

MUSICAL MATERIAL AND ORIGINALITY

IN IANNIS XENAKIS' MUSIC

GEORGE ZERVOS

In Makis Solomos, Anastasia Georgaki, Giorgos Zervos (eds.), *Definitive Proceedings of the International Symposium Iannis Xenakis (Athens, May 2005)*.

Paper first published in A. Georgaki, M. Solomos (eds.), *International Symposium Iannis Xenakis. Conference Proceedings*, Athens, May 2005, p. 288-298. This paper was selected for the *Definitive Proceedings* by the scientific committee of the symposium: Anne-Sylvie Barthel-Calvet (France), Agostino Di Scipio (Italy), Anastasia Georgaki (Greece), Benoît Gibson (Portugal), James Harley (Canada), Peter Hoffmann (Germany), Miha Iliescu (France), Sharon Kanach (France), Makis Solomos (France), Ronald Squibbs (USA), Georgos Zervos (Greece)

Abstract

The quest of authenticity and originality and not of imitation has always been the most important element in Iannis Xenakis' work and life. His critical attitude towards not only the work of composers that were attached to the Greek National School of Music but also towards the work of those who belong to the movement of the European serialism proves -in different levels in each occasion- his intention to stand against the prevailing musical movements of his time, something that could have only been achieved through a radical rejuvenation of the existent musical material. Contestation of the material and originality are the same thing in Iannis Xenakis' work. This paper argues that the constant use of different mathematical theories was not an end in itself for the Greek composer but a way of reaching originality in terms of creativity and not in terms of a simple quest of innovation. Xenakis was obliged not only to create his material *ex nihilo* but also to make sure that it sounded original and interesting fighting all through his work a real battle with this material.

As in most cases of concepts appearing in Xenakis' writings, the concept of originality is not only connected to art (as an aesthetic category) but it also pertains to philosophical and scientific (mathematical) thought. So in his piece of writing «Scientific thought and originality» of 1975 [6: 113-152] originality is connected to indeterminism (e.g. the chapter entitled: Indeterminism and originality) while in 1984 he writes the text «Music and originality» [6: 207-214], which is subdivided in chapters that have the following, revealing titles: Creation and Time, Creation out of nothing, The concept of law. The search for originality during his entire musical career is not necessarily an end in itself but neither is it synonymous to the concept of innovation, category that plays a prominent role in the avant-garde music of the 50s and 60s. It would be interesting to note that Xenakis shows a great degree of originality even in his first works and in compositions, which are characterized by Greek elements. His approach to Greek traditional music (folk song, Byzantine music) as this becomes evident through his writings (for instance his text "Problems of Greek musical composition", 1955) [6: 41-52], as well as his early works (for instance his work *Zygia* 1952), is simultaneously critical, modern and original. By listening to *Zygia* one will note that in this case the Greek composer accomplishes that which he poses as a requirement in his aforementioned passage, in which among others, he stresses the following: "The modern Greek composer must forget the counterpoint he has learned and be immersed once again in the problematic of technique by exploring folk masterpieces. The critical consciousness will force him to seek for expressive and structural means in folk and church music on the one hand and in the pioneering discoveries of European music on the other. With one ear he will be listening to the voice of Greece and with the other to the voice of Europe" [6: 50]. This composition, *Zygia*, is indeed a compound of Greek character, simplicity, innocent primitiveness, but abstraction as well, if by this last term we mean not only the systematic use of mathematical patterns and more specifically the Fibonacci series as far as the rhythm is concerned, but also the abstract method of model application from the area of traditional music. The period influenced by the Greek character -if we may speak of a period- will not last long. After *Procession aux eaux claires* (1953), a composition that could be considered as the extension of *Zygia* and in which the Greek elements become more abstract and pagan, Xenakis composes during the same year *Sacrifice*, a composition which is characterized by the lack of anything Greek and the great degree of abstraction. This quick transition - in a period of two years - from *Zygia* and

Procession to Sacrifice and Metastasis (1953-54) - which is not so abrupt after all, as Makis Solomos very aptly indicates in a passage of his [2: 15-28] - proves the following: 1. The quest for a universal musical language, in which Greek elements or even the matching elements of non European musical cultures, provided these exist, have become entirely abstract 2. The refusal to belong to any kind of national school since that would entail an inward conquest of the musical material (the case of the composers of the Greek National School) and not radical challenge.

It is not accidental that his criticism of Greek composers (the names of Petridis and Kalomiris are mentioned) about their mistaken, in his opinion, way they use folk and Byzantine music elements, does not include the corresponding musical solutions. In *Zygia* and much more in *Procession* he follows a course, which seems to be very different from anything that had been composed until that time, but it must be noted that these are samples of phonetics and not absolute music. A solution based on Bartók or Skalkottas models was far from Xenakis' intentions and probably his capabilities of expressing himself in a similar way¹. But there was something more important as far as his non-involvement in the ideals of the National School was concerned. During the early 1950s, the ideals of the National Schools in Europe as well as in Greece started decaying while at the same time the internal erosion of tonality (since the beginning of the 20th century) establishes the conditions necessary for the creation of a more international musical language without any national distinctiveness, which climaxes during the 1950s and 1960s. After abandoning Greece in 1947, he gradually abandons every sort of any, obvious at least, Greek characteristic (something that becomes definite after 1953). He subsequently studies under Messiaen (1951-1952) and is exposed to all contemporary trends of music, experiencing the height of twelve-note composition and the birth of total serialism. While however his criticism of Greek music through his text «Problems of Greek musical composition» was not realised in a musical way, or at least it was realised only partly, the severe criticism through his work «The crisis of serial composition» published during the same year (1955), will be followed by his musical answer to the work of the serial composers which was non-other than the famous *Metastasis* for orchestra, a composition that was performed in October of 1955 in the Donaueschingen festival.

It might be interesting to note that Xenakis' transition from his tonal and of Greek character compositions such as *Zygia* and *Procession* to *Sacrifice* and *Metastasis*, takes place without his active involvement either in atonality or serialism, thus radically challenging the dominating musical material of the time, both from a theoretical and an aesthetic aspect. This denial of tonality (as this appears in his early compositions) as well as serialism and afterwards of total serialism, inevitably leads him to the search for completely new material, entirely personal and original. The mistakes he attributes to the twelve-note composition of the New Vienna School composers are that a) frequency dominates other components whose interference is only secondary and arbitrary. b) duration is even less organised and it only appears in its traditional form. He blames total serialism for the following: 1. the series emanates from a linear category of thought. Why 12 and not 13 notes? wonders Xenakis 2. Linear polyphony destroys itself by its very complexity; what one hears is in reality nothing but a mass of notes in various registers. Its macroscopic effect is an irrational and fortuitous dispersion of sounds over the whole extent of the sonic spectrum. These problems will disappear when the independence of sounds is total. The macroscopic effect can then be controlled by the stochastic laws.

At this point we must note that Xenakis faults serial music on the following: «From now on the serial composer is allowed to do everything or almost everything; combinations of unheard-of sounds, infinitely short or extremely long durations, intensities of all kinds, absolute continuity or discontinuity of mobility. It is precisely due to this reason that the serial system is unstable». [6: 54] This complete freedom of the serial composer -even if this is limited through number 12- constitutes the system's destruction. Even though the criticism seems to be contradictory -on the one hand linear polyphony is accused of being restrictive and on the other hand it permits everything- Xenakis, discussing the introduction of probabilities in his music in one of his texts entitled «Free will and mechanism» (1975), writes: «It is therefore adversative what I ask: on one side, I ask to possess the bigger possible freedom, since my intervals will be fortuitous, and on the other hand to have a coercion, an abstract mechanism (that it would distribute accidentally the intervals). Here lays the unstoppable fight of probabilities and of the human being, I believe. The opposition will not be raised, it will always exist» [6: 129]. Obviously the case of the limitations imposed by Xenakis' mathematical probabilistic theories is not similar to the total serialism of the composers of the early 1950s: on the one hand, from a mathematical point of view, the combinations of all musical components are infinitely more; on the other hand, Xenakis' starting point -contrarily to serial composers' way of thinking- is simultaneously philosophical (demand for freedom) and mathematical (controlled chance) and not purely musical. In both cases though the musical material used is subjected to limitations as well as to an unlimited or almost unlimited freedom. The process of «deconstruction and finally reconstruction» of the components of sound comprises a further -and perhaps more significant- common characteristic, even if this reconstruction occurs differently in each case. In this context Xenakis and the serialists' material is the same: frequencies, durations and sound level that are independent undergo different processes of reconstruction. The degree of originality depends on the way the sound's components are reconstructed and of course on its (the way's) corresponding sound results. The way towards originality is perhaps more evident in Xenakis speech on his return to Greece in September of 1975. The structure of this speech's constituent parts is revealing as far as his deeper thoughts and the concepts of art, philosophy, mathematics, and the connection between them, are concerned. After defining the basic properties of art in the first part, he poses the philosophical problem of freedom of choice in the second part, setting as comparison the epicurean freedom in the platonic and stoical causality of the world but also of humans. Compar-

¹ As Xenakis says 'Bartók had done what he did much better than I could' [7: 212]

ing the Epicurean theory of «ekklisis» for the human being with the freedom of choice and with indeterminacy, he reaches the conclusion that “since human beings and all other creatures are creations of the universe, we also have the quality of unpredictability, and consequently the freedom of choice” [6: 117]. In the following chapter, entitled “The introduction of probabilities”, he connects this theory with indeterminacy, as this appears by Epicures in the Bernoulli’s law of great numbers and by the latter in Heisenberg’s principle of uncertainty. Xenakis’ thought is completed in the third part, which is entitled “Non causality and originality”. Here the concept of originality is directly connected with the concept of freedom, indeterminism, as well as the concept of the value of a work of art. Xenakis writes: “the idea of originality is related to the issue of freedom. The value of art, of a person’s, nation’s, culture’s artistic contribution depends on originality, on this fundamental freedom” and ends by saying “because art poses one more question. It concerns the admiration we feel when looking at the achievements of the contemporary or a previous era. These objects however are few. What is the element that distinguishes them? That is to say, what constitutes their originality? Suddenly we realize that the problem of originality is directly related to and synonymous with the value each person attributes to a work of art” [6: 120]. Freedom of choice, indeterminacy, originality, and value comprise the links of a chain or the stages through which we will be lead to the creation of significant works of art. How are originality and indeterminacy connected on a practical level, however? ‘Whenever you hear a sound that is always accompanied by a second sound you will expect this sequence. Immediately however, with the second repetition, you get bored. But if a different second sound is produced the interest is renewed... Therefore the question of causality is doubly interesting. Previously we examined this from the viewpoint of free will. Now, we explored it from that of aesthetic interest’ [6: 122], states Xenakis thus connecting originality with indeterminacy but also identifying both these categories with aesthetic interest. Originality, aesthetic interest and in the final analysis, value (since it is connected to originality) exist wherever indeterminacy exists. All his compositions created in the 1950s -instrumental and electro acoustical- and the early 1960s, are determined by the laws of probabilities (Gauss’, Poisson’s laws, continuous probabilities etc.) and also form the corresponding aesthetics. Using the questions he posed in *Achorripsis* (1956-57) as a starting point, Xenakis creates a series of compositions based on the laws of probabilities, many of which were realised in Parisian studios of IBM in 1962, based on a program that was named ST (from the word stochastic). It seems however that the outlined infinite -from a mathematical point of view- possibilities of the laws mentioned above did not completely satisfy Xenakis from an artistic point of view. In other words: theoretically, he could compose music for decades based on the same mathematical laws. To which degree though, would one composition be different from another and to what could each one’s originality be attributed? The mathematical structure of the laws themselves imposes an internal order as far as the probability of the realisation of a sound event once, twice or more times, is concerned. The charts that Xenakis provides us with due to the analysis of *Achorripsis* in his book *Formalized Music*, is revealing: by applying Poisson’s law the possibility that a musical event might happen once in a particular period is great, while this continually becomes less probable in cases when the event takes place two, three or more times. The same order is noticed concerning the density of the sounds (one cell with the larger density, four with smaller density and nineteen with even smaller), the size of the intervals and durations as well as the rapidity of the glissandi. The fact that every probabilistic law obeys to an internal order of events (for instance e^{-x} is the determinant factor of the order of events in Poisson’s and Gauss’ equations and the various kinds of continuous probabilities) and even though the final choice and arrangement of these events depends on the composer, it appears that these processes restrict him as far as the search for originality is concerned. Furthermore, he has now overcome his dispute with serial composers. What concern him now are not only the contradictions of linear polyphony but also the future course of music itself in an absolute way, as action and not reaction. Even since 1961 with *Herma* for solo piano and *Eonta* for piano and brass quintet a little later, Xenakis introduces the symbolic logic next to the stochastic processes, which he still uses. It is not accidental that the sixth chapter of *Formalized Music* that is entitled Symbolic Logic and which was written during the early 1960s begins with the phrase: “In this chapter we shall begin by imagining that we are suffering from a sudden amnesia” [5: 155] while in a subsequent passage of 1965 entitled “The course of research and question. Formalization and axiomatization of music” we read the following, among other things: “It is necessary for one to consider that he has no memory and to leave aside the emotions that we inherit from musical traditions. We should only take into consideration the abstract relations in the inner part of one or among a lot of sounds and the logical operations that we might impose on them” [6: 86]. The abstract relations and the logical operations, of which Xenakis speaks, rise above the mechanisms of deconstruction and final reconstruction of sounds’ components through stochastic processes. Now specific operations are applied to the inner part of the whole, which represents every component, and through these operations two frequencies, two durations or two dynamics create a third. We are at the time (early 1960s) when the in- and outside-time categories are created, categories which are determinative for the future processes of composition: “The traditional scales are partly outside-time, the logical relations or operations that are imposed on categories of sounds, intervals etc, are also outside-time. As soon as speech contains what precedes or follows, we are in-time. Serial music or traditional melodies are in-time. The research on the outside-time nature of music leads to the logical architectures, to the symbolic music. The formalization and the axiomatization are the dynamics that should be followed. Today we can ensure that, after twenty-five centuries of musical evolution, we reach a universal conclusion regarding musical pitches which is the following: all melodic intervals have a group structure and addition is their law of composition. This structure is, of course, independent of the interval unit that can be a semitone, a comma or any other interval. It is universal, because the ordered structure can be found in the folk music of Japan, India, Africa,

etc. This structure is not only applied to pitches but also to durations, intensities etc.” [6: 86-88]. The conception of the outside-time categories leads the composer, during the same period, to the sieve theory, a theory that provides one with the chance to create a large number of scales through the operations of union, intersection and complementation of specific intervals. This theory, which is extensively illustrated in 1967 in the seventh chapter of *Formalized Music* that is entitled “Towards a Metamusic”, may be extended to the other components of sound such as duration, intensity etc, as this is evident through the words of the composer himself in the aforementioned chapter [5: 199]. The fact that this theory is applied along with the group theory in the mid sixties, and frequently in the same compositions (*Nommos A*, *Nommos I*, etc), signifies that it derives from the same source of thought, the outside-time structures category. These theories allow him on the one hand to dispose of the exclusiveness of the internal order of stochastic equations and on the other hand provide him with the opportunity to create symmetrical as well as asymmetrical structures. The application of the sieve theory, especially, plays an important role in the construction of main scales or structures and, to a less degree, durations and characterizes the compositions not only of the 1960s but also of the next decades.

At this point we ought to stress that the application of a mathematical model at a specific time does not exclude the simultaneous use of other previous models in order to create interesting compositions. The use of a certain model may frequently cause problems, which must somehow be solved, and consequently new models are discovered. In *Hermia* for instance, beyond the fact that logical operations between sound groups coexist with stochastic processes as far as the presentation of these sounds is concerned, there is the problem of creating an internal relation between the sounds of any sound group. Xenakis says about this composition in an interview with Varga: “The next stage is to create links between the notes, that is, intervals. In other words we look for a law to determine the points on the line. The line is actually the continuum of pitches. From the values of the line we allow only some to manifest themselves. That is why I call this method a sieve” [7: 94]. The compositions of the 1970s are perhaps the best example of the coexistence of different theories and compositional techniques, even though as in every period of Xenakis music, these compositions are based on the same or almost the same principles. While discussing with Varga his compositions of the late 1960s and early 1970s he says: “After that, in sound synthesis, I returned to probabilities, but some instrumental pieces were also composed using this method. At the same time I also set out in a direction that has nothing specifically to do with probabilities yet is distantly related: the idea of arborescences is closely linked to causality, repetition and consequently variation” [7: 88]. A series of compositions including *Evriali* for piano (1973) and *Cendrées* for mixed choir and orchestra (1973), *Empreintes* for orchestra (1975) are the result of the application of arborescences etc. During the same period Xenakis uses Brown’s movements or random walk in a series of compositions such as *Mikka* for solo violin (1971), *Mikka S* for solo violin (1976), *Cendrées*, thus introducing probabilities again since movements of such kind cannot be periodical. Even though the results are contrasting, on the one hand causality and repetition and on the other hand chance, both instances are the result of diagrams drawn manually or with the assistance of appropriate stochastic computer programs. “If I map it in the Cartesian system of coordinates I have before my eyes the picture of what it sounds like. If I were to write the same on staves I would have to break it down into many staves and continuity would be lost” says Xenakis in the same discussion with Varga [7: 90-91]. So almost all the compositions of the 1970s are characterized by the coexistence of repetitive rhythmical patterns as well as stochastic movements that are usually expressed through the glissandi, wherever there are stringed instruments. *Evriali*, which is the first composition where arborescences are used, is perhaps the best example of how different musical materials coexist. With the exception of three major instances of silence, the form of the composition consists of the continuous alternation of three different materials, as Ronald Squibbs quite correctly notes in one of his articles [4]. These materials correspond to three different compositional techniques: the first with which the composition starts he calls gamelan (a definition which he borrows from the Japanese pianist Yuji Takahashi) [4: 154] due to its intense rhythmic profile and the small amount of sounds it consists of, characteristics that remind one of Java music. Contrary to this, the second is distinguished for its stochastic way of sound arrangement while in the third one, as it has been already mentioned the arborescences technique is used (continuous contrary movement of voices to a large extent). It is important to point that these materials not only alternate but also they are added on to each other creating a total form, which is characterized by a kind of “functionality” -even though this definition appears strange in Xenakis work- in the sense that every section prepares in a way the next one. The existence of repetitive rhythmical patterns, which usually alternate with sound complexes of clouds and galaxies of sounds as well as glissandi (in the compositions that include stringed instruments), is the main characteristic of compositions of the 1970s. Apart from *Evriali*, compositions of chamber music such as *Kottos* for solo cello (1977), *Ikhoor* for string trio (1978), or for orchestra like *Jonchaies* (1977), are all characterized by continuous repetitions of specific rhythmic patterns to such a degree that sometimes some of their sections remind of minimalist music processes (e.g. *Kottos*). Generally we might claim that repetition is the element that characterises the music of the 1970s, along with arborescences of course, the Brown movements as well as the conquests of the 1950s and 60s, a combination that comprises Iannis Xenakis’ “new originality”.

The main characteristic of the music of the 1980s is the limitation and the gradual abandonment of the theories used in the past. This however does not signify that Xenakis rejects the musical consequences of these theories. “All those years served as a kind of training. I can now work with the theories intuitively – they’ve become an innate part of my thinking. Most of the time I don’t need rules or functions for composing. They’re in my blood.” Xenakis reveals to Varga in their second interview in 1989 [7: 200]. In that same interview he explains the reasons he no longer uses theo-

ries. "Because I've no new theory to put forward. In the past I developed theories and tried to compose in accordance with them. Each theory was sound and unique. Today I draw on them in a sporadic and sequential manner. Theories now are dominated by the general approach, the architecture of the composition itself. Why no new theories? I don't know. Perhaps because I concentrated on constructing pieces, which should be architecturally more...I don't know how to put it." [7: 199]. And indeed with the exception of the use of scales through the sieve theory, the only new composition process he introduces is that of cellular automata - he uses it for the first time in *Horos* (1986) - a technique clearly simpler and more practical than the complicated mathematical models used in the 1950s and 60s. The exhaustion of mathematical theories combined with their absorption by the same musical processes lead Xenakis to purely musical solutions, a fact that is equal to his concern for the architecture of his compositions. Even though the problem of form always interested him, it is only natural that his detachment from non-musical mathematical models gradually leads him to the construction of an internal architecture, something that is manifestly obvious in his aforementioned interview with Varga. Now the quest for originality will have to go through purely musical channels. It is probably not accidental that this decade is considered by many to be the most expressive period in his compositional career.

As always, Xenakis does not rest assured, and the music of the 1990s is not the same as that of the 1980s. As Makis Solomos points in a passage entitled "Notes sur les dernières œuvres de Xenakis", most of the compositions of the 1990s are characterized by "extreme asceticism and an obsession to remove everything that is unnecessary" [3: 59]. A series of factors (such as the retardation of tempo, the lack of significant differentiations as far as dynamic is concerned, the restriction of the range of rhythmical values etc) lead to a music without important internal differentiations, that is, contradictions or climaxes within the musical material. The lack of continuous rhythmical flow and mobility not only in small structures that are fragments of the whole but also in the complete form of each composition create the impression, as Solomos says, "that the piece has started before its hearing and continues after it (the hearing) has ended, as though it concerns a piece of music that somehow unfolds continually outside us and which the composer decides to let us hear it at times. One gets the impression that Xenakis created only one gigantic composition which is subdivided, almost arbitrarily, to many compositions" [3: 60]. And indeed, perhaps with the exception of *Dammerschein* (1994), which partly continues the tradition of the architectures of the 1970s and 80s and the two concertos for violin and trombone respectively, most of his compositions, especially since the mid 1990s, are characterized by these qualities without however completely following the same principles since that would be opposite to the fundamental demand for originality.

Generally, as far as the compositional methods followed in his compositions are concerned, we can gain important information from the interview he gave Varga in 1989. Xenakis is 67 years old and what is written down signals -if we make a comparison with the compositions themselves- on the one hand his progress during the 1980s and on the other hand prefigures the possible ways of composition of the next decade. By drawing a parallel between the processes of ancient rhetoric and the principles of composition, he says: "Today, of course, it's no longer valid. You can have a static piece of music without any articulation through the composition: it ends the way it began. Many composers work like that. Or you can start with a kind of introduction, followed by a development, and the ending is also clearly indicated. This is one of the ways in which I work. Yet another solution is to start with something that's not static and change it all the time without an introduction and without development. You can go from one point to another, avoiding a development altogether - that is, each point is a section by itself, linked to the preceding one. It's like the Sonata Form which consists of self-standing movements each linked to the one that comes before it" [7: 160]. It seems that the first and the third, of the three ways described by Xenakis, are the ones that correspond to many of the compositions of the 1990s where every idea of "development" is indeed abolished. At this point it must be stressed that the idea of development - at least in the classical sense of the word - is generally alien not only to Xenakis but also to many composers of the mid 20th century. The same internal articulation however of several sonic events and their arrangement, combined with the section of the introduction -if this exists- and the rhythmical flow which conditions every section as well as the whole of the composition, often creates the sense of development (functionality), and that is the reason Xenakis uses the specific term. At the point, which this kind of development is abolished and the partial sonic events dispose of every kind of internal differentiation and contradiction between their musical components, the musical result approximates all the characteristics of the compositions of his last period.

In order to be faithful to Xenakis spirit and partly to the spirit of 20th century music, all the aforementioned phases and periods of development during his 50-year compositional career, must be documented in the context of the quest for originality and authenticity. This quest however does not lead the composer to easy solutions, such as the renunciation of his past compositions or to the radical change of his expressive means, as is the case with other 20th century composers. So, if he considers it necessary he does not hesitate to return to his early compositions: In *Sea-Change* (1997) for instance -his last instrumental composition- he returns to the glissandi technique. This however does not mean that he is trying to bring back to existence the technical and aesthetic models of *Metastasis* and *Pithoprakta*. The dipole of originality-commonplace does not constitute for Xenakis -and this is apparent in his personal ideology as well as in his work- only an aesthetic problem but it is identified with the dipole existence-non-existence. As he reveals in his first conversation with Varga "Composition, action are nothing but a struggle for existence. To be. If, however, I imitate the past, I do nothing, and consequently I am not. In other words, I am sure that I exist only if I do something different. The difference is the proof of existence, of knowledge, of participation in the affairs of the world". The avoid-

ance of imitating the past does not signify renunciation of tradition. I am not against tradition, Xenakis supports in the same interview and providing an example from Physics he ends by saying: "Einstein, however, did not turn against Newtonian mechanics. The revolution in thinking that he brought about was on a much more general level. That is also my endeavour. My music makes no revolution; it comprehends the forms of expression used in the past. My greatest achievement would be to compose something which could include any form of expression" [7: 50]

If one reads the above sentences carefully, one will realise that these include all his theoretical views concerning art, as these are expressed in *Formalized Music* and other relative texts that he has written at times. His philosophical, scientific and musical background combined with the complete repudiation of existing serial material of his time, inevitably leads him to the agonised search for the authentic and the original. Xenakis -who does not directly belong to any of the movements of his time, even though his work on the whole unavoidably belongs and is interpreted in the context of 20th century music- is obliged not only to create his material ex nihilo but also to make sure that it sounds original. At this point however the danger is evident: is the discovery of new, personal material, of a new language, necessarily identified with the concept of originality? Apparently Xenakis was well aware of this danger and consequently in every composition he literally fought a battle with his material, a battle that was a matter of life and death, existence and non-existence.

To conclude, I cannot avoid mentioning a deeply cultural problem that does not only concern Xenakis music but also musical creation in general, especially that of the second half of the 20th century: in previous musical periods and in the context of the same musical material and the same musical language, what was it that made the difference between originality and the commonplace? In other words: what was it that made Mozart's music original compared to the music of other, significant in other respects, composers of his time who used the same language he did? Why weren't Bach, Beethoven and Mozart forced to radically change the musical language of their time in order to be original but were original in the context of the demands set by this language itself? Which were the qualities and the possibilities of the existing material of each time that allowed the emergence of the original and authentic without the composers' having to radically question the concepts and the vocabulary of this material?

REFERENCES

- [1] Solomos, M. (Editeur). *Présences de Iannis Xenakis*. Cdmc, Paris, 2001.
- [2] Solomos, M. "Du projet bartókien au son L'évolution du jeune Xenakis", *Présences de Iannis Xenakis* (Solomos, M. Editeur). Cdmc, Paris, 2001, p. 15-28.
- [3] Solomos, M. "Notes sur les dernières œuvres de Xenakis", *Présences de Iannis Xenakis* (Solomos, M. Editeur). Cdmc, Paris, 2001, p. 59-63.
- [4] Squibbs, R. "A Methodological problem and a Provisional Solution: An Analysis of Structure and Form in Xenakis's *Evryali*", *Présences de Iannis Xenakis* (Solomos, M. Editeur). Cdmc, Paris, 2001, p. 153-158.
- [5] Xenakis, I. *Formalized Music. Thought and Mathematics in Composition*. Indiana University Press, Bloomington, London, 1971.
- [6] Xenakis, I. *Texts about Music and Architecture*. (M. Solomos Editor). Translation T. Plyta. Psychogios Editions, Athens, 2001.
- [7] Varga, B.A. *Conversations with Iannis Xenakis*. Faber and Faber, London, 1996.