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MEYERHOLD'S BIOMECHANICS: HISTORY OF THE TERM AND ITS
RELATIONS WITH CONTEMPORARY SCIENCE

"Man - machine" metaphor came into existence as early as in the 18th century in the epoch of French materialism. The metaphor was becoming a reality while machine constructors started imitating living organism employing the language of their contemporary technology. In 1920ies in the Soviet Russia certain social conditions were such that "man - machine" formula came into use in the ordinary sense of the word. It was connected with the necessity of quick speeding up labour productivity, with the strive for the soonest scientific and technological progress following the social revolution.

Artistic culture of that period should be regarded in the context of scientific and technological thought. This opinion has been reaffirmed by the experience of studying theatrical art of 1920ies, especially the works on biomechanics by the great theatre producer V.E.Meyerhold (1874 - 1940).

In 1922 Meyerhold was lecturing at the Higher State Theatrical Studios and called his pupils assistants as if they were employees of a scientific research institution. Meyerhold's experiments in stage direction and theory of theatrical education were akin to those of Central Labour Institute founded in 1921 where the outstanding neuro- and psycho-physiologist N.A.Bernstein was working.

The genesis of the term "biomechanics" has not been completely cleared out in the Soviet science. The first Russian handbook on the subject was published in 1926 (Bernstein N. Biomechanics for Instructors). The author defined biomechanics as a science dealing with the way "the living machine, i.e. every human being, is constructed, what the design of its moving parts is, how they work".

Meyerhold's biomechanics in everyday meaning of the term had come into being even earlier. It was a school for training

actors and a practical system of their stage existence. He put forward an idea of "showing perfectly organized human mechanisms on the stage".

Another stage producer of theatrical avant-garde N.M. Foregger (1892 - 1938) was developing - parallel to Meyerhold's biomechanics - his own system of theatrical and physical training. His demonstration of perfectly organized movement resulted in the imitation of labour process, of various productive mechanisms operations and was called "machine dances". "Machine dances" were actors group formations with various types of symmetry. Looking-glass-like similarity of performers' groups was stressed by uniformity of their accentuated geometrical costumes. Actors were imitating the work of transmission, rotating shafts, the movement of driving-belts, transporters, pistons, wheels. Complex combinations of simultaneous turns, gestures and movements of arms, legs, trunks, heads were included in a geometrical stage volume and were carried out in accordance with the rules of rotary and translational symmetry. Coordinate axes in this movements system were stage dimensions. Performers' physical actions were constructed according to mathematical laws deduced from living nature observation, from biological systems by productive mechanisms inventors. In "machine dances" these laws were visually demonstrated by people.

Accurate and reasonable movements were, thus, subjected to the one and the same algorithm defining the essence of a device operation, of a machine detail, of their dynamic peculiarities.

Biological symmetry laws and accentuated geometrical forms in the epoch of 1920s constructivist art had their logical meaning, distinct esthetic ideals and social landmarks. From theatrical biomechanics point of view, these exercises were important for defining an actor's physical actions morphology, studying interconnection of movement elements and perfecting performers' technique.

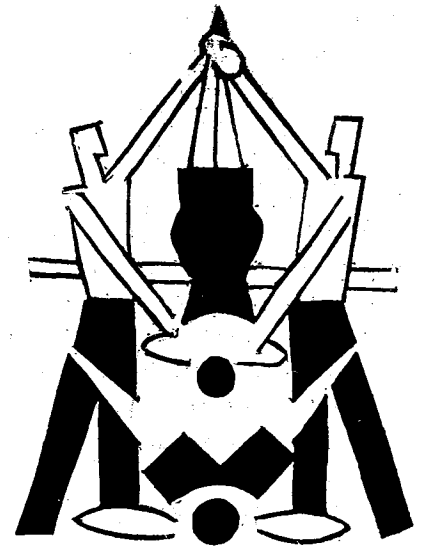
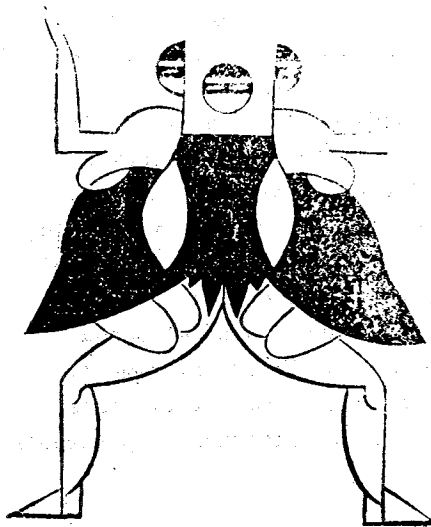
Parallel biomechanical experiments in science (Central Labour Institute) foretold the concept of cybernetics. In 1960s, simultaneously with the exuberant growth of cybernetics and interdisciplinary branches of science, the interest towards theatrical experiments of 1920s reappeared.

as well as some peculiarities of complex artistic thinking and scientific approach of modern prominent figures of stage towards the problem of creation.

From modern scientific point of view, Meyerhold's biomechanics and Foregger's "machine dances" have helped to define structural mechanisms of biological mobility. For them movements and structure symmetry was a device for studying and creating beauty, purposefulness and perfection in a given epoch. Movements algorithms were determined by dynamics of modern processes.

In present conditions of complex approach towards art and progressive theatrical figures' scientific thinking, artistic problems algorithms are becoming still more complicated. Complex symmetries concept helps modern artists to realize new esthetic principles of the late 20th century.

The main ideas of the present extended abstract have been presented by the author in the article "Theatre is a non-euclidian space" published in the magazine "Theatre" (1986, N II, p. 161 - 169).



Механические танцы Фореггера.