

# Biomechanics. Learning from Dr. Dapertutto

## Biomecanica. Învățând de la Dr. Dapertutto

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### Rezumat:

Vsevolod Meyerhold a introdus sub pseudonimul Dr. Dapertutto elemente de comedie, clownerii, dans, gimnastică, acrobații și tehnici din Asia în metodele sale teatrale, cu scopul de a le permite actorilor să controleze în mod conștient mecanismul mișcărilor și fluxul energiei. Ulterior a dezvoltat așa numitele studii biomecanice (*études*), integrându-le în spectacole, cu intenția de a lărgii potențialul emoțional al teatrului.

### Cuvinte cheie:

Meyerhold, Dr. Dapertutto, biomecanică, studii biomecanice (biomechanical *études*)

### INTRODUCTION



Biomechanics was founded by the Russian theater maker Vsevolod Meyerhold, an actor and director who had studied and worked under Constantin Stanislavsky. Shortly after leaving Stanislavsky's Moscow Art Theater, Meyerhold began working at the Imperial Theaters in Saint Petersburg (1906). There, both in the Imperial Theaters and in various small experimental theaters, he initiated a new approach to acting that was a departure from the *psychological* approach of Stanislavsky and Vladimir Nemirovich-Danchenko.

Under the pseudonym of Dr. Dapertutto<sup>1</sup>, a miracle doctor named after a character in E. T. A. Hoffman's *Adventure on New Year's Eve*, Meyerhold introduced commedia, clown work, dance, gymnastics, acrobatics and techniques from the Far East into his experimental theater approaches. In the early stages of development in the Pvarskaja studios, Meyerhold and his actors composed short

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<sup>1</sup> Pseudonym given by Michail Kuzmin to Meyerhold. / Dapertutto « Vous n'avez pas d'épée... prenez la mienne. »

exercises and coined them *melodramas/bufoades*. They were designed to allow actors to control the mechanism of their movements and energy consciously and practically. Meyerhold's intention was to widen the emotional potential of theater and express thoughts and ideas that could not easily be presented through the social and natural realism theater of the period. Over time, he developed them into biomechanical *études*, and then began integrating them into performances.

One of the earliest performances that incorporated these *études* was Fernand Cromelynk's *Magnanimous Cuckhold* (April 1922). The production utilized a constructivist/Popova set that could be erected anywhere (conventional theater flats and platforms joined by steps, chutes and catwalks using scaffolding). The set was an ideal platform for the actors to express their biomechanical agility, 'a spring-board... which quite rightly was compared to the apparatus of a circus acrobat'.<sup>2</sup> Popova also conceived of the uniform-like costumes/working suits called *prozodiejda*. By 1922, as the newly appointed Director of the State Higher Theatre Workshop in Moscow, Meyerhold developed his system officially as a pedagogical training approach. Biomechanics eventually influenced much of the physical theater of the 20<sup>th</sup> century, and continues to influence theater training programs worldwide today.

## ORIGIN OF BIOMECHANICS

*There are no such things as standard rules in the western acting tradition... but we have to believe it in order to survive.*

Jaques Copeau (*Le Patron*)

Meyerhold was one of a long line of theoreticians and practitioners who wanted to develop a systematic methodology for practice and learning in the performing arts. He was seeking principles and forms that could be handed down orally—functional acting treatises with clear terminology. Examples of treatises like this already existed from the East, including the *Natya Shastra*, an ancient Indian treatise on performing arts, and Kanami's *Kadensho* and Zeami's *Fushikaden*, the first known treatises on drama in Japan. The Indian and Japanese treatises provide guidance on standard forms, and validate the importance of learning from a master. The *Natya Shastra* teaches the concept of *rasas*, mental states (eight) that are achieved in the performing arts through the mastery of specific gestures called *bhavas*. The *Kadensho* and *Fushikaden* characterize the process of training as lifelong, predicated first on mastering the technical aspects of art through practice. The actor must master basic models (*katagi*) involving vocal music, dance, vigorous

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<sup>2</sup> Alexei Gvozdev, *Teatr imeni Vs. Meyerholda* (1920-26), Leningrad, 1927, p. 28.

moves, and imitation of masters (*monomane* or *anakurana*). *Katagis* are learned via *kuden* (Japan) or *parampara* (Indian) – oral and practical lessons from master to student... or in “disciplined silence”.

While Meyerhold borrowed from these traditions, it is important to note that many discussions, debates and theoretical concepts also existed in the West, dating as far back as Aristotle. Some influential examples worth exploring include the following:

- Aristotle: *Imitatio techne*
- P.R. Saint-Albine: *Le Comedien*
- Franciscus Lang ‘Crux Scenica’
- Antoine François Riccoboni and Gherardi: *Discussions on extempore comedy*
- Denis Diderot: *Diderot’s Paradox via Clairon and Marie Francois Dumesnille, Adrienne Lecouvreur and Michel Baron*
- Francois Delsartes: *The 9 Folded Accord*
- Emile Jaques-Dalcroze: *Ictus and Eurhythmics*
- Gordon Craig: *The ÜberMarionette*
- Suzanne Bing: *The inexpressive mask*
- Antonin Artaud: *Athleticism of the heart, and Ciphirage & ideograms*
- Etienne Decroux: *Scales and articulations / dynamo-rhythms*
- Ryszard Czeizlak: *Corporals and translumination*
- Sadayakko, Tomaso Salvini, Georg Fuchs, Frank and Lillian Gilberth, Bode, W. James

Like many of his predecessors, Meyerhold was also influenced by the politics and theories of his time. He designed biomechanics during a period when Russian socialist leaders were developing practical applications of Marxism. Meyerhold was concerned with re-crafting the work of the actor so that it would be regarded as organized labor and a means of production. He also wished to address *Diderot’s paradox*, which identified two methods for recalling a character: a) reliance on personal emotions and moods (*L’acteur naturel*); and b) execution and re-creation of exterior gestures via “repetition” (the *technical actor*). In order to distinguish his system as scientifically based (in contrast to the work of Stanislavsky), he attributed part of its design to Fredrick Winslow Taylor’s *time-and-motion* studies on organized labor in America, and on Taylor’s Russian follower, Gastev. Efficiency, the use of appropriate rest periods, reflexology and therbligs were critical to his design.

“If we observe a skilled worker in action, we notice the following in his movements: (1) an absence of superfluous, unproductive movements; (2) rhythm; (3) the correct positioning of the body’s center of gravity; (4) stability. Movements based on these principles are distinguished by their dance-like quality; a skilled worker at work invariably reminds one of a dancer; thus work borders on art.”<sup>3</sup>

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<sup>3</sup> Vsevolod Meyerhold, *The Actor of the Future and Biomechanics* (a report of Meyerhold’s lecture in the Little Hall of the Moscow Conservatoire, 12 June 1922).

## RATIONALE

*Biomechanical training might be compared to a pianist's studies... Mastering the technical difficulties of the exercises and études does not provide the student with a prescription for the lyric energy necessary, let's say, to perform a Chopin nocturne... yet, he must master the techniques in order to master his art. Technique arms the imagination.*

Garin (one of Meyerhold's most talented actors)

Meyerhold believed that an actor embodies both the artist and the art. He borrowed this conceptually from Constant-Benoît Coquelin, who wrote on the dual personality of the actor in *L'art et le comédien* (1880) and *L'art du comédien* (1886). The formula for this can be expressed as follows:

$$N = A1 + A2$$

Here, N = the actor; A1 = the artist who conceives the idea and issues the instructions necessary for its execution; and A2 = the artist who executes the conception of A1.

The dual nature of the actor has many practical equivalents, such as:

- the INSTRUMENT and the INSTRUMENTALIST
- the MACHINE and the MACHINIST
- the WORKER and the MATERIAL

An actor must train his/her body so that it is capable of executing tasks dictated externally by the actor (and director).

Meyerhold also set forth two basic conditions:

1. Rest is embodied in the work process in the form of pauses.
2. Art has a specific, vital function and does not merely serve as a means of relaxation.

With these conditions in mind, Meyerhold espoused that the actor must produce his/her art as efficiently and economically as possible. He/she must also possess (1) *an innate capacity for reflex excitability, which will enable him/her to cope with any employ within the limits of his/her physical characteristics*; and (2) *physical competence, consisting of a true eye, a sense of balance, and the ability to sense at any given moment the location of his/her center of gravity*.

**Excitability:** *the ability to realize in feelings, movements and words a task which is prescribed externally*

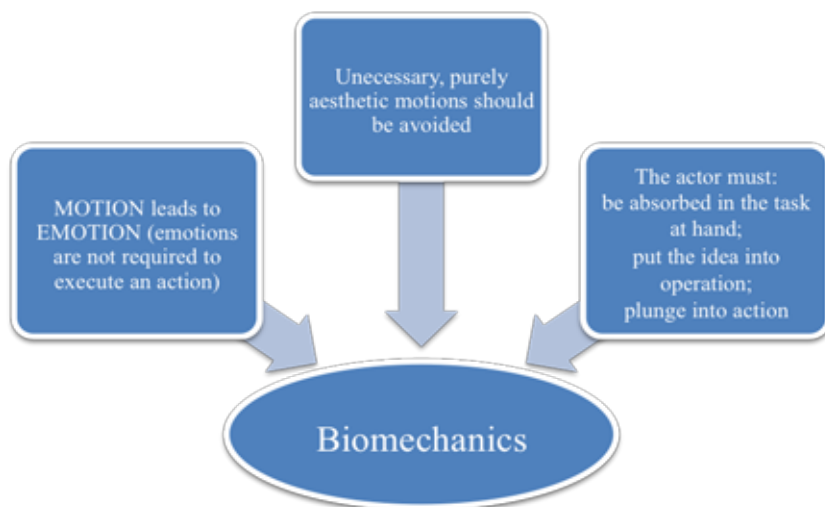
Coordinated manifestations of excitability together constitute the actor's performance. Each separate manifestation comprises an acting cycle.

## PRINCIPLES OF BIOMECHANICS

Since the art of the actor is the art of plastic forms in space, Meyerhold believed that the actor should study the mechanics of his/her own body – hence, the term *biomechanics*. Meyerhold developed a series of training exercises for his students that he called *biomechanical études*. *Étude* is a French word that literally means *study*. An *étude* in music is an instrumental composition, usually short and of considerable difficulty, designed to provide practice material for perfecting a particular musical skill. Meyerhold developed biomechanical *études* as a series of acting cycles with opening and closing gestures that would lead from motion to emotion. He wanted to eschew unnecessary, purely aesthetic motions, and instead promoted simplicity, economy, and complete absorption in the task at hand.

“There is a whole range of questions to which psychology is incapable of supplying the answers. A theatre built on psychological foundations is as certain to collapse as a house built on sand. On the other hand, a theatre which relies on physical elements is at very least assured of clarity. All psychological states are determined by specific psychological processes. By correctly resolving the nature of his state physically, the actor reaches the point where he experiences the excitation which communicates itself to the spectator and induces him to share in the actor’s performance... From a sequence of physical positions and situations there arise... ‘points of excitation’ which are informed with some particular emotion.”<sup>4</sup>

A summary of the basic principles of Biomechanics is provided in the diagram below.



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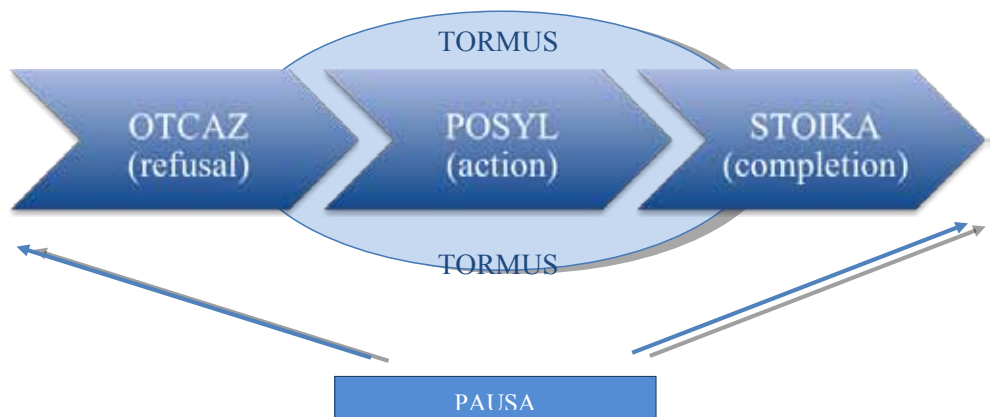
<sup>4</sup> Vsevolod Meyerhold, *The Actor of the Future and Biomechanics* (a report of Meyerhold’s lecture in the Little Hall of the Moscow Conservatoire, 12 June 1922).

## BIOMECHANICAL STRUCTURE AND BASIC TERMINOLOGY

The structure of Biomechanics may be best described by examining the *biomechanical étude*. Consider the *étude* as a short play, for example, about a man walking down a street. Within the *étude*, there may be one or more **sketches** (events or scenes). One of these sketches might be his throwing a stone that he discovers on the street. Each sketch is made up of specific **elements** (movements): he sees the stone; he bends to pick it up; he lifts the stone; he throws the stone; he observes the stone as it lands.

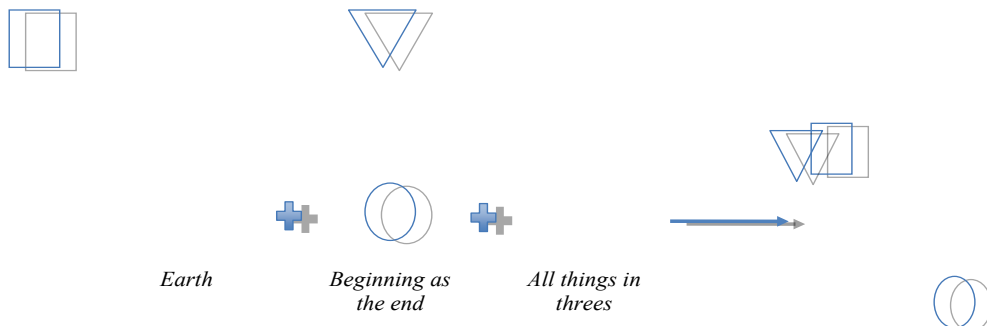
Meyerhold divided the acting chain for each element into three parts, categorized in Russian as *otcaz* (the gesture before one begins, or ‘refusal’), *posyl* (stepping forward into action, or ‘action’) and *stoika* or *totchka* (arrival or ‘completion’, literally a dot or point). He also introduced a cross-cutting concept, *tormus* (literally break, or control), which represents the actor’s way of modulating a given action, by speeding it up, slowing it down, and/or stylizing it. The idea of tripartite components in acting is found in a myriad of approaches and treatises across cultures. The Japanese concept of *jo ha kyu* is one example.

### Biomechanical components



*Pausas*, breaks or rests between movements, are a critical part of biomechanics. While partly rooted in the socialist principle of appropriate rests between labor, *pausas* also come from far earlier roots in Greek philosophy. Early Greek philosophers struggled with humankind’s propensity toward cycles, yet inherent unhappiness because it cannot connect beginnings with ends. The classic example is life: birth (the beginning), and death (the end). The diagram below is a pictographic representation of the kind of harmony Meyerhold and likeminded philosophers strived to achieve

in developing their theoretical approaches and treatises. The square represents *earth*, the circle represents the *beginning as the end* (all things cyclic), and the triangle represents all things that inherently come in *threes* (a principle found throughout arts and sciences). Triad.



The *pausa* in biomechanics serves to emphasize and link the end of one action and the beginning of another, therefore bringing them to a cyclic completion. *Pausas* occur between elements, as a means of bridging the end of one element and the beginning of another, and between components within an element. Intra-element pauses are called *caesuras*. In the example above, a *caesura* would occur before the man bends to pick up the stone, once he bends, and after he picks it up. *Pausas* also occur within the movement of bending to pick up the stone, between the *octaz*, the *posyl*, and the *stoika*. They can vary in duration and take on different natures, depending on their placement in the *étude*. The *octaz*, which inherently leads to a pause, can be likened to the gesture a musician makes just before playing an instrument (i.e. the placement of the bow on a violin).

Each *étude* is buffered with an entrance and an exit, called the *parade*. It is customarily a uniform, slightly fast-paced walk that brings the actor to a *point of departure*, a place where the actor decides to begin the exercise. Once the actor arrives at the point of departure, the *étude* can begin. The opening and closing of each *étude* includes a movement called a *dactyl*. The word comes from the Greek *daktylos*, meaning ‘finger’. It refers to the one long and two short phalanxes on each finger, used as basic metric units in tempo (see diagram below).



The tempo of the dactyl reads as: dum – di-ddy

The movement of a dactyl is a sweeping upward motion with hands and arms, followed by a rapid double clap downward to the ground (see image below).



Generally, movements within the *étude* are half run, half walked, but always on a spring. They are dancelike and self-mirroring. Each exercise is a melodrama; each movement is executed with the sense of performance. Meyerhold further dissected each movement into three factors, or stages.

1. *Namerene* (intention)
2. *Osushtchestvenie* (realization/execution)
3. *Reaktsiya* (reaction)

The *intention* is the intellectual assimilation of a task prescribed externally by the dramatist, performer or director. The *realization or execution* is the cycle of volitional, mimetic and vocal reflexes. The *reaction* is the attenuation of the volitional reflex as it is realized mimetically and vocally in preparation for the reception of a new intention (the transition to a new acting cycle).<sup>5</sup> In general, these three factors occur naturally, but on stage, actors must be acutely aware of them.

## ADVANCED TERMINOLOGY AND CONCEPTS

In addition to the components described above, it is important to understand the concepts and terms that Meyerhold and his colleagues worked with in order to achieve *tzelekupnostj*, a synthetic integrality of awareness on stage. They were concerned with incorporating elements of time, space, shape, movement, purpose, and related constructs in their teaching and practice. While a detailed discussion of these principles is beyond the scope of this brief, the terms and definitions are provided in the following table as a starting point for deeper exploration.

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<sup>5</sup> Meyerhold, V. M. Bebutov and I. A. Aksynov, *Emploi aktyora*, Moscow, 1922, pp. 3-4.



Biomechanical terms	
Term	Definition
<i>tzelekupnostj</i>	synthetic integrality of awareness
<i>raccourci</i>	foreshadowing, buffering
<i>pokaz</i>	showing
<i>partiere di tereno</i>	spatial awareness with respect to partner(s)
<i>leverage</i>	feeling for countermovement
<i>samozerkalenie</i>	self-mirroring (awareness as if filmed by a camera)
<i>pausa</i>	break or rest between movements, elements, sketches... etc.
<i>emploi</i>	the ‘business’ of the actor, the purpose, what he/she must do
<i>uslovnji</i>	form or style
<i>otdatcha</i>	discharge (getting rid of unnecessary energy related to alertness)
<i>dansantnostj</i>	dancelike
<i>soznanie</i>	synthetic awareness
<i>popal</i>	when sound comes through, as in a shout
<i>namerenie</i>	intention
<i>osushtchestvenie</i>	execution
<i>reaktsiya</i>	reaction and recoil
<i>razryazhenie</i>	detente
<i>zritelnaya</i>	Perceived emotion in the audience

\*\*On Youtube: Niky Wolcz

- Biomechanical Etude for “Il Principe Constante”- Calderon/Meyerhold
- IL-BA-ZAI two biomechanical Etudes.
- Training of Dramatic Instinct.

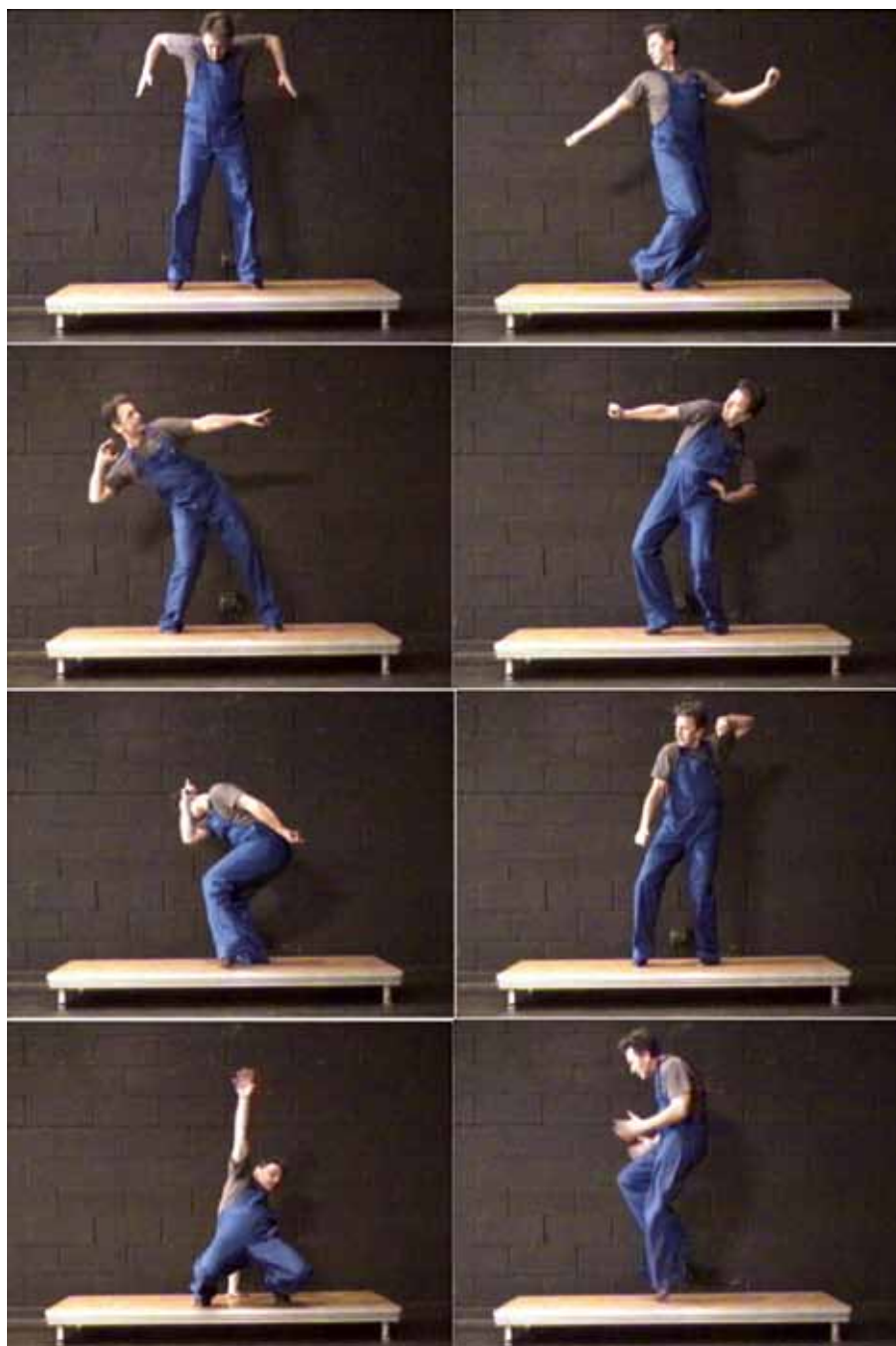


Foto: Níky Wolcz – biomechanical exercises