

Notes for Lecture at IRCAM

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On the Involution of Form and Content in Music and the Arts

The end of the 17th century saw the emergence of two characteristic attitudes towards the scientific investigation of the universe. I call these the Kant/Leibniz approach, and the Hamilton/Lagrange approach. Aesthetic form corresponds essentially to the Kant/Leibniz approach, while traditional set theory and most mathematics, to a first approximation, is more in keeping with the Hamilton/Lagrange approach.

(1) Kant/Leibniz

Leibniz, followed by Kant, posited that the knowable structure and contents of the entire cosmos are present at every point of space-time. Kant expresses this idea by means of categories of thought, Leibniz through his Monadology, a system or network of infinitesimal intelligences or monads, each of which reflect, in the manner of a holograph, the entirety of this network.

Paradoxically, this viewpoint embodies an article of faith among scientists. The scientific enterprise proceeds under the assumption that it is possible, ultimately, to accumulate enough information at a single location in space and time, that is to say, our planet, to construct a picture, at last in theory, of the history, present status, and eventual future of everything in the universe.

At the same time, the Kant/Leibniz approach viewpoint is of very little practical use in real scientific investigation, as it makes it impossible, in both theory and practice, to set up a laboratory impervious to outside influences in which to perform experiments.

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(2) Hamilton/Lagrange

The Hamilton-Lagrange approach is based on the possibility, whether in a real world setting or in some conceptual space, of placing dynamical systems in a causally void region. Such "systems in isolation" are forbidden in the Kant/Leibniz approach. The Hamilton/Lagrange approach also allows one to invent "thought experiments", the backbone of modern science.

The Hamilton/Lagrange approach shares many of the features of Set Theory. Like thought experiments, sets are conceived of as entirely decontextualized, the bounding notion of a "set" being sufficient to cut them off from all interaction with an external context. At the same time' In the same way that the "empty space", or causal void, in which a thought experiment is situated, cannot interact with the elements of the experiment themselves, the bounding notion of a "set" imposes no structural constraints on its elements.

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It is not altogether surprising to discover that two seemingly disparate fields, General Relativity, and the analysis of aesthetic forms, are both amenable to analysis through some form of Leibniz's Monadology. In General Relativity, space, time, matter and the metric are formally symbiotic in such a way that their quantities, as magnitudes, concept cannot be calculated without knowing the values of the others. Every measurement in General Relativity is a local approximation, in which the background is neglected. For example: to establish the metric units for measuring space and time in the neighborhood of the earth, one should, in theory, determine the configuration of space and matter everywhere. By the principle of relativity, signals cannot travel faster than the speed of light, which means that, even theoretically, one can never acquire all the

information one needs to write down the full equation for the metric.

There is a kind of cross-fertilization of Kant/Leibniz with Hamilton/ Lagrange in modern Quantum Field Theory and Quantum Gravity. In these fields the concept of "empty space" no longer has meaning. However it is still possible to invent "thought experiments" in the languages of these subjects, which live in an abstract space in isolation delimited by the nature of the experiment itself. Once again we recover the structureless set, which is entirely defined by its contents and has no effect on or interaction with it .

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The Kant/Leibniz approach is more appropriate for the analysis of the relationship of form and content in the arts, most notably in music. Here are some of the aspects of aesthetic form which cannot be easily adapted to the isolationist mentality of Set Theory nor to the Hamilton/Lagrange paradigm of the system in isolation:

(a) **Holographic Reflection:** the way, for example, in which a motif in a work by Beethoven will re-appear at every level, from the shape of an entire piece to the form of an appoggiatura. One must credit Schenkerian analysis, with all of its failings, for bringing this to our attention.

(b) **Bounding:** the 'frames', 'boundaries' or 'containers' of artistic objects do not function in a neutral or passive capacity, but actively provide coherence, intelligibility and impulse through the imposition of a structure that both delimits and challenges the imagination.

(c) **Fragmentation:** We tend to perceive or remember a work of art as a collection of inter-related fragments. One recalls specific effects, phrases, melodies, along with the way in which these relate to the whole. A cultivated appreciation will piece together many more fragments than a naive one, and inter-relate them in more interesting ways. These reconstructions by means of fragments create sub-forms

with many of the properties of large or complete forms: one might speak of holographs within holographs.

(d) Interconnection: If there were such a thing as a perfect poem, every word would have some relationship to every other word, either by meaning, sound, connotation, denotation, syntax, grammar, etc. It is this phenomenon of maximal cross-referencing of elements, that distinguishes art, both from entertainment and the simple transmission of factual information.

(e) Resonance. This will be treated in more detail later on. I use this word to describe a phenomenon, characteristic of all the arts, whereby the form, whether one defines this as boundary, structure, motif, etc., constitutes one of the elements of the content. This combination leads to a more encompassing notion of form based on their interaction.

Such symbiosis is central to any authentic artistic work, and is most apparent in music, in which structure itself resonates in the interplay between melody, counterpoint and harmony. This central notion is embodied in poetic form in the matrix poem "Music, Art Drawn From Sublime Springs". A copy of this can be seen at

<http://www.fermentmagazine.org/MP/music.jpg>

(f) Enhancement: This is a property of aesthetic forms, (sonnet, sonata, still-life, passacaglia, etc.), because of which certain forms survive historically while others do not. Good forms initiate discovery. In this sense, form enables content by posing challenges to creativity.

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Poetry is "Kant/Leibniz". Journalism is "Hamilton/Lagrange". Cast into poetic forms, the news report of a journalist would be completely unintelligible by virtue of the cross-referencing of words, sounds and themes that make a poem come to life.

Narrative fiction lies somewhere in between. Genuine fiction however is primarily concerned recreating the qualities of living

experience, and only indirectly with the transmission of information or ideas. At the highest level, say in the experiments of the 1920's (Joyce, Broch, Woolf, Proust, Bunin, Kafka, Musil, Mann) a true poetry is achieved in the intensity of associations between themes, fragments and larger structure.

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*Zermelo Fraenkel Axioms,
Presentation and Discussion*

(Axiom 0 has been added because in my opinion it's been overlooked:)

0. Axiom of Existence

If x exists, then the set containing x exists.

$$\exists x \rightarrow \exists \{x\}$$

I. Axiom of Extensionality

$$\forall A \forall B: A=B \Leftrightarrow (\forall C: C \in A \Leftrightarrow C \in B)$$

Given sets A and B , $A = B$ if and only if every member of A is a member of B , and every member of B is a member of A .

2. Axiom of the Empty Set

$$\exists! \phi \forall d: \phi \neq \{d\}$$

In other words, Axiom 0 is not invertible. There exists a set ϕ for which there is no d such that

$$\phi = \{d\}$$

3. Axiom of Pairing

$$\forall x \forall y \forall z \exists C: x \in C \wedge y \in C \wedge (z \neq x \wedge z \neq y \rightarrow z \notin C)$$

If x and y exist, then there is a set $C = \{x, y\}$ such that

$x \in C$ and $y \in C$, and if $z \neq x$ and $z \neq y$, then $z \notin C$.

4. Axiom of Union.

$$\forall A \forall B \exists C (x \in A \rightarrow x \in C \wedge y \in B \rightarrow y \in C \wedge [(z \neq x \wedge z \neq y) \rightarrow z \notin C])$$

If A and B are sets, either disjoint or overlapping, then there exists a set C which is uniquely formed from the totality of their contents.

5. Axiom of Infinity

$$\forall A \forall B \exists N: \phi \in N \wedge x \in N \rightarrow y = \{x \cup \{x\}\} \in N$$

There is a non-vacuous set N such that if x is a member of N, then the set $y = \{x \cup \{x\}\}$ is a member of N. In this way, every integer can be defined as the set containing all previous integers, thus building up the successor relationship.

6. Axiom schema of Specification

Let P be a predicate in one variable. P(C) says "The statement: element that C has a certain property is true". Then the Axiom of Specification can be written:

$$\forall A \exists B \forall C: C \in B \Leftrightarrow C \in A \wedge P(C)$$

Roughly, "The collection of all elements C of A with the property P(C), is a well-defined set, and subset of A."

7. Axiom schema of Replacement

This states that the values in the range of a function whose domain is a set A , is also well defined as a set B :

$$[\forall A \exists ! y P(x,y)] \rightarrow [\forall A \exists B \forall y: y \in B \Leftrightarrow \exists x \in A: P(x,y)]$$

"If, for all x in A , there is a unique y such that the predicate $P(x,y)$ is satisfied, then there exists a well defined set B such that y is in B , and for all elements in B there is an element x in A such that $P(x,y)$ "

8. Axiom of the Power Set

The collection of all subsets of a given set A , is itself a set, called the *power set* $P(A)$

$$[\forall A \exists P(A), \forall B: B \in P(A) \Leftrightarrow (\forall C: C \in B \rightarrow C \in A)]$$

(9) Axiom of Regularity

(a) No set can be an element of itself

(b) There are no infinite descending downward chains:

$$\forall A, A \neq \phi \rightarrow \exists B (B \in A \wedge \exists C (C \in A \wedge C \in B))$$

Basically, there must be elements of any set A which are disjoint from A , in the sense that

$$A \cap [B] = \phi$$

(10) Axiom of Choice

Given a collection A of pairwise disjoint sets, there exists a set which contains one element from each member of A. This has been formulated in many ways.

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Discussion of the Axioms

Axiom 0: Existence, or Singleton Axiom

Consider the plot format of Luigi Pirandello's play, "Six Characters in Search of an Author." A family of actors enters onto the stage. They are character actors, only able to play stock situations. However these do not add up to a plot. The play they are in, that is to say themselves, simply does not exist without the arrival of an author to give it meaning, to draw a circle around them and say: "*This is a play.*"

The predicate $\exists x$, "x exists" covers both entities and their defining boundaries. More generally, in the statement of the Axiom, $\exists x \rightarrow \exists \{x\}$ one has to interrogate both the "legitimacy" of the existence predicate, and the meaning of the "set operator" $\{\}$, which can be generalized to cover sets, forms, boundaries, contexts, etc.

Example: By Axiom 0, if a musical composition "exists", then the set containing it also "exists". Yet this already raises problems, because one can debate whether the composition is the score, or a performance of the score, or the impression made upon the person reading the score, or upon someone playing the score, or listening to the performance, etc.

The set concept is "pure", in the sense of being "indecomposable". However these manifold definitions of a musical composition "exist" at many different levels, physical, mental, emotional. Are we to understand that the "set" containing the score must contain all of these aspects, none of which can be considered pure concepts in

themselves?

The debate over the form that a musical composition has to take before it can be considered to "exist" is inherent in the nature of music and will never go away. We know that Heinrich Schenker took an extreme position in that regard, proclaiming that all is in the score and comes out of the score. Most professional musicians and composers would disagree. Certain historical periods have given one of the aspects of aspect of this diversity prominence over others. The set "containing" a musical composition must therefore also include the "debate" over what makes a composition "exist".

Although a work of art inevitably mediates between sensual phenomena and pure ideas, the sets of Axiomatic Set Theory are only intended to "contain" pure ideas. In the extreme formulation of Russell and Whitehead, the one irreducible entity is the null set, the set that contains nothing.

Axiom 1: Extensionality.

This axiom relates only to membership, and not to the properties of the sets *A* and *B* *prior* to the inclusion of its members. It says, in effect, that a set is completely characterized by its members and is otherwise without structure. Adjoining even a slight amount of structure violates Extensionality.

Taking a very simple example, consider a building *K* holding several apartments, some of which have people in them, others of which are empty. Let *A* be one distribution of the tenants among the apartments, *B* another. Each then has the same same members. The apartments cannot be considered subsets, for then all empty apartments would be the null set.

Because *K* has prior structure, it is not a set. However, it shares the following characteristic with a set, namely that the structure has no influence over the specific attributes of the tenants, nor do these

attributes influence the shape of the building or the distribution of rooms.

Thus, neither sets, nor buildings, can successfully represent the requirements of a musical or poetic form.

To further explore what this means, we propose to contrast the properties of the Petrarchean sonnet form with those of the Shakespearean sonnet form, placing them in the context of their respective times and cultures, and with regard to their functional utility.

The Petrarchean sonnet form is naturally adapted to the Italian language. It can only be useful to poets writing in English whose possess great ingenuity - Wordsworth for example. We know that John Keats wrote 75 Petrarchean sonnets before conceding failure . He then invented his own form, the Keatsean Ode.

Because so many words in Italian end in vowels it is quite easy to cast the end-rimes of lines into the form:

a-b-b-a

a-b-b-a

c-d-e

c-d-e

or the even more rudimentary form:

a-b-b-a

a-b-b-a

a-b-a

a-b-a

*Voi ch'ascoltate in rime sparse il suono
di quel sospiro ond'io nudriva'l core*

*in sul mio primo giovenile errore
quand'era in parte altr'uom da quel ch'i' sono*

*del vario stile in ch'io piango et ragiono
fra le vane speranze e'l van dolore
ove sia chi per prova intenda amore,
spero trovar pietà , nonché perdono*

*Ma ben veggio or si come al popol tutto
favola fui garn tempo, onde sovente
di me mesdesmo meco mi vergogne;*

*en del mio veneggiar vergogne ê'l frutto
e'l pentersi, e'l conoscer chairamente
che quanto piace al mondo e breve sogno.*

The poet apologizes for the 'scattered rimes' and 'uncouth sighs' that characterized his earlier love poetry , presumably for Laura. Now that he is a man he recognizes that these early efforts has made him a laughing-stock to mankind, and that in truth love has no meaning.

The tight structure and beautifully controlled language, the harmonies resounding throughout all the lines and controlled by the scheme of end rimes, contributes to the conception that the poet has at last become a master and can disparage his youthful efforts. One sees the involution of form and content which, in contrast to the "neutral vessel" of a set or "building", is the identifying property of a work of art.

The Petrarchan form was used by the early English poets, who took the Italian and Provençal poets as their models. It soon became apparent that the form simply did not work for the English language,

a syncretism of French and German that conforms to no simple rule with respect to the sounds of end-rimes. Thus was developed the Shakespearean sonnet.

Shakespeare's schemes are at the other end of the spectrum, in that they emphasize a maximal diversity of end-rimes. These rimes are exploited for this assonance as much as possible. Like Arnold Schoenberg's 12-tone compositions, Shakespeare wishes to exploit the full potential of 7 distinctive sounds!

Shakespeare's form also differs from Petrarch's by the inclusion of a "turn" in the 3rd quatrain, a kind of antithesis to the thesis established in the first two quatrains. The final two lines, or epigram, resolves the contradiction in a synthesis which, in many respects, is disquieting rather than re-assuring, thus indicating that the story is far from over.

This fits Shakespeare's purpose because, unlike Petrarch, he is not taking council with himself, listening to his inner stirrings. Rather he is speaking to someone whom he wishes to persuade, by means of rhetorical devices, to adopt a certain course which he appears to resist. Yet, even as the author is urging his listener to find a wife, there is an under-current conveyed both by the form ('turn' and 'epigram') which suggests that the author has private doubts about his own advice. The Shakespearean schema is:

a-b-a-b

c-d-c-d

e-f-e-f

g-g

Shall I compare thee to a summer's day ?

Thou art more lovely and more temperate :

Rough winds do shake the darling buds of May ,

And summer's lease hath all too short a date :

*Sometime too hot the eye of heaven shines ,
And often is his gold complexion dimmed ,
And every fair from fair sometime declines,
By chance, or nature's changing course untrimmed:*

*But thy eternal summer shall not fade ,
or lose possession of that fair thou ow'st ,
Nor shall death brag thou wander'st in his shade ,
When in eternal lines to time thou grow'st ,*

*So long as men can breathe, or eyes can see ,
So long lives this, and this gives life to thee .*

Shakespeare maximizes the number of differing end-rimes, 7 in all. In doing so, he also enhances the effects of *internal rimes* which resemble or are identical to the end-rimes. In the example given above, one can highlight such words as "thee", "shake", "lease" "eye", "time", "breath", etc. as acting in consonance or dissonance with the rich rime scheme.

Axiom 2: The Empty Set .

This axiom is very "Zen". There is only one entity, and that is empty! One thinks of Robbe-Grillet's stated intention, perhaps overstated, that he is writing about "nothing". What he's saying is that , even for such 'prosaic' media as the novel and portrait painting, the "content" of a work of art is completely unrelated to its literal, factual or sensual materials, although it can only be conveyed through them.

Robbe-Grillet's critique is of particular value when one considers how many "bad" readers of novels exist, who readily fall in with the delusion that they are reading about "real" people, with extensive

histories, emotions and intentions, stated and unstated. It is almost impossible to convince them that a character "acts a certain way", only because the author made a decision that it should do so. The cinema has turned this vice into a universal pathology.

Thus, in a manner similar to yet quite different from set theory, the "content" of an artwork reduces to "nothing" ; that 'nothingness' however, cannot be treated as an element of a set. Thus, "content" in art violates both Axiom 0 and Axiom 2.

Axiom 4: Union

This axiom is only appropriate to structures in which there is a sharply defined, unambiguous boundary separating its elements and internal structures. In a building with apartments, it is possible to speak of the union of all the tenants. One can compile the thesaurus of a book, consisting of all of its words, as is done with the bible.

For example: no competent musicologist (such as Charles Rosen in his excellent books on Sonata Form) would ever maintain that there are sharp divisions between Exposition, Development, Recapitulation and Coda in the first movement of a piece written in "sonata form". Such a description only applies to are banal pieces for students like the Kuhlau and Clementi sonatinas, or sonatas written by amateurs or recent graduates of conservatory composition classes!

The subdivisions of a sonata form movement, labeled Exposition, Development, Recapitulation and Coda, always overlap to a greater or lesser extent. In many sonatas the composer will begin to elaborate the musical possibilities in the several themes of the Exposition before an official "development" is reached. New themes may occur in the development, as in symphonies by Beethoven, Schubert and Brahms. Beethoven in particular is fond of using the Coda as a kind of second development. Even in the sonatas of Mozart and Haydn, in some sense

the inventors of what is called 'sonata form', there are numerous examples of false recapitulations. In fact, the term 'sonata form' was invented by theorists of the 19th century, and would not have been used by the creators of those pieces which are exhibited today as the paradigms of sonata form.

At the same time, in all sonatas in which the first movement is in sonata form, the listener always senses the presence of a progression from an 'exposition' of fundamental melodic themes, to some kind of 'development', followed by a 'return to the origins'. The closing section, or 'coda' is the most controversial. It can be as brief as a few bars, or even a few chords in a piece by Mozart, to a veritable 'tail wagging the dog' in a Beethoven symphony, notably #3 and #5.

The Axiom of Union does not apply to any phenomena for which the whole is, in some sense, be greater than the sum of the parts. This applies to the other musical forms as well.

Such considerations apply even to something as fundamental and canon and fugue, normally thought of as highly rigid. A single theme, or subject, generally combined with a derived melody or counter-subject, overlaps with itself several times through a sequence of entrances. In the formulation of Set Theory no provision can be made for an entity which interacts with itself, in such a fashion that unity, or coherence, is only achieved after all self- interactions have been worked through. One is put in mind of the entangled states of quantum theory, whereby each particle in the entangled state has its own characteristics, but the pair possesses attributes which cannot be found in either one of its members.

One is impressed, for example, by the extraordinary power that the Pachelbel Canon has over the general public, even for people with little or no musical background. Pachelbel has set up a highly ingenious interplay between unity and diversity, identity and

distinction, solemnity and playfulness, elaborated over time while holding one's attention all the way to the end. The result is a non-trivial piece of music able, at the same time, to enter the popular domain.

Axiom 6: Infinity.

It is possible to "interpret" the Axiom of Infinity in such a way as to make a relevant statement for Aesthetic Form. Briefly, this Axiom says that there exists a set S such that, if x is an element of S , then the set consisting of " x and the singleton set containing x " is also an element of S .

Works of art have this peculiarity that form is also an ingredient of content. It is this phenomenon that I have labeled "resonance". To the extent that a work of art "resonates", there can be no sharp distinction between the part and the whole, between an element, and the form 'containing' that element. One might go so far as to say that it is "resonance" that distinguishes an artistic form from any kind of neutral container, object or set.

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I now turn to some works of poetry and music which illustrate the relevance of these considerations. Of particular interest is the poem by John Keats' "Ode to a Grecian Urn". This poem is nothing less than a complete treatise on Aesthetic Form. In it one finds many of the arguments presented here.

One of the reasons why it is difficult to appreciate poetry is that it "exists" via two modes of representation:

- (1) Spoken aloud
- (2) Read silently

In the first mode its ideas resonate in the minds of both speaker and listener. Keats employs this convolution of self-referencing forms

to invoke the sensuality of pure ideas, something of a cliché when referring to ancient Greek civilization. Such meditations evoke a passionless, timeless, voiceless Platonic sphere of Eternal Truth. Keats poem, abiding as it does between thought and speech, invokes the 'speaking voice which speaks in silence'.

Ode on a Grecian Urn

The first verse reads:

*Thou still unravished bride of quietness
Thou foster-child of Silence and slow Time
Sylvan historian who canst thus express
A flowery tale more sweetly than our rhyme
What leaf-fringed legend haunts about thy shape
Of deities or mortals, or of both
In Tempe or the dales of Arcady?
What men or gods are these? What maidens loth?
What mad pursuit? What struggle to escape?
What pipes and timbrels? What wild ecstasy?*

Urn is a form growing out of functions. His urn is an abstract idea, both frame and canvas for depicting the drunkenness of a Bacchic revel. From the days of ancient Greece, urns have been fashioned to hold wine. It is therefore somewhat curious that wine itself is never mentioned in this ode, although Keats is always ready to invoke its remarkable attributes elsewhere!

The phrase "foster-child of stillness and slow time" refers only to the pure shape of the urn. The unravished bride is a reference both to the beauty of the artist's conception, which, in theory 'exists' for all time, and also to the actual scene depicted on its surface, the fleeing maidens who will never be ravished because they are frozen forever in

a single instant of time.

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A Grecian Urn may be a "pure unravished bride of quietness", but it is never once mentioned in the ode that it might have been fashioned to hold wine. Keats is a highly lyric and sensual poet, and he rarely passes up an opportunity to invoke the powers of wine elsewhere. The following image from the Ode to a Nightingale is famous :

*" O, for a draught of vintage that hath been
Cooled a long time in the deep-delved earth
Tasting of Flora and sun-burnt mirth
The blushful Hypocrene
With beaded bubbles winking at the brim..."*

The Urn is both a pure form and a picture frame. It is the idea in the mind of the potter who forged it, translated into physical shape.

This speaks to our notion of form that it be a receptacle for something, and, in the arts, that what it contains has some intrinsic relationship to its shape, like a tree to its bark. A sonnet cannot hold wine, a jug can't contain a string quartet.

In fact, Keat's urn is "filled" with quite a lot of content, but this content is purely aesthetic and conceptual. The idea of a Bacchic orgy, the idea of eternally unrequited love, the idea of a Platonic shape, (no doubt the Golden Section), exemplifying timeless beauty, the idea of melodies which are sweeter to the extent that they are unheard. This is the metaphorical wine that his urn contains, not to be confused with literal or material wine:

*Heard melodies are sweet, but those unheard
Are sweeter; therefore, ye soft pipes, play on;
Not to the sensual ear, but, more endear'd
Pipe to the spirit ditties of no tone*

*Fair youth, beneath the trees, thou canst not leave
Thy song, nor ever can those trees be bare
Bold lover, never, never can thou kiss
Though winning near the goal - yet, do not grieve;
She cannot fade, though thou hast not thy bliss
Forever wilt thou love, and she be fair!*

The next two verses echo the same sentiment with regards to the shedding of leaves from trees, unheard melodies, undying love, a religious procession, and the population of a little town. The final verse states

*O Attic shape! Fair attitude! with brede
Of marble men and maidens overwrought
With forest branches and the trodden weed
Thou, silent form, doth tease us out of thought
As doth eternity. Cold Pastoral!
When old age shall this generation waste
Thou shalt remain, in midst of other woe
Than ours, a friend to man, to whom thou sayst
"Beauty is truth, truth beauty" - that is all
Ye know on earth, and all ye need to know.*

Here I think Keats is referring explicitly to the Golden Section, which embodies both visual beauty and mathematical truth. The Golden Section appears, in a somewhat reduced form, even in the shape of the distribution of lines and the rime scheme of the Ode. Each stanza has 10 lines, each line 10 syllables. The rhythm in the indentation of the lines is 2-2-3-3. Although there may not be a strict adherence to the Golden Section, the Ode gives us a sense of having been "shaped" in the manner of an unwinding scroll, the analogy of a container for literature analogous to the urn as a container for wine. Combining the rime scheme with the pattern of indentations produces

a shape which, schematically, looks like this:

a
b
a
b
c
d
e
c
e
d

Note how the 'inversion' of rimes, c-d-e, followed by c-e-d, resembles a chord sequence that could be used in music to make a cadential ending: Something like "C-F-A; C-A-F", "C-F-E;C-E-F") or V-I-IV, I(6-4)-V(7)-I. Such form may be likened to a hall of mirrors, each reflecting all of the others in an infinite spiral .

Consider now the single phrase:

"The still unravished bride of quietness "

Note the multiple meanings of the word " still". They reappear in association with the "maidens loth" in the following phrases. In both contexts "still" then means both "motionless", and "not yet". "Still" is also be used as a synonym for "silence"; the theme of "silence" persisting throughout the Ode, as in: "Heard melodies are sweet, but those unheard are sweeter."

Thus the urn is, at one and the same time, the "bride of quietness" and the "foster child of Silence". Are "quietness and "silence" different ideas? Well, yes, quietness is more like "calmness"; there can be some sound, but it is calm. Also, "silence" is more akin to "death", as when Hamlet says: "The rest is silence", whereas "quietness" refers rather to Apollonian beauty

Note the reappearance of silence in the 4th verse:

*"... And, little town, the streets forever more
Will silent be - and not a sound to tell ...*

Finally, in the last verse

*"Thou, silent form, doth tease us out of thought
As doth Eternity"*

The silent form of the urn is filled with powerful music, a music conveyed by the "unheard melodies", which are sweeter than those which are heard. The contrast is between the rich life of the mind, which, in contrast to that of the body, is silent. To achieve such a richness, the body itself must be placed within an environment of "quietness".

The Ode, both in its content, its principal image, and in the self-referencing even with its own form, plays upon the essential nature of ideas of 'containment', 'bounding', 'filling' and of the involution of form and content in works of art: form reflected in content, as an element of content.

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Additional aspects of the expressive use of form in works of art include:

(i) Form that sets up challenges which initiate a dynamic between the artist and his materials. One can call this "improvisation".

(ii) Form as an active element within content, in much the same way as the cameraman in a well-made film is one of the actors, the camera one of the participants.

(iii) Form also has the valuable function of giving a historical context to a work of art: "Baroque Form", "Romantic Form", "Impressionist Form", etc. This can differ widely from one medium

to the next. Thus music was essentially "baroque" all through the Enlightenment, (to 1750) . The Enlightenment was, however, a very different climate of ideas from the neo-Platonism from which the Baroque emerged. (circa 1600).

In the latter part of the 19th century, literature was embarking on "Naturalism", a kind of grim Realism, when painting, in the form of Impressionism, was becoming both more lyrical and more abstract.

The artist can use this identification of forms with periods deliberately, as an artistic device. Thus Wordsworth and the whole circle of English Romantics (a period 20 years before the French Romantic period) achieve a kind of "antique effect" by using the form of the Petrarchean sonnet. Likewise, Coleridge in the "Rime of the Ancient Mariner" hearkens back to the border ballads of the 17th century

Emily Dickinson's use of the hymn or ballad form, automatically endows her poetry with a religious quality. In Beethoven's quartet, Opus 135, slow movement, the Aeolian Mode is used to evoke an archaic, religious or medieval ambiance.

Form, in other words, by becoming an element of content, *resonates* in the hands of a master craftsman. The resonance can be so strong that the normal tendency to separate form from content is undermined.

Dylan Thomas: A Refusal to Mourn

The first two stanzas combine to produce an extremely vehement rejection of the traditional hypocrisy and sanctimony associated with mourning:

*Never until the mankind making
Bird beast and flower
Fathering and all-humbling darkness
Tells with silence the last light breaking
And the still hour
Is come of the sea tumbling in harness*

*And I must enter again the round
Zion of the water-bead
And the synagogue of the ear of corn
Shall I let pass the shadow of a sound
Or sow my salt seed
In the least valley of sackcloth to mourn*

*The majesty and burning of the child's death
I shall not murder
The mankind of her going with a grave truth
Nor blaspheme down the stations of the breath
With any further
Elegy of innocence and youth*

Yet, although the poet states that he is opposed to all elegies, the final stanza is in fact an elegy:

*Deep with the first dead lies London's daughter
Robed in the long friends
The grains beyond age, the dark veins of her mother
Secret by the unmourning waters
Of the rising Thames*

After the first death, there is no other.

The form is recognizably derived from that of the sonnet. The rime-scheme, a generalization of that of the sonnet, is just as regular. The "quatrain" has been extended to 6 lines. There is a "turn" in the 4th stanza. The final line, though it completes the last stanza, is placed apart to function as an epigram.

Though the poem is about the effects of a fire, water is the most prominent element. Water is associated with both weeping, and with the maternal ocean, the waters of the womb: "The sea tumbling in harness"; "The round Zion of the water bead" "The waters of the rising Thames"; "mourning". The phrase "sowing my salt seed", an amazingly effective way of uniting the twin notions of "weeping" and "ejaculation of the seed" which gave life, however brief, to the child.

This "refusal to mourn" is actually a very deep and powerful mourning ode. It is a classical rhetorical device, whereby the speaker does what he claims he is refusing to do.

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An artwork may be considered as a set of elements or entities *made meaningful through resonant form* . The form that gives meaning is not the same as the forms of the objects themselves. The

former is indeed quite distinct from the latter. Beethoven's use of the motivic principle: a sort of dynamic tension is set up between the motifs and the classical "forms": sonata, concerto, etc. Consider, for example, the String Quartet Op. 18, #1.

As in his 5th Symphony, the first movement of this quartet is based on the repetition of a single 6-note motif. It occurs at least once in almost every bar, often several times in the same bar. It "paves" the larger sonata form, serving as a kind of font or template from which to forge a rich variety of melodic and harmonic shapes. The melodies and progressions fashioned of this motif are the "objects" that function like the objects in a still-life, fruits, bowls, etc.

The motif may be called the template form, while the frame form is the sonata-form Allegro.

Thus form operates both from within and without. The motifs supply the vocabulary from which the objects are fashioned. The frame sets them in a meaningful context. There may also be a direct relationship between the inner motifs and the external forms.
