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Meyerhold's Biomechanics and the Image of the New Man in Early Soviet Avant-Garde Theatre

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Abstract

This article explores Vsevolod Meyerhold's biomechanics as an avant-garde theatrical and anthropotechnical method developed to forge new subjectivity and redefine roles in post-revolutionary society. It delves into early Soviet avant-garde theatre's emphasis on movement as a core expressive tool and the transformation of the actor's body into a precise instrument for calibrated gestures. Methodologically, the research is based on cultural studies examining relations between art processes and the functioning of social institutions. The article also analyzes a significant corpus of recently published archival materials related to Meyerhold's development of biomechanical elements and details the structure of Meyerhold's exercises and their role in enhancing motor skills and expressiveness on stage. The purpose of this article is to interpret biomechanics in the socio-cultural context of early Soviet times, while also examining it as a complex system transcending mere theatrical training. The key finding of the article is that the development of biomechanics encompassed not only theatrical, scientific, and social aspects but also proved close to the ideas of philosophy of Russian anthropocosmism.

Keywords: biomechanics; Meyerhold; Avant-Garde; theatre; Taylorism; psychophysics; Soviet Union; anthropocosmism

1. Introduction

The creation of the Soviet political and economic utopia in the 1920s was not merely a catalyst for radical change but marked a deliberate transformation of the entire social order. A new social structure was taking shape; the familiar way of life was changing almost instantaneously, and habitual modes of being were rapidly replaced. The citizens of the country became participants in a large-scale experimental project whose goal was not only to modernize the economy but also to create a fundamentally new type of human being and a new kind of state.

The utopian ideas of this period carried within them the vision of an ideal society in which, as Lev Trotsky wrote: "Man at last will begin to harmonize himself in earnest. He will make it his business to achieve beauty by giving the movement of his own limbs the utmost precision, purposefulness and economy in his work, his walk and his play. He will try to master first the semiconscious and then the subconscious processes in his own organism, such as breathing, the circulation of the blood, digestion, reproduction, and, within necessary limits, he will try to subordinate them to the control of reason and will. Even purely physiologic life will become subject to collective experiments. The human species, the coagulated Homo sapiens, will once more enter a state of radical transformation, and, in his own hands, will become an object of the most complicated methods of artificial selection and psycho-physical training" (Trotsky 1925).

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Trotsky's words, written in the mid-1920s, can be seen as a synthesis and culmination of the debates and processes that had animated Soviet intellectual and cultural life throughout the early post-revolutionary years.

Science began actively to objectify and instrumentalize the human body. The scientific study of movement relied on the development of new systems of observation and notation capable of breaking down motor actions into their smallest measurable elements. Moreover, the body became a special object of state control: "The Soviet experiment of the 1920s sought to connect the science and scientific management behind programmed intelligence and voluntary movement to a political programme and a motorology that would help engineer human conduct, habit, identity and political selfhood through corrected movement and socio-politically determined motor control" (Salazar Sutil 2015, p. 39). During the years of war communism, industrial labour unfolded under conditions of extreme intensification, chronic shortages, and rigid disciplinary regimes, in which the factory worker was simultaneously cast as a heroic figure of socialist modernity and as a resource to be rationally managed and optimized. In the cultural imagination of the time, the shop floor became a site where the new socialist body was to be forged, disciplined by the rhythms of the machine, the tempo of planned production and socialist competition. Against this background, a distinct political and aesthetic dialogue emerged within the early Soviet avant-garde.

Art began to perceive the human body as a vessel of new meanings, and its capacity for movement was chosen as one of the key instruments of social transformation. In this context, the reflections of the French historian, anthropologist, and social philosopher Michel de Certeau are particularly relevant: he emphasized that bodily action never exists by itself. He wrote that, in order to perform a movement, the organism requires a "model of the necessary future" ("modèle du futur nécessaire")—an image or projection of the possible that makes the very act of movement realizable (de Certeau 1980, p. 261).

Thus, movement and dynamism became synonymous with change. The fascination with the optimization of production processes, as well as with new discoveries in neurophysiology and biology, became one of the defining features of post-revolutionary avant-garde art in the Soviet Union. This approach established the "life-building" dimension of the new art, which came to be understood as a socially useful practice capable of transforming reality. As Irina Sirotkina notes, "The kinesthetic experience generated by movement, gesture, and dance is interesting because it may give rise to sensations not yet labelled or categorized. Perhaps the experience of a new movement as a field of possibilities is what creates in us an openness to change" (Sirotkina 2016, p. 198).

Not only cinema and dance but also theatre rethought the philosophy and practice of physical action. Director Vsevolod Meyerhold became one of the pioneers of this movement. His method of theatrical biomechanics represented a unique synthesis of the most important scientific, technical, and philosophical discoveries of his time. In what follows, each of the elements that constituted the concept of "biomechanics" (its biological dimension, Taylorism, etc.) will be examined, followed by an analysis of how Meyerhold employed them in developing his theatrical biomechanics, viewed through both social and anthropological perspectives.

Sirotkina (2011, 2016) provides a cultural and phenomenological perspective, illuminating biomechanics as an artistic-scientific hybrid that expands kinesthetic perception and avant-garde sensibilities. Complementary to this are recent studies on psychotechnics and their experimental applications in post-revolutionary Russia (Feringer 2019), which frame biomechanics within evolving scientific and aesthetic paradigms. Vital contributions by Shcherbakov (2014) detail the constructivist utopian ethos at the heart of Meyerhold's biomechanics, while outstanding research and extensive publication of the

archives (Feldman 2017; Meyerhold 2022) of Meyerhold's legacy enriches understanding of the pedagogical environments and theatrical applications of biomechanics. Additionally, the comprehensive work by Law and Gordon (2012) contextualizes Meyerhold's biomechanics alongside Eisenstein's cinematic experiments, underscoring actor training as a tool for revolutionary artistic transformation.

The aim of this article is to interpret biomechanics within the sociocultural context of the early Soviet period, as well as to analyze biomechanics—as based on recently published archival materials—as a complex system that goes beyond the scope of purely theatrical training. This system originated at the intersection of several disciplines—biology, labour theory, and artistic practices. An important conclusion of this research is the demonstration that for Meyerhold, the development of biomechanics had not only theatrical and social dimensions but also opened the path to theatrical anthropology and cosmocentrism.

2. The Birth of Biomechanics

The term "biomechanics" originated in medicine in the nineteenth century. It appeared as early as 1887 in the work of the Viennese physician Moritz Benedikt, who applied the principles of mathematics and mechanics to living cells. His colleague, the Strasbourg physician Ernst Meinert, used the term in the title of his study devoted to organogenesis—the development of organs in the embryo.

In Russia, the term entered scholarly discourse thanks to the eminent anatomist Petr Lesgaft, who was the first to introduce the systematic study of the physio-mechanical properties of living tissues and their role in the formation of "natural human movement." Lesgaft developed a course entitled "*Theoretical Anatomy*", in which he treated the human body not as an object of mechanical action but as an integrated system connected to intellectual activity.

In 1910, Lesgaft's student and follower Grigorii Kogan proposed introducing biomechanics as a subject in medical faculties and organizing practical courses to promote its popularization. That same year, he published a four-part work on medical mechanics with the subtitle "*The Theory of Human Physical Development: The Biomechanics of Solid Bodies.*" Beyond medical mechanics departments, Kogan proposed establishing biomechanical institutes—theoretical and practical centers for teachers, physicians, massage therapists, gymnasts, athletes, military physical training specialists, and practitioners of the visual arts. In the early 1920s, Kogan referred to himself as a "professor of biomechanics" and taught the subject at the State Choreographic Technical School (today the Vaganova Academy of Russian Ballet).

During the same years, another of Lesgaft's students, Nikolai Bernstein, developed a new fundamental theory of movement that became the backbone of Soviet biomechanics. In the early 1920s, Bernstein headed the Laboratory of Biomechanics at the Central Institute of Labour (TsIT), lectured on biomechanics at production-instructor courses organized by the Moscow Union of Education Workers, and worked on textbooks for these programs. He developed the concept of "muscular thinking", regarding dexterity as one of the most striking manifestations of kinesthetic intelligence—a form of the body's own wisdom. Complementing the discoveries of biomechanics, this period also saw the rapid development of psychophysics, the study of the relationship between physical stimuli and subjective sensations, that is, the quantitative correlation between the intensity of a stimulus and the magnitude of the resulting perception.

These major scientific advances deeply influenced avant-garde artistic research and contributed to the emergence of a movement known as psychotechnics. In the new art academies founded at the time, laboratories were established where the human body and human perception were systematically analyzed according to physiological and psycholog-

ical criteria. The Institute of Artistic Culture (INKhUK), the Russian Academy of Artistic Sciences (RAKhN), and the Higher Artistic and Technical Workshops (VKhUTEMAS) served as intellectual hubs for the most progressive artists and scientists of the era. In this context, the programmatic statement of Sergei Tret'iakov in LEF magazine (1923) is particularly characteristic: "Together with the man of science, the worker-artist must become a psycho-engineer, a psycho-designer" (Tret'iakov 1923).

At the same time as Meyerhold was developing his system of theatrical biomechanics, other avant-garde figures pursued similar syntheses of art, technology, and movement: Nikolai Foregger created "machine dances" and "dance-physical culture simulators," Ippolit Sokolov developed "Taylor Theatre," Evgenii Yavorskii introduced "physical culture dance," and Maria Ulitskaya staged "industrial dance."

3. The Scientific Organization of Labour

All these developments resonated deeply with the ideas of Alexei Gastev—director of the Central Institute of Labour and a poet of the Soviet avant-garde—who sought to unite physiology, psychology, and labour into a single socio-productive project for creating the "new man." It is worth outlining those features of Taylorization in Soviet industry[1] that most strongly influenced Meyerhold's formulation of theatrical biomechanics.

One of the most significant signs of the era was a profound transformation in the understanding of labour. As Denis Ioffe notes in his study on the economy of modernist culture, this was the moment when "what we now habitually call 'work' appeared—an area of active, pragmatic, personal experience separated from family, household, or intimate kinship relations" (Ioffe 2022, p. 21).

Moreover, an unprecedented intensification of production required its optimization and began to shape a new social sense of rhythm and time. Drawing directly on Frederick Taylor's time studies and the time-and-motion analyses of Frank and Lillian Gilbreth, Gastev insisted that Russia needed to develop a mentality oriented around the stopwatch. As Salazar Sutil writes, "The goal of the Soviet utopian enterprise, according to Gastev, ought to be the creation of a 'plastic culture' that would harmonize the rhythm of the anatomical body and the machine. Where formerly workforce production was carried out in relation to an agrarian sense of temporality (seasonal time), or a religious sense of time (Church calendar), the Taylorist revolution in Russia also relied (like in the United States) on the objectification of time, or the 'chronization' of social life" (Salazar Sutil 2015).

At the same time, Gastev viewed the connection between production and artistic creation as self-evident. He described the Central Institute of Labour as his "last artistic work," a "scientific construction and supreme artistic legend," and saw its purpose as the cultivation of an "elementary culture of habits, without which no durable new life can be built." For Gastev, the new culture was characterized by speed and precision of movement, mastery of the body, and the "ability to struggle relentlessly" (Sirotkina 2011, p. 53).

He believed it necessary to train the vast mass of former peasants and orphans brought to the cities by revolution and war. They had to be taught not only professional skills but also new patterns of behavior and urban life—to develop new motor habits and adopt new "labour attitudes." He exhorted: "Let us set to work on ourselves! Humanity has learned to process objects; now it is time for the thorough processing of man" (Sidorina 1995, p. 79).

As the author of the concepts of "motor culture" ("dvigatel'naya kul'tura") and the "norm of movement" ("normal' dvizheniya"), Gastev aimed to subject every aspect of life—creativity, nutrition, housing, even the intimate sphere of aesthetic, intellectual, and sexual needs—to social standardization. He even called for the "normalization of words from pole to pole" (Sirotkina 2011, p. 56).

Not only labour itself but also its by-products, such as fatigue, became central topics of social and philosophical debate. In "*The Human Motor: Energy, Fatigue, and the Origins of Modernity*", Anson Rabinbach shows how scientific discoveries—such as the law of conservation of energy—began to influence conceptions of human capacity, exhaustion, and productivity, replacing moral interpretations of labour with technical and physiological ones. The idea of "fatigue as toxin" and the various attempts to eliminate it became part of the social and political utopias of the time—the dream of a "fatigue-free society" (Rabinbach 1990).

This fascination with Taylorism profoundly affected early Soviet theatre as well. A number of proponents of "production theatre" emerged, advocating an art that directly served industrial and social functions. Radical declarations appeared that seemed to abolish art altogether: "Art is finished! It has no place in the human labour apparatus. Labour, technology, organization!" wrote artist and theorist Alexei Gan in 1922 (Gan 1922). Theatre theorist Boris Arvatov echoed him: "The coming proletarian theatre will become a tribune of creative forms of actual reality; it will construct models of life and models of people; it will become a continuous laboratory of new sociality, and its material will be any function of social life" (Arvatov 1922, p. 115).

In that same year, 1922, Meyerhold presented his report "*The Actor of the Future*," in which he demonstrated, among other things, the achievements of his biomechanical method. Yet Meyerhold's first steps toward biomechanics had begun much earlier. Having now outlined the constellation of ideas and phenomena from which it arose, we can turn directly to its structure and meaning.

4. Meyerhold's Theatrical Biomechanics

It is possible to trace a clear connection between the training etudes that later formed the basis of biomechanics and the pedagogical system of Petr Lesgaft discussed above. As early as 1919, at the Courses for Stagecraft Mastery (KURMASSTEP) in Petrograd, where Meyerhold was teaching, doctor Alexander Petrov introduced gymnastics based on Lesgaft's method, as well as a subject he called "biomechanics". Meyerhold himself began teaching biomechanics only after moving to Moscow in 1920.

What, then, did he himself understand by this term? How did biomechanics manifest itself in Meyerhold's theatrical practice, and how did his body-centered experiments contribute to shaping the image of the new post-revolutionary human being?

4.1. The Actor as a Perfect Automaton

It is important to remember that Meyerhold at this stage was intent on educating what he called the "actor-citizen." His analysis of the contemporary theatrical situation led him to conclude that the future "revitalization" of theatre was directly linked to the problem of "perfecting human nature" (Meyerhold 2022, p. 444). One of his students, Tamara Kashirina-Ivanova, recalled her studies at the State Higher Director's Workshops founded by Meyerhold: "We were called upon to cultivate and develop new human qualities within ourselves" (Meyerhold 2022, p. 14).

In one of his conversations with laboratory assistants, Meyerhold remarked that "modern man, living under conditions of mechanization, cannot help but mechanize the motor elements of his organism" (Meyerhold 2022, p. 474). But in what way could the imitation of the machine assist in the development of a new type of actor? Did art, in absorbing the sciences, sports, and industrial techniques, risk losing its essential character—its capacity for imaginative and sensory understanding of the world and of humanity?

It is essential to recognize that during this period, Meyerhold was actively searching for a formula for theatrical constructivism. The "scaffolding of a world under construction" (in

Sergei Tretyakov's phrase) was organically aligned with the life-building concept of theatre. Meyerhold understood that to realize his artistic and social aims, "it would be necessary to change not only the forms of our creativity but also the method itself" (Meyerhold 1968, p. 487). He wrote that "the actor who works for the new class will have to reconsider all the canons of the old theatre. The entire acting profession will be placed in new conditions. The actor's work in a labour society will be regarded as production, necessary for the proper organization of labour for all citizens. But in labour processes it is not only important to allocate rest time correctly; it is also necessary to find such movements in work that maximize the use of every working moment" (Meyerhold 1968, p. 487).

For this to happen, Meyerhold believed it was necessary to develop a special actor's technique. The new type of actor was to become the prototype of the new human being, and biomechanics is one of the means of its creation. Boris Arvatov, who fully shared Meyerhold's ideas, wrote that "being founded on the purposeful economy of movement and on the psycho-physiological laws of the human organism, biomechanics for the first time in world history attempts to teach what every person must learn if he wishes to become a qualified member of society. Biomechanics is therefore the first real leap from theatre into life" (Arvatov 1922, p. 115).

By the summer of 1922, biomechanics had become the banner of Meyerhold's theatre. His students taught it in studios and theatres, including the Bolshoi Theatre, while Eisenstein lectured on it. Slogans of the time proclaimed: "Biomechanics is a phenomenon of world importance," and "the modern actor must appear on stage as a perfect automaton" (Meyerhold 2022, p. 444).

What exactly did Meyerhold wish to transform in the actor as the prototype of the new human being, and how did this relate to his vision of theatre and the world?

On the one hand, art-as-entertainment was transformed into art-as labour, acquiring a pronounced social dimension. Since, from Meyerhold's point of view, the actor's task was the execution of a specific assignment, he demanded an economy of expressive means, ensuring precision of movement and efficiency in the accomplishment of the task. "The method of Taylorization applies to the actor's work just as it does to any other labour in which there is an aspiration to achieve maximum productivity" (Meyerhold 2022, p. 435). Meyerhold even introduced literal—if somewhat absurd—parameters of "time economy," effectively equating artistic performance with industrial production: "The Taylorization of theatre makes it possible to perform in one hour what now takes us four," he declared (Meyerhold 2022, p. 435). Moreover, Meyerhold maintained that the actor of the future would no longer waste time on makeup and costume changes: thanks to professional mastery, he would perform without makeup and in a work uniform (Meyerhold 1922, p. 10).

Meyerhold justified his advocacy of Taylorization by pointing to the similarity between the perception of labour processes and that of a work of art. "The process of work performed by a skilled labourer always resembles a dance; here, work approaches the realm of art. The sight of a person working correctly provides a certain aesthetic pleasure. This fully applies to the work of the actor in the theatre of the future" (Meyerhold 2022, p. 434).

In his classes with students, this analogy was formalized in what became known as the "first principle of biomechanics": "the body is a machine, the worker is the machinist." The general objectives of the method were also outlined: "to construct a sequence of exercises from the simplest tasks of individual movement to the most complex coordinated movements of groups; to cultivate the 'new speed man' (A. Gastev's formula), with his quick reactions, his constant readiness for the ideas of socialist construction, and his ability to conserve himself by expending a minimum of nervous energy; to cultivate constructive passion; to care for body and nerves" (Meyerhold 2022, p. 560).

At the same time, Meyerhold had been concerned with reforming the existing type of theatre since the very beginning of his directing career. From the late 1900s onward, he was preoccupied with the idea that it was time to purify and rediscover the true nature of theatre. "The secret of theatricality has been lost. It is necessary to find and define these laws. We need a healthy traditionalism—that is, adherence to the general principles inherent to theatre as such" (Meyerhold 2022, p. 456). By the general laws of theatre and a healthy traditionalism, Meyerhold primarily meant its anti-naturalistic character, the absence of the so-called "fourth wall", and the openness of stage techniques.

4.2. The Actor as Beautiful Beast

Meyerhold thought about stage techniques as such and with each new production developed the theatrical language. This theatrical reform turned out to be very closely connected with the actor's movement on stage: "The art of the theatre transforms the words given in the play into action, for which the words are only decoration, an ornament. And this is so essential that once the actor ceases to act, the question arises: is he not a gramophone? Thus, movement is the main thing in stage art". And further: "No utterance of words will produce an impression if it is not accompanied by the necessary movements" (Meyerhold 2022, p. 87).

Meyerhold believed that movement on stage is a hieroglyph endowed with a certain meaning. Every stage action must be easily "deciphered" by the spectator, while accidental or superfluous movements only distract. For him, "the art of the theatre is the organization of movement" (Meyerhold 2022, p. 88).

To bring this to life, according to Meyerhold, it was necessary to raise the level of self-control, that is, the self-organization of the actor. This was precisely the purpose of the biomechanics he was developing. It was for this that Meyerhold created one theatrical school after another, in which exercises in biomechanics were among the main disciplines. "The idea was to focus on actor training not on 'psychology,' 'inner feeling,' or 'experience,' but on movement-gesture. And if Stanislavsky proposed a series of 'psychological' tasks for the actor, Meyerhold needed to develop a system of 'motor' or 'biomechanical' exercises" (Sirotkina and Zolotukhin 2021).

It is noteworthy that Meyerhold began to develop the method of biomechanics by reflecting on the ways in which theatre influences the spectator. In the "Regulations on the Research Institute of the State Higher Theatrical Workshops" of 6 March 1922, it is stated that the founders of these workshops (including Meyerhold) considered the most appropriate form of influence to be "influence through mechano-physiological processes" (Meyerhold 2022, p. 350). Here, the influence of recent discoveries in the fields of psychology (William James) and physiology (Ivan Pavlov) is clearly noticeable. The spectator, in turn, was expected to respond emotionally to the contemplation of the angles of the human body and its movements (biomechanics).

At the same time, according to Meyerhold, movement must not be given free rein, and a great economy of movement must be observed, since this is what tests the director's and the actor's apparatus. In the end, the whole of biomechanics is based on the principle that "if the tip of the nose is working, then the whole body is working," and that first one must find "the stability of the whole body" (Meyerhold 2022, p. 560).

What did Meyerhold's proposed classes and exercises consist of? Here is Meyerhold's curriculum plan for the biomechanics course of 1922:

Actor

A. Material:

1. The body:
(a) torso (without limbs)

(b) limbs (arms, legs)
(c) head (face: eyes, mouth)
2. Voice and articulation

B. Biomechanics
I. The nature of biological movements and acts is determined by the biological structure of the organism.

(a) The human organism as an automaton
(b) Secondary automatic acts
(c) Mimetic behavior and its biological significance (Bekhterev[2])
(d) Motor actions of man:
(d1) Movement of individual organs (tremors or innervation of muscles, eye rotation, mimetic movements of the hands, legs, and individual muscle groups)
(d2) Complex movements of the whole organism or chains of actions (locomotion, walking, running, acts of reading, writing, carrying loads, and the complex movements constituting various kinds of work or "acts of doing")
(e) Acts of restraint ("non-doing"), externally devoid of movement or producing minimal visible motor effects (patient endurance of blows, acts of abstaining from active resistance, etc.)
(f) Play as the release of surplus energy
(g) Receptors, conductors, effectors
(h) Study of the mechanism of the nervous system's reactions
(i) Psychic reactions as objects of natural science
(j) Psychic phenomena as simple physico-chemical reactions in the form of tropisms, taxes, or purely physiological reflexes
(k) Reflex, instinct
(l) Reflexes—their connection, linkage, interdependence
(m) Mechanization (unconscious habitual acts)
(n) Normalization, both physical and reflexive
(o) Influence of sound stimuli (the role of the shout at moments of intense action)
(p) Movement and musical background (the construction of a movement score in relation to a given musical score according to the laws of counterpoint, or the construction of a musical score in relation to a movement score—according to the same laws)
(q) Meter and rhythm

II. Mimeticism

(a) Study by the actor of muscular movements (direction, force, pressure or pull produced by movement, extent—the length of the path, speed).
(b) Movement of the torso, arms, legs, head (center of balance, angle).
(c) Rationalization of movements.
(d) The sign of refusal.
(e) Tempos of movement.
(f) Legato, staccato.
(g) Gesture as the result of movement.
(h) Large and small gesture.
(i) Laws of coordination between the body and external objects; between the body and objects in the actor's hands (juggling); between the body and the costume that clothes it.
(j) Laws of coordination of time and space.
(k) Geometrization.
(l) Laws of even and odd.
(m) Laws of construction.

(n) Dance.
(o) Acrobatics.
(p) Jests characteristic of the theatre.
(q) Eccentricism.
(r) Manual concepts.
(s) Word-movement.

Acting

1. Three systems of acting (inner, experiential, biomechanistic).
2. Roles (natural traits, stage functions).
3. Grotesque.
4. Improvisation.
5. Actor and spectator.
6. Ensemble.
7. Diary.

Recording of experience. Study

1. Study of the subject based on sources.
2. Study of schools and movements (styles).
3. Study of acting techniques of various schools.

Organization of labour

1. The actor's workshop.
2. Work clothing (Meyerhold 1998, pp. 26–28).

This outline, apart from detailing the teaching of biomechanics, demonstrates Meyerhold's comprehensive approach to actor training: the development of professional skills—based on the latest discoveries in the exact sciences and medicine—was combined with the study of styles and theatrical schools of past centuries. Moreover, the program reveals how important the actor's constant reflection and self-observation were for Meyerhold. He sought to make the actor both the subject and the object of his own work.

The actor of the future, according to Meyerhold, was to be a craftsman. Therefore, every actor, like a carpenter or tailor, had to have his own workshop, with gymnastic apparatuses hanging from the ceiling. And whereas actors of the past, before going on stage, would drink coffee, wine, or valerian to unbalance their nervous system, the actors of the future, Meyerhold insisted, should prepare arnica, gauze, and bandages, since in the system of work he proposed, dislocations would occur frequently (Meyerhold 2022, p. 134).

Yet beyond the perfection of physical parameters, Meyerhold's biomechanics—as can be seen from this plan and from many of his other writings—also included exercises in rhythm and musicality, which for him were a means of returning to the natural foundations of life. He wrote: "The actor must be extremely rhythmic; he must hear not only with his ears but with every point of his body" (Meyerhold 2022, p. 497). Already in his Petrograd lectures of 1919, he emphasized that when the actor plays Othello, in the scene where he attacks Iago, he forgets for a second that he is a man and makes a magnificent leap: "At that moment he recalls the animal world, he remembers that, essentially, our habits—despite our jackets, boots, and hats that seem to distinguish us—are in fact exactly the same as those of animals."

The natural principle, for Meyerhold, is directly connected with movement and rhythm: "If we have now returned to rhythmic gymnastics, for such existed in ancient culture, if we have begun to speak of rhythm, which stands at the center of every stage action, then we have done so precisely because in us, in man, it has been forgotten, whereas

in the animal it is always present. All their movements are built upon the laws of rhythm" (Meyerhold 1919).

Thus, the actor, in Meyerhold's view, is a "beautiful beast" who strives to express in movement beauty, agility, brilliance, and rapture. His task, therefore, is "to display his animal art, to show his beautiful movements, to show his agility, to show his beauty, the brilliance of the turn of his head, or a brilliant gesture, or a brilliant leap, or ecstasy. . . in some beautiful movement" (Meyerhold 1919).

Meyerhold's emphasis on rhythmic training was largely inspired by the method of Émile Jaques-Dalcroze, the Swiss pedagogue who developed a system of musical and rhythmic education, and in whose honour institutes were founded, for example, in Hellerau in 1910 and Geneva in 1915. In July 1919, a Rhythmic Institute was also opened in Moscow, inspired by his method. Meyerhold valued many elements of this system, often spoke about them to his students, and included "Dalcroze exercises" in his classes: "When Dalcroze invented his rhythmic gymnastics, he thought mainly of helping musicians, but it turned out that questions of rhythm are equally important for everyone. Whether we saw badly, handle a knife and fork clumsily, or walk poorly on stage—we must learn from Dalcroze" (Meyerhold 2022, p. 441).

4.3. The New Psyche

Biomechanics as a training discipline was closely connected with Meyerhold's work on his first constructivist production *The Magnanimous Cuckold (Le Cocu Magnifique)* by the Belgian playwright Fernand Crommelynck, which premiered in the spring of 1922, and it was described by Meyerhold as "a free manifestation of the talent and training of modern man, developed without any museum-like, archaeological, or stylized assignments" (Meyerhold 2022, p. 363).

A key element of this production was the psychology of the "new man". Here, one cannot fail to note the influence on Meyerhold of the ideas of the French theatrical pedagogue, musician, and singer François Delsarte, who linked the vital and energetic foundation of creativity with thought processes and moral principles. Studying anatomy and medicine, working in a clinic for the mentally ill, and observing human behavior under both ordinary and exceptional conditions, Delsarte later used these observations to analyze the actor's mimicry and gesture and the nature of stage emotion. He summarized his findings in a special chart of "zones", illustrating his proclaimed "law of correspondences" between body organs and emotional and rational reactions.

This "new psyche" allowed the actors not to "sink" in soul or body into the play's rather provocative plot[3]. It is symptomatic that similar tendencies could be found in avant-garde painting. The artist Boris Ender, one of the pioneers of biomorphic abstraction, wrote: "What we call the soul is a state of strong or weak movement in the body" (Kullikki 1996, p. 300).

In *The Magnanimous Cuckold*, Meyerhold contrasted temperament with excitability, which, in the actor's case, arises as a result of the well-used training material and of the pleasure experienced in the mastery of technique. The pleasure of one's own performance was complemented by what Meyerhold saw as the actor's new essential quality: the ability, in all circumstances, to convey to the spectator the joy of existence. Two years after the premiere of *The Magnanimous Cuckold*, Meyerhold succinctly formulated what he had been seeking from his actors at that time: "A pathological image, healthy acting" (Meyerhold 2022, p. 497).

Beyond developing acting technique, Meyerhold also realized the principles of Taylorism in the stage design of the production. The constructivist artist Lyubov Popova created a revolutionary stage environment, applying the principles of constructivism to

theatre for the first time. The stage was stripped of all superfluous elements, and in the background stood a multi-level structure with moving parts. This construction included staircases, platforms, revolving doors, and mobile grids. These dynamic elements accelerated their motion at key moments of the performance, intensifying its dramatic effect.

In accordance with the new stage design, the appearance of the actors also changed. Instead of conventional theatrical costumes, they wore identical blue work overalls, with no distinction between men and women. They also abandoned makeup, relying entirely on the expressiveness of bodily movement.

In the production *The Death of Tarelkin (Smert Tarelkina)*, Meyerhold and Eisenstein pushed their experiments with biomechanics and constructivism to their limits. The costumes, stage structures, and stunt apparatuses were designed by the constructivist artist Varvara Stepanova, a committed advocate of "production art". Thus, biomechanics, initially conceived as a technical discipline for the actor's control over his body, became a full-fledged mode of existence for the actor on stage.

4.4. A New Mode of Acting

According to the conception of early Soviet theatre theorists, the new theatre was to assume responsibility for the construction of a new society. At the same time, its ultimate goal was to bring about its own disappearance—its dissolution into the fabric of socialist reality.

As we know, such dissolution never occurred: as often happens, a gap emerged between theory and practice. Meyerhold was not as radical in his theatrical experiments as some of his contemporaries. He advocated the transformation and organization of life *through art*, within the framework of theatrical aesthetics, even though these boundaries were significantly expanded. He certainly did not seek the disappearance of theatre into life.

The most important quality that, in Meyerhold's view in the early 1920s, the new actor had to possess was reflexive excitability. Following this logic, Meyerhold formulated what became for him and for early avant-garde art a fundamentally new type of acting:

1. "Stage movements cannot be the same as in life. The scale of the stage, its angles and walls, must influence movement. Objects in the actor's hands must not be the same as those represented in naturalistic theatre". On stage, one must "toss an imaginary ball", "drink imaginary coffee at an imaginary table" (Meyerhold 1919).
2. The actor's work on a role must proceed from the external to the internal. In this system of the "emergence of feeling," the actor always has a solid foundation—a physical premise.

In this context, a detailed description of the scene "The Leap onto the Opponent's Chest" (or "Grasso's Jump") occupies a page and a half in Eisenstein's notebooks based on Meyerhold's exercises (Meyerhold 2022, pp. 366–69). From this description, it is evident that, although everything is recorded in strictly physical and technical terms—as if broken down into dozens of still frames—it achieves a special kind of stage expressiveness, a particular theatrical truth. On one level, it may seem like purely a professional craft—refining movement technique in a single, specific scene—but for Meyerhold, the task was far greater: to teach students to understand and control their own bodies, to reach the highest degree of mastery. For him, acting was above all a craft, not a divine gift.

In 1923–1924, Meyerhold in many ways softened the standards he had himself set earlier: "Transferring elements of industry or circus apparatus into the theatre without modification is nonsense. It is time to propose a new slogan: sobriety. We must learn to perform entirely without constructions" (Meyerhold 2022, p. 516). At the same time, he began to speak more about psychological aspects, about the importance of imagination

and inventiveness in the actor, and about the need "to be able to look closely at the actor's initiative in order to direct that initiative in the proper direction" (Meyerhold 2022, p. 519).

On the one hand, we could see rationalization and systematization of acting practice. For Meyerhold, "Art must be based on scientific foundations, and all creative work of the artist must be conscious." On the other hand, he often spoke of the need to return to natural spontaneity. His collaborator Arkady Pozdnev also opposed a literal understanding of Taylorism in theatre. He wrote: "Meyerhold's biomechanics derives from the natural possibilities of the human body. In contrast to production, theatre must have its own, theatrical Taylorism—its own theory of theatrical gestures and movements. This Taylorism will be directed exclusively toward naturalness, emphasis, and breadth of gesture. The Taylor of the theatre is Vsevolod Meyerhold" (Pozdnev 1922, p. 9).

5. Conclusions

Meyerhold's biomechanics cannot be considered separately from his search for a theatrical system and his broader understanding of theatre, from his construction of a holistic system of theatrical education, or from his methodology of staging performances, nor from his conception of directing as the organizing principle of a production. Meyerhold's appreciation of the importance of movement on stage and the actor's physical preparation emerged even before the revolution, during the so-called period of traditionalism, when he studied and incorporated the techniques and theatricality of historical theatres into his productions. From 1910 onward, he became interested in the fairground and pantomime aspects of theatres. He believed that pantomime is the foundation of theatres because in it, pure emotion is not obscured by words.

In his search for a new theatrical language, Vsevolod Meyerhold also turned to the idea of the actor as a kind of mechanism—a concept that can be traced back to the theories of Heinrich von Kleist and Edward Gordon Craig. A century before Meyerhold, Kleist, in his essay on the marionette, reflected on the superiority of the puppet over the human performer, arguing that its freedom from personal consciousness and its innate grace of movement endowed it with a special beauty. Craig, in turn, sought to liberate the stage from the "human element" by replacing the actor with the figure of the "Übermarionette." These ideas formed the foundation for Meyerhold's own attempts to overcome the psychological approach of acting and to achieve ultimate expressiveness through form and movement. So, developing his system of biomechanics, Meyerhold embraced the legacy of the puppet theatre, conceiving the actor as matter disciplined by rhythm, the architecture of the stage, and the law of precision.

Therefore, Meyerhold's theatrical ideas and all innovations of the early 1920s were inspired not only by the latest socio-economic trends and scientific discoveries but were also embedded in the logic of global theatre's development—including Eastern practices, as well as the centuries-old experience of Western European theatre, which Meyerhold knew brilliantly.

Biomechanics opened new possibilities for actors in terms of stage movement and expressive performance. This method gave performers broad freedom to experiment with their bodies and gestures, allowed them to highlight technical details of their craft, and masterfully combine different acting techniques. Biomechanics combined precision of movement, economy of gesture, clarity of physical form, musicality and rhythm in stage behavior, expressiveness of acting techniques, and the precise, measured articulation of text with the melody of speech: "In the performances, one could observe the 'conversation' of hands and fingertips, the 'dialogue' of eyes and knees" (Kwon 2017, p. 129).

According to Meyerhold scholar Vadim Shcherbakov, biomechanics became "the highest stage in the development of Meyerholdian grotesque," a way of "montage-like

expression of the world." He continues: "In the 1920s, it became a method of paradoxical theatre. Here, the conflict is translated into the actor's body. Only now, it is not the properties of the character that are assembled, but conflicting energies: the right hand struggles with the left leg, the elbow with the ear, the forehead with the finger. . . All of them simultaneously—subject to the laws of gravity. Biomechanics is an extract of theatricality, the culmination of Meyerhold's study of the laws of expressive movement. Every spatial form is a hieroglyph with its own set of meanings. Biomechanics is the selection of the most conflictual, self-playing (and therefore most effective!) hieroglyphs" (Shcherbakov 2014, p. 155). Its emergence was perceived as a genuine discovery of a new theatrical reality. It was precisely "the combination of the concreteness of movements with their hieroglyphic capacity to absorb complex meanings that made biomechanics so captivating for the audiences of Moscow in 1922" (Shcherbakov 2014, p. 156).

The central concept of this system became the "mechanization of theatre," which the director understood not as depersonalization, but as a path to the conscious organization of the creative process. For Meyerhold, this was not a loss of freedom but its acquisition: "Mechanization is the limitation of oneself in a certain desired direction, but it is not the deprivation of the freedom to express the spirit. This self-limitation acts as a springboard for freedom." It is precisely in this self-limitation, as Eisenstein also noted, that the principle of "self-limitation as a springboard for creativity" is realized (Meyerhold 2022, p. 265).

Biomechanics was, in essence, a "return of the body to the actor." A body disciplined, trained, and technically refined acquired a new quality—the capacity for "absolute freedom". "Only one who does not master the entirety of the training material feels unfree in the process of mechanization" (Meyerhold 2022, pp. 263–64).

Thus, bodily discipline became a form of liberation, and play, according to Meyerhold, was the result of accumulated inner energy: "To live is to move the muscles, to expand oneself" (Meyerhold 2022, p. 385). Moreover, as David Zolotnitsky observed, "biomechanics is a system of actor training capable of creating generalized images—hyperboles and metaphors" (Zolotnitsky 1978, p. 12). It is no coincidence that contemporaries saw in it a path to mass theatrical action. Actress and Meyerhold's wife, Zinaida Reich, writing under the pseudonym Rich, noted: "Through biomechanics, we will no longer need to dream, theorize, or conduct poor experiments about mass action—we know that in five or six years we will see theatrical celebrations that will allow us to profoundly experience the joy of new existence" (Meyerhold 2022, p. 439).

But Meyerhold's biomechanics is not only a pedagogical system and acting technique. One of the central concepts of biomechanics, as is known, is the center of gravity. According to Meyerhold, the ability to locate it in one's own body is one of the actor's main tasks. And this in turn has a direct relation to gravity and the interaction of various objects. Thus, the body in biomechanics becomes a special microcosm. As researcher Vadim Shcherbakov notes, "biomechanics teaches the ability to transform chaos into ordered cosmos" (Shcherbakov 2014, p. 160).

Moreover, the human in biomechanics is conceived not only as a citizen of their country, but also as an inhabitant of the Earth. In his 1921 lectures on directing, Meyerhold stated: "Movement is powerful in that it relates to what human life on Earth depends on—the movement of the planets"[4] (Meyerhold 1998, p. 20). This statement establishes one of the key coordinates of Meyerhold's thinking during this period: theatre is understood as a form of contact with the cosmic, which aligns Meyerhold's worldview with the philosophy of Russian anthropocosmism. One of its representatives was the thinker and founder of heliobiology, Alexander Chizhevsky, who posited that humanity constitutes a part of the planet's "living substance," the emergence of which results from the prolonged action of terrestrial and cosmic factors; consequently, life is predominantly a cosmic phenomenon,

and humanity represents an outcome of cosmic evolution. Furthermore, in his doctoral dissertation "On the Periodization of the World-Historical Process" (1918), Chizhevsky, having traced the correlation between periods of solar activity and surges of "excitations" in history (mass popular movements, wars, revolutions, etc.), advocated for the study of social phenomena in conjunction with geophysical and cosmic phenomena, emphasizing that such correlations necessitate collaborative efforts by scholars from the natural and humanities sciences. Later, biologist and philosopher Nikolai Kholodny wrote that in anthropocosmism, humanity appears as an organic component of the Universe and as an essential stage in its development (Gacheva 2019).

The origins of this philosophy should be sought at the turn of the 19th-20th centuries. The founder of Russian cosmism, philosopher Nikolai Fyodorov, wrote in 1902: "United science and art will become ethics and aesthetics, will become the natural, world technique of this artistic creation, the cosmos" (Fyodorov 1902). The philosophical works of Nikolai Fyodorov, Vladimir Solovyov, Nikolai Berdyaev, Pavel Florensky, Vladimir Vernadsky, and Konstantin Tsiolkovsky had a colossal influence on the Symbolist poets of the late 19th-early 20th centuries (Gacheva 2019). For example, in 1908, in a poem dedicated to aviators, Valery Bryusov wrote: The earthly sphere/We shall fully take into possession (Bryusov 1990, p. 191). It was at this very time that Meyerhold became acquainted with the Symbolists and spent a lot of time in their circle at Vyacheslav Ivanov's "Tower" in St. Petersburg, absorbing their ideas and dreams of unprecedented transformation of the surrounding reality (Arefyeva 2025, pp. 59–148).

After the revolution, the Symbolists' ideas of life-creation transform into avant-garde ideas of life-building. Cosmism has become an important part of the scientific-artistic context of the Civil War era and early 1920s (Lissitzky, Malevich, Kandinsky et al.). Many revolutionaries became cosmists (Bogdanov, Svyatogor et al.)[5]. Meyerhold does not stand aside from this discourse and in 1922, he formulated the task of theatrical art as "conscious participation in the reconstruction of the globe" (Meyerhold 2022, p. 457). The image of the "new type of human" emerges—the human-of-motion, whose mastery of reflexes becomes a step toward organic progress. Thus, we observe that Meyerhold's biomechanics of the early 1920s resonates substantially with the philosophy of Russian anthropocosmism, refracted through the prism of theatre, wherein the corporeal and cosmic dimensions are interlinked; theatre in which movement constitutes not merely physical action, but a universal principle of being that unites humanity and the universe; theatre that develops mechanisms for regulating and transforming not only the individual and society, but the entire planet.

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Notes

[1] Scientific Organization of Labour (NOT) became one of the recognizable neologisms of the Soviet period. This approach was presented as an alternative to Western systems of rationalization and was often considered more humane than the methods developed by F. W. Taylor and Henry Ford. Even before the revolution, some factories—such as the St. Petersburg "Aivaz," owned by Siemens—were implementing production organization practices modeled on Ford and Taylor. At that time, the poet

and active revolutionary Aleksei Gastev worked at "Aivaz" as a locksmith. While hiding from the police, he had previously worked in metallurgical plants in France. Later, Gastev became the secretary of the Metalworkers' Union and organized one of the first sections of NOT at the People's Commissariat for Transport. In his poetry collection, he exalted the "poetry of the worker's strike" and personally participated in theatrical productions of works created by Proletkult studios.

[2] Vladimir Bekhterev was a Russian and Soviet psychiatrist, neurologist, physiologist, and psychologist, the founder of reflexology and the pathopsychological direction.

[3] The play tells the story of the poet Bruno, who suffers from an inexplicable jealousy toward his wife Stella. Hoping to uncover a rival, he forces Stella to engage in intimate relations with all the men in the village. Ultimately, in response to his madness, Stella runs away with Louis.

[4] It should be noted that the word «planet» derives from Greek, meaning a wandering or errant celestial body, thereby embedding the concept of motion at the core of its etymological essence.

[5] It is noteworthy that the scientific concept of the Earth's rotation around the Sun is expressed in "revolutionary" terms across numerous European languages: la révolution de la Terre autour du Soleil (Fr.), Earth's revolution around the Sun (Eng.), la rivoluzione della Terra attorno al Sole (Ital.), a revolução da Terra em torno do Sol (Port.), die Revolution der Erde um die Sonne (Ger.). This reflects the Romano-Germanic linguistic tradition, wherein "revolution" retains its astronomical connotation of a "complete orbit".

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