

# IANNIS XENAKIS

# HERMA

Musique symbolique  
pour piano

2202320

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Les petites notes barrées, ex. ♩, sont jouées avant le temps. Elles ont mêmes intensités que les notes principales voisines qui elles ne sont pas accentuées. Elles leur sont reliées par une ligature — ou par une ligne brisée - - (qui ne signifie pas *glissando*).

Toute la pièce doit être jouée sans accents, les barres de mesure servant uniquement de repères temporels.

Les indications rythmiques  $\frac{3}{8}$ ,  $\frac{4}{4}$  etc. n'impliquent aucune subdivision du 1er temps ou des temps suivants.

De même, les — 5 — ou — 6 — etc. ne sont pas subdivisés et le passage d'un groupe rythmique à un autre se fait sans accentuer le 1er temps des groupes rythmiques.

Cette pièce est basée sur des opérations logiques imposées à des classes de sons; c'est pourquoi j'appelle cette musique: *Musique symbolique*.

Les lettres enfermées dans des rectangles désignent les classes des sons. Il existe dans cette pièce quatre classes: [A], [B], [C], [R]. La classe [R] est référentielle et elle comprend la totalité des sons du piano.

A partir de ces quatre classes de base on peut former *hors-temps*, grâce à la relation de complémentarité (négation), ex.: classe A, la négation de la classe A s'écrit  $\bar{A}$ ; grâce aussi aux opérations, de réunion (disjonction) et d'intersection (conjunction). La réunion s'écrit symboliquement avec le signe + et l'intersection par la juxtaposition des lettres. La réunion correspond à *ou* et l'intersection à *et*. Ainsi, A + B signifie la classe dont les éléments appartiennent soit à la classe A soit à la classe B; AB signifie la classe dont les éléments appartiennent à la fois à la classe A et à la classe B.

Les relations et opérations *hors-temps* (abstraites) définies précédemment, sont matérialisées dans le temps linéaire (lexicographique) à l'aide des opérations *en temps*: (a) simultanéité; (b) succession.

Les intensités de *ppp* à *fff* servent à clarifier la perception des classes lors de leur gravure temporelle

Les densités linéaires des nuages de sons des diverses classes servent elles aussi à la meilleure perception des articulations relationnelles et opérationnelles.

The *acciaccature* are played before the beat. They have the same dynamic intensity as the adjacent principal notes which are themselves not accented. The former are connected to the latter with either a ligature — or a wavy line - - (which does not here indicate *glissando*).

The whole piece is to be played without accents, the bar-lines serving merely as divisions in time.

The time-signatures  $\frac{3}{8}$ ,  $\frac{4}{4}$  etc. do not imply any subdivision or accentuation of the initial or succeeding beats.

In the same way, the groups of — 5 —, — 6 — etc. should not be subdivided, and movement from one rhythmic group to another is made without accenting the initial beats of the groups.

This piece is based on logical operations imposed upon classes of pitches; hence I have described it as *Musique symbolique*.

The letters in boxes [A], [B], [C], [R] denote these classes. [R] is referential and incorporates all the notes on the piano.

Starting from these four classes, others can be formed *outside of time*, as a result of complementary relationship (negation) e.g.: group A, the negation of A is written  $\bar{A}$ ; also as a result of the operations of union (disjunction) and of intersection (conjunction). Union is shown symbolically by the sign + and intersection by the juxtaposition of letters. Union corresponds to *or* and intersection to *and*. Thus A + B signifies that class in which the elements belong either to A or B; AB indicating the class in which the elements belong to classes A and B at the same time.

The relationships and operations *outside of time* (these are abstract operations) defined above are materialised in linear time (lexicographically) with the aid of the operations *in time* (a) simultaneously and (b) successively.

The dynamics from *ppp* to *fff* serve to render more clearly the perception of the classes at the moment of their temporal inscription.

In the same way, the linear densities of the 'clouds' of sounds of the various classes are used to make for better perception of articulation of relationships and of logical operations.

Les classes de cette pièce sont uniquement définies dans la domaine hauteur.

L'exposition des éléments de chacune des classes se fait stochastiquement, c'est à dire sans contraintes restrictives, afin de demeurer sur un plan fondamental d'opérations et de relations logiques entre classes.

Le mot *Herma* signifie *lien*, mais aussi *fondation*, *embryon* etc.

(Cf. mon livre: *Musiques formelles*, édit. Richard-Masse, 7 Place St. Sulpice, Paris VI).

I.X.

*Création mondiale: 2 fevrier 1962 à Tokyo avec Yuji Takahashi. Cette oeuvre lui est dédiée.*

The classes in this piece are defined solely within the realm of pitch.

The elements of each class are presented stochastically, that is unrestrictedly, in order not to disturb the basic plan of operations and of logical relationship between classes.

The name *Herma* means "bond", but also "foundation", "embryo" etc.

(Cf. Iannis Xenakis: *Musiques formelles*, publ. Richard-Masse, 7 Place St. Sulpice, Paris, VI.)

I.X.

*First performance: Tokyo, 2nd February 1962, by Yuji Takahashi, to whom the work is dedicated.*

Dediée à Yuji Takahashi

## HERMA

JANNIS XENAKIS

**PIANO**

R  $\text{♩} = 104$

*ppp et crescendo*

*continu jusqu'au signe [S]*

*accelerando*

$\frac{3}{4}$   $\frac{4}{4}$

$\text{♩} = 120$

The musical score consists of five staves of notation. The top staff starts in 3/4 time with a treble clef. The second staff starts in 2/8 time with a bass clef. The third staff starts in 2/8 time with a treble clef. The fourth staff starts in 5/16 time with a bass clef. The fifth staff starts in 3/16 time with a treble clef. The notation includes various rhythmic values (eighth and sixteenth notes), dynamic markings (3, 5, 8, 16), and time signatures (3/4, 2/8, 4/8, 2/16, 3/8, 5/16, 4/16). The music is divided into measures by vertical bar lines.

B. & H. 19516

Verzoek geen vingerzettingen of  
andere tekens aan te brengen.

+ A nuage 5 s/s

Ped. → pp →

pp → Ped. → \*

(pp) → Ped. → \*

This image shows the first page of a piano score, spanning measures 1 through 10. The music is written in two staves: treble and bass. Measure 1 begins with a dynamic of *ff* (fortissimo) in the bass staff. Measures 2 and 3 continue with *ff* dynamics. Measure 4 features a dynamic of *pp* (pianissimo). Measures 5 and 6 show a mix of *ff* and *pp* dynamics. Measure 7 includes a dynamic of *pp*. Measures 8 and 9 feature *ff* dynamics. Measure 10 concludes with a dynamic of *pp*.

The image shows a page of musical notation for two staves. The top staff is in treble clef and the bottom staff is in bass clef. Both staves have a key signature of three sharps. The music consists of several measures, each containing multiple vertical stems with different note heads (circles, squares, triangles) and stems. Measure 1 starts with a forte dynamic (F) and includes a measure repeat sign. Measures 2-4 show various rhythmic patterns with eighth and sixteenth notes. Measure 5 begins with a piano dynamic (P). Measures 6-8 feature eighth-note patterns. Measure 9 starts with a forte dynamic (F). Measures 10-12 show eighth-note patterns. Measure 13 begins with a piano dynamic (P). Measures 14-16 feature eighth-note patterns. Measure 17 starts with a forte dynamic (F). Measures 18-20 show eighth-note patterns. Measure 21 begins with a piano dynamic (P). Measures 22-24 feature eighth-note patterns. Measure 25 starts with a forte dynamic (F). Measures 26-28 show eighth-note patterns. Measure 29 begins with a piano dynamic (P). Measures 30-32 feature eighth-note patterns. Measure 33 starts with a forte dynamic (F). Measures 34-36 show eighth-note patterns. Measure 37 begins with a piano dynamic (P). Measures 38-40 feature eighth-note patterns. Measure 41 starts with a forte dynamic (F). Measures 42-44 show eighth-note patterns. Measure 45 begins with a piano dynamic (P). Measures 46-48 feature eighth-note patterns. Measure 49 starts with a forte dynamic (F). Measures 50-52 show eighth-note patterns. Measure 53 begins with a piano dynamic (P). Measures 54-56 feature eighth-note patterns. Measure 57 starts with a forte dynamic (F). Measures 58-60 show eighth-note patterns. Measure 61 begins with a piano dynamic (P). Measures 62-64 feature eighth-note patterns. Measure 65 starts with a forte dynamic (F). Measures 66-68 show eighth-note patterns. Measure 69 begins with a piano dynamic (P). Measures 70-72 feature eighth-note patterns. Measure 73 starts with a forte dynamic (F). Measures 74-76 show eighth-note patterns. Measure 77 begins with a piano dynamic (P). Measures 78-80 feature eighth-note patterns.

B nuage 3, 3 s/s

linéaire

B 1,8 s/s linéaire

5





Musical score for piano, featuring four staves of music. The score includes dynamic markings such as  $\text{f}$ ,  $\text{p}$ ,  $\text{pp}$ , and  $\text{fff}$ . Articulation marks like dots, dashes, and vertical lines are used throughout. Performance instructions include "nuage 2,5 s/s" and "Re. →". Measure numbers 1 through 10 are indicated above the staff.

1 2 3 4 5 6 7 8 9 10

nuage 2,5 s/s

Re. →

+ C linéaire 5 s/s

$\boxed{C}$  9 s/s

B. & H. 19516



**AB** 0,8 s/s

2e Rép.

**BC** 0,85 s/s

+ **[AB]** 10 s/s rappel

**[AB+ĀB]** (ppp) 20 s/s

Rép. →

**AB+AB**

+ [BC] (f) 3 s/s rappel

+ [ABC] (fff) 6 s/s

B. & H. 19516

**AB+AB** 20 s/s rappel

**ABC** (fff) 6 s/s

**(AB+AB)C** (ff) 12 s/s

+ **BC** f 6 s/s rappel

toujours (AB+AB) C(ff)

+  $\boxed{\bar{B}\bar{C}}$  ( $f'$ ) 10 s/s

$\boxed{\bar{B}\bar{C}}$  ( $f'$ ) 10 s/s seul

$\boxed{\bar{A}\bar{B}}$  ( $ppp$ ) 1 s/s

$\boxed{AB+AB}$  1 s/s seul

+  $\boxed{A\bar{B}\bar{C}}$  ( $fff$ ) 3 s/s

$\boxed{(AB+\bar{A}\bar{B})\bar{C}}$  ( $ppp$ ) 3 s/s

+  $\boxed{(AB+\bar{A}\bar{B})C}$  ( $f'$ ) 6 s/s rappel

toujours (AB+ĀB) Ā (ppp) 3 s/s(seul) puis (AB+ĀB) Ā (ppp) 5 s/s

ĀĀĀ 3 s/s rappel

+ ĀĀĀ (f) 10 s/s

**(AB+ĀB) Č** (ppp) 1 s/s rappel

+ **(AB+ĀB) C** (ff) 10 s/s rappel

**ABC (f) 5 s/s rappel**

**+ ABC (fff) 3 s/s rappel**

**ABC (f) + ABC (fff) 20 s/s**

**Red. →**

**6 8 3**

Verzoek geen vingerzettingen of  
andere tekens aan te brengen.

+ (AB+ĀB)C (ff) 3 s/s rappel

(AB+ĀB) Č (ppp) 1 s/s rappel

(AB+ĀB) Č 1 s/s toujours

+ ĀBČ (fff) 1 s/s rappel

(AB+ĀB) Č (ppp) 1 s/s toujours

+ ĀBČ (fff) 3 s/s rappel

(ĀB+AB) Č muté sur ff 6 s/s rappel

$$F = ABC + \bar{A}\bar{B}\bar{C} + \bar{A}B\bar{C} + \bar{A}\bar{B}C = (AB + \bar{A}\bar{B})C + (\bar{A}\bar{B} + \bar{A}\bar{B})\bar{C}$$