

Iakovos Potamianos

Associate Professor

Fine Arts School, University of Thessaloniki, Greece

Zefirou 43, Rafina, 19009, Greece.

e-mail: ipota@tee.gr

tel./fax +30 22940 79269

cel. +30 6945 833 312

FROM POETICS TO TOPOLOGY: PATHS TO DESIGN INSPIRATION.

Abstract

Poetry can carry man into a realm of heightened consciousness and feeling. Through image, sound, and rhythm can influence man's spiritual balance and direct his psychic energy. In recent years Martin Heidegger reflected on the idea that "Poetically Man Dwells" on this earth and that it is this kind of dwelling that must first take place before any other becomes possible. Etienne Louis Boullée, in his *Essay on Art* of the 18th century, suggests that "buildings must to some extent be poems". A study of the processes in which poetry attained its impact in ancient tragedy written by Aristotle in 4th century B.C. has been handed down to us in his *Poetics*. The visual and spatial impact of poetics has been studied by 20th century intellectuals from various standpoints. Concurrently, Wolfgang Köhler reached the conclusion that similar principles govern creative thinking across boundaries of human activity in the arts or sciences. Such generally valid principles may be found in fields that range from the making of poetry, to perceptual processes in psychology and the formation of topological theorems in mathematics. Despite their diverse origin they seem to share common threads that may be turned into paths of inspiration for artistic creation. For this reason it has been attempted to introduce such principles in the design studio and experiment with their potential outcome and applications. Some of the principles that have been explored are those of action, reversal, continuity, function, isomorphism, and boundary. Each of these seems to have produced interesting and unexpected results.

Keywords: Poetics, Topology, Design, Dwelling, Inspiration.

Introduction

It appears that in the sphere of art it is necessary for the artist or designer to move comfortably within the realm of feelings both in being sensitized to their slightest variations and handling comfortably the ways in which these may be envisioned and organized. Only then will he compose works of art that will incorporate powerful experiential qualities that might have an effect on human existence, on the inner world of man. In this sense, approaching the realm of feeling becomes a priority in all art and precedes the specific workings of any specific artistic discipline. Composition of feelings precedes formal, color or spatial composition. These latter aspects then become vehicles to a purposeful experiential adventure which may have a deep and lasting effect on the psyche. Architecture is no exception to this, but often because of a prevalent confusion about its aims with utility or practicality it appears that such concerns are secondary or marginal. In short, it is less evident that feeling and experiential issues should constitute the principal aim in architecture as they do in fact in any other art such as painting, sculpture, dance, theater, or cinematography. As a result, several architectural curriculums are organized around issues that may seem more real and fundamental based on the assumption that there are practical needs to be fulfilled such as structure, functionality, protection from the elements of nature, social responsibility, the relation to the context, ecological consciousness, and so on, while any pursuit related to feelings is thought of as a desirable additional element, as beautification, as the glazing on the cake.

To be sure, there have been artists and architects who have specifically emphasized feeling as the only or exceptionally important reality with which art and architecture ought to be occupied, namely, Ettiene Louis Boullée, Kazimir Malevich, Johannes Itten, Louis I. Kahn, but also intellectuals coming from a different point of view asserting that the sense of dwelling first resides in feeling before it acquires form, namely Martin Heidegger, Hölderlin, Susanne Langer, and others.

Based on these thoughts my contention is that a design fundamentals course should be based on issues of feeling and the possible ways of approaching and deriving feeling both analytically and synthetically. The first year of design education should not get the students involved with specifically architectural problems because if it does it introduces by necessity a multiplicity of factors without prioritizing them. The result may not be anything but confusion. If there is agreement that the union of the arts stems from the firm basis of feeling and experience then a design fundamentals course should begin with ways of approaching them. Toward this aim I propose two possible paths that may help students both to understand and be inspired by. The first path comes from philosophy and literary criticism and is called “poetics” while the second is found in mathematics and perceptual psychology and is called “topology”.

Poetics

Poetics is a branch of philosophy that deals with the various aspects of the poetic process in the creative disciplines and the manner in which this process affects the human psyche. Aristotle distinguishes poetics from theoretical and practical philosophy. Theoretical philosophy is occupied with knowledge, reality, and the being while practical philosophy with the attainment of happiness and with moral issues. Poetic philosophy, on the other hand, is concerned with the investigation of poetry that derives etymologically from “poiein” which means to make, construct, or create (Webster’s, lemma: poet). Poetic operations differ from all other human activities, dealt with by the other two branches of philosophy, in that they seek to make things that do not exist in nature, which is the realm of the practical arts, or that they simulate nature, which is the realm of the fine arts. Although the ideas of what constitutes a practical art or of a fine art creation as a simulation of nature have been superseded since Aristotelian times the general categorization still holds. Moreover, Aristotle, in stark opposition to Plato, thinks highly of poetry and declares that poetry is more philosophical than history because in opposition to history, that studies particular facts which have taken place in a certain time and place, poetry aims at revealing universal patterns (Aristotle, 1541b, p. 54.), i.e., general ideas that surpass and comprise history.

Consequently, according to Aristotle, anything artificial created, envisioned, formed and made by man belongs in the realm of poetic philosophy. In this sense, all fine arts and the design disciplines fall within this same category. In this sense, the study of principles that have been observed to govern the making of a thing, the conception of an imaginative idea, the perception of an idea in a thing, or the manner in which a feeling arises and the psyche is affected by an artificial situation are of crucial importance. In short, any process observed regarding poetic operations is of interest to design instructors. Are there any such processes of universal application to all art and design disciplines? If such processes existed would that mean that they would point to a right way of doing things? The answer to this should be, and is, negative. Processes of this kind are not of a particular but of a general nature thus they may only be related to a student as generalities or potentialities, as paths of inspiration rather than as correct procedures.

Poetics is not the making of poetry itself but rather an analytical approach to general ways or paths potentially used in the creative arts in order to affect the human psyche. It studies the principles according to which a process of artistic creation may be organized in view of its specific purpose. One could possibly conceive it as the ways, reasons, and methods of artistic making, all in all, as the architectonics of art; as if all art were in union. If poetics is the philosophy of artistic making then there could be many widely differing forms of poetry and poetic expression in the sense that they may touch the innermost psychic chords through diverse sensorial and emotive routes.

Each form of art seems to display its peak of power in its peculiar medium and affect those that have developed a particular sensitivity to this particular form. From the point of view of the creator it is the will to form that must be present before any specific medium is chosen. If one selected as a start the visual artistic medium then one should experiment with various aspects of it before he moved more specifically into painting, sculpture, architecture etc.

Although architecture, for instance, may be a medium with its particular properties and peculiarities, most design principles are to a considerable extent common with other media. This was well understood by early 20th century teachers when they set up basic design courses (Itten, 1975).

Poetry can carry man into a realm of heightened consciousness and feeling. Through image, sound, and rhythm it can influence man's spiritual balance and direct his psychic energy. In recent years Martin Heidegger reflecting on the idea, expressed in one of Hölderlin's poems, that "Poetically Man Dwells" on this earth and that it is this kind of dwelling that must first take place before any other becomes possible he placed architecture right in the heart of poetic philosophy (Heidegger, 1971, p.213ff). The 18th century visionary architect Etienne Louis Boullée, suggested that "buildings must to some extent be poems". Reflecting on nature and its seasons and attempting to relate the impressions each produces to a suitable kind of architecture he reaches a poetics of architecture and his great discovery which he calls "the architecture of shadows" (Rosenau, 1953, p.90). More philosophical in its aims is Aristotle's *Poetics*, of 4th century B.C., a work among several of his dealing with this subject, parts of which are explored in this paper. Although such works may appear quite different at first sight they seem to share some deeper similarities, ways of relating things that form common threads. Perhaps this is due to the conclusion reached by Wolfgang Köhler, one of the pioneers of Gestalt psychology, that similar principles govern creative thinking across boundaries of human activity (Henle, 1971, p. 239).

I will refer here to two concepts among many found in Aristotle's *Poetics*, namely, "action" and "reversal". These two concepts have been singled out because of the generality of their nature on the one hand and of their potentially immediate relevance to other works of visual art on the other. They have been presented to students in order to explore the range of their applicability to design problems. Although these two concepts might be investigated in various ways, specific instruction was given to the students to explore their expressive potential.

Action

An action in tragedy is the deed of a character engaged in it because of a certain need aroused in him and his particular disposition which impels him to undertake such an action in order to fulfill this need. His disposition is of the essence regarding the kind of action he chooses to undertake. This action is only one of several that compose the tragic plot. Any action is independent to a certain extent but it is so placed so as to serve or reinforce the ultimate tragic goal. These are some fundamental qualities of an action in the poetic form of tragedy.

What might be the relevance of these qualities to a visual composition? An important factor is the unity of the action. It is performed by a single entity so that it is not only infused by a distinct character but it is imbued with a sense of independence and uniqueness. No matter to what degree it may have been affected by other actions and surrounding circumstances it retains marks of its unique identity. Furthermore, each action is by virtue of its character imbued with certain expressive properties and it is those that are of particular interest here;

not so much what it does, which might refer to a utilitarian, practical, or pragmatic aspect but how it does it, which refers to a particular expressive attitude, a certain expressive identity.

For instance, let us suppose that in the composition of a teapot the designer wishes to provide the action of dispensing with a certain expressive attribute; the teapot is to dispense tea *gracefully* into the teacup. This gesture must be experimented with in order to develop a sense of the ways in which a graceful character may be imparted. Among the several ways that might be invented the one picked will be based on the manner chosen by the plot or the scheme of the composition. This manner might be *melodious* in which case the action chosen should be conforming to the overall melody; it might be *contrapuntal* in which case a certain opposition to rhythmical occurrence or to shape occurrence might be necessary. In still another instance the designer may opt for an *explosive collision* in which case the antithetical rhythmical occurrence might not be enough. The antithesis should be as explosive and sudden both in shape and in void, etc.

All of the above examples refer to expressive attributes of functional wholes rather than of local elements. These expressive attributes refer to the whole of the action rather than to small parts of it. An action develops over a time period or over a space interval and during its development acquires its particular expressive characteristics. As Köhler puts it, a melody has a “minor” and a “major” character as a melody, that is, as an auditory whole. No matter how long we investigate the tones of the melody separately we will be unable to find a “minor” or “major” character in them. This character belongs to the whole alone which develops over time. The same happens in space. Attributes such as “Regularity”, “smoothness”, “angularity”, “slenderness” are expressive tendencies developed by lines, curves or figures over space (Henle, 1971, p. 241).

Reversal

The concept of reversal or “peripeteia” described by Aristotle (Aristotle, 1452b, p. 56) is a situation in which a certain action brings about the reverse outcome than the one expected. In this sense it constitutes a complete overthrow. The action which reaches reversal or is subjected to reversal must have a clearly defined goal, in the first place. It is this goal which is being overthrown, reversed because of which a surprise is caused, puzzlement, dilemma, estrangement, or uncomfortable feelings. Etymologically the word “peripeteia” is equivalent to “fall in with” or “fall into” a condition or situation. It means not to move intentionally toward a situation but to arrive at it unexpectedly, suddenly, abruptly. The reversal starts as something and ends up as something completely different. Something unstable ends up as something stable. It contains a continuous reversal. It contains duration so that during its evolution, which becomes evident in its form, reversal turns up.

Seeking the particular nature of “peripeteia” as a potentiality in a visual object we must first attempt to reach it as a generality of meaning. What is the true meaning of a reversal? Something is turned upside down. Does this constitute a change? It depends. It must bring about not only the reversal of a form in space because most probably this can be compensated by a rotation of the visual field. In essence, what is discussed here is a reversal of feelings, a

reversal of what one thinks as his world, a reversal of what one considers as familiar, as one's own, pulling the rug under one's feet, a complete shake up. Can a designed thing do that?

This far-reaching questioning, critiquing and overthrowing of one's assumptions is what the philosophy of deconstruction is all about but is it something that can be even thought out with any clarity? Can be done synthetically or perhaps only analytically? How can a teapot, for instance, provide a reversal in what the idea of dispensing stands for which may make one realize what he assumed dispensing was up until now? And what would it mean for the idea of dispensing to be reversed? And what for? How might one be inspired by that?

I shall attempt to follow a potential path of inspiration. Let us suppose that dispensing means that I already have something which is my own and which I hold in a certain way which I then wish to dispense to someone in a certain way. What is important here is the manner in which I think I have something, the manner in which I hold it and the manner in which I want to dispense it.

If, for instance, I am a person that has newly come into money I would think that this something is precious therefore it should be put into a teapot which pinpoints to its value by its unique material or complex shape. It is unquestionably mine and thereby the teapot should pinpoint to that fact that it would allow me to get a firm grip of it and handle it with an air of self-assurance. In the same vein, dispensing would become an act of generous and perhaps condescending giving to someone perhaps not as lucky as I.

Quite contrary to this would be a situation in which one is thought of himself as an environmentally conscious individual who would think that what he has is precious not because it belongs to him but because he was allowed to use it by mother earth through a difficult and complex process of creation. The thing is not mine and not easy to hold or get a grip of but it requires care and gentleness and it needs a special effort to handle. Finally, dispensing is not generous but takes time, effort and special attention pinpointing to the nature of its value.

Both of the above teapots require certain actions from an expressive-poetic point of view to be composed into a final synthesis. The two correspond to antithetical outlooks. However, there is no sign of reversal among the two until the first turns out to be the second. Only then a sudden realization may occur.

These are some potential paths the mind may follow in creating objects or spaces. These paths may be enriched through the study of dream imagery and of archetypes (Jung, 1964). Also they seem to be certain aspects in the behavior of the senses that may be exploited in order to achieve desired expressions through not very obvious ways.

Topology and Perception

“Topology” is a rather recently formed and developed branch of mathematics which I have referred to in an article of last year's Designtrain Congress meeting. The reason for resorting to such a specialized field of interest to seek paths for design inspiration would appear

surprising if it were not for the observations in perceptual psychology that assured us that all perceptual operations are of a topological nature (Arnheim, 1997, p.75ff). The philosopher Ernst Cassirer also concurs in that in perception metric space derives and is gradually abstracted from topological space, which is based on relations of things to the body and among themselves (Cassirer, 1985, p.422). This being the case, topology acquires a special importance to the art and design professions and it would only be logical that students should become familiar with the relational structure of all visual percepts and the system of concepts that this structure is governed by.

Isomorphism

Isomorphism is a term coined by Gestalt psychologists which refers to the similarity of the structural characteristics of brain processes and the related phenomenal events (Henle, 1971, p.80-1) or, more clearly, the structural kinship of the stimulus pattern and the expression it conveys (Arnheim, 1974, p. 63, 450). This means that expression is embedded in form and perception accesses this expression first before reaching a complete comprehension of the form, or pattern. At the same time this expression is perceived as a sense of the thing that exerts an influence to all our senses which is of a general nature so that expressions derived from diverse visual aspects or even diverse sensorial routes may become functionally related or even interchangeable.

Along this vein the painter Wassily Kandinsky attempted to relate diverse stimulus patterns according to the similarity of expression they conveyed. Thus he related, for instance, acuteness to tension, to triangle, to yellow, because although differing as visual aspects they conveyed a similarity of expression (Lindsay, 1994, p. 591) these he related also to non visual aspects such as the psychological tension experienced by an artist during the process of working on a piece of art (Lindsay, 1994, p. 588). This principle is of a very general nature and transcends any specific sensory apparatus. The sense of acuteness may be derived, through the visual observation of a shape or color, the auditory sensation of a sound, or the olfactory sensation of a smell and all three sensations different as they may be share something in common that places them within the same category. It is this principle of isomorphism that a student will resort to when asked to translate a piece of music or a poem into a formal or spatial composition or a textual description of feelings into dance movements.

Function and Homeomorphism

Strangely enough the principle of isomorphism may be directly related to the topological concept of “function” and “homeomorphism”. Among the many concepts found in topology we will discuss here those of function, homeomorphism and boundary not because they are more important than others but because they correspond to concepts that are quite removed than those we are used to describing by these words.

“Function” from a topological space to another is a correspondence of the elements of the one to the elements of the other (Mendelson, 1990, p.43, 87). The topological concept of function operates only toward one direction. Extrapolating this concept to the realm of art, in the

example presented in the figures below the forms and colors of Van Gogh's "Potato Eaters" refer to the potato. In this sense, Figure 2 is a function of Figure 1. The function cannot be inverted. The dimension here is not metric but is the potato-quality.



Figure 1. Potato



Figure 2. Vincent Van Gogh. The Potato Eaters, 1885.

"Homeomorphism" exists between two topological spaces where inverse functions are valid as well (Mendelson, 1990, p.90). Although, this concept comes from mathematics appears to be very similar to isomorphism which is derived from observations on perceptual and brain processes, as mentioned above. Numerous homeomorphic concepts are found in Kandinsky (Figure 3). The dimension here duration-size and the function can be inverted.

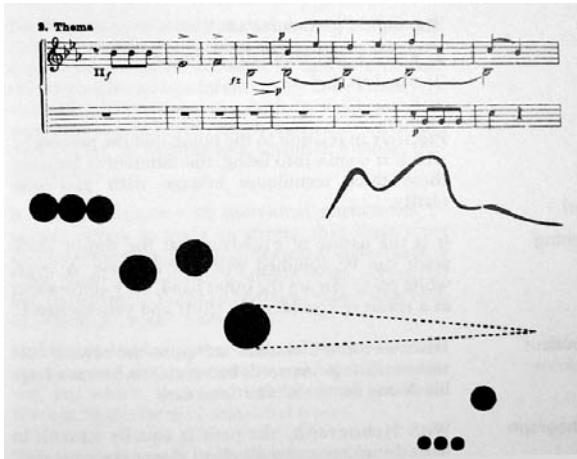


Figure 3. Wassily Kandinsky. Musical theme translated into points (Lindsay, 1994, p. 561).

Boundary

Another topological concept of great interest is that of “boundary”. A boundary in the topological sense is quite different than its meaning in common language. The elements that belong to a certain set but also to belong to its complementary set are said to form a boundary (Mendelson, 1990, p.85). In this sense, such elements do not form some sense of a barrier or limit between the two spaces but rather a condition of belonging to two opposing fields. The elements do not form a shell which separates the inside from the outside but are found between two magnetic fields, as it were, in a tug of war torn between two conditions. The handling of a topological boundary, in this sense, is quite a different undertaking from an art point of view especially if one is reminded that the quality or dimension in terms of which this boundary ought to be conceived is anything but metric. This dimension may be understood as any kind of quality or feeling other than metric.

Results

Attempting to teach such principles to art and design students is not an easy task. Philosophical or mathematical concepts must be translated into simplified examples and imagery in order to be grasped. Often, it is this imagery which the brain of the student is attached to, rendering it hard for the underlying concept to pass through to him. A few students stand up to the challenge. They try time and again attempting to delve deeper into the workings of each concept looking at it as a more meaningful endeavor. They are either art or architecture students. They strive to grasp the concepts either in painted shapes, or in collages, or simple color and line schemes, or in models. Any visual means is acceptable.

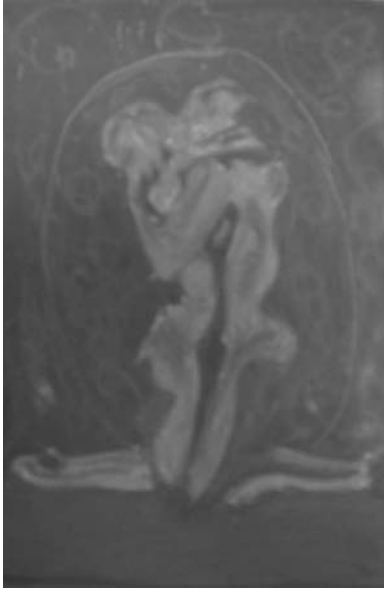


Figure 4. Eirini Dapoulaki. Exploration of the topological concept of “boundary”. Experimentation with the dimension of “passion”.

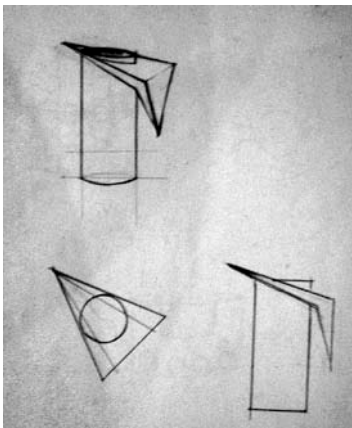


Figure 5. Lili Tsolakidi. “Actions” composed into a pitcher, 2007

References

Aristotle (1982) *Poetics*, W W Norton & Company, New York

Arnheim, R (1974) *Art and Visual Perception, A Psychology of the Creative Eye*, University of California Press, Berkeley

Arnheim, R (1997) *Visual Thinking*, University of California Press, Berkeley

Cassirer, E (1985) *The Philosophy of Symbolic Forms, Vol 3, The Phenomenology of Knowledge*, Yale University Press, New Haven

Heidegger, M (1971) *Poetry, Language, Thought*, Harper & Row, New York

Henle, M (ed) (1971) *The Selected Papers of Wolfgang Köhler*, Liveright, New York

Itten, J (1975) *Design and Form The Basic Course at the Bauhaus and Later*, Van Nostrand Reinhold, New York

Jung, C (ed) (1964) *Man and his Symbols*, Doubleday & Company, New York

Lindsay, K C and Vergo P (eds) (1994) *Kandinsky, Complete Writings on Art*, Da Capo Press, New York

Mendelson, B (1990) *Introduction to Topology*, Dover Publications, New York

Rosenau, H (ed) (1953) *Architecture, Essay on Art by Etienne Louis Boullée*, Alec Tiranti Ltd, London