Dalla musica alla matematica: invito al viaggio

terza parte

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Pattern ritmici nella musica afro-cubana

El cinquillo (Fig. 1)

El trecillo (Fig 2)
La geometria del ritmo musicale


Qual è il ritmo più regolare?
La geometria del ritmo musicale

Il Bembé (o Abadja): un pattern ritmico ‘ottimale’ [maximally even]

Ritmi asimmetrici nelle tradizioni orali africane: *clap your hands!*

Simha Arom

Marc Chemillier

Musimédiane
Dalla musica alla matematica: canoni ritmici a mosaico

O. Messiaen:


« ...il résulte de tout cela que les différentes sonorités se mélangent ou s’opposent de manières très diverses, jamais au même moment ni au même endroit [...]. C’est du désordre organisé »

Un canone ritmico a mosaico a tre voci e di periodo 12
Un canone melodico-ritmico a mosaico a quattro voci e periodo 16
I vari tipi di canoni ritmici a mosaico

\[ Z_{12} = Z_4 \oplus Z_3 \]

\[ Z_{12} = Z_3 \oplus Z_4 \]
I vari tipi di canoni ritmici a mosaico
I vari tipi di canoni ritmici a mosaico
Canoni senza periodicità interna (o canoni di Vuza)
Canone melodico-ritmico di Vuza

Dan Tudor Vuza
Anatol Vieru

Perspectives of New Music
Clapping Music: esercizio minimalista sulle permutazioni cicliche

Clapping Music (1972)
Clapping Music: esercizio minimalista sulle permutazioni cicliche

The performance begins and ends with both performers in unison at the 2nd bar. The number of repeats of each bar should be fixed at twelve equal parts. Since the first performer’s part does not change, it is up to the second performer to move from one note to the next. The second performer should try to keep his or her drumbeat where it is written, i.e., on the first beat of each measure (not on the first beat of the group of three steps), so that his drumbeat always falls on a new beat of drum

The choice of a particular clapping sound is left up to the performers. Whichever choice is chosen, both performers should try to get the same one so that their two parts will blend to produce one overall sounding pattern.
Clapping Music: esercizio minimalista sulle permutazioni cicliche

Clapping Music

FOR TWO PERFORMERS

The performance begins and ends with both performers in unison at Bar 1. The number of repeats of each line should be divisible by twelve equal parts per bar. Since the first performer's part does not change, it is up to the second performer to move from one bar to the next. The second performer should try to keep his or her drumstick where it is written, by on the first beat of each measure (not on the first beat of the group of three stops), so that his drumstick always falls on a new beat of drum bar changing pattern.

The choice of a particular clapping sound, in, with clipped or flat hands is left up to the performers. Whichever style is chosen, both performers should try to get the same one so that their two parts will blend to produce an overall interesting pattern.

Clapping Music (1972)
Clapping Music: esercizio minimalista sulle permutazioni cicliche

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Clapping Music (1972)

Gerubach's Scrolling Score Project
http://www.gerubach.com
Grazie dell’attenzione!