

Pudovkin's "Mechanics of the brain" Film as physiological Experiment.

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After finishing this film I understood that the possibilities of filming just have started to open up to me. My meeting with science strengthened my belief in art. Today I'm firmly convinced that these two ways of human perception are much closer connected than many people think. Vsevolod Pudovkin/1951

In 1925 Vsevolod Pudovkin, leaving his studies in physical chemistry unfinished and having worked a few years both in a chemical laboratory and in the experimental filmstudio of Lev Kuleshov, began shooting his first independent film: the "Mechanics of the brain", a didactic documentary of Ivan Pavlov's physiological laboratory in Leningrad. One year before the Soviet party had started the campaign of "Cinematization of the whole country". *Factography* was the concept, which connected writers, photographers and filmmakers to produce propaganda movies and bring cinema and ideology simultaneously to the largely alphabetic population. This tendency of effectivation, which had started with the death of Lenin, was reinforced by Stalin at the end of 1924, when he presented his program of *accelerated industrialization* at the 14th Convention.

It is in this dynamic spirit in that Pudovkin set his goal to teach Pavlov's physiological results to the masses just as the functioning of his new medium, film - and he accelerated some things as well. As Pudovkin cut several decades of physiological research down to forty minutes of film and to a few years of Pavlov's reflexology, he also condensed five years of apprenticeship with Kuleshov into one and a half years of shooting and into a few, but crucial theoretical cornerstones of his film production. "Mechanics of the brain" therefore stands in line with several events, which all refer to complications between scientific-experimental and artistic-medial practices.

Following this, Vsevolod Pudovkin explains his camera technique in the "Mechanics of the brain" as the result of dealing with Pavlov's reflexology: "I became aware of the fact that the photographic exactness in fixing a movement allows one to catch this much more accurately than with a simple observation of the eye. I proposed [...] to fix the narrowing of the pupil with the camera as a precise unconditioned reflex of the eye [...]". The proposal was accepted by Pudovkin's scientific consultants at the laboratory. The result was a camera-optic, which constantly opens and closes its aperture as a simulation of the human pupil, at one time narrow and focussed, and at another wide and giving a blurred image. But Pudovkin's idea was not only to imitate the functioning of the human eye and to transport physiological knowledge ingeniously with his medium film. In his first press talk on the "Mechanics of the brain" he promised "to *develop* the «doctrine of the reflexes' *by film*, [...], to record moments of scientifically valuable experiments, which can only be fixed *with the help of the objective of a film-camera*". The functions Pudovkin postulated for his apparatus go far beyond the problem of documentation. He considered film technique not only to be a condition for *mediating* experimental knowledge, but as a procedure amenable to the scientific goal of *investigating* experimentally gained knowledge.

The operation of narrow and wide lenses through the whole film is not at all coherent, which means it is not exclusively dependent upon the specific physical conditions of the perceptual space. Instead the camera objective is used as a formal vehicle which arranges the "Mechanics of the brain" into four scenes: Nature, laboratory, hospital and filmstudio, each corresponding to the places where Pudovkin was shooting. The movie starts - in *nature* - with everyday leisure activities of the soviet citizen: swinging, swimming, horseback riding. Shots of zoo animals lead over to Pavlov's *laboratory* and to central experiments in the history of physiology - with frogs, dogs and monkeys. The third part of the "Mechanics of the brain" returns from the animal kingdom to the human world, to the *hospital*: the birth of a new human being is shown and the demonstration of all of his natural reflexes finally merges into the exemplary conditioned soviet child, whose skills and inspiration grow constantly from his first to his twelfth year. But there is one striking difference: this ideal child grows neither in the physiological laboratory nor in social reality, but in the *film studio* of the producer.

The comparison of these scenes and their particular camera performances with each other shows that the opening and closing of the lens in the *nature* and *hospital* sections are much livelier and more noticeable than in the ones in the *laboratory* and *studio*: the lens opens in the beginning suddenly after a cut from a long shot at the beach into a close-up of a group of undressing boys. Correspondingly the lens is hardly opened when watching the birth procedure and later the feeding of the baby. Against this the shots at the laboratory give a permanent diffuse light with a slightly closed lense, just as the scene of playing children in the studio is also shown with a mainly constant objective.

If Pudovkin permanently holds the eye of the spectator on the presence of a camera focus, forces him again and again to the point of view of the lens itself, into the black box of the camera, it was to make him aware of his *mediated* perception. If Pudovkin pulls the attention of the viewer from detail into long shot and back again, if he repeats shots in changing situations, it was to make the viewer realize the functioning of his perception in a reflexological manner: "The lens of the camera is the eye of the spectator. It depends on the director if the spectator will become a good or a bad observer. It is clear that the turning of the attention there and back - it corresponds to the montage - is a process based on strongly regular forms. The forms must be properly observed and have to be completely transferred to the structure of the montage."

That Pudovkin intentionally feedbacks each place of action by the focus of his camera is almost obvious. There was nothing in these one and a half years of shooting to be left to pure chance. The director "has to make accidental material useful [...], then the will of the director transforms reality [...]". An understanding which Pudovkin came up with while filming the see lions in the zoo.

Linking nature to hospital and laboratory to studio is Pudovkin's comment on their status in the process of research and cognition. This becomes easier to understand when considering such basic texts of experimental physiology like Claude Bernard's "Introduction into the study of experimental medicine" and its theoretical pillars - observation, chance, repetition, verification, doubt, idea. Bernard's experimental praxis became familiar to Russian physiology in the 1860s via Ivan Sechenov, who studied physiology in French and German Laboratories and whose publication in the West was once even sponsored by Claude Bernard. Sechenov is known as the "Father of Russian Physiology" and the forerunner of Ivan Pavlov. With his dissertation work "Reflexes of the brain" (1863) he drew a crucial thematic line between the french scholar and the "Mechanics of the brain". In the end, Pudovkin, through the process of using his apparatus on this subject matter, expanded the discussion of experimental physiology on objectivity in nature, hospital, laboratory to the objective possibilities of his camera. He deals with the reality of his medium, the film studio and its technical conditions - camera and montage. It seems that he gave a methodological answer to the main question of the first "Allrussian Conference for Initiatives of Scientific Labor Organization and Management" in 1921: "Which stimuli have to be used, which interests have to be roused in the worker, to get out of him [...] the maximum power in the best working conditions?" Pudovkin's answer would be not to "make him watch the recorded object" but to "force him to understand the viewed".