THE SHAPE OF SPECTATORSHIP: ART, SCIENCE, AND EARLY CINEMA IN GERMANY

Philip Teuchmann (FCSH-UNL)

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In the last few years, there has been an increasing trend which has changed and refreshed the historiographical methods in cinema studies. This new movement in the historiography of film prioritizes linkages: interfaces, couplings and articulations between the moving image and other realms of human cultural and social activity; it assumes and emphasises the plurality of applications of media technologies (in this case film). Scott Curtis's *The Shape of Spectatorship* (2015) clearly belongs to the drift mentioned above, and is perchance one of the first books that addresses exclusively the relationship(s) and connection(s) between early film and the pertaining epistemological and ideological context. It is with this in mind, that Curtis's book opening states: "whatever cinema is, it has always been many things to many people." (Curtis, 2015, p.1), thus seeking to explore the relationship between film, science (physics, motion studies, medicine, educational and pedagogical enterprises) and aesthetics (the Kantian tradition, which generally draws its attention to the reception of the work of art) in Wilhelmine Germany. It should be noted that other outstanding examples of this "contextual turn" in the historiography of the moving image are Vonderau's *Films that Work: Industrial Film and the Productivity of media* (2009), Oliver Gaycken's *Devices of Curiosity: Early Cinema and Popular Science* (2015) and Andreas Killen's *Homo Cinematicus* (2017).

Curtis's aim is to show the "heterogeneity of early cinema" (2) and the quest for legitimacy of this "new" media technology ("always already new", as Lisa Gitelman would say). To carry out this challenging task, Curtis's develops a critical analysis in four of his chapters—each of them featuring different (but linked) case studies—the way film is shaped by the diverse patterns in which an object of study is represented in a certain epistemic culture[1]. Film is therefore defined by its multiplicity of meanings whose variation depends on certain traditions of "ways of looking that are assumed" (6) by each discipline. These ways of viewing are always collective, shared by the members of a certain community (be it medical or aesthetic) and which are in its very nature always segregating, establishing requirements, rules and ideological bonds that must be respected and followed if one chooses to be part of the community. Therefore, "the ways of looking that are assumed" (pag.2) by different disciplines are always of a performative nature. However, Curtis identifies a particular dialectic in this process: film is not only a passive cultural form that is moulded by expert viewing; film actively shapes practices of looking in which it is itself a way of looking. Fulfilling Berkeley's dictum "*esse est percipi*", media technologies determine our situation[2]

by determining our perception, affects and senses. Therefore, the moving image features a whole new fashion of representing the world, shaping expert viewing and thus being a catalyst of new problems (in science, medicine, aesthetics, etc.). Film becomes a synthetic category for modernity's problems and debates around questions of education, representation, perception and ideology. In fact, cinematic experience becomes an "expression of the state of urban life" (pag.13) and grants continuity to the history of fragmentation of the subject traced by Jonathan Crary.

The first chapter ("Science's Cinematic Method") traces the use of film in three renowned scientific disciplines: human motion studies, physics and biology. Each of the scientific disciplines and the established relation between technology and epistemic object enables Curtis to display cinema's diverse epistemological functions. In other words, the relation of chronophotography and film to an "object of study" (the body in human motion studies), "a theory" (physics and the recasting of Brownian motion by Einstein) and "representational options" (the research on cells in biology). The ability of the cinematograph to "decompose the event into discrete, regular units" (pag.21) earned himself some prestige and value. Indeed, Henri Bergson already declared that science and film shared some "philosophical affinity" (pag.22). For Bergson cinema, like science, overlooks the *Whole* due to its inability to acknowledge the qualitative dimension of time, or as he calls it, duration (*durée*), which is always a *becoming* (*avenir*). Although Bergson's critique might be understood as part of the broadly context of critiques to images and simulacra (which characterizes western's metaphysical tradition), one also might assume that the relation of science and film is built precisely upon film's ability to quantify, measure and manipulate time and space.

The manipulation of time and space is already obvious in Braune and Fischer's experiment (human motion studies). Directly related to a general "medicalization of society" (pag.127), a conventional *Weltanchauung* of the nineteenth and early twentieth century, Braune and Fischer aim first to decompose human movement and then to reconstitute it so that there could be an increase of efficiency in movement, that is, a better conservation of energy and lessening of fatigue. Evidently this experiment had an indubitable military orientation and concepts like energy (consumption and conservation) become tropes for the moral and physical wellbeing of a society. To decompose and to measure bodies was the first step to take in order to rebuild society (Curtis, 2015). It was with this in mind that Braune and Fischer wanted to build a three-dimensional model of human movement, which was only possible through the decomposition and measurement of the human body, thus rendering him docile. Furthermore, the composition of a legible image was only possible by first rendering the body visible (accomplished through Geissler tubes), that is, a selection of what is of significance for the experiment. Secondly, Curtis says that there is also the need of

constituting a graphic (or mathematical) space. These elements materialize the body's "protomathematical properties" (49), thus creating mathematical space. Finally, the interpretation of the data would render the "real" body into an "ideal", creating an "*eidetic* image" (59), which culminated in the above mentioned three-dimensional model. For Curtis this final operation is cinematographic, forging continuity out of discontinuity. The second experiment (located in physics) describes the early twentieth century quarrel between phenomenological thermodynamics, a heritance of Newton's mechanics and atomic-kinetic theory. The atomic-kinetic theory shed some light on the behaviour of matter (composed of particles of so small nature that they were invisible). Brownian motion demonstrated, in turn, that the movement of particles had to have some external cause. An experimental confirmation to that thesis came from Einstein, which advocated for the atomic-kinetic theory of heat. Einstein succeeded, proving that the laws of thermodynamics did not apply absolutely, but only statistically. Not only did Einstein found in Brownian motion theory the backbone for proving the existence of molecules, but he also proved the displacement of particles. After Curtis, the significant role of cinema comes to light with Seddig, who built a cinematic apparatus for the measurement of Brownian motion. In Seddig, one may find the "empirical translation of Einstein's displacement equation […] an experimental method that corresponded to […] Einstein's theory" (72), which in spite of the efforts, still remained more of a theoretical guidance than a mathematically built description. Indeed, even Einstein's theory remained akin to the workings of the cinematographic apparatus. There were gaps and deletions in Einstein's equation, for the complete and actual path of the particles was not traceable. According to Curtis, the "interruption" created finds its homology in Seddig's cinematic interruption. Therefore, film is rendered mathematical, and time becomes reversible both in Einstein's equations and in Seddig's cinematographic truth. The third example of Curtis concerns biology, in particular nerve fibers. In this case, motion picture technology emerges in all its rhetorical power. Studying the processes that govern the organism, the argument developed around what type of connection there was between fibers and tissues. In other words, how nerve fibers grew. There again, this was a question of movement, leading Curtis to declare: "once the new techniques were available, new questions came to the foreground" (81). Anticipating some of the issues of the second chapter, Curtis highlights the importance of "virtual witnessing" prompted by film, wherein lies its rhetorical power. The major relevance of film lied here in its reproducibility, even substituting the object of study. Analogous to tissue culture, film granted the isolation and analysis of tissues, thus permitting measurement and manipulation. In fact, film became a new form of evidence, structurally reproducing Harrison's *in vitro* technique and materializing Benjamin's "optical unconscious". Perhaps referring himself to our *posthuman* condition, for Curtis the analogy

lies in the fact that both film and tissue culture reproduce the notion that life is separable from the body.

The second chapter ("Between Observation and Spectatorship) emphasises the relationship between researcher and image. Being still part of science, this chapter can be seen as a bridge between the first one (concerned mainly with science) and the third one, concerned with the notion of "*taste*". Curtis demonstrates that German doctors were particularly interested in cinema. In fact, for Curtis there is a correlation between life and death, as well as, movement and stillness. Cinema served firstly an exploratory function, granting the researcher with the power to manipulate time and space, thus leading to an exploration of new domains and comprehension of the complexity of movement. Secondly, it served a documentary function, being able to capture moving (ant therefore fleeting) phenomena. This function is related to cinema's rhetorical power, building a new type of truth. This leads us to the third function: its pedagogical nature. The potentiality of cinema as a *medium* of education was soon recognised, be it for students, teachers or the general public. However, the pedagogical nature was also related to the training of the eye and perception. Indeed, the difference between spectatorship and observation lies in the capability of controlling the moving image. While spectatorship was perceived as a passive stance (resulting from the untrained eye), observation was perceived as a critical and controlling approach to cinema, preaching a contemplative stance. This contemplative stance translated itself in a "viewing protocol" (140), linked to the notion of *Wille* ("will") and attention, which avoided immersion. Spectatorship, on the other hand, was shaped by this immersion, thus the comparison between cinema and hypnotism. In the third chapter ("The Taste of a Nation") Curtis lengthens his analysis of spectatorship to taste. Indeed, anticipating what will be said in the fourth and last chapter, Curtis explains that those who wanted to reform cinema pretended to do it by negotiating between the new *medium*'s singularities and the moral as aesthetic values of Wilhelmine Germany. This reform would also appease the tension existing between *Zivilisation* and *Kultur*. Therefore, for reformers, film's most useful shape was its pedagogical and educational potential, which translated itself in the *Anschauungsunterricht*[3]. "Vision was the means by which taste was trained" (146), thus the *Anschauungsunterricht* was directly liked to aesthetic education and norms. Curtis subdivides the film reform movement in *Filmreform* and *Kinoreform*, the first engaged in reforming movie's content and the second the physical space for it was deemed that both films and theatres had "physical and moral side effects" (154), especially for children. Accordingly, the film reform movement not only issued a general plea for filmic realism— as film was seen as something that is "faithful to nature" (179), his function was recording and reproduction of "real life"—but also was simultaneously concerned with the regression of aesthetic sensibility. Therefore, Curtis shows that there is a correlation between spectatorship, masses and childlike behaviour. The problem

of taste was then a problem of "moral weakness". By being the perceived solution to the aforementioned problem, aesthetic education emerges here in its full moral potential, precisely by yielding a moral renewal. Therefore, aesthetic education was predominantly conservative; homologous to the *status quo*. For Curtis, this is specially clear not only in the controlling function that the *Anschauungsunterricht* assumes in relation to modernity, the image and movement, but also because the "visual education" always supposed the mediation and intervention of the word, as a means of rationalization. Hermann Lemke even suggested that films should be preceded and succeeded by discussions. Therefore, film was put "into an orderly and recognizable system of practice" (177), which is translated in the numerous attempts to adapt film to school *curricula*.

As the fourth chapter ("The Problem with Passivity) demonstrates, aesthetic education, the basis of the film reform movement, still was perceived as the major means to counter cinema's negative moral and physical side effects. As Curtis argues, temporality and control play an important role in aesthetics. In fact, those who master time and body are perceived to master motion pictures. Therefore, in the fourth chapter Curtis focal point is the *Kino-Debatte*[4]. For Curtis, the *Kino-Debatte* represents an enlargement of the discourses on cinema in Germany, due to its increasing popularity and significance. However, the *debatte* was two-pronged. On one hand, advocates of cinema felt the need in justifying the new *medium* in terms of literature, drawing on the written word. Indeed, as Curtis demonstrates and as we have seen, there was an urge to "conform film to traditional bourgeois aesthetics" (194). On the other hand, there was also the acknowledgement, as Walter Benjamin argues, that cinema represented a dramatic change in aesthetics, establishing new modes of reception of art such as distraction, mass reception, hallucination, shock and embodied immersion, thus replacing the individual contemplative stance and recasting categories of space, time, agency and identity. By all means, the *Kino-Debatte*, as Curtis argues, was an aesthetic debate and therefore placed in the "larger ideological problem of the moral significance of the aesthetic experience" (199), for the "viewer's stance before the image was also a stance before the world." (213). It is with this in mind that Curtis explains thoroughly the concept of *Einfühlung*, which establishes a "resonance between the structure of the body and the structure of the artwork" (216), a resonance thought in terms of movement and described prevailingly in terms of emotional projection and embodied perception. For Curtis, *Einfühlung* was therefore an attempt to reconcile some of the values of traditional aesthetics and modern art reception. During the chapter, Curtis shows gradually how aesthetics suffers a conversion. In fact, one example is Walter Serner's "Kino und Schaulust"[5], which links aesthetic experience in cinema to sexual desire: cinematic movement appealed to our "basest instincts, our darkest needs." (229). "The eye was no longer detached from the body" (229) as

it was in traditional aesthetics, for aesthetic experience could now also encompass not only erotic but also physic, bodily, visceral reactions.

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[1] To make use of the acclaimed concept of Karin Knorr Cetina.

[2] As Kittler and other so vehemently noticed.

[3] *Anschauen* means to look at, to behold or watch; a lengthy gaze. *Anschauung* can be translated as "intuition", but also "contemplation". *Unterricht* means, in this case, lesson.

[4] A term created by Anton Kaes.

[5] Cinema and Visual Pleasure.