

## The prime-octave Polarity.

Infinity at the centre, the centre on the periphery. The ultimate polarity in music. A defense of Tonality.

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### Introduction

Ever since I decided that music would be the focus of my life of work I have been occupied with the question concerning the expressive qualities and powers of the musical elements. Of these the intervals in particular have received my attention. Over a period of almost twenty years my understanding of how the elements in themselves carry polarised forces has grown. It is this phenomenon that offers the huge capacity of music to reflect inner human experience. "Major" and "minor" are widely recognised to be related yet contrasting elements. For a long time I have found the intervals of the fourth and the fifth to be the archetypes of "Major" and "minor" 'per se', but the riddle concerning the tonic and the octave or the unison and the octave eluded me for a long time. The octave is the utmost aim of a scale and yet a mere new tonic of a new scale!

The central subject of this essay is the phenomenon of the prime - octave polarity in relation to tonality, but paving the way for an extended tonality where such composers as Kodaly, Bartok, Hindemith and Shostakovich among others have achieved the marriage of atonality with multi-tonality carried by a strong emphasis and use of the qualities of the intervals.

I wish to demonstrate that the prime and the octave are gravitational or levitational places that exert influence in varying degrees over the other intervals of our 12-tone system and lend them their particular quality. These qualities will be described and brought into relation to the forces exerted by the prime and the octave.

Our familiarity with these 12 tones (which, by virtue of the endless spiral of fifths is theoretically endless in terms of number) has, I believe, made us complacent if not contemptuous of the tones' infinite capacity to move the listener to experience ever greater profundity and elation. Tonality has been declared all but obsolete in the twentieth century, and yet, I believe that tonality will not be robbed of its right to exist for all our declaring it obsolete and a thing of the past.

Many systems have been developed in the field of musicology to explain how different harmonies relate to one another and why they have the effect they do. But all these theories are hampered by the fact that we cannot quantify or even scientifically determine an aesthetic value to a given phenomenon in the same way we can name it for practical purposes. The theorists must all shy away

from making qualitative judgements, as they seemingly cannot be subject to scientific proof. All too often a phenomenon is forced into a single category for the sake of simplifying the overall system, thus endangering our open-mindedness to its complexity.

Music forever presents us with ambiguities and paradoxes no matter what instrument we play and particularly in the human voice, and this we must honour when we develop a theory to encompass these paradoxes.

The intention of this essay is to investigate the role of the prime and the octave in music based on the 12-note system as laid out in the circle of fifths. The circle of fifth does in fact present us with a 'cycle', since; the thirteenth tone comes very close to the octave of the first note of the circle. In fact music deals with many more than merely 12 major and 12 minor scales, hence we can think of the circle of fifths as an unending spiral where many cycles repeatedly unfold the same structure.

My experience is that the polarity of a prime and its octave offers a fundamental experience of tonality. And subsequently all tones that are derived from the circle of fifths, when brought into melodic or harmonious relation, to each other will seek to underline and enhance an experience of tonality as exemplified by either the prime or the octave. The notes of the scale from prime to octave form a journey with qualitatively different degrees, which constitute:

fixed tonal places where different relationships to the prime and the octave principally and secondarily the other degrees unfold, and the unfolding interplay between the forces of the major and minor second interval that are between the "rungs on the ladder".

The modes are here seen as carrying different qualities of "tonality", where the harmonies are in a "functional" relation to each other according to their placement in the cycle of fifths. The balance of the harmonies (i.e. cadences, the triads of the other degrees) is differently weighted in the various modes. We can note here the consequence of where the prime is situated in the Cycle of fifths in relation to the other notes of the scale. For example the prime in c major (Ionian) is the second note in an anticlockwise direction in the section of the circle of fifths from F to B (F-C-G-D-A-E-B). Within this context the different qualities of "tonality" (as carried by the prime-octave) can be explored.

The subjects to be explored in this article will concern:  
the polarity of prime and octave.

the circle of fifths in relation to the prime-octave polarity.  
The intervals and their qualitative relationship to the prime-octave polarity.

Considerations concerning twentieth century attempts at departing from tonality and the effect of this on the art of composition and music in general.

Conclusion: considerations on methods of researching musical phenomena.

## CHAPTER 1

### Outlining the prime-octave polarity

Intervals have two ways of expressing themselves. One way is to be experienced by an individual voice in moving from one pitch to another. The other is when two voices are sounding simultaneously. A prime is experienced when we have the meeting of two instruments or voices at the exact same pitch. We also experience the effect of the prime when we repeat the same tone in succession. The former can give an experience of a merging timeless unity. However, when this exact same pitch is shared by two instruments with different registers the experience is given an added dimension, as might be demonstrated by a double bass sounding the same pitch as a piccolo! The latter experience will produce a rhythmical force that drives the performer to an ever-faster pace as if to create one long held note. Any conductor, especially of less experienced musicians, will have had to deal with this phenomenon. The same can be experienced in relation to the octave. But the octave does offer another dimension in addition to that of the prime. There is the space that unfolds between the prime and the octave and the jump that has to be negotiated melodically. These engender a change of consciousness in the performer and the listener. The difference is not merely akin to "inside" and "outside":

- 1) the prime: inside the "within".
- 2) the octave: inside the without.

A tone when experienced as a prime will unfold a gravitational pull in an "inward central" direction. A tone embodying the power of the octave will unfold a levitational pull from "the periphery" which we can feel to be an expansive force. And yet by virtue of an octave's ability of becoming a prime (and vice versa), we can have the feeling of expanding downward towards the prime and indeed contracting upward towards the octave. Thus polarity and paradox are married in this relationship of two different experiences, which are often mistaken as being synonymous! The fundamental and its first overtone, the octave, embody the closest relationship two pitches can have to one another. This fact is perhaps the reason for why the difference between the two is often overlooked. We can investigate the intervals and find many polarities, an obvious one being major and minor intervals. But at times we can feel uncertain as to which polarities belong together and create pairs. Is it the pairs of sevenths, sixths, thirds and seconds, then what of the perfect and diminished fifth and perfect and augmented fourth? Or is it the complementary intervals of major third and minor sixth for instance? Then what of the fifth and fourth, are they complementary of each other? The fifth I submit as the major interval and the fourth as the minor

interval in an original archetypal type sense. Their different qualities of "archetypal contraction and expansion" are subtle but clear. The perfect fifth is expansive and stable whereas the perfect fourth is contracting and unstable.

The prime and the octave however embody an even greater principal polarity. This polarity is, as stated above, very obvious. In the same way that unity and division is an ultimate quantitative polarity, so the prime and the octave is an ultimate polarity in the realm of tone. The prime is the root of all musical systems in which tone figures. The notes that figure in the journey along the so-called scale or tone-ladder are derived from the other adjacent tones in the circle of the fifths. The numbered sequence of the degrees within the scales takes no account of the placement of the tones in the circle of the fifths (i.e. the note "E" is the third degree of the C major scale but it is four fifths away in the circle of fifths - in real distance 2 octaves and a third. Taking this fact seriously offers new criteria for comparing the different qualities of the intervals). The circle of fifths can be experienced as expansive upward in a lightening or peripheral direction, but equally so into a downward darkening or centering direction.

These different degrees relate more to either the prime or the octave, and enhance our experience these. The melodic minor scale is an indicator of the supreme importance of the difference between the prime and the octave. The principle of this melodic scale could be extended in such a manner as to become Ionian (major) ascending from prime to octave and Phrygian descending from octave to prime - and through such an exercise the prime and octave polarity would be demonstrated.

The octave does not produce any different harmonic function to that of the prime, and this corresponds to the fact that the octave is not to be found in the cycle of fifths. Instead of finding the Octave, we invariably arrive at an augmented seventh at the end of the cycle, which does not offer an true octave experience. Our 12-tone cyclic system is based on the next overtone produced after the octave. This is the perfect system for our need to understand all phenomena intellectually. The meaning of this interval and its importance has been the subject of an enormous amount of thought processes for centuries, if not millennia (Pythagoras seems to have pondered not a little the problems of the circle of fifths in some depth). Studying the cycle of fifths however, does not tell us anything about the importance of the prime - octave polarity.

The 8-degree scale deals very effectively with the principal importance of prime - octave polarity. The axial extremity of the (tri-tone) notes F and B constitute a "striving" power; in the direction of octave with a + or- 6 below in the case of the augmented fourth (ie from B-F to C-E/Eb); or in the direction of prime with a + or- 3 above in the case of the diminished fifth (ie. F-B to E/Eb-C). These two intervals are as different as are the minor second and the major seventh to each other. The 12-tone chromatic "scale" however, fails to deliver an experience of the octave, as there is no dynamic unfolding within the scale. The

"chromatic scale" is not a scale. Neither is the "whole tone scale". Nor is the slendro scale of Javanese music. These systems are seemingly simple for our heads to grasp. The ladder I know in life has regularly spaced rungs for me to walk up! So I like to think that my walking up and down the ladder of a musical system set within the confines of a prime and octave framework, are equally valid as a musical setting. These are unending sequences of notes placed at regular intervals. These systems have in common that they are forever striving in a particular direction but never arriving at any destination. We arrive at the place where we expect to experience the octave but we have forgotten our experience of the prime hence we are unable to have an octave experience. What constitutes a scale is the interplay between opposing tendencies and forces of different intervals. I believe this polarity of "prime and octave" is the ultimate polarity in music, it is the "alpha and the omega". All other tonal polarities are variations in the form either of understatements or as exaggerations.

## CHAPTER 2

The role and importance of the circle of fifths.

A characterisation of the fifth will be necessary here although its placement between prime and octave will be explored in the fourth chapter. The fifth rests in a balanced position of complex harmony between the prime and the octave. It is stable in the way it unfolds from the prime and yet it gently strives upward towards the octave. The overall effect is levity in balance and with ease. However, we can equally extend the fifth downward and observe how the fifth affects us then. Intellectually we are tempted to postulate that the inverse is true and that the fifth down from a given note will expand downward in easy gravitational manner towards the octave of the starting note! To claim this would be to ignore the difference of an octave above and an octave below. The tone that is arrived at a fifth below the tonic does unfold a downward expansive tendency, but the tone a fifth below this lower fifth could equally be an aim of this expansive gesture as well as the new lower prime. We do not merely have the inverse in a downward direction. In a sense we have a gentle ever expanding energy in the octave and a firm ever contracting force in the prime. The balance of the fifth above and the fifth below is not borne out by symmetry of forces. The two direction are as opposite as are the states of sleep and awake and yet these are equally as important to us in our human state. We feel gravity to be more of a state of being natural to us than levity and so we consequently give more weight to the importance of the prime (or tonic/root) than to that of the octave.

This importance of the directions in the "spiral of fifths", i.e. the "lightening", upward direction into the "sharps" and the "darkening" downward direction into the "flats" can be

demonstrated in the following way. All major intervals are going with the direction of their placements in the circle and all minor intervals are going against the direction. Let us for example take the upward major sixth from "C" to "A": the "A" is situated "above" (in a clockwise sense) the C in the exposition of the interval and so it is in the circle of fifths. In the minor third interval "A" to "C" on the other hand, the "C" is situated above the "A", contrary to the juxtaposition of the two in the circle of fifths. In the case of the first interval we feel the power of the sixth is able to sustain its upward expanding direction. The minor interval cannot sustain the given direction; it will collapse back onto the lower note. Conversely, if the intervals are extended melodically in a downward direction, the direction of the major interval will be sustained but the minor interval will tend to fold in on itself.

Hence we have in the circle of fifths a two-fold direction unfolding a longing towards the confirmation of the tonic. However, the circle of fifths never arrives at a tonic by its own volition. The activity of confirming one tone as a tonic is a fundamentally human one. Through the unfolding of this human activity in identifying with the tone if I can put it that way, the rest of the tones in a given tonal system/structure will act according their own inherent lawfulness within this framework. Although the scales of major and minor are artificial they bear different qualities in relation to each other when I connect to them in one place or another. I could indeed strip away all names of keys and still confirm the difference in experience of relating different scales to one another, and I believe that this human capacity of differentiated experience in response to complex musical phenomena is a driving force in musical composition. To say that there are but merely eleven transpositions of the major and minor scale in the diatonic system is a crass simplification, which leaves us feeling silly when we have gleaned the complexity of key relationships in a Beethoven piano sonata for instance.

## CHAPTER 3

The perfect, major and minor intervals, and their relationship to the prime-octave polarity.

The following consideration is concerned with determining the striving tendencies of the various intervals that occur in the 12-tone system in this case between the octave and the prime. It must be stated at the outset that this appraisal is subject to subjectivity. These are my personal perceptions that I am trusting. However, I am in no way claiming to have discovered a "law of aesthetics" that I am setting out to prove. The relationship I have to these intervals is one, which has deepened over the years. Having found certain analogies that describe the qualities I experience, I am encouraged to write these down in a

way that may stimulate others to approach the world of tone in a similar or other original way which complements my personal research.

When speaking about the striving tendencies of a particular degree within the octave framework we have to first realise that a note lacking all tonal context engenders very little striving. It will however unfold its own context namely the overtone series. The first overtone as already discussed is the octave. If we allow this prime and octave to manifest as independently produced then we have a polarity akin to the poles of a magnet. When we place the remaining notes of the 12tone system derived from the cycle of fifths within this prime-octave polarity we will notice that the notes all display tendencies to be attracted to either the prime or to the octave. I will refrain from using any names, as it is the degrees we are considering and they hold good for any particular scale.

The overtone series is balanced by the phenomenon of the undertone series. But although this series exists, it is not obviously audible, as is the case with the overtone series. In concordance with this we hold the root of a triad in special esteem when it is placed as the lowest note. It thereby reflects the unfolding of the overtone series.

We are on the whole looking at the striving tendencies as going from the prime to the given degree thus experiencing an upward projected interval. However, I strongly recommend, exploring the intervals in their downward direction from the octave to the prime in a similar way to what is carried out here. We can investigate the intervals and find many polarities, an obvious one being major and minor intervals. But at times we can feel uncertain as to which polarities belong together and create pairs. Is it the pairs of sevenths, sixths, thirds and seconds, then what of the perfect and diminished fifth and perfect and augmented fourth? Or is it the complementary intervals of major third and minor sixth for instance? Then what of the fifth and fourth, are they complementary of each other? [It has to be made clear that the diminished or augmented intervals (apart from the augm.4th and the dimin.5th as these have no major, minor or perfect counterpart) presuppose a third note, which acts as a bridge. Thus, the diminished 4th cannot be experienced through just these two notes. The third note does not need to be audible; an inner sense of it suffices.]

We will proceed in a manner of the closest notes to the polarities and work towards the middle and the tri-tone.

The Major 7th displays, as its name 'leading note' suggests, a strong pull in the direction of the octave. It is one of the most difficult and uncomfortable melodic intervals to sing and as a simultaneous harmonious interval, it requires a great deal of effort to sustain let alone bring back to the prime, the pull towards the octave is so strong. The sustaining of this interval is like being stretched to the limits of human endurance, it

represents a chaotic state of being where all "otherness" is stripped away before entering into the octave. Whether it is the octave pulling or whether this interval is predisposed to strive for the octave is a bit of a chicken and egg situation. Its place in the cycle of fifths in relation to the tonic (our term for the prime-octave in general) is that of five places above the tonic in the clockwise "sharp direction".

The Minor 2nd strives(falls back) towards the tonic and constitutes the downward leading note in the Phrygian mode (scale). These two intervals are at the highest points of tension of all the intervals. The minor 2nd gives the experience of being unable to sustain the upward intention it unfolds in rising from the prime. In this way it accentuates the quality of the downward pulling power of the prime. The minor 2nd succumbs to the comfort of dreamless sleep-like unconsciousness. Its place in the cycle of fifths in relation to the tonic is that of five places below the tonic in the anticlockwise "flat direction".

The Minor 7th despite it being a large interval it does not sustain enough levity to really strive towards the octave with any real conviction. It will prefer a downward resolution and a number of resolutions will satisfy. The prime will provide a surprisingly comfortable resolution considering the distance but since the prime cannot "pull" as such one can dwell in this place and be outside the power of either the octave or the prime. This is also to be experienced in the natural 7th of the overtone series. The sustained listening to this interval is known to have a drug-like sedative effect on the listener.

This is much easier to sing than a return to the prime after a Major 7th jump up. The perfect fifth also provides a comfortable point of resolution, as does the Major 6th. Its place in the cycle of fifths in relation to the tonic (our term for the prime-octave in general) is that of two places below the tonic in the anticlockwise "flat direction".

The Major 2nd is the first gentle unfolding of an upward striving that can match the power of the prime. It figures as the most comfortable interval for the singing voice. It does eventually strive towards the octave but initially as a striving away from the prime. It does represent a levity force in relation to the prime and the more a scale unfolds the major 2nd in contrast to the minor 2nd the more striving power is accumulated. However, as experienced in the simultaneous sounding of prime and major 2nd the magnetic power of the prime is a force to be felt as a struggle hence it can be said to be "the beautiful dissonance" per se. Its place in the cycle of fifths in relation to the tonic is that of two places above the tonic in the clockwise "sharp direction".

The Major 6th gives an unambiguous feeling of striving towards or at least being able to reach the octave with little or no effort. It is placed in the middle of the lower three notes of the upper



major tetrachord. This upper major tetrachord in the scale is under the influence of the levity force of the octave, which strengthens progressively as we near the octave. This upward lifting force, as it comes to expression in the major 6th, can be felt to be very thrilling. The interval is to some extent unstable and foreign (it does not appear early on in the overtone series) and at the same time very comfortable, stimulating an experience of longing with the expectation of fulfillment. It is however an interval, which is in danger of misuse. Children's songs often feature the note as one, which goes beyond the fifth and then returns to it. In the same way it can give the feeling of purity and innocence even devotion, it is also vulnerable to being used in a sentimental fashion. Its place in the cycle of fifths in relation to the tonic is that of three places above the tonic in the clockwise "sharp direction".

The minor 3rd is an interval, which immediately tends to relate back to the prime from whence it came. At the same time it does represent a place in the scale where a certain independence from the prime has been achieved and a certain dramatic momentum is achieved when this interval is sustained. It is very capable of achieving this but the gravity pulling force of the prime is almost felt to bring an air of tragedy to this interval. A certain sober and resolved state can be felt to be embodied, if the aspect of tragedy is not over-emphasized, rather life experience and clear headed wisdom. Its place in the cycle of fifths in relation to the tonic is that of 3 places below the tonic in the anticlockwise "flat direction".

The minor 6th has a double polarity to be experienced. It strives upwards but through a lack of sustaining power tends downwards. Additionally it is a large interval, which takes us beyond the fifth into the upper tetrachord region under the influence of the octave. However, in its defiance of the power of the octave it almost provides a kind of outer limit to a tonal range issuing from the prime. In contrast to the major 6th this we could characterize as painful hopeless longing. As if it prevents us from even hoping that an octave could be arrived at. It falls immediately back upon the fifth and eventually returns our tonal journey to the prime. In this case the fifth is the substitute for the octave but in its similarity to the minor 2nd the fifth is made to feel like a prime. We could call it: an inverse leading-note, when we hear the sequence 1 (prime), minor 6th, 5th. Its place in the cycle of fifths in relation to the tonic is that of 4 places below the tonic in the anticlockwise "flat direction".

The Major 3rd is reached through a continuation of the unfolding of the major 2nd as a sequence or through a leap from the prime itself. The major 3rd is clearly an interval, which has levity in it and it does not necessarily fall back on the prime. In fact it displays comfortable ease in reaching the octave quite effortlessly despite the great leap this requires. However, in it being imbedded in the first tetrachord it is still very

comfortably in the womb of the prime. At the same time in its clear inner connection to the octave and striving power towards this it leads us upwards and would seek to resolve its striving in arriving at the fourth lending this an octave quality. Hence, in the major 3rd we can experience a duality and an enjoyable balance of relating in to both the prime and to the octave.

It is of course at the same time the first interval we encounter as belonging to the triad in root position and at the same time the first of the primary section (1 -6 i.e. 1,8,5,8,3,5) of the overtone series. Its place in the cycle of fifths in relation to the tonic is that of four places above the tonic in the clockwise "sharp direction".

The Perfect 5th is a remarkable interval. It is stable and solid and yet it carries a paradox within it. But the nature of that paradox contributes to the very balance this interval embodies and offers us. The leap of the fifth takes us into the area of the second tetrachord, which is under the influence of the octave. The fifth provides us with the first real premonition that the octave will be achieved. It produces the first instance of levity that is totally free from the power of the prime. However, it relates freely to that prime tonic and complements this so harmoniously that the two develop the ultimate relationship of closeness, kinship and "otherness". The fifth brings the premonition of the octave (its' higher self so to speak) to the prime and the prime in turn gives an opportunity to fifth to relate to the prime as strongly as it relates to the octave. The fifth can take on the attributes of the prime to some extent although it does not have the same power of unconscious, dreamless sleep. The moment it achieves this it becomes itself a prime and the original prime-octave polarity will have been relocated so to speak. At the same time the fifth upward is so harmonious, it brings us to an experience, which is often mistaken for that of the octave. The fifth downward does not result from the power the prime exerts over the other note. There is an air freedom in the descending fifth. It is not subject to necessity. What is difficult but vital to grasp here is that that the fifth relates differently to the prime than it does to the octave. This fact can stimulate us to ask the question whether the circle of fifths is merely an intellectually construed, quasi-natural phenomenon, or indeed a musical one as well. The paradox and wonderful balance and stability of the interval of the fifth is that it is like the prime and closely related to it and like the octave under whose primary influence it stands.

The analogy that comes to mind here is that of the master to the pupil: the master [the fifth] is there to awaken the pupil [the prime] to the higher self of the pupil [the octave]. The master is himself in the service and under the "power" of that higher self and is himself in his patient ongoing learning a striving pupil. Its place in the cycle of fifths in relation to the tonic is that of the next place above the tonic in the clockwise "sharp direction".

The Perfect 4th brings us to the end, limit and aim of the first tetrachord, which is under the influence of the prime. Here the power of the prime is to be felt and the fourth will tend to return in the direction of the prime. [A very well-known resolution is that of the resolution from the fourth to the third.] But the fourth and prime also have a relationship of, kinship and "otherness". The fourth is so coloured by the particular degrees of the tetrachord that precedes it that these must be briefly referred to at this point. The fourth is reached in a similar way to the octave but at the same time it stems the upward octave-striving of the power of the unfolding major seconds in the third and second degrees of the scale. Here the fourth presents a barrier. The Fourth is a place of triumph in the case where the minor 2nd and 3rd precedes it. Here these are in the danger of falling back into the prime and are so to speak rescued by the fourth. This tetrachord holds a particularly strong dramatic potential. The fourth is a point of sober achievement when we have the Major 2nd followed by a minor 2nd thus bringing balance at the point of the minor 3rd. The arrival at the fourth under these circumstances gives a feeling of poised strength but also of sensitive delicacy, both tragedy and comedy is possible in this context. These are just very short indications of what dynamics unfold through the scale in the two tetrachords. These are not merely a sequence. They are in themselves a polarity. And there are variations on the polarity as borne out by the different juxtapositions of different tetrachords in the different modes. The first tetrachords unfold in some way in relationship to the gravitational power of the prime. The second tetrachords unfold in some way in relationship to the levitational power of the octave. Its place in the cycle of fifths in relation to the tonic is that of one place below the tonic in the anticlockwise "flat direction".

The Tritone [the devils interval] this interval is the ultimate embodiment of duality in one percept. It is either an augmented fourth or it is a diminished fifth. We must consider each of these, as neither of them is within the force-field of the octave or the prime. Both of these dissolve the polarity of the prime-octave relationship, but in very different ways. The important difference is sometimes ignored because the difference between the "quantitative distance" of one to the other is seemingly not existent! However, that fact holds a secret. If we try to determine the qualities of intervals in accordance with the "quantitative distance" we seem to perceive, we go down a metric dead end of the intellect which will lead us to countless contradictions resulting from the paradoxes that the musical elements embody. The augmented 4th will bring an expansive force to bear upon the prime, which challenges its' supremacy. We can determine that this interval is a result of the striving power of a sequence of major 2nds when they have not been stemmed by the contracting power of the minor 2nd. The augmented 4th will force the prime out of its position and bring another tonality into being. The prime will move to a degree below its position, and the Tritone will tend go in the opposite direction taking the new octave position. The only example of this interval in a modal

context is that of the Lydian Mode, which is often questioned as a genuine modal tonality.

The Diminished fifth is different in that it presents us with two instances of the power of the minor second and thus the contracting power, which is brought to bear upon the octave, overcomes its polar position. It will force the octave out its position and itself take the position of the prime in a new tonality. The octave will be pulled downward, although it embodies the archetypal levity force. The only example of this interval in a modal context is that of the "Lockrian Mode"•, which is also questioned as a genuine modal tonality. Its place in the cycle of fifths in relation to the tonic is that of the six places above the tonic in the clockwise "sharp direction". However, we can take the 6th note below the tonic in the anti-clockwise flat direction and the same will happen but upside down and inside out so to speak.

Although I have here portrayed the relationship between tritone and prime-octave as a power-struggle where the Devils interval comes in and destroys a divine order, we may look at this relationship in another way where tonality is dependent upon this dualistic interval to manifest in all the different possible tonics.

The prolonged hearing of the tritone without a tonal setting offers the challenge of remaining loyal to the constant simultaneous striving for the centre within and the periphery without, without mentally creating a tonal reference point which would function as a tonic. If the listener can sustain an inner holding of the paradoxical duality of the interval and not allow either the contracting or the expanding power to prevail it has a profound effect on the listener. This challenge can cause a considerable stress which, when met will bring the listener into a strengthened relationship to her/his own centre and periphery! My personal finding at this stage of my search is that all intervals (with perhaps the exception of the augmented fourth and the diminished fifth) are analogous to inhaling and exhaling, incarnating and ex-carnating, contracting and expanding. Experienced in different ways through major and minor with the perfect fifth as the archetypal major and the perfect fourth as the archetypal minor. In the case of the fifth we can feel the therapeutic value of this interval on the breathing. The rising fifth assists the exhaling and the descending fifth assist the inhaling. The Prime is a state of being before breathing and the octave is a state of being after breathing. Pre-birth and after death or turning points between modes of existence?

## CHAPTER 4

"Antitonicity", and the problem of the 12-tone system.

The beginning of the twentieth century sees a crossroads where basically there is a clear breakaway from the world of musical

tonality, where the harmonies are in a "functional" relation to each other according to their placement in the Cycle of fifths. Compositional technique with an overemphasis on the tonic as the only aim of tonality, drives the harmonic and melodic structure to such a degree that freedom in composition is felt to be crushed by this power of necessity. How a new atonality was and is negotiated and with what sense of responsibility to the development of the listener is a concern, which has perhaps been rather secondary in importance to the urge to create new forms, be original and achieve authenticity.

"Serial technique" seeks to develop a system, not of tones but of the treatment of the tones in an attempt to emancipate them from their origins whereby all 12 notes are intended to be given an equal status. Other techniques are developed where tonality in a conventional sense is kept at bay. None of these invent or discover a new tonal system or environment for the unfolding of a new compositional direction.

We can understand "antitonicity" from a psychological point of view as a rebellious gesture against the tyranny of (our associative responses to) tonality in its romantic guise. But has it not led us to an attitude, which judges any form of recognisable tonality as embarrassingly unfashionable, clichéd or even taboo? Has the difference in experience of the contemporary composer and the (little musically educated) music-lover (which by necessity must be there) become so great that it seems impossible to bridge? What is old is not the musical element in itself (or the piece of music) but more likely our associative response to it! Whoever sees only wigs and costumes of the 17th century when they hear the music of Mozart are themselves responsible for the removal of these. Music will always be capable to bring something new to our field of experience for the same reason that no two human beings are identical. All have similarities and differences, and our human status is equal but we are all unique and no human being is more or less important than another. If one is capable of having a profound and genuine musical experience from an avant-garde contemporary piece of music, which is void of any tonality, does this mean that tonality can no longer offer anything profound or meaningful in the realm of contemporary music?

If in our using ever new and different compositional techniques we wish to create music free from the associations of tonality are we prepared to relinquish this fundamental and ultimate polarity of the prime and octave? On the other hand if we are consistent in this striving for atonality, then why use a system of notes, which by its very nature is bound up with a very particular experience of tonality that has developed in the west over the last 1500 years or so. If we relinquish the tonal centre and yet stay with the tones of the circle of fifths (for convenience sake), we ignore the very essence and nature of the system we opt for. We treat tonality as something we can dispense with as if we had invented it in the first place. This denial of the existence of tonality as a given phenomenon rather than an invented one will drive the composer with this attitude to avoid tonal connections that hint at a possible inherent tonality. Since all intervals will hint at tonality in their relating to either the octave or the prime (either through expanding or contracting), and since

notes cannot be put together without manifesting the quality of the interval, the composer must look elsewhere to find his material for music making. And so sound disassociated from tone is finally raised to the status of musical phenomenon! This is extremely valuable and vital to the further development of our attitude to the world of sound and music. On the other hand it must be said, that to treat the realm of tone-embodied sound and the mysteries of the intervalic qualities as subject to fashion, easily to be dispensed with as no longer appropriate or "contemporary" is arrogant and disingenuous. We thereby ignore a challenge that the world of tone offers us. To maintain our deepening, ever renewing relationship to all musical elements and realise that "newness" is not merely a matter of inventing a new combination of notes, but of allowing all elements of sound to be part of new "soundscapes".

Through tempering this "12-note" system we have a compromise of tonal, intervalic purity and hence sonoric richness. This deed was a compromise that inaugurated the structural equality of all the scales. This equality is based on an intellectual simplification, which has deemed that for obscure reasons nature got it wrong! The various keys were quite different in their qualities before the tempering of the scale and some were experienced as unplayable. J.S. Bach's 48 Preludes and Fugues exemplify what was gained by this compromise. What was lost is not often mentioned but I would venture as far as saying that musical composition has increasingly become an intellectual pursuit. Improvisation or composition arising out of an immediate rapport with a tone, an instrument and/or other musicians in a mode of concentrated active music making on the other hand has decreased. And yet this form of music making will manifest, and give confidence and an experience of authenticity to whoever engages in it and indeed has done so in swing, jazz, blues, rock, soul, pop, etc. This mode of creating new music will inevitably explore new ways of experiencing tonality and new intervals with which we are on the whole unfamiliar.

In the overtone series tonality manifests in quite a different way and intervalic purity is of the utmost importance. The importance of the functional driving force of the harmonic cadences in the 12-tone system is very different to when we are exploring chord combinations in the overtone series, and new uncharted ground is here to be discovered and practised. We have the fundamental as the ancestor, and the other tones (like offspring) are subservient but in accord with the ancestor. In a system like the circle of fifths, where an interval has been perpetuated we have the result that each note in turn has had a moment of being the centre from which another note was begotten. In a sense we have an autocratic situation in the radial overtone system which extends infinitely "as many as there are grains of sand on the shore or stars in the sky". Whereas we have a syndicate of individuals with the same potential status, where all are capable of playing the role of leader (the thirteenth i.e. the octave) or centre of reference and the rest receive and know their function and duty all according to who has the key-role. In fact, in a scale there will always be

seven in action and five standing by. (We find the analogy with the twelve holy Bodhisattvas of which, a maximum of seven is active on the earth at the same time, and five must remain in the spirit world. Hence, when we are in "the five" of the pentatonic mode we have entered the kingdom of heaven and of childhood and can sense the analogous relationship of these two realms.)

On reflection I believe that the dynamics of the interplay of major and minor seconds in the scales we find within our "12 tone" system are to be created and explored in other ways by composers and improvisers alike. We have the opportunity to experiment with extended techniques, and microtones, and other systems completely for instance a segment from the 24 notes that are produced by the 13th overtone when formed into a system like the fifth...and far more precise. But I believe we are particularly challenged to come to an unbiased grasp stripped of our old boring associations of the "meaning" and "value" of the phenomenon of music of western culture of the last 1500 years.

## CHAPTER 5

### Conclusion

For our intellect to have a chance of grasping the complex way music works, we must first face a few realities. The correlations and connections between the various musical elements have not been placed or invented by the human mind. A particular tempo will be dependent on a musician for its perceptible existence but it will have a qualitative nature, which can be enhanced but is not created by the performer. We are in our performance practice co-creative and through our openness to that phenomenon we "give body" to, we can enhance it's inherent qualities. This is what moves an audience more than technical virtuosity, a three-fold living intimate dialogue between the performer, the instrument and the music itself enhanced by the depth of co-creative listening of the audience. It is a revelation of spirit we here witness as musicians and audience. The mind cannot expect to discover something it has itself created. The intellect must accept that by virtue of its very complexity music can embody paradoxes, which we experience very profoundly but struggle to explain rationally. The intellect does not as such play a major manipulative part in a creative process. It is however a vital vessel for making decisions and choices in the compositional and improvisational process. It has to make itself subservient to our feeling perceptions, and thereby allow the feelings to be thought-like in their conscious but still feeling-cognition. The feelings respond with sympathy and antipathy to the balance or imbalance of tension and comfort of a musical situation and initially choices are made according to these experiences. The action of removing our own and inherited associations from the musical elements is an activity in which we can develop a great intellectual discipline. To the extent this discipline is achieved and mastered the

musician composer and/or listener will develop the faculty of hearing music as if for the first time, thus enabling the musician/composer to avoid the pitfalls of merely having a habitual experience when encountering a given musical element. This in fact transforms the intellect into an organ of perception, which no longer is infatuated with "naming" according to quantitative differentiation. The intellect, through the active practice of self-restraint and acceptance of the "living paradox" begins to actively trust the perceptions through the response of the feeling life and can start to accept its understanding of the musical phenomenon as "an unknowing knowing". This understanding is no longer dependant on a system and intellectual proof, but develops a "knowing through trust" in the same way as one human being can learn to know and trust another.

This is a powerful analogy that hints at the possibility of coming into conscious participation with hidden and higher dimensions in our pursuit of music. In the same way as we can experience entering into higher and hidden dimensions, when this knowing and trusting a fellow human being is achieved. There is never a proof or total predictability in such a relationship, but when we relinquish our desire to understand music purely on the so-called scientific basis of its numerical and physiological components we can appreciate our own compositions as if it were the work of another. The intellect can discover a manner of principles, patterns and laws in a work of which it was to some extent ignorant during the creative process of composing or indeed of improvising. The intellect can come into a mode of "play" in which it is happy to merge with the life of feeling and also with higher modes of being, which we may call inspiration and intuition. These will abide by their own lawfulness and rely on this faculty of hearing (perceiving) as if for the first time, and above all they do not bow to convention or tolerate associations. This risk-taking state of activity is accompanied by a non-analytical sense of knowing what one is doing, which is not possible if the reliance on the intellect for determining the creative process is too great. An enhanced inner ability to experience as if for the first time the very basic elements of sound, will be open to all musical elements.

To myself as a composer, who has on the whole been working with little or no association with other composers, it appears "from a distance" that the practice of breaking with tradition, displaying originality and devising new musical material, is the pursuit of composers of contemporary classical music. Judgements and assumptions abound on what constitutes contemporary classical music and new conventions are set and broken at a seemingly high rate of frequency. Originality as an aim of composition itself appears to be a driving force fuelled by the need for emancipation from the tyranny of tonality, which has led to a tremendous amount of musical exploration and innovation in the twentieth century. It is fair to say that only few non-musicians are active in the discipline of performance practice or concerned with finding new idioms of sound. Many a music-loving listener has found other areas of music to be more inclusive of the audience in a



participatory sense. I believe that at this point in history and development of the human psyche both individually and collectively as humanity, music may no longer demand that a tonal centre is adhered to throughout a piece of music but the tone still holds great mysteries to the human being.

Music exists with, for and through the human being. We cannot think our way through to understanding a given musical phenomenon unless we engage in dialogue with it and first discover our own bias towards it. We may benefit therapeutically, educationally, socially, physically and spiritually, from the pursuit of music. Moreover, we find ourselves stimulated by the challenge to understand why we respond in such complex ways to acoustic phenomena. We may realise that when these are transformed into an artistic musical event we encounter the sacred.

#### Footnote

- And when this is postulated on the background of the overtone series, I would disagree with this on the background that the notes of the overtone series are only subservient to the fundamental as long as they are part of it as a secondary acoustic phenomenon. As soon as they are emancipated and receive a "soundbody" of their own, they will display their close relationship to the fundamental but this does not constitute a magnetic power exertion in the sense we are trying to determine here. In the overtone series there can be no striving for the prime or the octave as these are omnipresent, only in a cyclic system that does not carry the prime-octave polarity can there be the striving for these and hence "functionality" is to be experienced.

- The lokrian mode is a scale that extends from B to B on the white notes of the piano. The fifth degree of this scale is diminished.