

TO THE READERS OF OPEN SPACE:

FELLOW MUSICIANS, ARTISTS, AND POETS:

My article in the current issue, just out, an analysis of Satie's 'Vexations' has inadvertently been printed without the complementary graphic images which render clearly with immediacy what is explained in the text. Also missing are the somewhat humorous realizations of what may result from some of the misguided attempts at traditional tonal analysis i have seen. Therefore, the editors have proposed that i write a personal message to each one of you subscribers informing that the article, completed now as intended, is available at their website:

<http://www.the-open-space.org/osjournal.html>

Philip Corner

Prelude to a non-vexation

When John Cage called me to ask for my participation in the first performance of Satie's 'VEXATIONS' i accepted only with reservations.....at least until i should see the score.

At least until i saw the score.

Perfectly obvious at first view that this was no vexation.....no simple and simplemindedly vexatious example of that soon-to-become-fashionable "épater le bourgeois".....Au contraire!

So of course i said yes. And i played in what was the first performance.

I must say here that i have no patience for the pile of academic speculation that has accumulated since. (full disclosure!) From my point of listening/hearing/comprehending/experiencing much of it amounts to socio-psychological indulgence with no other usefulness than to generate a publishable paper.

Incontrovertible direct experience reveals that this composition is, if not the first, the most perfect mantra in the history of Western culture.....unique in scope and profundity.

Immediately evident that its effect must be that passing through the barrier of boredom beyond which lies the transcendent sense of timelessness.

How could that not be the intent?

And, in fact, that was the state achieved by at least some of the performer-participants.

The theorist in me afterward looked attentively into its compositional details, an analysis which reveals the working of a very subtle intellect indeed, and by-so-doing reconciles intuitive apprehension with the intelligent functioning of the brain.

An asked-for publication in 1975 never came through. At this writing some non-essential stylistic details are to be cleaned up; but the basic insights remain in effect.

(This seems all the more important at this time since a number of writings have fallen under my eyes which are by-all-means to be contradicted.)

The only modification i feel necessary to make now involves the numerology of the number 840, Satie's choice for the number of repetitions. I had disposed of it by saying that any uncountable large number would do just as well. This is undoubtedly so concerning the immediacy of the listening. But the meaning of it lies elsewhere in the mind.

For this reason i add as an indispensable part of my discussion, indeed a prelude to it, the amazingly revelatory exegesis so generously added by my colleague Martha (now Mother Felicitas) Curti.

Philip Corner, Reggio Emilia, 2009

The Number 840

Nothing so uplifts the mind, giving it wings and freeing it from the earth, releasing it from the chains of the body, affecting it with love of wisdom, and causing it to scorn all things pertaining to this life, as modulated melody and the divine chant composed of number.

--St. John Chrysostom

Thus reason has perceived that numbers govern and make perfect all that is in rhythms and in song itself; has examined them diligently; and has found them to be eternal and divine. ... All things present themselves in the mathematical disciplines as harmonious, as having to do with the immortal numbers which are apprehended by reflection and study, those which are perceived by the senses being mere shadows and images.

--St. Augustine

Why did Satie choose 840, of all possible numbers in the world, for the number of repetitions of Vexations? The answer, if there is one, can be found within each person who contemplates the number. To some, it may mean nothing; to others, the universe. To find the universe in the number 840 requires only an elementary awareness of the meaning of numbers throughout civilization--from ancient India, Arabia, Babylon, Sumer, Egypt, Greece--transmitted to us by Pythagoras, Plato, Dante, and many others, as well as by a continuous popular tradition. In music, number plays a central role structurally and symbolically, especially in those periods of history when music is considered a reflection of the eternal, divine, cosmic order. For example: the motet composed by Guillaume Dufay for the dedication of the Florentine Cathedral designed by Brunelleschi, in 1436, corresponds exactly in its mathematical structure to the proportions of the cathedral. The correspondence involves

highly complex fractions which can not be accidental. Equally awesome uses of number in music abound throughout the Renaissance and the Baroque, culminating in the music of J.S.Bach.

The more ways a number can be taken apart to yield its component numbers, the richer and stronger are its symbolic meanings. The number 840 has possibilities so rich that only a few can be explored here. To begin, we add the separate digits:

$$8 + 4 + 0 = 12$$

Eight represents a new beginning, a resurrection, a rebirth, following the completeness of Seven:

The eighth day in the week is the first.

The eighth note in the scale repeats the first.

Many medieval baptismal fonts and baptisteries are eight-sided.

Four represents Earth, the visible creation:

Four directions

Four seasons

Four phases of the moon

Four elements.

The number Four, the element Earth, the square, and the four-petaled lotus, belong to the first chakra in Hindu psychology.

Zero represents non-being, eternity, death.

Twelve represents the cosmic order, salvation, completeness:

The 12 tribes of Israel, the people of God

The 12 disciples of Christ

The 12 signs of the zodiac

The 12 months of the year.

The universality of Twelve is the product of Three
and Four.

Three is generated by the union of

One -- Unity. God. Being, divinity, light, the sun.

+ Two -- Duality. God as Father and Son. Conflict,
illusion, pairs of opposites, equilibrium.

Three -- Trinity. Perfection, heaven.

In Renaissance music the perfect meter
(triple) is represented by a circle. Three
is the favored number for repetitions of
prayers, incantations, and wishes. It
forms a complement to Four:

<u>4</u>	<u>3</u>
Earth	Heaven
body	soul
square	triangle

Thus, in the number 840, most simply, we have:

rebirth, earth, death, and the complete cosmic order.

Next, we look at 840 as a product of three numbers:

$$7 \times 12 \times 10 = 840$$

Seven represents completeness, perfection: a union of Four and
Three by addition instead of multiplication; a union of
heaven and earth, soul and body.

Seven directions of space (two for each dimension and the center)

Seven notes of the scale

Seven planets (in ancient cultures)

Seven colors of the spectrum

Seven chakras

Seven days of the week.

The number seven in the medieval Church represents a full complement of either evil or good: seven deadly sins; seven joys of Mary; seven sacraments; seven last words of Christ. The book of Revelation, abundant with number symbolism, contains seven seals, seven angels, seven trumpets, the seven last plagues. In the Old Testament, the sacrificial blood is sprinkled on the altar seven times (Leviticus); the seventh day is a day of rest, modelled on God's rest after the six days of creation; the fields must have a sabbath every seventh year and lie fallow, to give the fields a rest and to help the poor, who can glean whatever is growing there (Exodus 23:10f); seven abundant years followed by seven years of famine in Egypt (Genesis 41:2ff). Seven and all the numbers before it add up to 28, the number of days in the moon cycle.

Ten is a very powerful number, symbolizing the return to unity in the decimal system ($1 + 0 = 1$). Ten represents the totality of the universe, completeness, perfection, Jesus, eternal life.

The whole Mosaic law is summed up in the Ten Commandments. Ten consists of the sum of the first four numbers, and represents the total of all that they represent. The number ten also forms a perfect triangle, the same viewed from any side.

$$\begin{array}{r} 1 \\ + 2 \\ + 3 \\ + 4 \\ \hline 10 \end{array}$$



Thus every single number in 7 x 12 x 10 represents completeness.

The number 840 viewed as 6 x 14 x 10 gives us two new numbers. Six represents humanity: the sixth day of creation. In Hindu numerology, six represents balance, equilibrium. The fourth chakra, in the heart, is the plane of balance, with three chakras above and below. Its symbol is the six-pointed star, consisting of two equally balanced triangles intersecting, representing male (descending) and female (ascending).



Fourteen, as 2 x 7, is an especially lucky number and represents justice, temperance, fusion, organization. In the number alphabet, it is the number for Bach, and appears often in J.S.Bach's music.

$$\begin{array}{r} B = 2 \\ A = 1 \\ C = 3 \\ H = 8 \\ \hline 14 \end{array}$$

Vexations

As $7 \times 3 \times 40$, the number 840 yields still another number, forty. Forty represents, in Biblical tradition, a long time. Periods of trial often last for 40 days or years.

40 years in a generation

40 days of rain in Noah's flood

40 years of Israel in the desert

40 days of Christ's temptation in the desert; 40 days of Lent.

We could go on, and you may if you wish, and find other numbers: 100, 21, 15, five, 70, and more. Nine is the only one of the nine basic numerals absent. Two numbers associated with bad luck, evil, transgression, excess, or suffering, are absent: eleven and thirteen. How could one wish for a better number than 840 for a series of vexations?

If you want to investigate numbers further, some good places to begin are: "Number", New Catholic Encyclopedia (1967); Vincent Foster Hopper, Medieval Number Symbolism (1938); J.E.Cirlot, A Dictionary of Symbols (1962); E.W.Dillinger, Number in Scripture (1952); "Pythagoras", Encyclopedia Britannica, 11th ed.; and various dictionaries of the Bible. Very little is available in English, to my knowledge, on Hindu numerology; one source is Leela, published by Satyam Shivam Sundaram, Princeton, N.J. (1973). For number symbolism in Renaissance music, see the articles on symbolism in Groves' Dictionary and Die Musik in Geschichte und Gegenwart; Willem Elders, Studien zur Symbolik in der Musik der Alten Niederländer (1968); Fritz Feldmann, "Numerorum mysteria", Archiv für Musikwissenschaft 14 (1957), pp.102-129; M.Van Crevel's editions of Obrecht's masses Sub Tuum Praesidium and Maria Zart in Opera Omnia, Vols.VI and VII. For some discussions of number symbolism in Bach's music, see Arnold Schering, "Tach und das Symbol", Bach Jahrbuch 1925, pp.40-63; Friedrich Blume, "Johann Sebastian Bach", Die Musik in Geschichte und Gegenwart I (1949), cols.1030-31.

Martha Curti, Livingston College, Rutgers
University

I am assuming that anyone reading this analysis of Satie's 'Vexations' will have already seen the score.

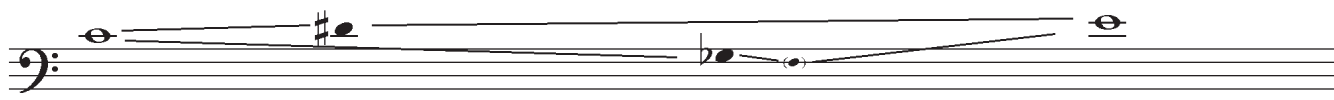
We can simply regard its form as that of a minimalistically reduced Passacaille, whose theme is quadripartite, with each repetition of the bass alone alternating with one or other of the variant harmonisations. There is no sense in considering an other interpretation.

Likewise there is no good reason to consider any number of repetitions other than 840 as correct. Aside from the unreasonableness of contradicting the composer's explicit choice. (Why give a number if any may serve as well?) The seduction of supposed freedom may be explained by a mistranslation of the unusual use of the reflexive in the French original: *se jouer*. Better to translate this as "to be played".....thereby rendering as obligatory what is the obvious intention.

Tonally, the melodic movement uses the full chromatic spectrum without any hint of a bias towards whatsoever central tone.

Starting on C, the movement is outward, expanding in both directions---to touch the F below and finally reaching the E above.
(From there it simply starts over again.)

a notational reduction pictures it so:



Those who have called Satie “static” should consider that it is tonal music which doesn’t go anywhere.

in greater detail:



Having distinguished the structural tones, a note-by-note detailing reveals that the general movement is upward, in spite of the generally smaller intervals. (I consider it a masterful example of melodic shaping, this balancing of the directional dialectic and maintenance of the inherent overall thrust.)

A deft controlling of the inner motions gives the melodic line an impression of smoothness, notwithstanding that objectively it is quite disjunct.

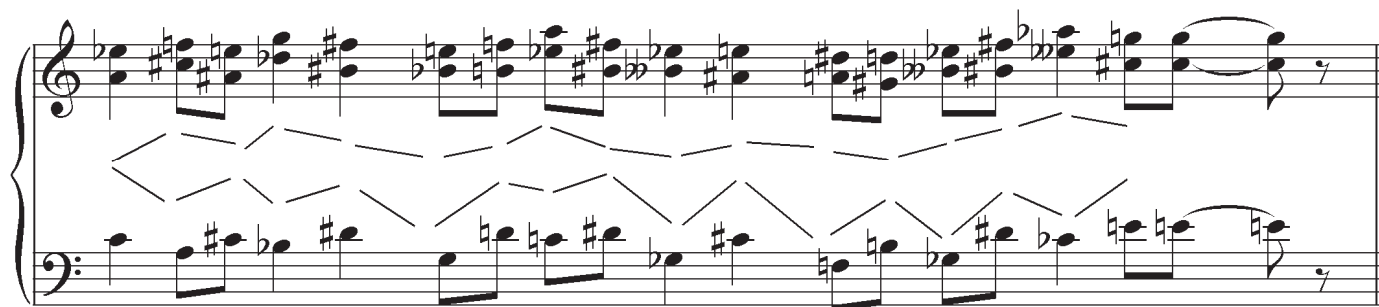
Some intervals are favored, contributing to overall coherence..... thirds minor and major, strategically placed perfect fifths, ascending fourths at phrase endings, and leaving the largest interval (upwards as expected) for last.

* I am going to insist on the “atonality” in the face of attempts to reduce it (reduce is the right word) to traditional tonality. No doubt there is something in common with the historically prevalent chromaticism (viz. “Wagnerism”) but this does not justify the trick of finding any 3 or 4 notes which could conceivably be in some major key and deriving from that a sequence of supposed modulations.

I imagine S. suppressing a laugh at the idea that the last 5 notes, B F# D# B E should be seen as an authentic cadence in E Major! (I interpret the idiosyncratic hard-to-read enharmonic notation as designed specifically to discourage such nonsense.)

Even less should we resort to an appeal to the medieval modes. If there is any precedent it would be in the extreme chromaticism in the Renaissance of, especially, Gesualdo and others of the Neapolitan school, or early Orlando Lasso as in the *Prophetiae Sibyllarum*.

As far as harmony goes we see a 2-voice parallel accompaniment, prevalently though non-compulsively in contrary motion. (How traditional can you get?)



With two slight exceptions, a tritone is formed around the bass melody tones. (The repeat presents the inversion, which changes nothing.)

To present this straightforward procedure as something like “inversions of a diminished triad” is at best gratuitous----- not to speak of really far-fetched interpretations of the like of “incomplete (whatever) chords”. Of roman-numeral root movement analyses let us not even speak.

There is moreover no question of “unresolved dissonances” as there are no dissonances.

Rhythmically we have 3 equal-length phrases (which make this curious arithmetic: $4 \times 3 = 13$, explainable by seeing the last beat as a written out measured fermata, to accommodate the repetition of the last tone----quite appropriately for a final cadence).

The phrases themselves are isorhythmic, being a sort of double anapest ● ● ● ● — —
(exception made for the first, where an initial long accommodates the first note, as is proper for an establishment tone.)

As an aside I might add that the movement towards the final beat of each measure is another touch of something unusual in Western music (only one example, from a Chopin nocturne, comes to mind). It is, however characteristic of the gamelan music of Java, which certainly he could not have been influenced by. Just another example of his intuitions of genius.

In any case, the parallelism of phrase should suffice to avoid the error of making the final E a downbeat.

My text of 1975 was 9 pages long. Read now, it seems more poetic than necessary. Also more detailed, in describing what is obvious enough. Enough words, therefore: I leave these few as of the essence.

The possibilities latent are not yet used up.

A reconsideration of tonal functions in the "Vexations" of Erik Satie

All the notes in the first measure can be arranged, according to Rameau's theory of inversions, to give an arpeggiated chord familiar to any student of jazz harmony.

Similarly, the next two measures continue the harmonic rhythm in whole notes, with the modification of new notes on the second semi.breve which can be interpreted as either passing dissonances or a change of chord colour which do not affect the root.

"Vexations" is therefore clearly in the key of Bb minor, with a progression establishing the usual subdominant-dominant functions (i IV V).

The image shows a handwritten musical score for the first three measures of Erik Satie's "Vexations". The notation is in treble and bass clefs, with a key signature of two flats (Bb minor). The first measure contains a Bb minor 9 chord with a suspended 4th (Bb min 9 Δ7 sus 4). The second measure contains an Eb major 6 chord with a dominant 7th (Eb 6 Δ7 (Eb min 7)), with a note in parentheses indicating a passing tone. The third measure contains an F major 7 chord with a suspended 5th and a flat 9th (F 7 5 b9 - Δ7), with a note in parentheses indicating a passing tone or upper neighbor. The fourth measure contains a Bb major 6 chord with a suspended 5th (Bb 6 5), with a note in parentheses indicating an implied 5th. The notation is annotated with "or Passing Tones" and "or Upper Neighbor". The piece concludes with a double bar line and a "d.c." (da capo) instruction.

Bb min 9 Δ7 sus 4 Eb 6 Δ7 (Eb min 7) F 7 5 b9 - Δ7 Bb 6 5 (5th, implied)

or Passing Tones or Upper Neighbor

d.c.

This is patently absurd.

the changes suggested by Satie's 'Vexations'
can be interpreted also as in A major!

Handwritten musical notation for a piano exercise in A major. The notation is written on a grand staff (treble and bass clefs). The chords and fingerings are as follows:

- Chord 1: A65b7#9 (11) - Treble clef: A4, C#5, E5, G5, Bb5, D#5; Bass clef: A2, C#3, E3, G3, Bb3, D#3. Fingering: (11).
- Chord 2: Gsus4A (add b7#11) - Treble clef: G4, A4, Bb4, C#5, E5, G5; Bass clef: G2, A2, Bb2, C#3, E3, G3. Fingering: (11).
- Chord 3: F#b7add6 - Treble clef: F#4, A4, Bb4, C#5, E5, G5; Bass clef: F#2, A2, Bb2, C#3, E3, G3. Fingering: (11).
- Chord 4: F7b9 - Treble clef: F#4, A4, Bb4, C#5, E5, G5; Bass clef: F#2, A2, Bb2, C#3, E3, G3. Fingering: (11).
- Chord 5: E4b9 - Treble clef: E4, G4, A4, Bb4, C#5, E5; Bass clef: E2, G2, A2, Bb2, C#3, E3. Fingering: (11).

Below the staff, the Roman numerals I and V are written, indicating the key signature of A major.

I can imagine a very nice jazzy piano solo
— maybe change with the b6-1 chordings.

as performed by Stephen Whittington in Annecy, March 24, 2010

Vexation unvexed (a revelation)

**The theme as usual, once, unaccompanied.
(for piano as is to be expected)**

Repeating

**with the addition of the beginnings of the harmonisations
as perhaps by just a pizzicato in the bass.**

**Continues with each repetition adding to the chords
(perhaps just a simple building up from the bottom---but could be
otherwise)**

**Like: the first melody note in each measure held through.....assuming a
sustaining by other instruments.**

This should always be very subtle.

**Obviously an arrangement will have to be composed,
although certain details may be left to spontaneous decision.**

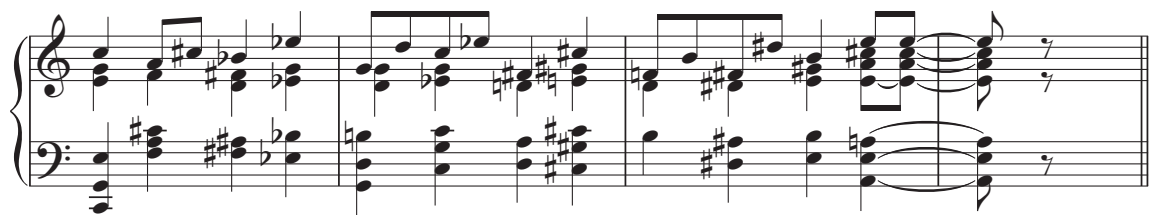
**In the course of things, variabilities would be well to appear: such as
Changing the register of the piano melody.....or of the accompanying
dyads, which can appear and disappear according to a prethought plan;
The tune taken by the instruments; orchestration of tonecolor changes;
The chords taken by the piano; arpeggiations, pulsations, or some other
form of rhythmic animation. Harps and zithers.
Disappearance of the theme.**

Tempo constant----: slow. Dynamic level held low---, unexcited.

Philip Corner

Vexations - remedial harmonisations

Philip Corner



Vexations

Vexations (Satie): remedial harmonisations



Stephen!

this can only be called
"from the ridiculous to the even more ridiculous".
However, I still think the Givres and Rose-Croix pieces
could well be given as models to students in Harmony I.