

The Psychological Effects of the Elements of Music, and
a Concept of the Transcendental Nature of Musical Experience.

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Painting.

"The mystery of music is seldom realized by those who so easily accept its gifts. Yet of all the arts music alone shares with great mystical literature the power of waking in us a response to the life-movement of the universe: brings us - we know not how - news of its exultant passions and its incomparable peace."

("Mysticism", by Evelyn Underhill, P.76)

"The art of music is a creation of the mind of man. All its characteristics and organizing principles depend upon the action of the mind. All its effects upon us when we listen to it, all that we do when we perform or create it, are determined by the laws of the mind. Thus if we are to have any ultimate explanation of music it is bound to be in terms of psychology."

So states J.L. Mursell in his introduction to a book on the psychology of music.

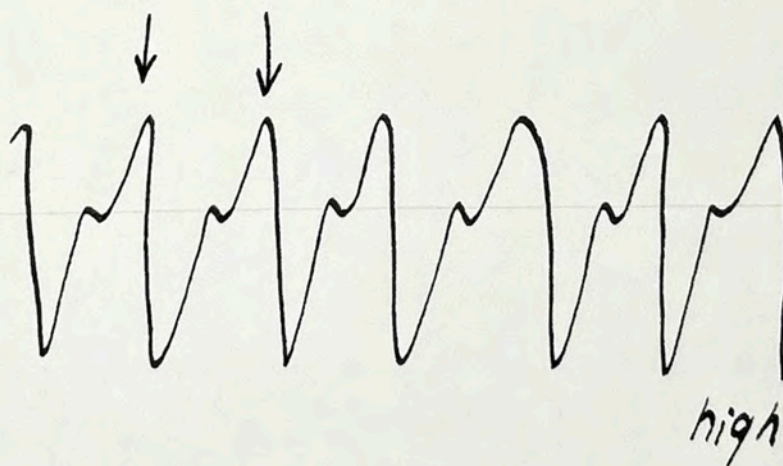
In this essay, (essentially from the psychological point of view) my aim is after firstly defining the four elements of music, tone, melody, harmony and rhythm, to secondly examine the psychological effect of music - what music does to the mind - or rather what the mind does in response to the elements of music, and finally in part three I want to question the latter part of the above theory by Mr. Mursell, and attempt a definition of the transcendental and spiritual nature of music.

The most outstanding factor in music is its immediacy. It is a happening, and as such demands spontaneous attention - its attraction is immediate and compelling. It triggers off the long and delicate chain of processes involved in normal auditory perception, and a more tenuous and intricate series of sensations which produce other phenomena, like the imagery, colour-hearing and trance-like states discussed later.

Movement, fundamental to the human grasp of the stable spacial world, is the essence of music: as Klee said, movement lies at the roots of the process of becoming, and in its immediacy music is a living thing - is in itself a process of becoming.

Music, an impression produced on the ear by the vibrations of longitudinal waves of compression and decompression, reaches the ear as a series of organized sound elements, these being pitch patterns and time patterns, which have the other qualities of power and volume, intensity and extensity, concordance and colour (meaning timbre, - character or quality of the sound).

Music itself is the total sound - fabric or painting of the composer, and is comprised of four main elements, the first of which is tone or tonal quality, which enables us to refer it to a particular source. Adjectives used to describe tonal quality range from high, thin, harsh to full, smooth and heavy. If we compare the sound waves of three trombone tones of different pitch, we notice that as the tone rises in pitch, the complexity of its composition decreases, and it therefore changes in quality, viz.,



i.e. the lower the tone, the slower its frequency.

Tone must have a minimum intensity to be heard, and if it passes a certain maximum intensity it becomes painful:- interesting to compare this to colour - very subtle tones or intensities are difficult to perceive, where the other extreme, fluorescent colours are painful to look at.

The pitches of which the tonal range of hearing is made up differ greatly in loudness: high tones are inherently loud, low tones soft, therefore low tones must be extremely intense to be heard, and high tones much less so. I find myself using terms like high and low to describe differences, as if tones had physical spacial position. As they do not have height and depth in space, are these terms borrowed from the spacial realm to describe feelings like spacial relations? The most accepted view is not that tones actually occupy space, do not move up and down, but that certain spacial terms are used because tones produce secondary effects in the mind in which space is implied. Thin, light tones inherently suggest something high off the ground, where heavy dark ones have a definite volume and fullness which unconsciously creates the idea of mass and weight. As well as high/low phenomena, tones are frequently described as broad, narrow, big, small - they have the effect of volume, i.e. low tones "spread" more than high as they have a slower frequency (as in the three trombone tones).

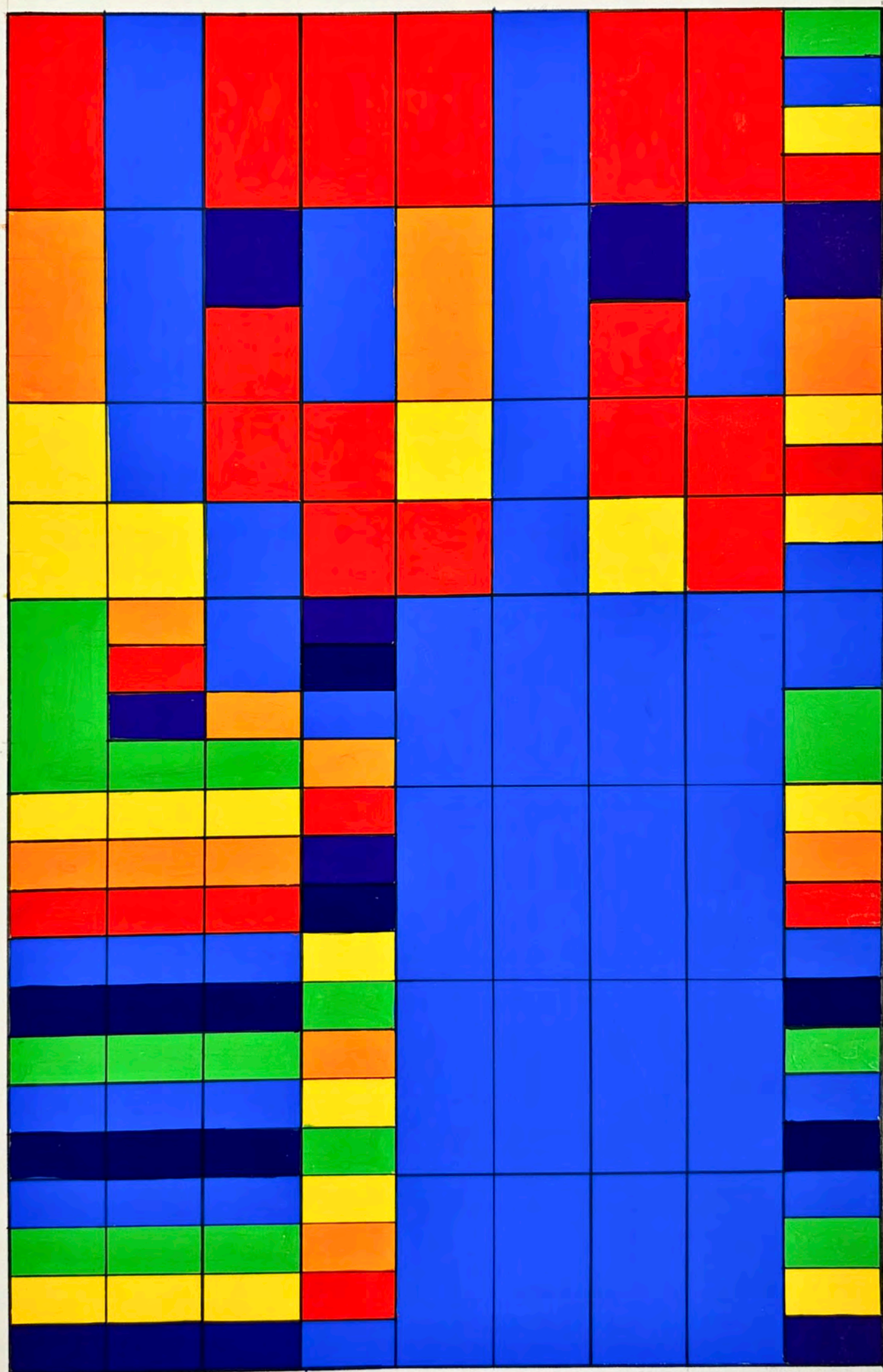
The second element, melody, is a succession of single tones in which each tone dictates what will follow - each is the development of an idea which must reach fulfilment - it has a definite form: if one fixed one's attention on each single tone of a melody as presented, the melody would vanish. Melody rises, falls, goes horizontally, and forms melodic auditory outline, in which the disjunction caused by tonal changes is still perceived as a whole. This movement of auditory outline is inseparable from duration in time, as duration depends on the continuous sequence of intervals. Melodic form then, is motion in that it evolves in time, as a sequential advance.

Melody, (formed succession of single tones) is distinct from the third element harmony, the concord of a succession of simultaneous sounds. Harmony implies a pleasant concord, discord implies an unpleasant series of tones. But the meaning of the word harmony is at present broadening to encompass much "discordant" music.

Ultra-modern composers are converting our concept of discordant, or traditionally displeasing intervals by gradually attuning our senses to the extraordinarily subtle and diffuse tone colour inherent in discords. Some familiarity with, and certainly flexibility towards some modern music is often essential to its enjoyment (compare this to dress, fashion changes, architecture: at first deplored as ugly, they frequently become the A.I. fashion).

The final element rhythm, the motor and structural factor, is also a fundamental element of our physical and mental life. Appreciation of rhythm develops early, is basic to all peoples, and to all stages of development.

These then are the four elements of music.



(PART TWO)

From here we can examine results of the most interesting experiments conducted to observe the complex phenomena of synaesthesia, which literally means "experiencing together", where the stimulation of one sense gives rise to an image or idea in another.

Some forms of synaesthesia are already socially integrated and unnoticeable - we talk of wines as dry and smooth, of colours as warm and cool, of noises as jarring, penetrating.

But just before looking at the experiments, two points must be borne in mind; firstly, the distinction between sensory experience and perceptual experience.

The former is a special self-conscious kind of awareness, while the latter is unselfconscious and direct. Although occasioned by having sensations, perception is chiefly a matter of intuition - i.e. the mind is informed by its own preconceptions, not by the sense impressions. Secondly, in experiments on compositions the perception of order and awareness of the whole depends entirely on memory; music is taking place in elapsed time and can therefore never be confronted whole.

Experiments on the effects of music are complex, but involve primarily a relaxed attitude and comfortable atmosphere, conducive to leaving the mind free to follow any path it will in response to the music.

Much specific investigation has been done on the effects of the most elementary factor of music, the single tone.

A German experimenter, Katz (around 1911), found the most common effect of keys was in the realm of colour vision, where the "feeling" of a colour underlies the tone - makes it more evident.

One of his subjects reported that G major was somewhat green, A major rose, E major red, F major intense yellow, D minor pale grey, C major bright white, and A minor deep blue-violet.

He reports the exceptional case of a subject he calls "Herr S", whose rare associations between keys and colours ranged from "dull white, silver white, yellowish white" for F major, F sharp major, D major, through "dark grey, deep black, dark green" for A flat major, C major, C minor, through brownish reds to G minor brown with orange.* Not even psychologists know from where these colour associations rise, but with some people they do distinctly and inevitably, and in some cases do not change when different sequences are played. The diatonic scale has been compared to the seven colours of the spectrum, by, amongst others, a Russian Spiritualist, Mme. Helena Blavatsky, whose "Secret Doctrine" holds
F Green, G Blue, A Indigo,
that C is red, D orange, E yellow/and B violet. This sequence is the most common and would perhaps indicate the average colour hearing. But a most complex colour scale belonged to the mystical composer, Scriabin. He evolved a unique colour scale, which he wrote in order of the chromatic scale (A, B, C, D, E, F, G, A, etc.) but which works spectrally if one starts at C and continues in a circle of fifths - so it reads C-red, G-rosy orange, D-yellow, A-green, E and B - "pearly blue - the shimmer of moonshine", and F sharp - bright blue. But the colours of the last five notes - D flat violet, A flat purple, E flat and B flat - "steely with the glint of metal" and F dark red, were believed by Scriabin to be extra-special - either ultra-violet or infra-red. This is particularly interesting as these are light radiations which cannot be seen: as light (including the fragmented light of the spectrum) is only a small section of the range of electro-magnetic radiations which include radio-waves, infra-red and ultra-violet rays, X-rays, Gamma rays etc., he is attributing an invisible (in the sense of not perceptible via the known senses) light radiation to an auditory fact. Moreover, for him red, the key of C relates to matter, the soil, whereas violet (ultra-violet) the key of D flat is spiritual and ethereal. (In his book "The Art of Colour", Johannes Itten says of red that

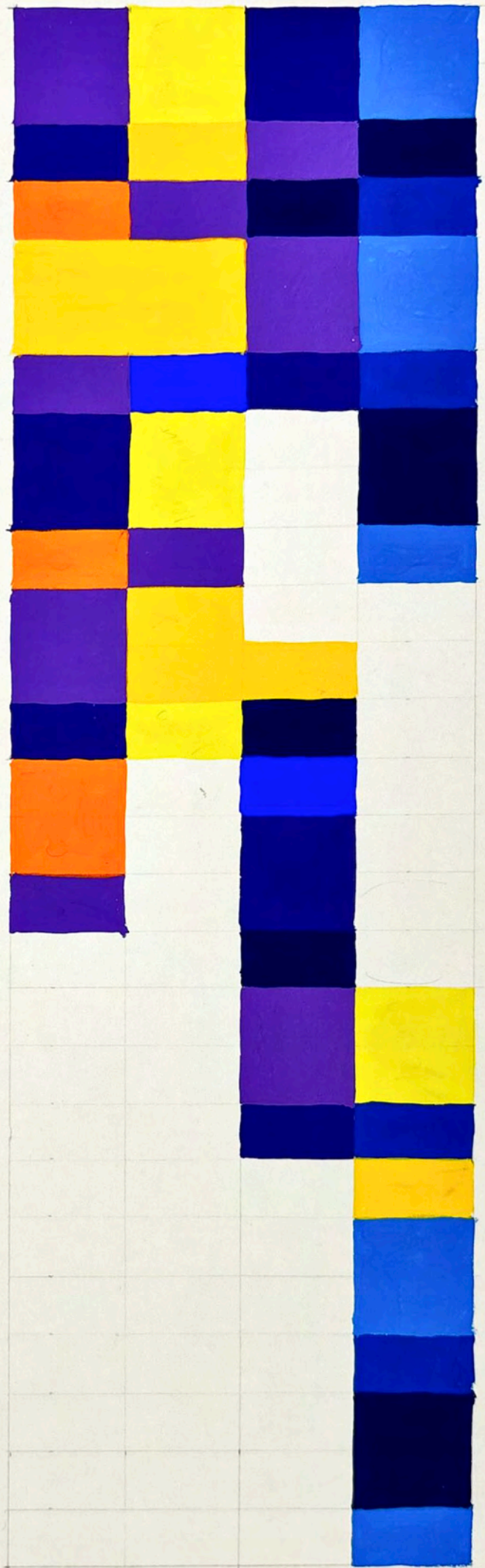
*psychology of Music", P.72

it is "symbolically comparable to vitalized earth", and of violet that it "is the colour of the unconscious - mysterious", in which "temporal and spiritual power are united.)* Scriabin implies a parallel between electro-magnetic radiations and the spiritual, in relation to an auditory tone. He also believed that a definite psychical struggle takes place between a tone and its overtones in the same way as tones in different sections of an orchestra simultaneously battle for a single fundamental sound the listener shall hear.

Coloured hearing then, is an exceptionally complex phenomena in which several factors (e.g. association, previous experiences and also colour preferences) contribute subconsciously and to differing degrees and which varies with the individual. These are all from the study of single tones, which differ again when the whole of a piece of music is heard. Certain reports of subjects "seeing" a sequence of moving colours simultaneous to hearing music are too complex to go into here, but the effects of which are comparable to those produced mechanically by amongst others Rimmington and his colour organ, and more recently, John Healey's "Box Three". This resembles a television set and when switched on shows constantly shifting patterns of shapes and colour, which appeal directly to the subconscious. It is now in use in University College Hospital, London, to sooth anxious patients (particularly in maternity wards) and send them into a light trance. Its powers of hypnosis are parallel to experiences of those who have colour hearing.

But colour hearing is not the only effect of tones. An experimenter Power, in Mr. Edmond Gurney's book "The Power of Sound"*** gave details of the inherent feeling-effect of tones. C major expressed feeling in a pure, decisive manner and also expressed innocence, powerful resolve, earnestness and deep religious feeling. G major expressed sincerity of faith, quiet love, calm meditation, simple grace and a certain humour and brightness. While G minor

*"Art of Colour" ps. 134 & 136)
***"Power of Sound", p.319



No. 2

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While G minor was sometimes sad, sometimes quite sedate and joyful, A major was full of confidence and hope, its genuineness beating all other keys in portraying sincerity of feeling. A minor expressed womanly tenderness, devotion, pious resignation, while B major in fortissimo expressed boldness, pride, in pianissimo purity and absolute clearness. B minor was the key of melancholy containing patient hope; (nervous people have been said to react to this key before any other). F sharp major was brilliant and clear, G flat major told of softness and richness. F sharp minor was dark, mysterious, spectral and full of passion, A flat major full of dreamy depression. F major was filled with peace, joy and also a light passing regret - mournful yet not deeply sorrowful, whilst finally F minor was especially full of melancholy, at times reaching passion. One cannot help but feel that Mr. Power was an exceptionally romantic sort of person, but apart from this, his "feeling-effects" have obviously been affected by tonal intensity (loudness) as will become more evident when we have studied the effects of major and minor modes played at different intensities and also affected by the time element in which his mind has embroidered upon his original feeling - this is not said against Power, the mind does this automatically and unconsciously.

So we see that the emotional or feeling effects of single tones involve equally complex thought associations and are as frequently contradictory as those of colour hearing.

Experiments on the effects of another fundamental, the interval, proved as interesting and intricate as those on single tones. In a study on the qualitative effects of the major intervals of the diatonic scale, the two experimenters Edmonds and Smith (American journal of Psychology, 1923, p.287 - 291) were surprised to find their subjects reporting primarily in terms of taste and touch. The octave interval was smooth "like molasses" and "smooth like polished glass": the seventh was "astringent or harsh like fine sandpaper": the sixth, luscious "like juicy succulent fruit",

while the fifth was "dilute like clear soup": the fourth was "rich like whipped cream and also harsh like crushed paper": the third mellow "like ripe but not juicy fruit": the second "gritty like cornflakes or pebbly, like pebbles in the fingers". This synaesthesia carries the conviction of immediacy.

However, a more comprehensive and detailed study on the expressive value of intervals was completed by the German experimenter Huber, who asked twelve subjects (mostly musical) to listen receptively to a series of intervals and report what each "said". The results again differed widely, but the total effects fell into five main areas:-

First, the character effect, in which such human traits as ^{dull} ~~chill~~,

fiery, earnest, secretive were ascribed to the intervals.

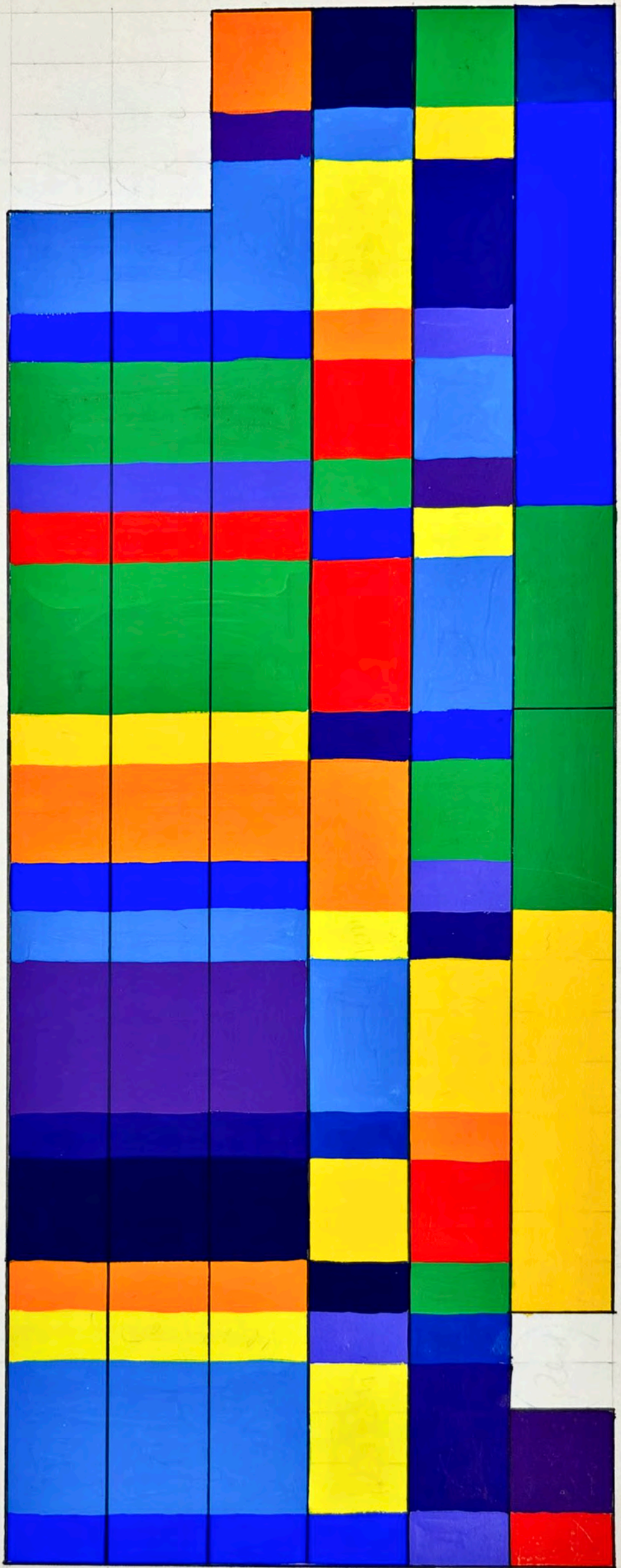
Second, the informing effect where the motif issues a call, warning or plea, an outcry of grief, a reproach.

Third, the movement or happening effect like climbing up, gliding, withdrawing.

Fourth, the perceptual imagery effect - "I saw a man in military uniform, lying on the shore of the sea, dead or wounded", "an approaching storm, one hears the first thunder", "the sure easy movement of a bird rising from the ground".

Fifth, and last, the atmospheric effect - one felt that "the interval belonged to a story about knighthood of the Middle Ages, taking place on the sea", another thought of "peace and midday heat".

The effects of single intervals were very elaborate here, suggesting again distortion of the original effect by time. The instance of "one hears the first thunder", is a pure auditory association taking place in the mind which is then read back into the sound by the mind as a sound. The effects of all separate components of music rely for their power on evoking a mood, idea or association in the mind and then reading this back into the original sound as if that sound is itself the idea, mood or



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association. The action of the mind is extremely swift and unconscious, leaving the experiment unaware of the action involved. Huber notes that ascending intervals are more often conducive to positive feeling content than descending ones, and so are consonant as opposed to dissonant intervals. The type of meaning of an interval he classified into sensory (auditory, visual, tactual content, colour and spacial content), emotional (in the form of moods) and ideational (in the form of calls and signals, or asking and answering questions).

One concludes from this experiment that the interval's definiteness of meaning depends upon the degree to which it is felt to constitute a unitary impression. The fact that a succession of three tones is more difficult to grasp as a whole than one of two tones, the former less definite and pure in meaning than the latter, would imply that a musical melody has less definite meaning as a whole than have its single parts. This in turn implies that the dissecting of a piece of music into its most elementary units - single tones and intervals - and the study of these separate units, would give as much pleasure over a longer period and be thus more meaningful than that of the structure as a whole. This idea of developing pure simple relations as entities in themselves certainly produces an infinite variety of synaesthetic results.

Perhaps the simplicity itself has a more direct impact and lasting influence on the mind and hence the complexity of response. A single pure colour can have this same effect. The mind, not assaulted by the intricacies of a melody, is left free to wander as deeply as it will, wherever it will.

But then again it is the change and complexity of a melody (or a painting) which maintains the interest and stimulates intellectual activity - the continuity and intricacies keep the mind constantly moving. So we must conclude that single intervals,

and melodies composed of single intervals, stimulate the mind to similar degrees but in different ways and have equally complex and compound effects. (As a footnote to this section, it is worth mentioning that the semitone is the smallest interval in European music purely for convenience; any smaller tone becomes difficult for us to distinguish accurately. This is directly opposed to, say Indian or Japanese music, based on the subtlest and most sensitive modulation of tone colour).

Certain notable contradictions became evident in the results of experiments on the effects of major and minor modes in music. The original view that the inherent difference between major and minor accounted for the different effects produced in the listener, has been disproved convincingly by psychological experiment. Traditionally the major mode was happy, bright, exciting, dynamic, while the minor was sad, melancholic. In one experiment, thirty subjects grouped as trained and untrained were asked to report the feeling effect of the chord from a printed list of words. It was found that tonal intensity was a primary governing factor in the effects of major and minor; change in intensity (loudness) had the marked effect of modifying the feeling-tone of the chords: soft chords were found to be soothing whether major or minor. (We remember Mr. Power's wealth of "feeling effect" of tones in which no allowance was made, with the exception of one case, for intensity). Therefore it is not a question of the tonal structure of a chord but of how it is presented. The choices of trained and untrained show also that reaction to major and minor is principally a matter of being trained to react in a particular way to a particular chord, i.e. those trained in music reacted in a specific manner to a purely intellectual discrimination.

This is true of single chords, but one must remember that a composition in a minor key includes many major intervals and vice versa. In some countries, major mode is frequently used for sad songs, minor for cheerful ones. Music in a minor key in some primitive peoples, although sounding tragic and dirge-like to us, may mean exactly the opposite to them. So the mode in which a composition is written bears little relation to its affective powers - to the type of feeling it may arouse: also the way a mode is presented can directly govern its effect - if it is intense, its effect will be that of a major mode regardless of its tonal structure.

Complex research has been completed on the effects of the structural elements - particularly rhythm and tempo. The tests where the structure and emphasis was shifted in two versions of the same piece of

music ran into the difficulty of re-writing the music, and it was impossible to include any but the most simple and obvious changes. Two patterns of rhythm studied were, in the first version a firm beat, with a full chord on every beat like a chorale, and in the second a more smooth and flowing motion in which supporting chords were fragmented and spread evenly throughout. The results consequently were as one would expect - the motion of the second version was more continuous and less definitely accented than the first, firmer version.

Certain principal elements of musical make-up were found for expressing four particular emotions, excitement, dignity, dreaminess and happiness. For excitement, tempo was the vital element, which must be swift, and to which complex harmonies lend much. For dignity, the slower tempos, firm rhythms of simple harmonies and ascending melodies gave rise to the feeling whilst for dreaminess, the minor mode, slow tempo and flowing rhythm with simple harmonies were the most important. Finally for happiness a much faster tempo with simple harmonies and more flowing rhythm gave the best results.

As a whole these results would suggest that the speed or slowness of tempo is by far the most important factor in all cases for producing in the listener a given effect and that the smallest part is played by melody. From this arises the possibility that certain effects of music previously attributed to the successive tones of melody are in fact due rather to rhythm and tempo. But then rhythm is an intrinsic part of our mental make-up - is far more readily perceived than any form of melody. Then again a person's occupation may condition their preference for the tempo itself: for example the commercial typewriter groups of a New York high school preferred fast allegro, almost presto tempo, whilst the beauty culture, dressmakers and domestic groups preferred an andante tempo, and power machine operators a slow allegro.

Convincing results came from students tested purely on the perception of rhythmic tapping. They revealed that whilst they could repeat endlessly a long series of regular rhythms once grasped, they could not repeat at all an irregular series, e.g. 111, 1, 1111, 1, 11111, 1, 111111, 1.

They tended all the time to read a regular rhythm into an irregular sequence of taps.

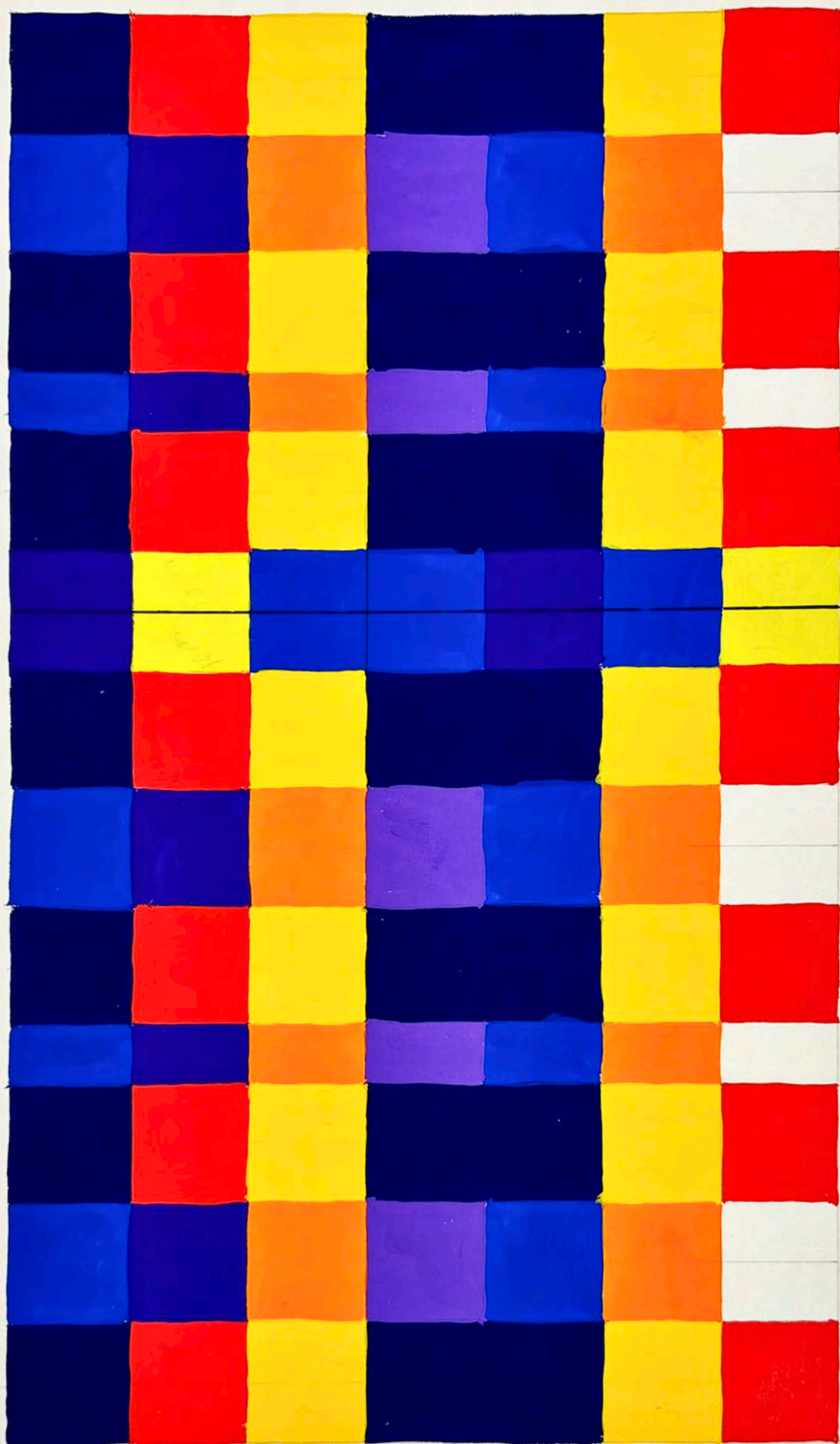
It is doubtful that this would have happened had the subjects been primitive peoples. Rhythm in primitive music, though seeming to Eastern ears to be quite simple, proves frequently to be excruciatingly complex: certain drum rhythms, for example those of the priests of the Ewe tribe of Ghana, were only cracked after persistent analysis by European experts. They have three drummers on different tone drums. The first beats ^{four} ~~low~~ basic beats; to these the second beats three, and this three-beat the third drummer divides into five: thus

1st drummer:	
2nd drummer:	
3rd drummer:	

This is accompanied by handclapping of two rhythms different to any combination of the three drummers.

One author, Valentine, in his book "The Experimental Psychology of Beauty" reported of a Zulu he met at college who was able to make a two-beat action with his right hand, a five-beat with his left, and a seven-beat with his foot simultaneously.

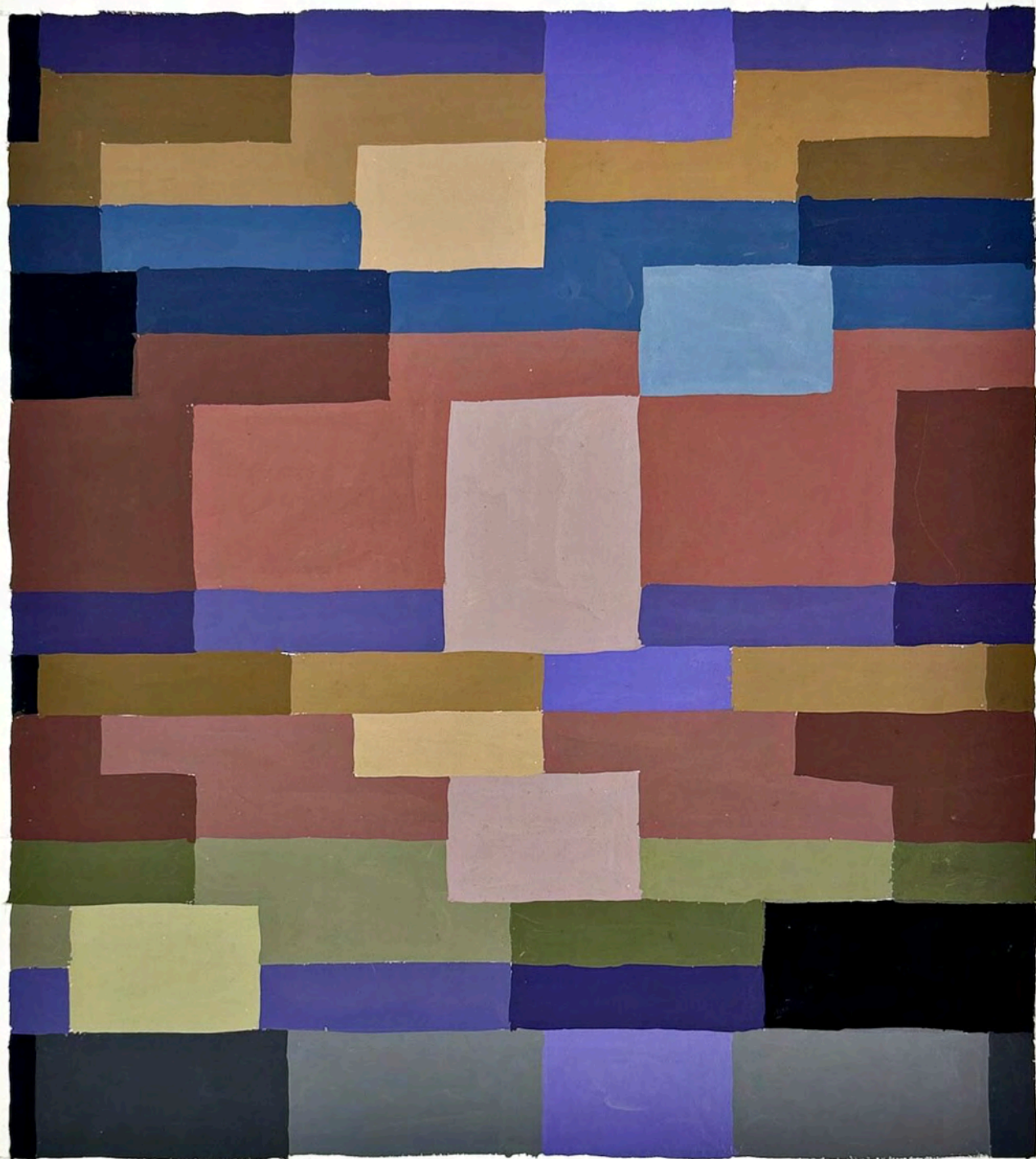
Primitive music in general has evolved through the gradual development of a more and more complicated sense of rhythm, whereas in European music rhythm has stayed fairly simple which let music develop via increasingly intricate harmonies. The still great scope in rhythm open to European composers is beginning to be exploited in modern times by such composers as Bela Bartok (8:8 time is familiar to him, divided into 3:8 plus 2:8 plus 3:8, or into 1:8 plus 3:8 plus 1:8 plus 3:8) and Britten, but even their work is rhythmically mild compared to the rhythms just studied. As rhythm stimulates actual physical movement and has an energising effect on the muscles, rhythm is an aspect of music which is more bodily than auditory in nature.



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Writers of all ages have told of the profound influence of music over states of body, mind and soul, often transcending normal spiritual boundaries. We recall how David allayed Saul's melancholy, and in 1634, Henry Beecham wrote in "The Compleat Gentleman" that "the exercise of Musicke is a great lengthener of life, by stirring and reviving the Spirits, holding a secret sympathy with them ... Yea, a curer of some diseases: in Apuglia in Italy and thereabouts, it is most certaine, that those who are stung with the Tarantula are cured onely by Musicke" (!) Robert Burton, author of "The Anatomy of Melancholy" writes convincingly of music as a cure for this, concluding with "Sine ore loquens, dominatum in animum exercet" (speaking without a mouth, it exercises domination over the soul).

Now that certain particular results of the medical and physiological effects of music have been tabulated, the use of music in hospitals seems to be the next logical step. Experiments where the heart beat has been measured by an electro-cardiograph before, during and after certain pieces of music, and similarly respiration measured by a pneumograph, have shown how strongly rhythmic music influenced blood pressure and circulation, and increased heart beat by accelerating respiration. Isolated tones, scales and motifs and simple tonal sequences literally energised the muscles, similarly dissonant chords, major chords and chords in rapid succession. Consonances, significant changes of tonal intensity, pleasantness, and anticipation of the goal tone or finale caused the pulse beat to slow. Subjects were unfavourably affected physically and psychologically by tragic, mournful tones and very slow rhythms, and favourably by gay rhythmic melodies. The more definite the rhythmic element, the more positive were the physiological responses. These results suggest that medical use could be made of music in the same way as Mr. Healey's "Box Three". One experiment along these lines was tried by playing soothing music all through the night to certain neurotic and restless patients, and the results were positive- they awoke relaxed, calm and rested. Perhaps music could be used in conjunction with "Box Three" - a patient affected by sound and rhythmically moving visual shapes, adapted to suit the patient.



Finally I want to look at the types and degree of enjoyment produced in the listener by music, and the types of judgment he may use.

The enjoyment of music is an extremely complex act involving a compound of at least six components; firstly, pleasant emotion arising from the tonal nuances of the instruments: second, pleasure from the rhythm, as the motor factor is always present in listening to music (the dominant factor of pop music); third, pleasure from associations stimulated by music, arising from the subject's past experience; fourth, enjoyment within his play of imagery: fifth, pleasurable mood, and sixth, pleasure from the intellectual activity of following the musical structure as it is unfolded. Of all these, motor reactions are held to contribute most.

But the type of experience depends entirely upon the type of listener. Though not mutually exclusive, four distinct types of listener have been noted.

The subjective type, to whom the music appeals sensually and emotionally will use expressions like "stirring", (it is interesting to note that specific emotions, like anger, jealousy, envy are conspicuously absent. Emotions do not enter the realm of aesthetics, but the aesthetic effect is of a general condition or mood). For the associative type, the main appeal of the music lies in its suggestion of something from previous experience. The objective type, who considers music as an object and adopts a critical analytical attitude, and the character type who reads personality into musical sounds.

Types of listeners differ again in the degree to which they enjoy music. There are those where enjoyment is slight and rare (little musical), those whose enjoyment is frequent and intense (the somewhat musical), and those whose enjoyment is rare and intense (highly musical).

So the least musical enjoys music rarely and then but slightly, while the other extreme, the highly musical, whose taste is discriminating and in whose musical judgment are many complex and complicating factors, (particularly those relating to interpretation) likewise rarely enjoys it but when does, it is intense. Therefore the advanced musically educated



and the exceptionally sensitive experient will perhaps in the long run get more intense and complex delight i.e. when the music is ideal, and its rendering perfect, his appreciation may be more intense and continuous than that of the other two groups. The middle group, however, gets the most regular enjoyment.

We have examined some effects of the separate elements of music and some types of judgment and enjoyment. We have seen that a vast amount of mental processes occur below the threshold of awareness including most of the routine input of the normal senses.

Perception in music, or intuitive preconception (which demands both analysis and synthesis at a subconscious level) is then the result of a development rather than of a given state: it is the response to a stimulus which is different from the nature of the stimulus itself.

For this reason verbal ideas do not determine the mind's reaction to music:- the listener is not given ideas by the music, he puts them into it. A few essential flashes of direction or shape stimulate his mind to the complexities of imaging, to which music lends itself, more than any other art, and some small section of which we have examined in this chapter.

(PART THREE)

By way of introduction to the conclusion, I want to return now to the original quotation - Mr. Mursell's prophecy that "if we are to have any ultimate explanation of music, it is bound to be in terms of psychology".

Psychology is the science of the mind: mind has been defined as "the faculty by which we think" (Oxford English Dictionary) and we think via the processes of the brain.

Sir Charles Sherrington, a former President of the Royal Society, a neurologist who has devoted his life to the study of the brain, is only able to conclude his researches by saying that the brain is "an organ of liaison"*between the physical world and the conscious mind. This definition of the brain presupposes some concrete definition of mind.

But what is the "mind of man"? What are the "laws of the mind"?

"The faculty by which we think" really is more a vague hypothesis than a definition. Man does not know what 'mind' is, and has to make do increasingly with indeterminate concepts.

Until we can define the laws of the mind, and until we can determine something of the power of the mind, until we can know the gargantuan realm, "Mind", there can never be an ultimate explanation of music. Psychology, the science of the mind, cannot explain music - it can only take us so far - which really is not very far as we shall see.

The imaging to the stimulus of music we have just observed in part two is different from the concept of "music", or music as meaning in itself, appreciable for its own inherent beauty. Music as total meaning is a stimulus which frequently leads to a trance-like state of intense musical absorption. This will become more clear if I illustrate with specific reports from several prominent musical artists.** "I am usually in a state of muscular tension. If I am really in the aesthetic ecstasy, I am absolutely oblivious of my surroundings;"

*Sir Charles Sherrington, from an article by Sir Cyril Burt, "The Observer", 16th April 1967.

**Reports quoted from "Psychology of Music", ps. 132 - 4

"When I am in a state of the most intense enjoyment of music, I am never introspective. I never catch myself at it. Looking back on it, I should say that I have rather become the music than remained something apart with some attitude toward it. On the less intense absorption, I should say that music in a very definite way restores me in body, mind and spirit":

"When I find myself in the act of intense enjoyment, it is generally after the experience is over. For such moments, loss of myself is fairly complete. This is, however, for special occasions: the ordinary rhythmic enjoyment of music is very much on the plane of any usual sensuous enjoyment, as eating and drinking. The self is perfectly conscious of the thing being enjoyed. In the supreme moment there seems to be a fusion and I am one with the thing heard. Such moments cannot be but a few seconds in duration, but they raise the whole attitude into a different level..... what I seem to feel is perfection, the realization of an ideal and perfect harmony between matter and spirit. Why this should move me so, I am unable to tell unless it may be that as in our ordinary consciousness our physical, mental and spiritual limitations are constantly with us and we are living most of the time, because of our personality, in a state of strife, whenever a perfect moment comes and we forget ourselves, and find the strife giving place to a perfect union, we experience a certain vacation or respite from ourselves".

These reports representing the height of musical appreciation imply the existence of a unique musical faculty, in the way perception is a unique intuitive faculty.

"When I am enjoying music it is hard to understand just what is going on because I do not seem to be there at all - I have disappeared"*

To become aware of the material self fused with the spiritual self is the first awareness - the listener is on the edge of grasping a supremely vital truth, and then the material self diminishes in importance as the spiritual self becomes spiritual meaning, becomes music.

This is the highest achievement of music, this is its transcendental function - the highest function of any art.

Music is not only a spiritual knowledge, but a way of life. Its meaning is beyond itself.

The mystical, ecstatic state of loss of self, or bliss absence, is the ultimate effect of the spirit, Music.

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Note on the illustrations;

Although I was much tempted to use other peoples colour-tone associations, their idea of say "steely with a glint of metal" (Scriabin, p.6), may be totally different to mine, so in each case I have used my own scale, C-red, v. warm; C#-pink/violet, cool; D-orange; D#-v. cool lemon; E-yellow, warm; F-green; F#-blue-green, v. cool; G-blue; G#-very cool cerulean; A-indigo; A#-cold pale violet; and B-v. warm violet.

Also, rather than convert an entire piece of music, I have used a few bars of several works by different composers, to invite comparison and contrast.

- No. 1, : three bars "Osanna" chorus of Mozart's "Mass in C minor."
- No. 2, : three bars "Misericordes", of Britten's "Cantata Misericordium."
- No. 3, : three bars Bartok's Violin Concerto.
- No. 5, : three bars "Whither hast thy friend gone aside," of Bach's "St. Matthew Passion."
- No. 6, : three bars "O si similes existant" of Britten's "Cantata Misericordium."
- No. 4, : three bars "Vincit" of Britten's "Cantata Misericordium."

In nos. 1-4, the notes are represented in a static form, *where 1 quaver is equal to 2 sq. centimetres, + co.*

In nos. 5 and 6, I have taken a single melody moving up and down in space, subdued it's intensity, and used a double echo sequence, where the echo of one note affects the surrounding area of the next.

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