

IANNIS XENAKIS

HERMA

Musique symbolique
pour piano

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Les petites notes barrées, ex. , sont jouées en 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 $\frac{3}{8}$, $\frac{4}{8}$ etc. n'impliquent aucune subdivision du 1er temps ou des temps suivants.

De même, les  ou  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.

Small notes above the beat 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 $\frac{3}{8}$, $\frac{4}{8}$ etc. do not imply any subdivision or accentuation of the initial or succeeding beats.

In the same way, the groups of ,  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.

HERMA

JANNIS XENAKIS

PIANO

R
♩ = 104

4 ppp et crescendo - - - - - *continu jusqu'au signe S*

accelerando - - - - -

d = 120

3 *8* *5* *3* *4* *3*

3 *5* *8* *5* *3* *4*

3 *5* *8* *5* *3* *4*

This page contains five systems of musical notation, likely for a multi-instrument ensemble. The notation is written on five-line staves, with some staves including a bass clef and others a treble clef. The music consists primarily of eighth and sixteenth notes, often with stems pointing in multiple directions. Above the notes, numerical values such as 3, 5, 8, 16, 2, 4, and 3/16 indicate specific rhythmic patterns. Measure numbers are placed at the end of each system: 34, 28, 28, 28, and 16.

5 (Mi) 8

5 8

8 5

5 8

5 8

8 5

8 5

5 8

5 8

8 5

8 5

5 8

5 8

8 5

8 5

5 8

5 8

8 5

8 5

5 8

5 8

8 5

8 5

B 1,8 s/s linéaire

+ B nuage 3,3 s/s

5 8

f pp f pp

5

pp pp f

Red. →

B 5 s/s linéaire

The musical score consists of two systems of music. The top system, labeled 'B 5 s/s linéaire', features two staves. The treble staff starts with a dynamic of *f*, followed by a measure of rest, then a dynamic of *s*. The bass staff starts with a dynamic of *f*, followed by a measure of rest, then a dynamic of *s*. Measure 2 begins with a dynamic of *f*. The top staff continues with a dynamic of *pp*, followed by a measure of rest, then a dynamic of *s*. The bass staff continues with a dynamic of *pp*, followed by a measure of rest, then a dynamic of *s*. Measure 5 begins with a dynamic of *pp*, followed by a measure of rest, then a dynamic of *s*. The top staff concludes with a dynamic of *pp*, followed by a measure of rest, then a dynamic of *s*. The bass staff concludes with a dynamic of *pp*, followed by a measure of rest, then a dynamic of *s*. The bottom system, labeled 'B 5 s/s nuage', features two staves. The treble staff starts with a dynamic of *pp*, followed by a measure of rest, then a dynamic of *f*. The bass staff starts with a dynamic of *pp*, followed by a measure of rest, then a dynamic of *f*. Measure 2 begins with a dynamic of *f*. The treble staff continues with a dynamic of *pp*, followed by a measure of rest, then a dynamic of *f*. The bass staff continues with a dynamic of *pp*, followed by a measure of rest, then a dynamic of *f*. Measure 5 begins with a dynamic of *pp*, followed by a measure of rest, then a dynamic of *f*. The treble staff concludes with a dynamic of *pp*, followed by a measure of rest, then a dynamic of *f*. The bass staff concludes with a dynamic of *pp*, followed by a measure of rest, then a dynamic of *f*.

5 8
8 5
5

8 8
5
8
5 8

5

5

5

5

5

5

[C] nuage 2,5 s/s

8

2

ppp

8

8

8

5

5

5

8... 5

Ped. →

+ C linéaire 5 s/s

The musical score consists of two staves. The top staff uses a treble clef and the bottom staff uses a bass clef. The score includes dynamic markings such as *ff*, *ppp*, and *fff*. Performance instructions like "C linéaire 5 s/s" and "8" are present. Measures are numbered 1 through 10. Measure 1 starts with a bass note followed by a treble note. Measures 2-4 show a series of eighth-note patterns. Measures 5-7 feature sixteenth-note patterns. Measures 8-10 conclude the section. Measure 11 begins with a bass note followed by a treble note. Measures 12-14 show a series of eighth-note patterns. Measures 15-17 feature sixteenth-note patterns. Measures 18-20 conclude the section.

Musical score for two voices (Treble and Bass) across six systems:

- System 1:** Treble voice has a 5 measure bracket. Bass voice has a 5 measure bracket.
- System 2:** Treble voice has a 5 measure bracket. Bass voice has a 5 measure bracket.
- System 3:** Treble voice has a 5 measure bracket. Bass voice has a 5 measure bracket.
- System 4:** Treble voice has a 5 measure bracket. Bass voice has a 5 measure bracket.
- System 5:** Treble voice has an 8 measure bracket. Bass voice has a 5 measure bracket.
- System 6:** Treble voice has an 8 measure bracket. Bass voice has a 5 measure bracket. A "3" is written at the end of this system.

The score uses a standard musical staff with clefs, key signatures, and time signatures. Measure numbers (5, 8, 11) are placed above the staves to indicate specific measures. The bass staff uses a bass clef, while the treble staff uses a treble clef. Key signatures change throughout the piece, indicated by sharp and flat symbols on the staves.

AB 0,8 s/s

3e *Rép.*

BC 0,85 s/s

+ **AB** 10 s/s rappel

AB+ĀB (ppp) 20 s/s

Rép. →

Measure 1: AB+AB 20 s/s rappel 8.....

Measure 2: ABC (fff) 6 s/s 5.....

Measure 3: ABC (fff) 6 s/s 8.....

Measure 4: ABC (fff) 6 s/s 8.....

Measure 5: ABC (fff) 6 s/s 5.....

Measure 6: ABC (fff) 6 s/s 8.....

Measure 7: ABC (fff) 6 s/s 5.....

Measure 8: ABC (fff) 6 s/s 8.....

Measure 9: ABC (fff) 6 s/s 5.....

Measure 10: ABC (fff) 6 s/s 8.....

Measure 11: ABC (fff) 6 s/s 5.....

Measure 12: ABC (fff) 6 s/s 8.....

Measure 13: ABC (fff) 6 s/s 5.....

Measure 14: ABC (fff) 6 s/s 8.....

Measure 15: ABC (fff) 6 s/s 5.....

Measure 16: ABC (fff) 6 s/s 8.....

Measure 17: ABC (fff) 6 s/s 5.....

Measure 18: ABC (fff) 6 s/s 8.....

Measure 19: ABC (fff) 6 s/s 5.....

Measure 20: ABC (fff) 6 s/s 8.....

Measure 21: ABC (fff) 6 s/s 5.....</

A musical score for piano, featuring two staves. The treble staff begins with a half note followed by a measure of three eighth notes. The bass staff starts with a quarter note. Measure 5 ends with a repeat sign and a first ending. Measures 6 and 7 show a melodic line in the treble staff with various dynamics and rests. Measure 8 concludes with a final dynamic instruction and a repeat sign. The score ends with a 6/8 time signature and a 12/8 time signature. Measure numbers 5, 6, 7, and 8 are indicated above the staff.

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

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

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

$\bar{A}B + \bar{A}\bar{B}$ 1 s/s seul

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

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

($A\bar{B} + \bar{A}\bar{B}$) C (*ff*) 6 s/s rappel

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

8
5
8
5
5

5

8
8
8
5

8
8
8
5

ABC 3 s/s rappel
5
6
8

5

5

5

+ ĀČ (f) 10 s/s
4
12
8
5
8
8
5

8
5

(AB+ĀB) Č (ppp) 5 s/s rappel

ĀČ 1 s/s rappel

(AB+ĀB) Č (ppp) 1 s/s rappel

+ (AB+ĀB) Č (ff) 10 s/s rappel

toujours (AB+ĀB) Č seul (1 s/s)

ppp ff ppp

+ (AB+ĀB)C (ff) 3 s/s rappel

(AB+ĀB)C (ppp) 1 s/s rappel

ppp 8. ff

(AB+ĀB)C 1 s/s toujours

+ ĀBĀC (fff) 1 s/s rappel

ppp 8.

(AB+ĀB)C (ppp) 1 s/s toujours

+ ĀBĀC (fff) 3 s/s rappel

8. fff

(ĀB+AB)C muté sur ff 6 s/s rappel

ppp

8.

5

8.

5

4

★ [F] 20 s/s

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