Laughter, Music, and Creativity

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As anyone ought to know for his own soul's sake, the so-called twelve-tone or atonal system of musical analysis and composition is a literally reactionary retreat led by dried-out 20th-century composers, in flight from the challenge of attempting to imagine something both new and significant within the framework of the so-called tonal configuration. This is not an opinion, but a readily demonstrated fact.

We shall review some of the possibilities inherent in the most obvious of the contrapuntal potentialities of the octave-scale. We shall consider the implicitly political state of mind which causes an otherwise committed, and perhaps potentially gifted musician to lack the minimal qualities defined by the leading strata among the professional musicians of the 18th and 19th centuries. That provides the thematic setting for focusing upon the broader interconnection between laughter and creativity.

This approach will appear, at first, to be only a choice of musical facts as a means for getting into the principal topics. That initial impression would be mistaken. In the end, we should share the estimation that this approach has been adopted in honor of Ludwig van Beethoven, who is both one of the paradigms for creative achievements in general and a musician whose achievements have never been matched by any of his successors. The object of this particular approach to the subject is, if only in part, to stimulate a broader appreciation of his contributions to the human soul for the forthcoming 150th anniversary of his untimely death.

In the beginning, it might appear to be the case that. we have introduced a theme—in this instance, music—ostensibly to obtain a point of access for the serious activity represented by the development of our argument. That first impression should be cast aside as we reach our concluding passages. As we consider the introductory thematic material from the standpoint of the intervening development, that theme must acquire both a richer meaning and a

specific appropriateness to the development itself which would have been non-existent from the standpoint of the opening statements considered entirely by themselves.

That, we propose to show, is the essence of creative music—for which Beethoven's work is the paradigm still, and the specific quality of coherent creative achievement in general.

Some Very ABC ABCs of Counterpoint

Consider only some of the obvious possibilities for creative freedom in counterpoint based on the most prominent features of the well-tempered tonal octave. We limit ourselves here to those demonstrations which can be made in no more than several hours of classroom work in an introduction to counterpoint. On this basis, the fact of limitless musical possibilities of that tonal system is adequately illustrated.

First, the simple well-tempered tonal scale by itself has several significant features. Second, all the key elements of counterpoint are demonstrable in terms of a single voice. Third, the addition of even a single second voice expands the possibilities not only to include a simple vertical element within the same beat-interval, but—in the hands of a gifted musician—a relatively limitless number of contrapuntal possibilities arising from all the immediately and potentially distinguishable interplays between the two voices.

One begins, for point of elementary reference, with the "natural" scales—the scales as one might imagine them to be understood prior to the influence of Bach's work in strictly defining a well-tempered system. (Any orchestral or piano and string work including fingered wind-instruments demonstrates that this is not merely an historical curiosity.)

The "natural" tonal scale is based upon an algebraically determinable regularity of intervals, such that each octave tone is precisely double the frequency (vibrations per second) of the immediately lower octave-tone, and the half-tone intervals within the octave have rudimentary algebraic determination of "equal distance." The energetics of this arrangement are obvious to any beginner in undergraduate physics: Notes of a higher pitch, otherwise having vibrations of the amplitude per cycle of vibration, transmit more energy to the ear within each equal fraction of a second.

Shifts in frequency (pitch) are habitually distinguished by the hearer in scale-singing, song-singing somewhere within a range of approximately a quarter-tone, and habitually distinguished as a distinct note at intervals of a half-tone. "Drift" from true or equal pitch in the order of less than a quarter-tone is habitually distinguished as an ambiguity (or a very good control of a range of vibrato), while larger drift is considered ordinarily a disagreeable off-key sharpness or flatness. It is sufficient for our purposes here, to consider these facts as

phenomena of musical hearing and to probe the physiology of such intervallic distinctions no further than that.

In a movable-do system based on such "natural" octave scale-singing, the difference between the key of C major and C-sharp major—insofar as intervallic effects are considered—is merely an increase in the intensity of the octave: More energy is transmitted in the singing of a C-sharp major scale at the same amplitude as a previously sung C major octave.

This difference in intensity is not without significance, of course. Music is heard not only as an activity of the mind with respect to the ear, but also with respect to the kinesthetics of singing. The hearer's own potential singing-range and the different physical experiences of singing in different parts of that range are part of the spectrum involved in the hearer's judgment of the heard musical tone.

With that, we may leave consideration of the "natural" tonal scale of European music, and now consider all the further points to be covered from the standpoint of reference of the well-tempered scale—including briefly a crucial, interesting little problem arising from the differences between such a well-tempered and the natural octave scales.

The development of the well-tempered scale was not immediately demanded by the use of keyboard instruments. To demonstrate the point, imagine the following: Tune all the C strings of a keyboard instrument (clavichord, harpsichord, piano) to their natural pitch. Now, next, tune all the notes between the Cs according to the natural intervallic intervals for C major. Now, try to play a natural D major scale on that keyboard instrument. The result is slightly off-key. Then, so forth and so on, for the other movable-do major scales, with the same sort of result. The well-tempered scale is a compromise-system, by which the values of the notes of all the scales are adjusted slightly such that the same note struck on the keyboard has the same assigned pitch, no matter which scale is being performed.

Ah, but what an intriguing set of results derives from that compromise. Now, because of the compromise, a new difference has been added for the comparison of one major scale with another. The very slight changes in intervallics (from the natural intervals) within each scale give to each of these key-signatures (scales of reference) a distinct "color" over and above the simple distinctions of intensity in natural movable-do system. This is in fact a major consideration of all the greatest music written in Europe during the late 18th and first half of the 19th centuries (to choose this segment of time for emphasis).

There is one further principal feature of the tonal system after Bach. In the earlier music, principally influenced by traditions originating in Asia Minor and Greece, European music was dominated by what are termed "modes." In the mainstream of most modern tonal composition only two principal modes survive: the major and minor keys. The simple

difference between well-tempered major and well-tempered minor scales is that, relative to the major, the minor key scale is diminished by a half-tone in the third and sixth interval, such that by augmenting the B-flat of the key of E-flat major to B-natural, we have the scale of C minor.

A few highlights of the possibilities of counterpoint in a well-tempered scale suffice to illustrate the basis for the working point of this paper.

Firstly, although *counterpoint* is associated with the simultaneous singing of two or more voices, all of the root-principles of counterpoint are locatable in terms of a single voice. We shall identify only a few rudimentary illustrative points.

Counterpoint, reduced to its essential principles, is the practice of changing the key or mode through deriving dissonances within an otherwise canonical (e.g., "according to the rules") elaboration of thematic material. The function of this is, more immediately, the explication of the range of "color" associated with distinctions among major and minor modes of the various well-tempered scales. This intersects what may be loosely described as the internal rhythmic pattern of thematic material, including the interaction between the rhythmic "internal" features of the thematic material and the habituated rhythmic values of the so-called unit measure of the section of the composition within which that thematic material is being developed.

Speaking broadly, counterpoint is essential to making musical composition and performance a vehicle for communicating and evoking the *development* of emotional experience—as distinct from undeveloped music, in which it would be possible only to communicate more or less monotonously a single mood. The more profound significance of counterpoint is that it permits the direct association of the "intellectual" side of music, the ingenious working-out of musical composition problems posed to himself by the composer, the intellectual point of reference—*cathexis*, with the ordering "emotional" ("color") correlatives of the tonal and rhythmic peculiarities of each immediate section of the composition as a whole. The following analogy is perhaps more appropriate than might first appear to be the case.

Imagine a physicist in the act of solving an important, challenging problem. The struggle represented by this intellectual, etc., effort, ranges over all the moods of which the mind is capable, including the most ennobling sense of excitement in the course of a genuine "breakthrough." Once the initial breakthrough to a sound hypothetical solution is effected, his mind ranges happily over the process by which this was accomplished, critically reevaluating each feature of that process, retrospectively looking over the shoulder of his intellectual self of that preceding moment whose work is now being reassessed.

If the emotional experiences associated with each part of the first and later retrospective critical phases of that work were somehow made as explicit as the intellectual activity itself, one would then have a first approximation of the special function of great musical composition. If the form of creative problem-solving and the emotional correlatives of problem-solving were then placed on the same level, so to speak, to serve as the primary subject-matter, we would have defined the special distinction of great music as art.

Using that illustration as a point of reference, we can properly state that great musical composition—with Beethoven's work the paradigm for this—is the science of celebration of the principle of creative life. The formal aspect of musical composition, the obviously articulable features of counterpoint, are an abstract representation of creative scientific activity in general. This is essential, since without a deliberative problem-solving element in musical composition, the successive emotional colors associated with tonal and rhythmic development would lack the essential development of reference to give them meaning.

To the extent that this aspect of musical composition is sometimes broadly acknowledged, the error is usually included, of assuming that the formal, problem-solving activity of music is focused on hypothetical ineffable problems—that "art" in general thus has no practical correlatives in real life apart from that specific domain of art itself. Such suppositions are purely nonsensical, virtually pathetic Bohemian driveling insofar as practical life is concerned, and reveal that the proponent of such pitiable conceits has no real insight into art itself.

If, to strain an illustration, mathematical physics activity were "set to music," it would be the physics-discovery that would be specific, and the music would be mere "program-music," the musician's equivalent of degenerate cant. The function of the articulable formal features of counterpoint (at least, susceptible of formal analysis *after the fact*) is that the problem being considered is directly associated with the emotional "tone-color," rhythmic side of musical activity. Thus, great musical composition is essentially a direct means for approximating and addressing the creative powers of man, for evoking in the performer and listener a sensibility of those creative processes, focusing on the sensuous correlatives of the creative process.

For example, the musically cultured creative physicist, coming from a period of intensive effort in his profession, finds in great music a special kind of satisfaction, the satisfaction of a profound human need. Physics activity *per se* does not explicitly express the emotional correlatives of creative mental activity, even though those correlatives are indispensable to that activity. Consequently, an appropriate selection in great music legitimizes, gives voice to, those emotional experiences which had no outlet in their own right in the physics activity *per se*. This may be essential in some respect, at least fruitful for the sustaining of the physicist's creative efforts the following day.

Illustration

Now, let us focus attention on some very simple features of the well-tempered scale, selecting a few points of the sort which are susceptible of immediate effective demonstration to outright musical novices. Let us consider in that way only two kinds of problems which typify the immense potentialities of counterpoint.

For this purpose we shall consider only the following features of a well-tempered system: the major and minor scales and their interconnections, the notion of principal leading tones, and the fact of the tonic, dominant, and subdominant. We shall consider first the highlights of counterpoint in terms of such elements for a single voice, and then identify a few of the notable features added by including even a single second voice.

Let us begin with the simplest sort of theme, a scale in the key of E-flat major. Let us then introduce just one dissonance into that theme; let us replace B-flat by B-natural, and continue that substitution. We are then in the key of C minor, which can lead us to the corresponding major key, C major, by a number of means. Similarly, the half-tone note one step below the dominant and the subdominant tones leads directly to similar transitions of an obvious sort. In a transition between E-flat major and C minor, a trill on B-flat and B-natural represents a delightful ambiguity, and so forth and so on.

In general, the production and: resolving of such dissonances and ambiguities, all of which exist in principle in a single voice, are the essence of counterpoint. One could go much further with the single voice case, even in respect of a few points of the scale we have identified, but this suffices for the moment.

In the simplest view of the effect of adding a second voice, we have the following. Begin the statement of the second voice, using the same theme as the first voice, on a beat such that the sounding of the first note of the theme by the second voice is in tonal agreement with the note and the key being then enunciated by the first voice. One is obviously faced, implicitly, with certain limitations in the selection of thematic material for such simple undertakings, otherwise the continuation of the two voices in parallel will generate an unwanted frequency of dissonances between the two voices, with respect to the immediate beat and the tonalities of the passages immediately surrounding that beat.

Looking at this more broadly, the question of the relationship between the two voices is not properly limited to the “vertical harmonies” represented by the notes sounded in the same beat or fraction of a beat. There is an obvious connection between the cluster of notes immediately surrounding that vertical arrangement. Preceding and following notes sounded by the second voice form an implicit series with the note being sounded by the first voice, and so forth and so on.

Without yet considering the rhythmic relationships between theme and measure, we have a rich range of options in the simplest case of this sort. Somewhere, certainly if the quality of the theme in itself has any bearing upon its selection, dissonances must arise either in respect of simply implied vertical harmonies, or from the configuration of tones surrounding any beat or fraction of a beat. To describe the matter broadly, the composer has the opportunity, in the first instance, to underline any of these immediate or implicit dissonances he may choose, and to generate development of the music by resolving any of the dissonances he chooses to underline and resolve.

The Need for Rules

What we have outlined so far is adequate for the statement of an essential principle at this juncture. It is possible, starting from the restricted framework of the well-tempered scale, to elaborate formal rules which provide the framework of all legitimate musical composition. Ah, but only the framework!

This framework allows for the disturbing element, dissonance, inherent in the elaboration of the rules themselves. The effect of dissonance, given the implied rules, is to cause what we may broadly identify as "stress." This "stress" demands a resolution; that is, the dissonant element must lead into, and become retrospectively or reflexively a necessary part of something which conforms to a rule of the well-tempered system. *With one further qualification:* It is permitted to develop a new lawful principle within the well-tempered system, provided that this new "mode" or other element of principle is defined in such a way that it becomes a conceptualized new discovery of a rule to the mind of an idealized audience within the composer's mind.

This existence of an expandable set of rules of composition is not a shortcoming of music developed within the well-tempered system. It is the very essence of music, however—and there is a point of significant difficulty—not for the reason given either by the reactionary formalists, or cited as license for anarchy by the counterculturalists of the atonal existentialist factions.

The reactionary asserts that the rules are necessary, but from the standpoint of stultified conservatism. (The backward formalist who had not yet been successfully bowel-trained would wear diapers; the anarchist who is not bowel-trained would instead ridicule the diapers, in order to more freely express his instinctive proclivities before the public. Frankly, between the two, perhaps the reader will agree that the formalist is more rational as well as being decidedly more sociable.)

The crux of the genuine issue is the principle of *Freedom in respect to Necessity*.

The analogy of the creative musician to the creative physicist bears out here most emphatically. The essential feature of human creativity is absolutely not the free expression of random impulsions; thus, all *consistent* existentialists are clinically definable as bestialized paranoids, a potential menace to themselves and others. *The essence of creativity is problem-solving*. In the final analysis, all creative problem-solving subsumes man's mastery of nature, mastery of the implicitly adducible laws of the material universe.

Immediately, man's knowledge of such laws is approximated *in an historically specific way* by the existing body of scientific knowledge and means of practice. Although ultimately it is the lawful order of the universe as a whole which determines what is and what is not a solution to a problem, the form in which the problem is posed is the set of rules representing the best approximation of universal knowledge. The immediate characteristic of most problem-solving is a solution to a problem which satisfies existing *laws of scientific knowledge*.

More rarely, more profoundly, there are crucial discoveries which redefine and add to the previously existing bodies of lawful scientific knowledge. It is the location of freedom (creative innovation) within a determining set of lawful knowledge of reality which is the first-approximation definition of creative work. However, that is not adequate by itself. Random, impulsive alterations in behavior (*freedom* as the anarchists and other lunatics misdefine the term) is not creative problem-solving. Man's successful mastery of the universe, is the criterion—and active content—of creative work, *of creative mental activity as such.*

The function of music is to emulate and celebrate that creative mental activity, specifically to focus on that activity as if in and for itself, such that the formal and emotional features of the creative process are directly, reciprocally intertwined in defining the problem and the solution. Hence *music must proceed from historically specific sets of adducible rules*. The crazy anarchist who simply proposes to overthrow the well-tempered tonal system for arbitrary freedom of atonality is only a berserker, a man driven wild by his own inability to master creative work in the well-tempered tonal system. He is a man who, so to speak, burns down the house (because he lacks the competence to repair its electrical circuits and plumbing) that he might enjoy the freedom of a technology-free hut. Whether the process of musical development is stagnant or alive is to be judged in the same principled fashion as we distinguish between a stagnant or vital body of scientific work: Is there development within the existing framework which leads, through lawful development, to a successful transformation of the previously existing rules?

The Role of Creativity

Even in terms of the arbitrarily simplified illustration of counterpoint we have given, the problem of the well-tempered tonal system is readily sorted out. *What the rules do not*

predefine is the composer's choice of use of dissonance and the new architectonics of form which he builds with the aid of such choices. The picture is merely amplified in a necessary way as we emphasize that the rhythmic ironies of composition, most notably rhythmic contrasts among figures, ironies concerning thematic material and measure, and so forth, are an essential aspect of the counterpoint as a whole.

Beethoven is the paradigm for what we have outlined. Everything exciting in Beethoven's compositions conspicuously involves an interdependency between the excitement of lawfully situated creative innovations and the uses of the rhythmic and tonal palette. Moreover, on these counts, Beethoven's achievements in counterpoint, and in the further development of the principles of a lawful counterpoint, have never been approximated by any composer to date.

This latter fact is of special relevance to the inane posturing pretensions of the so-called moderns. They are like student physicists who have invented an entire new anarchist's sort of pseudo-physics in revenge for the fact that they have found themselves hopeless failures in the existing profession. These "moderns," who on point of documented biographical and correlated material, were motivated to the atonal system by their inability to write new music of significance in the existing system—to say nothing of matching themselves even to the mid-19th-century romantics so-called—rejected modern technology for the simpler life of the noble savage.

In point of fact, from the standpoint of "sophisticated" conceptual advancement, Beethoven's notable later musical compositions represent a body of musical theory far beyond the competence of his successors, and apparently beyond the mere student-musicologist comprehension of those pathetic creatures who pretend to have superseded his musical conceptions.

To generalize more broadly, if we abstract a concept of musical development from Bach through the later notable Beethoven compositions, with special emphasis on Beethoven's own development, we have in a single, empirically premised conception both a conception of creative ordering of the development of the adducible formal laws of composition, and a higher-order notion of musical lawfulness which subsumes such an open-ended process of further lawful development of lawful music. As the notable later works of Beethoven already illustrate, there is no definable limit to what can be achieved in that way.

The Scherzo

The Beethoven scherzo form is an exceptionally useful point of student's focus. At its best, it might be described as the principle of a lawful musical joke—not merely a sheer delight, but a very lawful kind of humor. Like a creative irony in literature, or an insightful use of

punning as a form of metaphorical elegance, itis the anti-anarchist quality of the scherzo—as distinct, for example, from a late-18th-century musical-joke composition—which is its essential feature. An exercise in sheer contrapuntal delight, set to rollicking triplet figures and so forth.

The specific excitement of creative work, otherwise found most notably in great music and insightful forms of wrenching humor, is a specific sort of surprise. Laughter: the quality of the creative experience, of music, of wrenching insightful humor, and the exciting moments of loving.

The Beethoven scherzo is a celebration of that aspect of the creative process as if for itself—the echo of sheer delight apposited, and often necessarily so—to the profundity of some immediately preceding more momentous creative undertaking.

There is a sick world to be rebuilt. In this world—typified by the disgusting linguisticians—we are plagued by herds of humorless, uncreative, officious louts, best summarily described as of an oppressively grey color turning toward an ominous yellow. Otherwise, the general population is psychologically stoop-shouldered with a burden of growing fears—fears whose exact nature and shapes those persons would prefer not to know—each plodding miserably from one familiar, greying place to another, "trying, somehow, to take care of my own personal business." Meanwhile, the storms grow; earthquakes, many of suspicious origins, major storms of unprecedented patterns originating in conformity to known weather-modification capabilities. There are storms of erupting and threatened regional wars, and overall the threat of general combined atomic, biological, and chemical warfare on a global scale. Meanwhile, sickened rats proliferate, and the deadly new waves of killer and debilitating epidemics spread against man, beast, and foliage.

We must shake this off, and build this world as it lies so immediately and wonderfully within our capabilities to do so. We must, meanwhile, wake up science, sweep away the rubbish, and otherwise become a generation to which the future will look back in warm pride of its ancestors.

While we do this, we must laugh hearty laughter, laughter chiefly because of the excitement we rightly take from our achievements. For this, let there be music.