicating his admiration for them. The influence of these works was enormous on Mozart's late polyphonic stye and the Bach works exploded like a bombshell on Mozart's musical consciousness.

It would seem, then, that two principal sources were open to any composer after J.S. Bach which could determine that composer's choice of key for a particular composition and which could guide his silent and often subconscious education regarding the development of key sense. The first was the traditional use of the keys by earlier composers and Bach culminating in the "Mosaic Tablets" of music, the two parts of the *Well Tempered Clavier*, and also subsequent explorations and investigations by those composers after Bach; Mozart, Schubert, Beethoven, Liszt, Chopin and many others who in their written work extended Western tonal thought and gave further shape and scope to the character of the keys themselves. The second source available to any composer at a given time was the Universal source, one which so dramatically influenced Bach in all of his writing. Perhaps Bach, a very religious man, would have called this source God, and we find S.B.D (Soli Gloria Dei) on many of his manuscripts written in his had. Perhaps we would call it the Universal Force or Energy, or perhaps the structure of the Universe itself, realizing that the structure of music and the structure of the Universe may be very close, if not identical. A few years ago a Harvard professor announced that, tiring of the endless subdivisions of matter he increasingly faced as he penetrated the atom more and more deeply, he was going to study the fugues of Bach for a few years in order to discover more of the basic

structure of the Universe. In a sense it may be possible that the first music ever made did not involve man at all but was caused by the vibrations and collisions of the atoms themselves.

Related to the first influence, that of other works of music, a composer often can be influenced by his or her own works themselves. Nowhere is this clearer than in J.S. Bach and the characteristics of the keys abstracted in my book from the *Well Tempered Clavier* can be cross checked against the use of these keys in Bach's other works. It is also possible to study Bach's development itself from the two-part to the three-part inventions, and through the earlier organ works as well as the instrumental works written at Cöthen.

What is Bach doing in the *Well Tempered Clavier* if not teaching by example? He is presenting a form of composition not based on sudden inspiration or melodic songlike repetition but rather on the unfolding of an inner logic in which the entire composition is compressed into the opening figure of the prelude or the subject of the fugue and evolves inexorably from it. In these preludes and fugues, and in the inventions as well, is found the whole style of classical thematic development found in Haydn, Mozart, and Beethoven. Thus, the monumental symphonic forms of Mahler, Wagner and Bruckner not only look back to the classical masters but past them to find their origins in the tiny compressed musical forms of Bach.

The analogy in nature for the development, often symphonic, found in these Bach works is a Goethian one, that of the seed and the plant. Different seeds produce different plants in Nature and so it is in Bach's work, somehow the seed already has in it the complete fantastically complex for of the entire adult plant ready to spring to life. It would seem to me that once Johann Sebastian Bach had the theme of the fugue he had the entire composition. These fugue subjects, then, are ideal for studying key characteristics since in a highly condensed and easily recognizable for they present certain important characteristics of the key itself. Furthermore, the themes of the Beethoven sonatas and symphonies, compressed and highly charged, carry within them, as seeds do, much of the finished structure of the entire work.

Because of this astonishing fact, the student of music can, in the study of simple themes used in important works, learn a great deal easily about the structure of the composition itself, about its development, as well as about the characteristics of the keys. Furthermore, this study can do much to determine how a given composition may be interpreted. Study of themes, then to the player of sonatas or the conductor of symphonies, may be one of the clearest guides as to how the given composition is to be rendered. Such is the

importance of the simple tune in music, something that every composer from Luther through Gershwin has secretly acknowledged. It is not only the incredible complexity, called mathematical by some, which brings audiences toward classical music but also its innate and unshakable simplicity and the tension present between the two. It will be seen over and over again that the similarities between so called folk, pop, and jazz music on the one hand and the works of the classical masters on the other are much more important than the differences. Indeed, the master tonal composers based a good deal of their work squarely on the folk tradition.

Because Western music is tonal and seems to be highly mathematical and complex, and because on the other hand primitive (I prefer to say "world") music is so seemingly simple in its melodic and harmonic orientations, the differences between them have always been stressed. The biggest stumbling block to allowing Western music to join World Music, not as superior to it but simply belonging to it, has been the development of tonality itself. (Paradoxically, tonal music has spread to every corner of the globe, largely as a popular or rock idiom, and comes closest to a universally appreciated music.) Although we readily accept that each mode of Indian, Javanese, ancient Greek or African music suggests a mood, an idea, a dominant feeling or state of being, academic writers on music have for the most part refused adamantly to accept that these feeling states can be applicable in any way through the keys to the music of Mozart, Schubert and Beethoven except as major and minor convey their happy vs. sad, inner vs outer, or some other such dichotomy.

It is accepted by almost every music school that where World music presents a variety of modes that the West has produced in its masterworks only two, major and minor. This work contends that Western music has not just produced two harmonic areas since 1600 but rather twenty-four, namely each of the major and minor keys. Viewed from this orientation which is quite simply that of Bach's *Well Tempered Clavier*, Western music can be compared more easily in its essential features to other musics of the world and likened to them. It might be said that the willingness of Western musicologists to admit only the major and minor modes is symptomatic of the Western tendency to get trapped in a Descartian dichotomy of subject and object, inner and outer, observer and observed. Western thought is now at last moving toward a reconciliation with the Eastern view that it is a multiplicity of points of view or feeling states which are the embodiment of one grand underlying "universal mind" or ruling principle. These attitudes move mankind away from parochialism and an egocentric, anthropomorphic world view. Albert Einstein not only

believed in the relativity of all things but at the same time in God as a universal source of order.

Western music, then between 1600 and 1900 did not develop as we have been taught into a major-minor dead end at all, but into a blossoming or profusion of tonal areas which exceeded in scope the restrictive academic modes from which they partially developed and reached out toward other modes of the world's music.

When Schönberg and other twentieth century composers sought to break out of the so called major-minor tonal system and present an equality of twelve tones, they were really paying homage to J.S. Bach. When the layout of the *Well Tempered Clavier* is examined it will be found to be nothing more or less than what Schönberg's disciples called a tone row. The order of keys presented by Bach begins with C and travels in an ascending order through C sharp, D, E flat etc. It is true that a major prelude and fugue is followed by a minor one and it is this major-minor characteristic which has dominated so much of our thought. It is however, the movement through the keys which is of really greater interest, opening up worlds of possibility. Unlike the attempt of Schönberg to make all the tones equal and therefore featureless in themselves, Bach's system presents the twenty-four major and minor keys as fully formed individuals or personalities, in a way a community of individuals.

Psychologically, as well as universally, he is presenting different human personality types, different universal states, different social categories, different feeling states and states of being. Bach is not just the musical teacher and scientist but also the psychologies, physicist, biologist and sociologist, in other words a great world thinker and all of this is expressed in his musical forms and ideas.

When we say that C minor is the tragic key of music, the key of fate and destiny, that it speaks of restriction and taking responsibility for one's actions, or when we talk of D minor as the key of wildness, dionysian and often demonic, a key of incredible dynamism, we may be talking not only about music but also about psychology and physics as well. Bach was able to point the way with the *Well Tempered Clavier*, but in the same way that the fugue subject is the seed for the plant which is the final fugue, so each prelude and fugue of the *Well Tempered Clavier* is the seed for the G minor, A major, or B minor "plant", composition, of Schubert or Mendelssohn which is to follow it. Many characteristics of C minor can be seen in the Bach prelude and fugue of that key, but many more can be seen and appreciated in the Tragic symphony of Schubert, the fifth symphony of Beethoven, or the Resurrection symphony of Mahler, especially since they are longer and spatially bigger works. We can actually live through the emotional

states which they define - in apprehending a small Bach prelude or fugue we are “seeing” the characteristics of the key but in Mahler or Beethoven we are experiencing it.

Probably the most graphic way to illustrate the relation between a prelude and fugue in a given key from the *Well Tempered Clavier* and a given piece by a later master is to play the two at the piano consecutively. As a matter of fact, if several pieces in the same key are played over a period of two or three hours, either by a listener on tapes or records or by a musician on the piano, the concrete relationships between them and the feeling of the key will begin to emerge, and with it the tempo, rhythm and underlying meaning of the works.

Let’s use the key of G major as an example. Try playing both the prelude and fugue in that key from both books of the *Well Tempered Clavier* on the phonograph or piano. Immediate similarities will be observed: running passages in sixteenth notes being the norm and suggesting velocity rather than stasis. Then try the G major partita for clavier and the Goldberg Variations. When Glenn Gould first presented his performance of the Goldberg Variations they were judged by most musicians as being exceedingly fast. However, after studying the manifestations of G major in other works of Bach and also in other composers, the whole Gemini, mercurial and speedy quality of G major begins to emerge. Perhaps Gould’s interpretations only sounded fast to those brought up on slow playings of the Goldbergs which were highly inaccurate in their choice of tempo.

Bach is, of course, silent on the subject, leaving no tempo markings, but if we then look at other composers and their use of G major what emerges is a playful, childlike key, clear and concise with little ambiguity of mood (unlike C major for example in all of its many manifestations), often highlighting long running passages and rarely achieving a tone of seriousness. G major is, then, a “little” key as used in Mahler’s smallest symphony, number four, Mozart’s *Eine Kleine Nachtmusic* and G major “Haydn” Quartet, The “Gypsy” Piano Trio of Haydn, Dvorak’s Symphony number eight, all of the Beethoven piano sonatas in that key and Bach’s Anna Magdalena Notebook pieces. It is hard to find a really serious piece in G major (depending on how we view the Goldbergs), perhaps the first movement of Beethoven’s Fourth Piano Concerto being an exception in its opening mood, but the finale being more typical of the key. Therefore, we can say with some assurance that if one of the master composers set out to write a big, important, serious piece that G major would not be the key of choice.

If after all of this playing, comparison and study of G major we then took a work like the fifth partita of Bach and asked how it should

be played, the answer would be a bit less ambiguous. No longer would it be true that the piece could be played in whatever way the player felt it and perhaps more ruminative, profound and slow playings of it might now appear a bit absurd. If we wanted Mendelssohn's opinion, any of his piano pieces or the last movement of his first concerto could be consulted, and similarly with other composers. By this cross checking of one composer's work in a key against another a judgement can be easily obtained.

In comparing works of art T.S. Eliot's essay on the subject is helpful. Eliot points out that all works of art can be conceived of as contemporaneous with each other and thus can be thought of existing all at the same time within a huge room that the reader, or in this case, the listener, can traverse, going from one to the next in any order he or she pleases. Therefor our perceptions of a modern work can influence our perceptions of an earlier work as well as the other way around. Brahms can influence Bach and vice-versa, not historically, but because in Eliot's model both works exist now in the present. Agi Jambor used to say that if your Bach needs something that you can't get to, practice Chopin. All areas in our tonal music are closely interrelated, more than in any other art. The keys are the means available at any time to interpreters to get in touch with the composers, moving backwards and forwards in time, as Eliot suggests.

The specific Keys of the WTC

Let us now turn to an examination of the keys themselves. Bach not only arranges them but also names them. For example, he does not refer to the next key after C minor as D flat but as C sharp major. We might say that the naming of C, D, E, F, G, A, B major and minor is very obvious because they are all natural tones. However it should be remembered that any of the twelve tones can be named in a number of different ways. C is also B sharp or D double flat. E is F flat and F is E sharp. But if the key of F major which has one flat were named E sharp instead an unnecessary complication would occur as the key of E sharp has 11 sharps including the tone F double sharp! This example is of only theoretical interest but what about the case of the 5 non-natural tones, what do we call them? Here the ambiguity becomes more evident - is it the key of A flat or G sharp? E flat or D sharp? We might guess that the key is given the name that produces fewer sharps or flats, as musicians are always more comfortable with simpler key signatures. This rule would hold well enough in four of the five non-natural keys: The key of B flat (2 flats) is preferred of A sharp (10 sharps).

The key of A flat will generally be used in preference to G sharp since 4 flats are preferable to 8 sharps, and E flat (3 flats) is better than D sharp (9 sharps). Since F sharp has 6 sharps and G flat has 6 flats either name could be used, but Bach prefers F sharp major. In the case of D flat- C sharp major we face a contradiction because although D flat contains fewer flats (5) than C sharp contains sharps (7) yet Bach chooses to used C sharp major in both books.

Furthermore, we have only discussed the signatures of major keys. In the naming of minor keys there is a case in which prelude number 8 is in E flat minor and its fugue is in D sharp minor in Book I, and in book two both the prelude and the fugue are in D sharp minor. The 7th prelude and fugue in both books are in the flat key of E flat, but three of the corresponding minor key pieces of the group are in the sharp key D sharp minor. Or consider the case of the seventeenth prelude and fugue in both books which are in A flat major (4 flats) but the corresponding eighteenth preludes and fugues are all in G sharp (not A flat) minor. These namings of the keys were to have important ramifications for following ages which did not always agree with Bach's nomenclature.

For some reason, composers have generally since 1800 preferred flats to sharps when they are faced with bunches of them. Both classical and popular composers seem to shy away from pieces written in many sharps. The nineteenth century in its choice of keys moved away from the "plainer" keys of C, F, and G major toward the more exotic D flat of G flat major. Liszt often used F sharp as much as G flat but Schubert and Chopin and also lesser known writers for the piano definitely preferred G flat to F sharp and certainly D flat was used much more often than C sharp. E flat, A flat and B flat were almost universally preferred as major keys to D sharp, G sharp and A sharp major, which were hardly ever used. So by the nineteenth century 10 of the 12 major keys had fixed names while D flat, although preferred over C sharp, did not eclipse its use, and F sharp and G flat because of their balanced qualities (6 sharps and 6 flats) were used almost equally, with G flat having the edge.

In the case of minor keys, C sharp minor was accepted over D flat minor, E flat minor over D sharp minor, F sharp minor over G flat minor, G sharp minor over A flat minor, and B flat minor over A sharp minor, in ever case agreeing with Bach's naming in the WTC (with the one exception of the 8th prelude and fugue in D sharp minor.) Both 19th and 18th century composers seem agreed that key signatures over six accidentals were to be avoided whenever possible.

The case of Mozart in the use of key is unusual, and cannot be avoided. Where Bach, Beethoven, Liszt, Handel, Wagner and most

others wrote in most of the 12 major and minor keys, Mozart almost always wrote in simple keys, writing in C major and A minor (no sharps or flats) and in major keys with only 1, 2, or 3 sharps or flats and no more. He also wrote preponderantly in major keys.

Other cases of key usage associated with certain periods can be mentioned. In the same way that D flat and G flat major were loved by the Romantics, they did not care for E major which was used as a particular favorite by Handel, Bach and other Baroque composers. An interesting parallel between the Baroque period and pop music in the West since 1950 which has also used the keys of E, A and D, the sharp keys, probably due to the rise of the guitar as the important instrument of the day. Since the open strings on the guitar are two E's, A, D, G, C those scales and chords are easier to play and, similarly, since the violin was the dominant instrument in the Baroque period and its strings were G, D, A, E, sharp keys were also chosen with some regularity. In the Baroque period a concerto or sonata for violin was often written in E major but in the nineteenth century violin concertos were most often written in D major. Mozart had a special liking and aptitude for A major, a key whose use he dominated in tonal music. Beethoven, because of this, may have found it difficult to write a great early work in A major, and the emergence of the Kreutzer sonata and the seventh symphony and the A major piano sonata opus 101 later in his oevre show a struggle and triumph in that area.

By the nineteenth century the orchestra itself began to emerge as the principal instrument of music, at least as far as the public was concerned, and along with the piano created a whole new set of preferences in key usage. In the case of the piano A major and E major may have been avoided because of the relative awkwardness of their scales, particularly in bravura work, and because of the construction of the piano C major, all white notes, was not at all handy for the big octave passages which were better fingered for velocity and dynamics on alternate black and white notes as in Chopin's octave etude. The orchestra brought in a whole new set of problems because not all instruments were C instruments but actually, as in the case of the clarinet, horn, trumpet, read one note but sounded another. If the orchestras were playing Beethoven's Seventh Symphony in A major, the B flat Clarinet would have to read in the key of B (5 sharps) to play in A, since it always sounded one whole step lower but if it played by an A clarinet, the clarinet part in such a piece would have no sharps and flats at all since it would be read in C major.

In the Baroque time horn players had to carry various crooks, extensions of their instruments, or even different instruments when pieces in different keys and styles were going to be played. The

invention of the valve system for the modern trumpet, the standardization of its size and most important the acceptance of the tempered tuning which made all half steps equal solved many of the old physical problems but it also changed the use of many keys quite dramatically. Since trumpets and clarinets were more often in B flat as the modern orchestra emerged, the key of E major would be avoided just because these instruments would be faced with reading the 6 sharps of F sharp major in their parts which could be worrisome in fast passages, whereas a piece in B flat would put them in C. The same thing was true of the dance bands in the thirties and forties of the twentieth century which would rarely play in sharp keys in comparison to the honored E flat and B flat, which put the E flat and B flat saxophones in a better position.

Yet, because of the unchanged construction and string tuning of the violin there are still orchestral players who are not entirely happy with the key of E flat, D flat or A flat compared with the natural keys of E, D, or A. E flat caused problems for the violin because of its extreme popularity beginning with Mozart and Beethoven symphonies and chamber music and moving into the nineteenth century with Robert Schumann, who loved it also. On an instrument such as the violin, viola, cello or bass, suited to an E major scale, the scale of E flat major is not easy to play. Yet because of the importance of this heroic key, for example in the Eroica Symphony, opening to Das Rheingold, and Ein Heldenleben by Strauss violinists were forced to make the necessary adjustment in their playing. Perhaps the reason that the keys of C and D major have been used so much in every period is that they represent a compromise in which the transposing instruments are not in the worst keys possible and the non-transposing instruments are quite comfortable.

The idiosyncratic preference of certain musicians for certain keys cannot be denied by anyone who plays a musical instrument. Jazz musicians have favorite keys, as do blues musicians, in which they feel most comfortable when improvising, which is their stock in trade. C major has been a great favorite in this area and it is said that Bix Beiderbeck, the great trumpeter, took virtually all of his solos in C. On the other hand great untutored pianists like Errol Garner could play in the most difficult keys without ever having learned to read music in the first place.

The Keys of the Well Tempered Clavier
A Brief Description

I. C major (Virgo)

A key used for very simple or very complex statements, this quality exemplified by the simple prelude and the complex fugue of Book I and the complex prelude and simple fugue of Book II. The key is tremendously clear and logical, rather than emotive or sensual, capable of generating great effects through the pure use of form. The mood is stately and detached. Although many modulations to the flat or sharp side could be expected from this key, usually called neutral or simple, it is remarkably stable in its preservation of the tonic except in Prelude I of Book II in which the complexity of the key is fully revealed. Often described by listeners as clean, pure, crystalline, perfect.

II. C minor (Capricorn)

The key of fantasy and drama as represented by the prelude and fugue from Book I and of sobriety and mystery in the prelude and fugue from Book II. In both sets its formal presentation involves contraction and compression rather than expansion. The key emphasizes the static and stable rather than the dynamic or quick. The opening of the prelude from Book I is consistently misinterpreted by being played quickly, entirely out of keeping with its serious tone and which can only be rendered at a moderato or andante. The tempo changes to reinforce this view and show the dramatic freedom of tempo allowed in this key of fantasy with its stylized adagio.

III. C sharp major (Virgo)

Similar to C major in its straightforwardness and clarity of expression but aiming more towards the sensuously beautiful, lacking C majors dynamism. Aiming toward aesthetic and pleasing effects, sound rather than form. Similarity of structure between C major prelude Book I and C sharp major prelude Book II within the bar, each figure being represented. Extremely light in articulation, execution and mood, producing bell like tones and tending in its sensuality even toward the exotic. Richer than C major and more playful.

IV. C sharp minor (Scorpio)

The key of blackness and death, the C sharp minor fugue from Book I being the among the most profound and serious statements in all music. Its obvious connections with Beethoven's Moonlight Sonata and his late C sharp minor string quartet should be noted. It is a passionate, dark, dynamic key springing from the unconscious, chthonic depths of man and pressing on with unrelenting, yet contained, force. Great tonal complexity and unusual numbers of accidentals are found in the very difficult fugue from Book II. The tempo is felt as slow and heavy.

V. D major (Aquarius)

The key of joy. Bursting with trumpet figures and speaking of exuberance and upward movement. The ever present feelings are of Gloria and Hallelujah. The most irrepressible of all keys and also the most hopeful and optimistic. Dotted notes, running figures and repeated notes generate great excitement. Tempos run toward allegro or faster as opposed to C major whose tempos tend to be slower and aim more for spatial effects. Extremely bright.

VI. D minor (Scorpio)

The key of extreme dynamism, relating to C sharp minor in its unrelenting quality, always pressing onward, but not so dark or despairing. This is the key of wildness, dionysian, dithyrambic, destructive of any stasis or cessation, and irresistible in its rapid flow. More involved in chromatic harmonies than D minor, impressing one with its instability and constant change. Where C minor distinguishes itself through melody, form, and dramatic effect, D minor is all rhythm and is fed by incredible energy. Both fugues have a winding, snakelike quality and both preludes are a flood of unending flux.

VII. E flat major (Leo)

The key of golden richness, sustained and full in all of its manifestations. Sustained pedal points, melodic tones and stable rhythms found throughout. A key of tremendous stability with few severe modulations. The number 3 is very important for Bach in this key and the three parts of the prelude from Book I and the symbolism of the 3 flats can be compared with the Trinity or Queen Anne prelude and fugue in the same key for the organ. Both Beethoven third symphony and piano concerto are in three flats as well. The tempo should never be rushed, rather always sustaining and holding back to produce the fullest effects. Like C major it can produce large spatial sounds, but is devoid of C major's plainness, emphasizing everything rich , full, and blazing. The feelings aroused in listeners are described as warm and radiant, symbolized by the sun.

VIII. E flat minor and D sharp minor (Cancer)

_____These obscure and rarely used keys, E flat minor coming to be used after Bach much more than its companion, are shown here as stately, slow, inward, and spiritual in tone. Extremely rich and full they carry a tone of disembodiment, decidedly non earthly or physical, but also highly personal. The grief expressed in the E flat minor prelude is

highly stylized and presents the highly spiritual elements of Bach's nature in their fullest from than any other prelude or fugue from the Well Tempered Clavier.

IX. E major (Taurus)

All of the works in this key are extremely simple and direct, with few modulations, and speak of pastoral innocence. This gloriously green and verdant key is throughly Baroque and loved by Vivaldi, Scarlatti, as well as Handel and Bach in their most playful moods. Tempos are moderate, articulations legato, development minimal, and themes hymn and song alike. The prelude from Book I is an aria, the fugue from Book II a four part sturdy Lutheran hymn. Unselfconscious and unpretentious, richer than C major but not aspiring towards greatness as E flat. A full, comfortable, extremely stable and mundane key.

X. E minor (Cancer)

A watery key, completely dissolving of form and structure which are often disconcertedly absent. The strength of C minor and C sharp minor and instead a drifting quality full of mystical uncertainty and sensitivity are apparent. Rhythms tend to be loose and dissolving, aiming toward flow rather than stasis. A sadness and extreme melancholy, as in the opening of the Matthew Passion, are always present. Surprisingly few harmonic instabilities, accidentals, chromatic harmonies in the preludes of this simple key (one sharp), but just the opposite found in the fugues which are both unusual pieces, the first being only two voices the second being highly dramatic, even bizarre in its daring subject and convoluted development.

XI. F major (Taurus)

Perhaps the most stable of all the preludes and fugues in the Well Tempered Clavier. The key is highly pastoral and mundane, like E major, not marked for great expressions like D, C, or E flat major, but rather speaking of the more ordinary, everyday life. Never to be rushed in tempo F major tends to sing rather than hurry and the cantabile qualities must always prevail. The fugue of Book II emphasizes F major's playful qualities and a sense of humor often associated with this key.

XII. F minor (Libra)

A key constantly concerned with a striving for balance with fugue themes which present a disequilibrium which must be miraculously righted in the course of the fugue. The Appassionata by

Beethoven relates to both of these fugues. It is a sensuously beautiful key but one that seeks, sometimes frantically, a solution or a resolution for its rhythmic and harmonic problems. Although subject to instability through chromaticism and modulation, as well as melodic ambiguity using accidentals, it is nevertheless philosophical and thoughtful in its approach. The extreme logic of the opening two bars of the first prelude are undercut by its subsequent wandering and in the second prelude, and both fugues the lack of decisiveness in their development cause them to wander, sometimes undercutting their form and driving them to a frenzy of indecision.

XIII. F sharp major (Aquarius)

One of the least used major keys in music, Bach presents it here as an extremely stable and clear key, like D major, but not with its aspirations towards greatness. Its clarity and brilliance are joyful and uncomplicated. Although the first prelude and fugue share some of the simplicity and mundane aspect through E and F major, the second set are much more complicated works, yet still preserving their evenness and stability.

XIV. F sharp minor (Libra)

Lacking a strong emotional effect, this somewhat neutral key as presented by Bach is used surprisingly little in the West. It shares a certain simplicity with its relative major, A major, and a directness and uncomplicated emotional structure unlike most other minor keys. Its regular tempo gives the feeling of stillness in its unhurried and constant, almost droning, flow. All upset or discontinuity is avoided and although some complexity is found as in the second fugue, it develops in a regular and clear fashion.

XV. G major (Gemini)

Along with E flat minor and D minor it is one of the easiest of all keys to characterize, being totally given over here in Bach and in most of music to the extremely quick and light expression of a non-serious mode. This most mercurial of all keys is logical and simple. Neither prelude modulates widely and both reinforce the tonic and dominant harmonies. The feeling of speed is never distant from G major and its clarity and playful mood must be maintained throughout.

XVI. G minor (Gemini)

The other side of G major, the two being twin keys, more than any other tonic major-minor pair, with the possible exception of D major-minor. In the prelude and fugue from Book II we are shown the

disturbed, jumpy side of G minor, very disquieting. The first fugue although not as extreme as its Book II counterpart is also discontinuous and unsettling. The key also has a restless and even dynamic quality which can be heard in Mozart and the contrast between the open, guileless G major and the tortured G minor can be seen in the contrast of the quick major variations of the Goldbergs and the three minor ones, all in G minor, particularly number 25. We might say that the contrast is musically schizophrenic, pointed out not only by the sharp contrast between G major and G minor but also the splitting of the G minor fugue subjects themselves here in the WTC.

XVII. A flat major (Libra)

A highly stable and balanced key is presented in the preludes and fugues here. It is every bit as rich as E flat major, but lacks its heroic qualities, and does not aspire or seek importance for itself. Everything in it speaks of repose and equilibrium, singing and cantabile, the tempos unhurried. Both preludes have a mellow flowing quality and both fugues are broad and expressive with the eighth notes forming the rhythm rather than the sixteenths.

XVIII. G sharp minor (Leo)

A key so seldom used in music as to be remarkable in that respect. Bach and Moussorgsky may have had the best feeling for it, and the prelude and fugue from Book II are worthy of comment since they may be the best pieces ever written in this key. All four pieces from the WTC are robust and strong, but also gloomy and the double sharps in the opening notes of three of them speak of a feeling difficult to fathom. They all contain a quality of Bachs music that is not easy to define, but it involves a North German seriousness and complexity, a far reaching daring and a difficulty not even attempted by many other composers. Also very expansive.

XIX. A major (Aries)

The primal key, innocent and childlike, A major has also an energy rhythm, a drive , that is absent in G major which is much lighter. The harmonies are simple and a heroic or heraldic quality found in D and E flat major is also found here and the aspiring nature of the second A major fugue is found in Beethoven's Seventh Symphony as well as the dancelike nature of its prelude. The single tone A with which the fugue from the Book I begins could be the tone with which all musical orchestral and solo tuning begins, highlighted by Bach as an eighth note rests. A major is always forthright and to the point, very

bright in its sound, and totally without softness or subtlety and a bit edgy or hard.

XX. A minor (Sagittarius)

Completely lacking the stability and order of C major with which it is unfortunately often linked because of the key signature, lacking sharps and flats. It is the key of chaos with an extreme chromatic bent, modulating widely, extremely restless and impulsive. The prelude of Book I shows the blank character of the key and the bareness of its space while the other three works show the bewildering movement of A minor. The fugue from Book II is a highly charged and compressed work in which all times values, quarters, eighths, sixteenths and most important the thirty second notes battling for the ascendancy. Emotionally the key is at once tortured and modern, bare and unpleasant, sometimes even expressionistic.

XXI. B flat major (Sagittarius)

In both preludes and fugues B flat major is the key of the river, endlessly flowing, and in other composers works it also gives this attribute particularly in Mozart and Schubert. The key also has an expansive quality emphasized by the extremely long subjects of both fugues. This tendency towards length in B flat major is directly reflected in Schubert and Beethoven's longest works and will be discussed later, as well as in Brahms. The mellifluous flow and comforting emotions of this key sometimes belie its great power.

XXII. B flat minor (Pisces)

Also and expansive key like B flat, E flat major and G sharp minor it reaches for the soulful inner depths. B flat minor is a luscious, sensual key, and one in which an unhurried and flowing depth of emotion as well as spirit can be found. Its serene beauty is highly refined. B flat minor has a broad and even brawny aspect about it that leads it substance and strength, found in both fugues. The first prelude is probably the thickest and richest chordally of all the preludes.

XXIII. B major (Capricorn)

Probably the most unused of the major keys in tonal music Bach presents it here as strong, forthright, powerful but with little imagination or daring. It is shown as conservative and stable. All four works are characterized by great regularity, little rhythmic subtlety or excitement, straightforward and foursquare.

XXIV. B minor (Pisces)

The last of the keys, the key of the Christ in Bach, aspiring, expansive, reaching for both the depths and the heights. The first fugue, marked Largo, is an extraordinary long and complex work. In its stepping qualities it walks like both of the preludes, one marked Andante, the other Allegro, representing in Christian symbolism the walking of Christ to the cross. Both fugues dissolve everything away and their watery nature presents the strongly spiritual side of Bach's character. Comparisons must be made with the B minor mass, B minor arias in Bach, his suites and inventions in this key. B minor is presented as the final and cosmic key, the most far reaching and the most mystical.

Bach's love for letters and numbers is well documented and it is interesting to speculate on how the letters of his name B-A-C-H are woven into the very fabric of the keys of the Well Tempered Clavier. In German B is B flat, A is A, C is C, and H is B natural. The work begins and ends with two letters of his name. As a matter of fact it ends with A-B-H and then begins again with C. It would be interesting to speculate on how the characteristics of the major or minor key associated with each letter of his name combined to give a total picture of this unusual man's personality about which so little is known.

Interpretation

Bach left very few written indications about how his works were to be played but in the introduction to the Klavierubungen he gives instructions on how to execute embellishments and also briefly speaks of a "cantabile", a singing and legato style of playing which he favored.

The character of each of the major and minor keys is laid out clearly in The Well Tempered Clavier and each of the classical masters after Bach reinforces and further explores that character in his compositions. Therefore, every interpreter of tonal music should play The Well Tempered Clavier regularly and study the history and development of the key of the composition which they are studying or performing. As far as the interpretation and execution of the preludes and fugues are concerned certain points should be carefully studied. The phrasing of a given fugue will be determined by its principle subject or subjects, as in the C sharp minor fugue which has three subjects. The first theme of the fugue is a four note subject in which each tone receives great weight and the phrase lasts for the duration of the theme. The second subject is in flowing eighth notes played extremely legato. The third subject involves repeated notes and a

slow mordent with the repeated notes being detached but not staccato.

In the case of the preludes, Bach often builds them (particularly in Book I) on a single rhythmic unit which is repeated again and again as a pattern would be in a quilt or tapestry. Some are more stately, like C major, others more kinetic and tumbling, like D minor, flowing like B flat major, majestic like E flat major, spritely like G major. Information gleaned from the study of a single prelude in Book I can be applied to more complex often polyphonic preludes of Book II. By comparing the mood, articulation, tempo, phrasing, dynamics, of the two preludes and the two fugues with each other, a feeling of the key will begin to emerge for each student of interpretation.

If a key remains a mystery after the study of the four examples of each given in the Well Tempered Clavier, consult Beethoven, Mozart, Brahms or Chopin on the subject, looking for works you are familiar with in the same key. The Chopin preludes are excellent guides - his preludes very often correspond to Bach's in their mood, tone, and general character - G major is light and quick, C minor slow and fateful, D minor wild and kinetic. After only a few months or a years study of the keys and their manifestations in music, a basis for interpretation of any new tonal work to be included in the students repertoire will have been laid and the success of understanding that work assured. Listeners can certainly use the same principles to discover which recordings of a given work they like best based on their knowledge of the character of the keys and their tradition of usage in tonal music.