Semiotics and Archeology

The fine arts and the conception of space in ancient Greece

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The Aegean world and the oscillation of styles

It is a fascinating but thankless task to deal with lost civilizations which were preliterate or whose written language we are unable to decipher. We are constrained in these cases to infer both their material and spiritual life from the same data, their material remains. These two lines of inference are not identical. When for example from the differences in funerary offerings or the size of houses we infer the existence of social stratification, these differences do not signify the social stratification, but are caused by it, being thus the effect of that cause. In this case we are operating in a non-semiotic domain. In contrast, when we try to understand the signification of an iconographic element or association we operate on the relation between expression and content, and thus within the semiotic domain.

The study of the processes of semiosis in the Aegean world is one of those handicapped by the almost complete lack of the crucial evidence provided by written sources. The Linear B script, which appeared in the 15th century BC, is not able to compensate for this lack, aside from the problem of the ambiguity of its reading, because of its limited time-span and the limited thematic repertory of the documents found. Since even our knowledge of the views of the ancients through their texts is unavoidably permeated by our own state of mind, when texts are not present our ethnocentric tendencies and personal tastes can take over to such a degree as to replace the true historical subject of semiosis with ourselves.

It is not easy to know what the Aegean peoples thought about their art and what kinds of signification they were attributing to it, but, nevertheless, we are able to establish certain points and advance certain hypotheses. Thus we cannot know if the colors, red or black, of the monochrome burnished pottery of the people of the Proto-Sesklo period in 6th-millennium Thessaly, or the painted linear decorations of the Sesklo pottery of the following period (cf. Demargne 1964, 31) had any connotative signification. On the other hand, we are able to follow the transformation of figurines in the round from what has been considered as a primitive naturalism to the schematization of the so-called Larissa phase of the Thessalian Late Neolithic of the 5th and mainly 4th millennia BC (cf. Demargne 1964, 31ff). On the basis of this morphological transformation, we can assume a transformation, whose exact content escapes us, in the ideological approach to art objects.

It is a current archeological and art historical practice to use the criterion of the nature of the relation between signifier and referent as the main criterion for the definition of what scholars call works of art. This kind of metalanguage is usually followed by a series of drawbacks. First, these works are frequently not dominated by esthetic preoccupations, but have a religious function. Then, such a view neglects the world view guiding the way of conceiving the relation between signifier and referent. Finally, a theoretical approach to the problem of style reveals other equally

important criteria, such as the syntactic arrangements of the signifiers and the semantic structuring.

If, however, we remain focused on the referential dimension, we observe that this oscillation between nonrepresentational and representational art, and in the context of the latter between schematization and naturalistic style, characterizes not only the whole of Aegean art but also the development of art in the Geometric period and from it to the Classical period. The marble Cycladic "idols" of the Early Bronze Age (3rd millennium BC) are characterized by abstraction and geometricity [**fig. 1**], being thus radically differentiated from the simplified naturalism of the Neolithic. On the other extreme, the Minoan frescoes of the Middle Minoan III period (1700-c. 1550 BC) and their Theran equivalents are strikingly naturalistic [**fig. 2**], as is the case with many motifs of the pottery (Marinatos 1971, 363f), even if this naturalism does not seem to have gone as far as individual portraits.

A deeper analysis of these frescoes allows us to elaborate on the concept of naturalism. The plants depicted in landscape scenes cannot generally be identified, while in the few cases when they can, as in the case of lilies and crocuses, we observe hybridization and stylization, as well as standardization (Marinatos 1984, 85; 93f; 118). Similarly, the human figure is flat and pictorial space two-dimensional, without depth, an observation equally applying to Mycenaean art (cf. Richter 1971, 9). We should thus differentiate between realistic naturalism, such as the later Greek naturalism, and the general impression of naturalism. On the other hand, it has been argued by Marinatos (1984, 85; 96) that the Minoan interest in nature is due to a religious orientation and that the landscape scenes connote the fecundity of spring and the regeneration of nature. The rest of the themes of the frescoes are related to festivals and rituals, and thus all the themes seem to be religious. We can assume on this basis that Minoan and Theran naturalism is the product of a religious world view, which is manifestly not the case for all naturalistic art.

Minoan art is a semiotic system manipulating materials, signifiers and signifieds in its own way. This system is far from simple, as shown for example by the extant pictorial programs, whose complexity seems to increase through their relation to exterior semiotic systems connected with the activities taking place in the same space. Following N. Marinatos, Minoan art presents a standardization of the complexes of certain sign types, such as for example papyrus with rushes and ducks or water. Not all the signifiers of the frescoes are naturalistic, since, for example, the undulating lines with hooklets of the East wall frieze in room 5 of the West House on Thera seem to denote a river. Many signifiers acquire their connotative signification by being an iconic representation of social realities; thus, nudity or different hairstyles and dresses connote different ages and social positions. Gestures also seem to have their signification: on the Hagia Triada Sarcophagus, the outstretched hand with the palm down seems to have a ritual signification, and the combination of one arm hanging alongside the body with the other lifted to the forehead found in some bronze figurines seems to connote «prayer».

Certain colors of the frescoes at least have in specific contexts a connotative signification. White as a skin color connotes «woman», while reddish brown «man». The blue skull may connote partial shaving and youth, and/or a divine association, the latter being the case with the "blue" hair, eyebrows and beards of gods and heroes in Homer. Blue seems to have the same signification of divine association when used as the color of monkeys, who seem to be connected with the divine sphere.

If we follow N. Marinatos, the contorted position of animals on Minoan seals connotes pain or fear and often their death, the hunting scenes on these seals are metaphors for sacrifice, and the signs filling the empty space of the seals are not neutral ornaments, but have the function of suggesting sacrificial animals or metaphorical sacrifices. According to the same author, the main axis of the Minoan world view expressed in their art is the submission of human to natural order (N. Marinatos 1984, 51; 59; 81ff; 109 and 1986, 26; 42ff; 64; 71f, Demargne 1964, 148; 174, and S. Marinatos 1971, 363).

We find once more the oscillation of style as we pass from Minoan to Mycenaean art (1600-1050 BC). Undoubtedly the latter was subject to strong Minoan influences. However, it acquired its own personality which goes parallel with an increasing stylization and geometricity [**fig. 3**],

with the exception of the naturalistic golden masks moulded directly on the face (Demargne 1964, 137; 175; 185ff; 235).

The passage from the fine arts to spatial organization and form, both architectural and urban, is a passage from semiotic systems to functional systems, that is, systems whose primary function is not to signify but to be socially used. However, these systems do not lack semantization. The acropolis of Dimini of the classical Dimini period (3900-3400 BC) of the Thessalian Late Neolithic is composed of six concentric walls grouped in pairs. Each wall is higher than the next was as we move outwards, following the topography of the site. The acropolis of Sesklo of the end of the Middle Neolithic period includes a megaron and is also surrounded by three walls, for which it has been suggested that they are not defensive but follow an a priori model (cf. Lagopoulos 1978, 105). Comparison with similar forms in other cultures allows the hypothesis that the acropolis connotes a mythical cosmic mountain.

Connotative codes and semiotic functions seem also to accompany Minoan space. The well-known horns of consecration have a religious function and are probably connected to sacrifice. As architectural elements they are located on the roofs of palaces and shrines, where they seem to indicate the sacredness of the buildings. The sacredness of the palaces was probably also indicated by the tendency to orient them toward the cardinal points, a contextual relation which could be connected to a cosmic connotation of the palaces. This could also follow from the strategic location in the palaces of one type of the so-called mason's marks, the double-axe, which, as has been argued, had the function of the ritual commemoration of the palace foundation. On the other hand, it has been suggested that a code of colors existed connecting colors and architectural uses (Preziosi 1983, 210; 424ff, and Lagopoulos 1978, 103ff).

According to the foundation myth of Cadmea, which is thought to be the 15th-century BC palace complex found in Thebes, the founder Cadmus, who intends to sacrifice a cow, kills a dragon and sows his teeth, whence heroes spring which kill each other; the five survivors became the founders of the noble families of the settlement. Cecrops, the founder of Mycenaean Athens on the rock of the Acropolis, is depicted as half man and half snake or dragon. The victory of the hero over the dragon is considered by Trumpf (1958, 146f) as the victory over chaos and the landmark of the creation of the world, with which we should thus equate Cadmea. This interpretation is reinforced by the extension of Cadmea (after 1400 BC), which was constructed, according to the tradition, by the music of Amphion accompanied by dance, and had seven gates. This number, which accompanies the city in many ways, seems to have cosmic connotations and corresponds to the lyre with seven strings the invention of which is attributed to Amphion. Likewise, Apollodorus connects the foundation of Troy with a cow and Callimachus says that its walls were built by the sound of Apollo's lyre. The foundation of the settlement was probably related to a ritual dance, as its destruction has been connected to the crane dance. In relation to this, Knight (1936, 63; 93; 106; 113; 124; 132) integrates the settlement into a mythical complex comprising a labyrinth and the earth.

The preceding discussion attempted to show that specific meanings, symbolic ideas, and broad world views underlie the spatial organization and the artistic manifestations of the pre-Geometric periods in Greece. These cultural meanings cannot be ignored in the analysis of the cultural systems; on the contrary they provide the means to their real understanding. Maybe more importantly, they also offer the only legitimate, i.e., reasonably non-ethnocentric, way of analysing the signifiers of the systems, that is, the artistic and conceptual spatial forms.

The Geometric period and the transition from class to individual

Geometric pottery up to the 8th century is decorated with consecutive horizontal bands including simple geometric signifiers. In the course of the whole of the Geometric period (1050-700 BC) there appeared a series of parallel developments. First, the number of bands started increasing during the Middle Geometric period (850-760 BC), until by the end of the period they completely covered the vases. Second, there was a transition from the domination of the curvilinear signifiers of the Protogeometric period (1050-900 BC) to the right-angle signifiers of the Early Geometric period (900-850 BC), which became dominant. The third development refers

to the movement from geometrical abstraction to naturalism. Indeed, during the Submycenaean and Protogeometric periods, from 1100 BC, there are few exceptions to the nonrepresentational pattern, while even schematic human figurines are no longer found in mainland Greece. If the courtly and priestly market promoted Minoan and Mycenaean art, the shrinking of the market during these periods seems to have discouraged a sophisticated production. We only know of very few exceptions in mainland Greece, which are sketchy figures of animals, a couple of archers, and later schematic horses and birds on Attic vases. The two latter motifs were to dominate Attic geometric art, together with the human figure which reappears on a krater from the Keramikos cemetery of around 850 or 825, almost two centuries later than the archers. In the 8th century there appear new animal forms, as well as funerary and battle scenes. Together with the trend of the design toward schematic naturalism came the gradual increase of the importance of the human and animal figures in comparison to the geometric signifiers. A parallel trend can be observed in small-scale sculpture in the round (Hurwit 1985, 54ff; 94ff, Demargne 1964, 287ff; 299, and Carpenter 1962, 34; 36).

The pictorial system of Geometric pottery uses a series of conventions in order to convey signification. The painters of the black-figure Dipylon amphorae from just before the mid-8th century, which correspond to the peak of the Geometric style, operated with a limited set of main pictorial signs: standing women and men and their few accessories such as shields, horses and chariots, certain other animals, and later ships. The human figure as a signifier is generally composed of a triangular torso corresponding to a front view, and a head and legs seen in profile -- a convention known from Egypt and Mesopotamia, which also characterizes the Archaic period -- while the drawing technique is the uniform filling-in of a surface. We find similar conventions in the Orientalizing Middle Proto-Attic pottery of the mid-7th century, where the black color of the body connotes «man» and the white «woman». The sense of the third dimension is generally absent from the Dipylon amphorai, even if the couches bearing the dead show some depth representation. The realistic relation between pictorial elements Is replaced by pictorial conventions: thus, what is behind is drawn above, and the chessboard shroud of the dead on one of the Athens National Museum Dipylon amphorae is depicted frontally as a surface hanging over the dead. The syntax of the Dipylon amplorae follows three general rules: perpendicularly, organization in a series of consecutive horizontal bands, and horizontally, inside these bands, lateral repetition, and tripartite symmetrical organization in relation to an axial theme; the two latter have been compared to rhetorical schemes in Homer (cf. Carpenter 1962, 42; 46, Richter 1971, 11f; 14, Demargne 1964, 333, and Hurwit 1985, 28; 101ff).

Passing from the signifier to the signified, it is interesting to note initially Hurwit's observation that the Dipylon figures follow a proportional canon, and that they are an assemblage of discrete parts, demonstrating a conception of man as composed of head, chest and limbs found also in Homer, and an interest in what is constant in man (Hurwit 1985, 98ff). On the other hand, in the second half of the 8th century legendary narratives, related to the propagation of epic poetry and the hero cults, appear on vases, bronzes, fibulae and seals, and call for a development of the pictorial systems. The reason is that the generic types at the disposal of the artists, corresponding to a class of similar objects, needed to be specified as particular individuals, members of this class, something which earlier would have been done through contextual relations. The transitional step in this direction was the use of the name of the individual, that is of a complementary semiotic system, natural language. This device was used from the end of the 7th century to as late as the 5th century in wall paintings, carved reliefs (like the figured frieze of the Siphnian Treasury at Delphi) and red-figure vases. By the Classical period (480-323 BC) nevertheless, the artistic codes had become selfsufficient, a fact which should be attributed to the multiplication, and the relative standardization and socialization of the new individualized human forms (cf. Carpenter 1962, 106ff; 213, and Hurwit, 1985, 106ff; 121). An example of this multiplication of subjects is given by the archaic grave reliefs of men, where nudity is often abandoned for the depiction of specifying attributes (Holloway 1973, 42). However, the use of natural language was not abandoned, as can be seen, for instance, from the hellenistic Megarian bowls.

Pictorial narrative is spatial not temporal, and can obey semiotic principles different from those of literary narrative. Following Hurwit (1985, 165ff; 347ff; cf. also Holloway 1973, 30), we can trace these principles during the Archaic period (Orientalizing and Archaic periods: c. 700-480 BC). A first principle is "simultaneous narrative", in which consecutive events and different places coexist in the same pictorial space. According to a second principle, which could be called "fragmented narrative", parts of one and the same event, or even object as in the case of the ship Argo on the frieze of the Sikyonian Treasury at Delphi, are depicted in separate spaces, whether the different sides of a vase or contiguous metopes. There is also the principle of "serial narrative" from the 7th century, according to which a series of events occupies a series of contiguous individual spaces, as in the case of myths occupying a set of metopes. Finally, the mythical representations of the early archaic temples are not incorporated into a monumental programmatic unity, but this was not late in coming, first, in the early 6th century, in the form of juxtaposed mythical cycles, and then, in the 5th century, of metaphorical compositions (Holloway 1973, 69; 83).

The work on the pictorial signifier

We referred above to some pictorial conventions relating to the rendering of the sense of depth in painting of the Late Geometric period. Together with the development from schematic naturalism to realism came an increasing interest in the manipulation of the morphological elements to produce the illusion of the third dimension, that is the signification of depth. We can detect three approaches to the rendering of depth: foreshortening, shading, and linear Euclidean perspective.

In the turn from the Archaic to the Classical period, there appear the first attempts at foreshortening, i.e. three-quarter view and linear perspective (*skenographia*). By the second quarter of the 5th century BC the foreshortening of the human body has evolved and in the second half of the century it is current and correct, as can be seen for instance from the Parthenon frieze. The evolution of foreshortening can also be followed in the rendering of the old subject of the four-horse chariot. It starts with two standard compositions, the one purely profile, the other mainly frontal; then passes to a complex mixture of the two views (pseudo-foreshortening) in the end of the 6th century, and from the same period shows a foreshortening of the wheels (which become elliptical) and of the chariot; finally, the general foreshortening of the horses -- whose origin also goes back to the end of the 6th century -- appears complete on 4th-century Italian vases. Parallelly, the recession of the sides of volumes appears from the second half of the 5th century on red-figure vases and is frequently represented from the 4th century to the Hellenistic period (Richter 1971, 21; 23; 30, and White 1956, 11ff; 27f; 36f).

The second technique for rendering the third dimension, shading (*skiagraphia*), depicts the spatial mass of the objects with the use of light and shade and, according to Bruno, dates from the early 5th century and belongs to the four-color system we shall examine below. The Dipylon figures, as we saw, were internally undifferentiated. Proto-Attic and Proto-Corinthian potters dealt with the problem of the internal articulation of objects, which was solved, as shown by the late-7th-century black-figure ware, through the revival of the neolithic technique of incision (Carpenter 1962, 110ff). Next came shading. Bruno considers the first form of shading, which he associates with Polygnotus -- as opposed to Pollitt (1974, 193; 221) who attributes it to Apollodorus (active from 430 to 400 BC) -- as a chiaroscuro technique emphasizing contour lines and using what was called in antiquity "austere" colors, that is earth pigments (somber colors for Pollitt 1974, 247). One striking example of the four-color system is the Alexander mosaic from Pompeii, which is a copy of a Greek original of the late 4th or early 3rd century [**fig. 4**]. Shading would evolve in the four-color tradition from Polygnotus to Zeuxis (late 5th to early 4th century) who used a new kind of chiaroscuro, made outlines disappear, painted monochromes, and used the interplay of light and dark to convey the sense of depth. A similar manipulation of light can be seen in Greek sculpture and reliefs. After the 5th century there appeared tendencies to use a wider set of colors and there were followers of both techniques, while the system declined in the end of the 4th century (Bruno 1977, 17; 26ff; 41ff; 58; 63; 66; 70ff; 98f).

Foreshortening and shading concern individual elements of the paintings and give them their personal space and depth. But the problem of space reappears in the association of these elements to create individual objects, and in the association of these objects on the scale of the whole composition as a problem of the coordination between individual spaces; the specific form of this coordination offers a kind of syntactic framework for the paintings. We saw that in the Geometric period objects in depth are depicted in superimposed zones. These zones can be contiguous or overlapping. In the second case, there is still no proportional diminution, that is no change of scale as a function of depth, as can be seen in a sophisticated form on the Chigi Jug of the mid-7th century. In the second quarter of the 5th century the superimposed zones are abandoned, without yet any use of diminution, which was only used, occasionally, in the late Hellenistic period and by the Romans; before that, differentiation in size of the human figures signifies a status difference instead of depth.

Recession and diminution are both elements of linear perspective. Richter concludes that even during the Hellenistic period perspective in relation to furniture always remained partial and that the old practice persisted of assembling different parts of an object seen from different points of view. It should be noted that the main source of these observations is pottery, a usual approach since original works of monumental painting which appeared maybe toward the end of the 6th century are considered to be for the most part lost (but cf. Andronikos 1964, 287f; 298ff, and 1978, 35f on the late classical and early hellenistic paintings and mosaics in Macedonia). Richter completes this gap with the monumental wall paintings mainly from Pompeii and Herculaneum, preserved from 79 AD, which copy Greek originals. She observes that pictorial perspective in ancient Greece always remained partial in the sense that the receding lines of one or more objects of a painting do not have a common vanishing point even if they often converge, and that the same is true for the Roman reliefs and mosaics up to late antiquity. Thus, there is no unified perspective but a set of partial and contradicting perspectives. The single vanishing point of the painting on the East wall of the Room of the Masks on the Palatine should be attributed to an isolated empirical observation and not to a knowledge of generalized perspective; however, both painting and written sources would testify to the application of perspective to individual objects (Richter 1971, 29; 41; 47; 50ff; 59f).

White objects to Richter that generalized perspective was known from at least the first half of the 1st century BC, and that this date could recede to the 5th century and more probably to the 3rd or the 2nd. The Second style paintings at Pompeii, a style which would be imported fully developed but in decline, is from the second half of the 1st century BC characterized in individual cases by a unified perspective system and a fairly unified vanishing point, which is not the case for the Third and Fourth styles which do not adopt linear perspective (White 1956, 60ff; 83; 86).

Symmetria and Greek artistic structuralism
From classical formalism to hellinistic subjectivism

It was in the first half of the 8th century that Greek colonization started, with the first colonies created by the Milesians of Asia Minor. Colonization was a decisive factor in the termination of the sociologically transitional phase which extends from the decline of the Mycenaean civilization to the beginning of the Archaic period, and in the creation of the polis. A new socio-economic structure appeared in the Archaic period, characterized by the rise of a monetary economy; coins appear at the end of the 7th century. This new form of economy led to an important independence of politics from religion and to a tendency for the use value of objects to be transformed into exchange value, and this new logic of economy together with the new political thought led, in their turn, to a new form of logic, rationalism, the foundation of Greek philosophy (Vernant 1974 I, 176ff and II, 37ff; 104ff; 117ff). Philosophy guided the Greek approach to the study of nature, an approach not unconstrained by the influence of religion.

One of the fundamental aspects of Greek thought has been the tendency to discover a cosmic order behind the chaotic appearances of things. While this tendency may have existed

from the Protogeometric period, it took a new form under the impact of philosophy. The essential characteristic of order in Greek philosophy is measure, that is the definition of unitary elements and their measurable relationships. Thus, for Pythagoras and the Pythagoreans numbers and their relations, proportions, are the essence of things and make up the cosmos (κοσμος), whose center is occupied by a hearth of fire; each object is composed of a specific number of particles corresponding to geometric points. Representative of the Pythagorean cosmology is the perfect number 10, the sacred *tetraktys,* composed of the sum of 1 (point), and 2, 3 and 4 (lines); to these numbers would correspond the geometric series from point to solid and from their proportions would follow the basic harmonies of the musical scale, found also in the heavenly sphere (cf. Pollitt 1974, 15f; 17f; 167, and Raven 1951, 147f).

Less than a century after Pythagoras, in the mid-5th century, Empedocles and Democritus hold that all things in the universe derive from a whole of four fundamental elements, for Empedocles fire, water, earth and air, which are also found in Pythagoreanism (Raven 1951, 147f). For Empedocles these elements, which are united by love and separated by hate, compose a threefold structure: while they are equal, they nevertheless constitute a first dualist structure through the opposition of fire as dominant to the three other elements; then, a new dualist structure emerges since air is considered as related to fire and earth to water; finally, they compose a tripartite structure through the introduction of the two intermediary elements between the two extreme and primary poles, fire (light) and water (night). The combinations of these elements through their particles in different proportions leads to all things in the universe, which are mixtures governed by harmony and equilibrium (Bollack 1965, 18ff; 35f; 39; 81ff; 238f).

The artistic equivalent of this philosophical order is the concept of *symmetria* (συμμετρια), that is the (cosmological, unifying principle of the) commensurability of the parts of a work of art to each other and to the whole (Pollitt 1974, 15; 26; 162). Ferri, on the other hand, replaces this concept with Pliny's and Varro's *quadratus,* which refers for him to groupings of four elements related by two according to rhetorical (paratactic and chiastic) schemes and visual rules; the works of Polyclitus and Lysippus would correspond to two different elaborations of these rules. Ferri follows Varro in associating quadratus with *aequilibrium,* the Greek *isostathmia* (Ferri 1940, 117ff; 126ff; 133; 141; for quadratus as referring to the four cardinal aspects of a statue, see Carpenter 1962, 186). We should not, however, underestimate the crucial role of the concept of symmetria in Greek art. We can literally speak about a philosophical structuralism, operating with initial elements and deep structures, and rules generating surface structures on the basis of logico-proportional relations, and a corresponding artistic structuralism elaborating surface structures through the empirical expression of these elements and equivalent rules. Symmetria is the key concept in understanding the artistic and spatial semiotic systems of mainly Classical, but also to a certain degree Hellenistic Greece. Let us then follow its use in these systems and begin with sculpture.

The treatise the *Canon* by Polyclitus, from the second half of the 5th century, provided a set of proportions for the production of perfect sculptural works -- a procedure which the patterned nude archaic kouroi may also have followed. The *Canon* was materialized par excellence in Polyclitus' Doryphorus [fig. 5]. Beauty, and measure, symmetria, are here identical, as they are for the Pythagoreans and later for Plato, and the Canon seems both to have influenced and to have been influenced by the Pythagoreans (Raven 1951, 150ff). There were different classical approaches to the ideal sculptural form, but all of them were based on the concept of symmetria (used even before Polyclitus by the sculptor Pythagoras, first half of the 5th century). There is a whole set of concepts clustering with symmetria, such as *harmonia,* harmony; *aletheia,* the mathematical true form incorporated in the work; *(arithmos) teleios,* the perfect number ruling symmetria; *meson,* maybe an ideal balance; and the 4th-century *akribeia,* denoting mathematical precision in the application of mathematical and geometrical formulas, but also probably in the rendering of naturalistic details (Pollitt 1974, 14ff; 88; 126; 162; 167ff; 182; 187, Carpenter 1962, 158ff; 186f; and Schulz 1955, 202f; 213).

If the artistic concept of symmetria refers to the semiotic system itself, the key philosophical concept for the domain of the arts, *mimesis* (μιμησις), as used and propagated by Plato and Aristotle, concerns essentially the relation between semiotic structure, whether literary, musical,

sculptural or pictorial, and referent; that is, the imitation of reality. Following Pollitt, there are two types of imitation in Plato, also retained by Aristotle: literal imitation, copying, and associational re-creation of psychological characteristics. Speaking semiotically, the first kind of imitation has a denotative orientation, while the second a connotative one. Each type is subdivided into two other types, namely a productive type relating to the artist's use of mimesis, and a receptive type relating to the receiver as participant in it. Mimesis for Aristotle also imitates the teleological processes of nature, in which case it has a cosmological dimension (Pollitt 1974, 31; 35f; 38ff, and Else 1958, 78; 85; 87).

Again according to Pollitt, there is also besides these sophisticated views on art a popular criticism -- extending as far as 4th-century AD Roman culture -- evaluating the work of art with three main criteria. The first criterion corresponds to a simplified version of mimesis, according to which the realism of the work of art should abolish the difference between art and reality. The second criterion is a magical extension of mimesis and consists in the recognition of magical qualities in the work of art, based on the assumption that the realism of the works of art gives them life. The final criterion is the market value of the work or its material (Pollitt 1974, 63f). It is interesting to note here the dualism which has been observed in relation to Greek thought in general between the rationalism of the few and the magical thought of the masses, important already from the Classical period.

The austerity of the sculptural canons finds its counterpart in the restrictions of the four-color system, attributed by Bruno to Polygnotus (500-440 BC) and his circle, and by Pollitt to the Late Classical and early Hellenistic periods (Hellenistic period: 323-31 BC). The system is based on the existence of four primary colors from the combination of which an unlimited number of secondary combinations could be produced. Bruno concludes that the system can be attributed to Democritus and maybe Empedocles, and relates to a knowledge of painting practices. He points out that the four colors correspond to the four initial elements, as well as the four seasons and the four cardinal points. Indeed, for Empedocles, the white color corresponds to fire, yellow to air, red to earth, and black (dark blue, following Bruno), to water. To the second dualist cosmological structure of the initial elements seen in the beginning of this section (fire/air vs. water/earth) corresponds the opposition between light (white, yellow) and dark (red, black) colors. To the tripartite structure (fire vs. air/earth vs. water) corresponds the primary polarization of white (light) and black (night) around a middle term, two intermediary hues. Empedocles tries to explain with this structure how it is that we can recognize both colors and degrees of light intensity. Each possible hue is produced by mixing the primary colors in different proportions, and then figures are produced, in the image of things produced by the mixing of the four elements (Bruno 1977, 56ff; 63f; 83; 96, Pollitt 1974, 23; 111; 244, and Bollack 1965, 238f). Thus we can conclude that symmetria and harmony rule both the generation of colors and the final pictorial product, acting both as esthetic and cosmological principles.

These structuralist approaches to art of the 5th century are strongly related to rationalism, model-building, and formalism, in the sense that they concentrate on the construction of abstract models. Indeed, what has been called classical idealism, that is the whole classical approach to representational art, aims at the formalist perfection of a non-individualized model-type, corresponding to the unity behind the variety of appearances (cf. Carpenter 1962, 21f). The same ideology lies behind the formal treatment of sculptural drapery. This formalism (the term being used now in the art-historical sense of abstract geometrical representation, that is schematization - not to be confused with twentieth-century nonfi- gurative abstract art) should not be mistaken for immobility, as is attested from the interest of the Early Classical sculptors in the dynamic condensation of movement in seemingly still and balanced positions ("rests" for the Greeks), the winged Victory from Olympia, and the Phidian style (Pollitt 1974, 139ff, and Holloway 1973, 141; 173).

While this approach influenced the whole of ancient art, we can discern toward the end of the 5th century a gradual departure from symmetria as an artistic principle and an attempt at individualized portraiture (Carpenter 1962, 138; 157ff; 182ff; 190; 194f). Holloway (1973, 133f; 158ff; 176) considers as the key factor for the development of portraiture the commissions of the hellenized Persian satraps of Western Anatolia, who wanted their individual characteristics to be

imprinted on their coins and sculptural representations. While we should also look for this reorientation of Greek art to the general internal transformation of Greek society -- Holloway suggests Sophist philosophy -- this development finds its parallel in art criticism, which tends from the 4th century toward subjectivism. There is now an increased interest in the effects of symmetria on the viewer and his reactions, that is in appearances as opposed to essence. Painters and sculptors producing monumental works were altering the canon to compensate for visual distortions, hence the study of optical illusions.

This development is related to the importance given to *eurhythmia* (ευρυσμια), the quality of being visually well-proportioned as evaluated personally by the artist, an approach attributed by Pliny to Lysippus (on this point, see also Ferri 1940, 129ff; 138f, and Schulz 1955, 207ff). 4th-century subjectivism was accompanied by an emphasis on the subject, the non-measurable characteristics of the work of art, which were thought to be approachable through intuition, and on the representation of character (*ethos*) and emotion (*pathos*). The interest in subjectivity dominates the Hellenistic period in two diverging ways, as an interest in individualized portraiture, and as what Pollitt calls the '*phantasia* (creative imagination, intuitive insight) theory'. This classicizing theory of the 2nd century BC, with Platonic, Aristotelian and Stoic elements -- corresponding to a type of late hellenistic sculpture and coinciding with a growing mass-production of art objects -- is characterized by a mystical respect for the great artists of the classical past as seers moved by inspiration unrelated to the senses, able to catch divine essence and transcendental beauty, and render them physically (Pollitt 1974, 27ff; 52ff; 82ff; 96; 153f; 186f; 204).

The development from model-type to individuality in the interior of realistic naturalism is analogous to the movement from class to individual that we observed in the development of schematic naturalism from the Geometric to the Archaic period. The same development points at the fact that different world views rule the referential function of a work of art even in the interior of an apparently uniform type of reference. Finally, accepting that the mimesis and the phantasia approaches correspond in some way to certain current ideas in their times, then diachronically we find on the consumption (reception) side different semantizations of classical art, just as we can observe synchronically a similar differentiation between intellectual and popular criticism. This phenomenon is the rule in the history and sociology of semiotic systems.

Commensurability, cosmology, politics, esthetics and space

Vitruvius writes that a well-planned temple follows a system of symmetria, founded on the human body, and that this is also the case for columns of the orders (*De architectura* 3.1.2-5; 3.5.5; 4.1.10-12). Indeed, the Greek architectural orders -- among the extant examples of which the earliest cases of the Doric order date from around the mid-7th century and those of the Ionic from the second quarter of the 6th (Hurwit 1985, 182ff) -- seem to be canonically regulated, while Holloway (1973, 55) considers that mathematical proportions were introduced in Ionic temple architecture in the 4th century. Carpenter observes that while sculptural types proliferate as we enter the Classical period, the canonization of architecture had the opposite result, since there is a multiplicity of architectural types before the 6th century. The profile of the orders is based on standardized proportions and elements, and a similar standardization characterizes many other architectural constructions. Variety exists, but within the limits set by the canon. Carpenter compares from this point of view architecture and pottery -- he also finds strong parallels between them in the Archaic period in respect to subjects, general organization, and framing of iconic representations (Carpenter 1962, 73; 76; 79; 85ff; 113f; 124; 209; 213ff). More specifically, the Ionic order presents a multiple tripartite organization, which could be related to ancient cosmological views: in Hesiod's *Theogony* the spherical universe is tripartite, the number 3 plays an important role in Anaximander's cosmology, and the heavenly sphere is for Pythagoras also tripartite. If we follow Holloway (1973, 64ff), in the temple of Ceres at Paestum have also been incorporated Pythagorean principles related to the tetraktys.

Eurhythmia also appears in connection with architecture and refers to its good visual quality, achieved by counteracting visual distortions following from the application of the rules of

symmetria, that is by the morphological adaptation of the theoretical pattern of a building to visual exigencies. While, according to Pollitt, this term seems to appear in visual art criticism toward the end of the 5th or in the beginning of the 4th century, it should be noted that five corrective interventions of this kind were used during the third quarter of the 5th century in the building of the Parthenon (cf. Pollitt 1974, 142ff).

One of the main architectural elements, the column, is accompanied by four connotative codes, a religious, a cosmic, an anthropomorphic and a vegetal code. A main cosmological complex in ancient Greece is the association of the center of the universe, the zero-point of space and time, and the cosmic axis, passing through it and supporting the sky. On the basis of an analogy between the human body and the universe, the center of the universe and the earth was identified with the navel, *omphalos,* a notion also found in Homer (cf. Roscher 1913, 10; 54ff). Anaximander believes that the earth is shaped like a column and that men live on its upper surface. This cosmological complex is connoted by the circular hearth and the four columns surrounding it in the Mycenaean megaron (Vernant 1974 I, 167ff; 183). Atlas, the bearer of the sky, is identified with or even replaced by a column, whence an anthropomorphic connotation of the column (cf. Carpenter 1962, 83). On a similar line, Vitruvius compares the Ionic column to the female body. Yalouris (1980, 313; 316) points out the interchangeability between column and (female or male) human body in the case of mirrors (first half of the 6th century) and relates their form to the cosmic column surmounted by the solar disc; this interchangeability existed probably since Mycenaean times. Schmidt (1982, 72; 88), who does not attach any cosmic symbolism to the caryatids or the supporting figures in general, considers this analogy as a plausible interpretation of the introduction of the caryatids and relates them to a religious context. Finally, the association between vegetation and column, attested since Minoan times through the equivalence of column and tree (Marinatos 1986, 17) and from the half-columns of the Mycenaean Treasury of Atreus, can be seen in the vegetal associations of the Aeolic and Corinthian capitals.

The same ideological principles underlie settlement space. The polis is seen spatially as the expression of two dimensions, the one cosmological and the other political. Thus, it is round like the earth and the universe, and like them it has a center, the agora. This cosmic organization is geometrically isomorphic to a political one, based on the concepts of the equidistance of all citizens from the political center, and of symmetry, equilibrium and reciprocity. This conception of the *polis* is exemplified by the reform of Cleisthenes in the second half of the 6th century, who created in Athens a socially tripartite space approximately concentric. The numbers 3 (universe, totality), 5, 10 and 10^2 play a fundamental role in this reform. The aim of Cleisthenes was the actualization of the principle of *isonomia* (ισονομια), the equality of political rights (Vernant 1974 I, 179ff; 203ff, and Lévêque and Vidal-Naquet 1964, 10ff; 77ff; 91ff; 123ff). Isonomia was also used in the same period in relation to health to express the right proportions and equilibrium of the opposing elements of the body; it is closely connected in this sense to Pythagoreanism, and overlaps with symmetria (cf. Raven 1951, 150). Thus, commensurability can be seen as a totalizing concept integrating and articulating philosophy, cosmology, politics, aesthetics, and bodily health.

The Pythagorean numbers 3 and 10 are also basic for the urban model of Hippodamus (5th century). This model, planned for the 10000 citizens of an ideal democracy, consists of a chessboard pattern probably related to the cardinal points and is pervaded by a tripartite system of classification. In spite of the differentiation of the socio-political and functional spaces, the model aims at the unity of the polis. The number of citizens makes the Hippodamean city *myriandros,* a city with 10000 citizens, known also from other cases (Lagopoulos 1978, 111f and 1985, 219f).

The same interrelationship between cosmology and politics is found in the first poem of the Pythian Odes of Pindar dedicated to the foundation of the small city of Etna in 470 BC. The new city is located on the heavenly cosmic column uniting the three cosmic planes, and the poet conceives as an indivisible whole the foundation of a city, the notion of the center of the world, the victory over the dragon, and the legislature of the ideal city (Trumpf 1958, 129ff; 157). Both the ideal city in the *Laws* and Atlantis in *Critias* show that the same interrelationship was one of

the main concerns of Plato. These ideal spatial organizations are ruled by certain numbers and the perfection of the circular form; they are made in the image of the universe and they comprise its center (L'Orange 1953, 9, Herter 1953, 2; 3; 6ff; 12ff; 19, and Lagopoulos 1978, 112).

Thus, the same cosmological notions which are associated to architecture also operate in urban space. Many cities and sites were considered as *omphaloi*, as was the case for Delphi, with its omphalos stone, the grave of the dragon Python, and the «μεσομφαλος αξων» [**fig. 6**]. The complete model of Greek space is a series of concentric circles developping from a center through which passes a vertical axis. But the unity behind the Greek semiotic systems is much broader, at least for the period around the 5th century BC, encompassing also all of the arts and based on the totalizing concept of commensurability. One and the same general world view animates all the semiotic systems, but also differentiates them according to the nature of social groups, and the material and technical specificities of the different semiotic systems.

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Illutrations

Fig. 01 - Statuette of a harper from Keros, Cyclades (2400-2200 B.C.). By permission of the National Archeological Museum of Athens and Hannibal Editions.

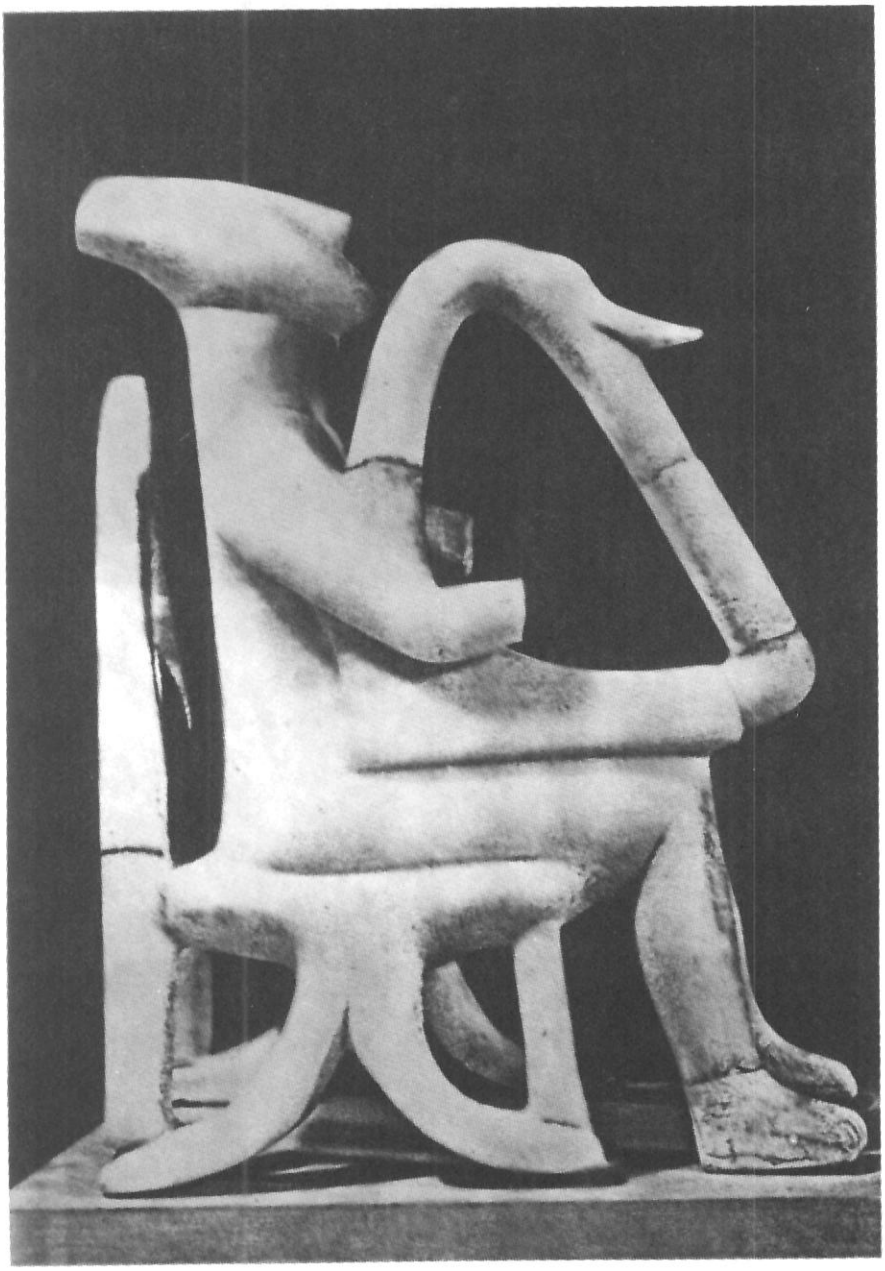
Fig. 02 - The Spring Fresco, Thera (c. 1500 B.C.). By permission of the National Archeological Museum of Athens.

Fig. 03 - Wall painting from the later palace of Tiryns (1300-1200 B.C.). By permission of the National Archeological Museum of Athens and Hannibal Editions.

Fig. 04 - The Doryphorus by Polyclitus. From Bianca Maiuri (1957), *Museo Nazionale di Napoli* (Musei e Monumenti), Italia: Istituto Geografico de Agostini, Novara. By permission of the publishers.

Fig. 05 - The Alexander mosaic: detail. From Bianca Maiuri 1957, *Museo Nazionale di Napoli* (Musei e Monumenti), Italia: Istituto Geografico de Agostini, Novara. By permission of the publishers.

Fig. 06 - The omphalos at Delphi. From Basil Petrakos 1977, *Delphi*, Athens: Clio Editions. By permission of the publishers.



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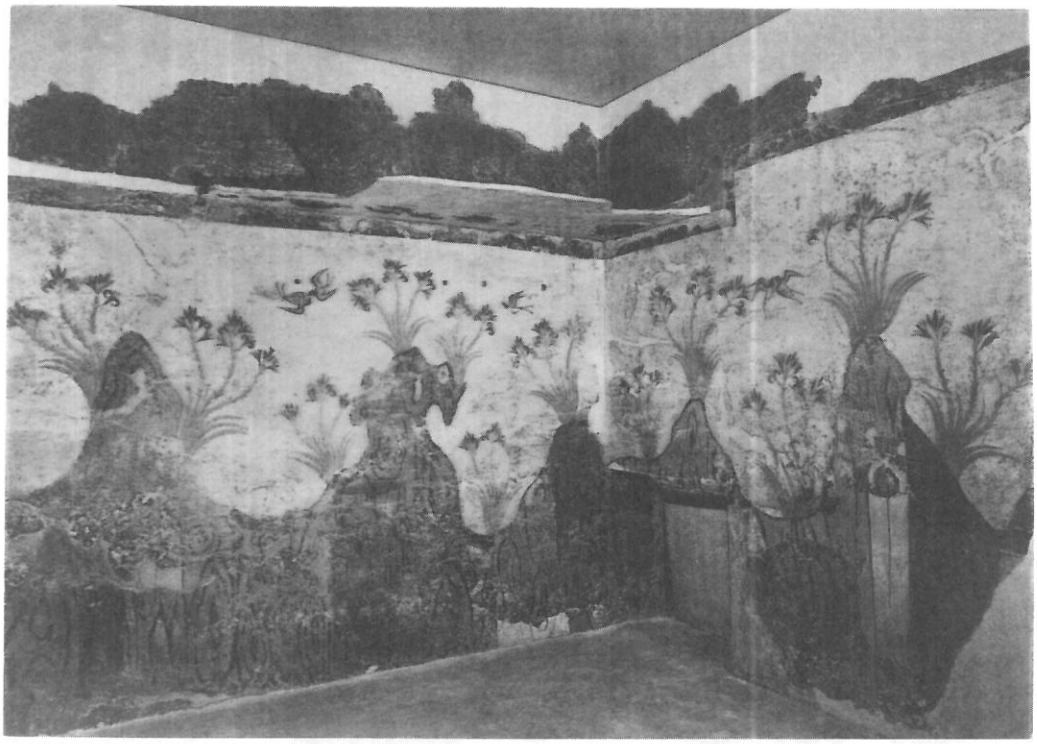

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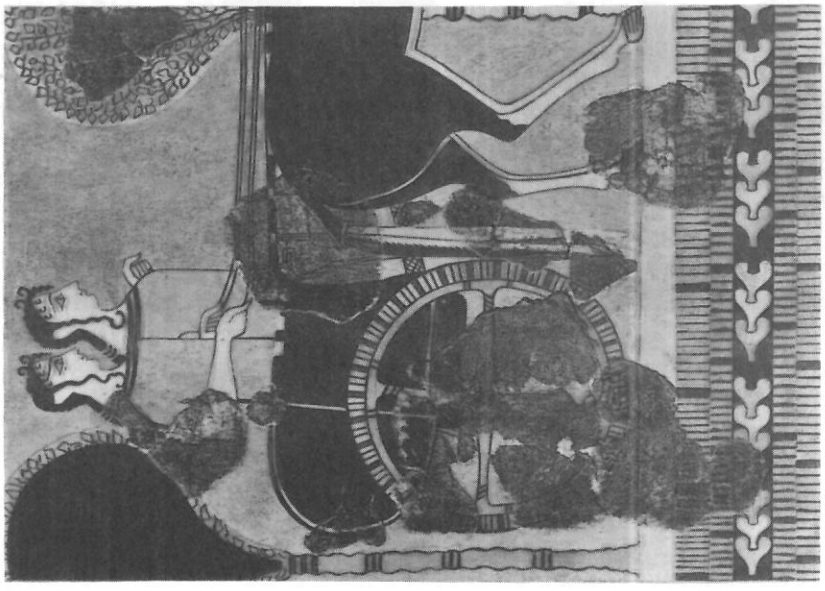

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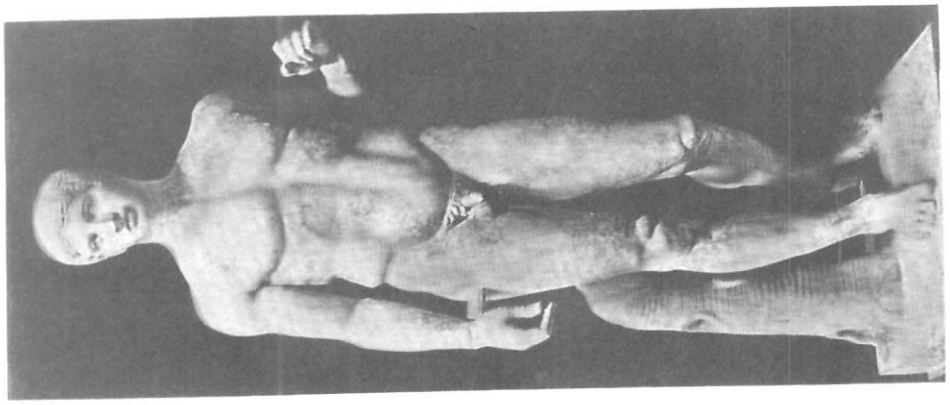

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