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Béla Balázs and the Eye of the Microscope

Absztrakt

This study explores the significance of the cinematic close-up to one of the earliest theories of film, produced by Béla Balázs, on the basis of a widespread technique of microscopy in the life sciences, notably in the work of his brother Evin Bauer, a theorist of microbiology. Balázs imagines that silent film records life in its immanence and spontaneity by virtue of what he calls the “physiognomic” nature of its signs. Rather than generating signs that must be passed through an alphabetic cipher, as had been required under the regime of the written or literary, Balázs presents film as liberating our access to the flow of optical data. Interestingly, however, Balázs retains the need otherwise characteristic of scientific analysis for dividing up the image into semiotic units, what he describes as “atomization.” He insists on returning the real to a symbolic order and making film into a language. Although he rejects the intellect as capable of expressing and comprehending life, Balázs produces a semiotic system for its analysis that anticipates the “errors” that could arise from subjective perception. If cinema's “language” is both methodical and irrational, both scientific and aesthetic, this is because its images systematically provoke signs in the viewer of a “physiognomic” rather than rational order. And as microscopic studies of the life sciences such as his brother's had shown in the 1920s and 1930s, the “language” of life could only be known by leaving behind the familiar, Newtonian space-time of visible, “macro” reality.

Szerző

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In 1930, the film theorist Béla Balázs published what was his second volume on the theory of cinema, *Spirit of Film*. [1] One of the reasons he gave for updating his readers since his book in 1924 was that during the seven years, the camera had moved "closer" [*näher*]. [2] The thematic of "closeness" was not new to Balázs. His 1924 *Visible Man* had already claimed the cinematic close-up as the "true terrain of film." [3] Given its association with no less than the very medium specificity of cinema, the close-up would seemingly not have needed an enhanced role in Balázs's updated theory of film. Nor had the technology of cinematic magnification changed over the course of the twenties. In fact, Balázs does not alter anything in his report on the function, technique or use of the close-up in *Spirit of Film,* making his statement that things were getting "closer" rather enigmatic. Instead of as optical magnification, cinema's greater "closeness" must be explained in other ways.

Figure 1 La Passion de Jeanne d'Arc. Carl Theodore Dreyer, 1928

In the chapter on the "Close-Up" in *Geist des Films*, Balázs illustrates the theoretical significance of the technique through Carl Theodor Dreyer's *La Passion de Jeanne d'Arc* (1927). [4] Dreyer not only shot the majority of the film in variable close-up, but those of Jeanne d'Arc in particular have since become iconic instances of the technique. (Figure 1) However, when in 1927 Carl Theodor Dreyer chose to direct the *Passion de Jean d'Arc*, he wrote that he wanted to convey "the impression

of watching reality through a keyhole" [5]. This interpretation of Dreyer's formal language is particularly curious as the effect of a keyhole is one of obstruction rather proximity. As seen in examples of early cinema in which an iris was used to block out all but a small portion of the scene, the "keyhole" effect and the close-up both worked toward bringing things closer, but one did so through optical reduction, and the other through optical expansion [6].

This paper suggests that, implied in the primary importance ascribed to techniques of "closeness" was a veiled challenge to the precision claimed by scientific instruments constructed to measure distance. Balázs's familiarity with the theory and instruments of the life sciences constitutes a wholly unexplored context in which it is critical to place his arguments for cinema as an art form. Examining the idea of "closeness" as it is developed with reference to science will also shed light on Balázs's interest in the aesthetic, socio-economic and philosophical experience of alienation. For Balázs, as for others like Benjamin and Kracauer, closeness arose from an awareness of modern man's removal from nature, or a lapsarian state of otherness. Despite the Marxist theorist Georg Lukács's dismissal of Balázs's claim to writing the "first Marxist theory of cinema," the relationship set up by closeness to distance might help us understand how Balázs positioned cinema with regards to its historical origins in capitalism.

Dreyer rigorously limits the profilmic spaces in *Jeanne d'Arc*, above all, in the film's famous interrogation scenes. The number and range of objects that appear before the camera are reduced to a minimum. Ornamental, architectural and sartorial period details are kept to a minimum. The monks' robes are generic: Jeanne's vestments are modest, and the settings are whitewashed, empty walls of ecclesiastical quarters. The repression of detail is pronounced, given that Dreyer displayed great historical sensitivity by basing the film on transcripts of the 29 interrogations to which Jeanne had been put (which he also limited in number). This minimalism is matched by a persistent reduction of the optical capacity of the camera. Not only does Dreyer regularly blinker the camera's range with a hovering iris, but he also insists on remaining within a few feet from his profilmic subject. The effect of such proximity is cumulative, so that despite the peripheral blocking simulating an obstacle between the object and viewer, the lack of space and the subsequent spatial jumps between set-ups gradually generates a sensation of claustrophobia.

The most striking of strictures Dreyer imposes, however, is his intense preoccupation with the face as subject-matter. Balázs himself described the film in the following terms: "A group of fifty people sit in the same place for the entire duration of the scene. For a thousand meters of film, nothing but heads." [7] Heads – numerous and largely stationary – are indeed the near-exclusive focus of Dreyer's film.

If Dreyer's "keyhole" device and the close-up exert an overall repression within the image, this is because they both contribute to an uncompromising isolation of their subjects. Balázs's impression that the film is made of "nothing but heads" is largely motivated by the physical cropping away of their surroundings, but it is also accomplished by the adjustment of the recording technology to the image. Not content with simply training his focal point on one among

a multiplicity of subjects, Dreyer retracts as much spatial volume between camera and subject as possible (close-up) and encloses it within a frame whose circularity matches the roundness of the faces (iris). As Balázs states, these are "heads without spatial context" [8].

The severity of the cropping is all the more conspicuous in *Jeanne d'Arc* as the close-ups repress the very markers of space that had become essential toward building diegesis. For it must not be forgotten that the film tells the story of Jeanne's inquisition, from her appearance at the tribunal to her execution. Dreyer's reliance on a variable close-up for the 90 minutes of the film fragments the narrative into sequences of delayed action. On the one hand, Dreyer's emphasis on the movements within the face could be related to the extreme anthropocentrism of Hollywood's cult of the star, which exploited and bolstered the actress's iconic status through enhanced lighting, soft frames and close-ups. Although a "fetishistic scopophilia," to use Laura Mulvey's words, is undoubtedly at play here, the sight of Jeanne's face as she is questioned, accused and tortured grips the viewer precisely in the ways the actress Renée Jeanne Falconetti departs from ideals of beauty. If the keyhole perspective creates a mode of exhibitionism, this would be closer to the "moving-head" subgenre of early cinema. [9] Saturating the screen in the manner of an "affect close-up," Dreyer's heads revived the visceral effect of the first appearances of deliberately monstrous faces. Rather than anthropocentrism, Dreyer seemed to be interested in a mode of filmic representation described by André Gaudreault as 'monstrative.' [10] "Monstration," according to Gaudreault characterizes the early cinema of 'effects,' or what Tom Gunning has called the "cinema of attractions," in which enthusiasm for the medium inspired profilmic subjects to demonstrate a story by talking or looking directly at the camera rather than have the director "tell" it through montage. [11] And yet if Dreyer appears to relinquish a narratological position, it is clear that his spectator is also meant to exercise restraint. At once drawing in and shutting out the viewers, the "keyhole" mobilizes what Mary Anne Doane in her study of the close-up has argued is a contemplative mode of observation in which the viewer "[exemplifies] a desire to stop the film, to grab hold of something that can be taken away." [12] Pursuing Falconetti with his view-finder, Dreyer enacts the possessive spectator with the fetishism not of the male gaze but of the lepidopterist. By inciting an attitude of passive desire in his viewer, Dreyer sets up ideal conditions of observation. Pinned to the lenses, his 'specimens' cannot but unfold in all their multiplicity.

Preceding his turn to cinema, Balázs delivered a lecture entitled *The Metaphysics of Comparison* in which he described the implications of placing two perceived objects side by side. [13] In such proximity, he stated, the eye cannot take in the appearance of both. Rather, in such a state of closeness, the eye scans both objects until it finds an attribute they share (*egyik elemük közössége*) and then focuses (*ráállítja*) exclusively on it at the expense of all others. [14] Closeness as a state of physical proximity here replaces empirical vision with a more formal order of perception. Balázs goes so far as to claim that without such comparison, neither object would actually be seen.

> "Because until I see [the two objects side by side] with my eyes focused on one point, I do not see the objects at all. Because one cannot see everything equally and the concept of a whole

never yields a concrete image." [15]

If the "whole" only exists as a "concept" [*az egészet jelentő fogalom*], what constitutes the image of the object as a part of "concrete," material reality is the shared attribute that surfaces in its features in the process of a comparison. In other words, proximity or closeness here reworks the previous hierarchy of our visual attentiveness, to fore- and backgrounds for instance. It alters our normal operative vision on the basis of an arbitrarily defined perception of similarity or formal correspondence. The question of what closeness brings to the fore of the cinematic image can be most readily be understood through the visual effect of the same image repeated over time, in other words through montage.

Over the course of her inquisition, Jeanne's character undergoes a range of abuses. She is cross-examined, intimidated, accused, humiliated, implored, deceived and eventually executed. Given the number of angles taken on her persecution, it is unexpected that Jeanne's formal expression remains relatively unchanging throughout the duration of the film. Whereas a range of camera movements and montage are used to animate those in her environment, Jeanne is always filmed by a stationary and unblinking camera. Cropped hair outlines the face in a thin, dark contour. Skin stretches wide between two cheekbones, not salient enough to break the face's round frame but proportioned generously so as to preserve an almost geological immobility. Expression condenses into the narrow, cross-like region of the facial features. The face becomes a cathedral: eyes and brows, transepts; nose and mouth a nave. With each question of the inquisition, we are returned to this silhouette. Remarkably little changes. The constancy of its image makes it unbearable. It appears and reappears with the regularity of a personal pronoun, a subject whose default position is that of speaking, being spoken to or being spoken about.

With this repetition, Jeanne's face divests itself of its human particulars in order to assume what one might call general cartographic values. The sections of the face that conventionally serve as sites of emotional expression progressively lose their legibility, yielding instead an affective opacity in her features. Without losing its capacity of differentiation, Jeanne's face gains a semiotic equivalence such that with each shift in expression the result is a slight alteration of one rather than a complex of symbolic values. Still a catalyst of the narrative, Jeanne's magnified features become the physical setting for her inquisition. The magnified, flattened form of the face becomes the very landscape of Jeanne's "Passion." As Jean Epstein's remarked in his 1921essay *The Close-Up*,

> "A breeze of emotion underlines the mouth with clouds. The orography of the face vacillates. Seismic shocks begin. Capillary wrinkles try to split the fault. A wave carries them away." [16]

The montage of Jeanne's image transforms the mimetic representation of a face into a non-mimetic, "invisible but evident expression." [17] It is within this topography of plates and tides that the story of Jeanne d'Arc takes place.

By close repetition of Jeanne's face, film allows for the visualization of inner struggles that would

otherwise be optically inaccessible. Hence the entire premise of Dreyer's film is the ability to convey, by virtue simply of drawing closer to facial expressions, an entirely novel sort of action. Balázs writes about *Jeanne d'Arc*:

> "Nowadays, the inner action, which becomes visible only in the face, is deemed more interesting than action visible only in external movements. […] In the dangerous duel played out here, it is looks that are crossed, not swords; and they generate a breathtaking tension that lasts two hours. We see every thrust and every parried blow, every feint, every rapier lunge of the mind, and we see the wounds inflicted on the soul. This film is acted out in a different dimension from Westerns or mountain films; and it is the camera's proximity that makes this possible." [18]

The emergence of a subtext in closely rendered facial expressions is like reading "between the lines," he continues, except it is "between the features, as it were." Balázs calls this figure within the face the "invisible countenance" [*das Unsichtbare Antlitz*], or more generally, a "physiognomy." [19]

With this distinction between the 'countenance' [*Antlitz*] and the 'face' [*Gesicht*], Balázs drew on a long-standing tradition in European intellectual history that viewed the face as the sensual manifestation of the human soul. Although the "reading" of individual disposition based on forms and features was not disconnected from traditions of divination and astrology, "physiognomics" as a scientific method of study was first definitively established by Johann Caspar Lavater, who, with the assistance of Johann Wolfgang von Goethe, published *Physiognomische Fragmente* between 1775 and 1778. Financed through subscriptions paid in advance and promising to analyze silhouettes sent in by buyers, Lavater guaranteed his volumes' financial success, and yet the vogue that his analytical method made of silhouettes within European civil society meant that his readership far surpassed his original expectations.

A similarly expansive belief in the expressiveness of appearance drives the conceptualization of surfaces in the first three decades of the twentieth century in Central-Europe, such as in August Sanders's *Antlitz der Zeit* (1929). [20] For the desire for "new trans-individual system of reference" in the historian Richard Gray's words that "detected personal essence not in terms of psychological traits, but rather on the basis of external identifiers such as clothes, hair-style, manner of speech and general habitus" both restricted and expanded the contemporary culture of semiotic ambivalence. [21] Meaning was sought in a range of phenomena such as street furniture, display windows, handwriting, makeup, photographic portraits, all of which had in common a surface value of semblance, understood as the flaring out or radiance of things that Walter Benjamin would call *Schein* or semblance. [22] Like Lavater's silhouettes, Balázs's faces on film constituted impressions produced by the narrowing of space from a given source of expression. Possessing all of the epistemological charge of an indexical imprint, this sign was contained in a "flattened" version of the space that normally separated viewer and viewed, essence and appearance. [23]

Physiognomics in Central Europe of the 1920s and 1930s would diverge from its Enlightenment

origins in various ways, but Balázs associated cinema with the silhouette as an example of a technology that through "mechanical" reproduction afforded a view onto a thing's "inner organization" (o*rganization interieure*). [24]

> "…as in a silhouette, [cinema] separates out the physiognomy of the most individual, innermost character from its contingent atmosphere." [25]

If it was believed that any living creature transmits its innermost mysteries through its outward shape, the observer needed an interpretative device with which to look at them. The silhouette posited that, by tracing the shadow cast by the sitter's head on a stretched piece of paper placed at a short distance from them, the sitter's external appearance would be transformed into text. The set-up of the *Schattenrissmaschine* or "silhouette machine" clearly illustrates the function of this narrow corridor of space. (Figure 2) Wedged between the "analyst" and the "analysand," the device registers details of the sitter's countenance such as they would not appear to the eye from any angle. By being near enough to the model to register fine details but far enough to remain immaterial, the silhouette depended on a positioning of viewer and viewed according to which the sitter appeared in an alternate spatial dimension. In this condition of closeness, the reproduction yielded not resemblance but similarity, not surface appearance but surface impression.

Figure 2 Johann Rudolf Schellenberg – Schattenrissmaschine (1783)

So what was this surface of "close depth" that physiognomics unearthed? Given the example of *Jeanne d'Arc* and the emotional quality of the invisible "action," one might associate the meaning gained as pertaining to the character's unconscious. Writing the *Work of Art* essay half a decade later, Walter Benjamin would describe the camera's revelation of an "optical unconscious," or "another nature which speaks to the camera as compared to the eye" as comparable to our [discovery of] the instinctual unconscious through psychoanalysis." [26] In a particularly dense passage of *Visible Man*, Balázs suggests a variety of discourses in which the hidden expressionmight be understood.

> "Both soul and destiny can be seen in the human face. In this visible relationship, in this interplay of facial expressions, we witness a struggle between the type and the personality, between inherited and acquired characteristics, between fate and individual will, the 'id' and the 'ego.' The deepest secrets of inner life are revealed here and to see them is as exciting as the vivisection of a heartbeat." [27]

Freud seems to be only one among many candidates, suggesting that the image produced under the visual conditions of closeness *cannot* be limited to attributes of the mind. Rather, ranked as a question of typology, evolution, determinism, what emerges upon close analysis seems an object of greater material density, one that can be cut into, and one that responds with the expression of its own vitality.

Matter

Although it is doubtful that Balázs at any time performed a vivisection, it is a significant but largely ignored fact that his younger brother was quite at home in such procedures. Six years Balázs's junior, Ervin Bauer (Loecse, 1890 – Leningrad, 1938) devoted a large part of his career to understanding life as a biomolecular phenomenon (figure 3). [28] (Figure 4) Bauer held a variety of positions at laboratories (Prague 1921-23, Berlin 1923-25, Moscow 1925-1933, Leningrad 1933-38) and worked on a variety of issues such as metabolic science, neurological irritation and inhibition, muscle contraction, tumor growth, mutation, animal morphology and life prolonging treatments. By the height of his career in Leningrad, he had amassed a considerable amount of empirical data, which he had gained through a variety of interdisciplinary experiments. [29] Despite his firm basis in experimental methods, however, Bauer retained an almost philosophical desire to find a pure expression of the physical mechanisms constituting life. He had started out wanting to study mathematics, an interest that was kept alive by his second wife Stefánia Szilárd, who was a mathematician of note in addition to being the nuclear physicist Leo Szilárd's sister. Along with his wife, Bauer remained open to the possibility that biology functioned according to laws other than those governing physics and chemistry, and that they could be summarized in a single equation.

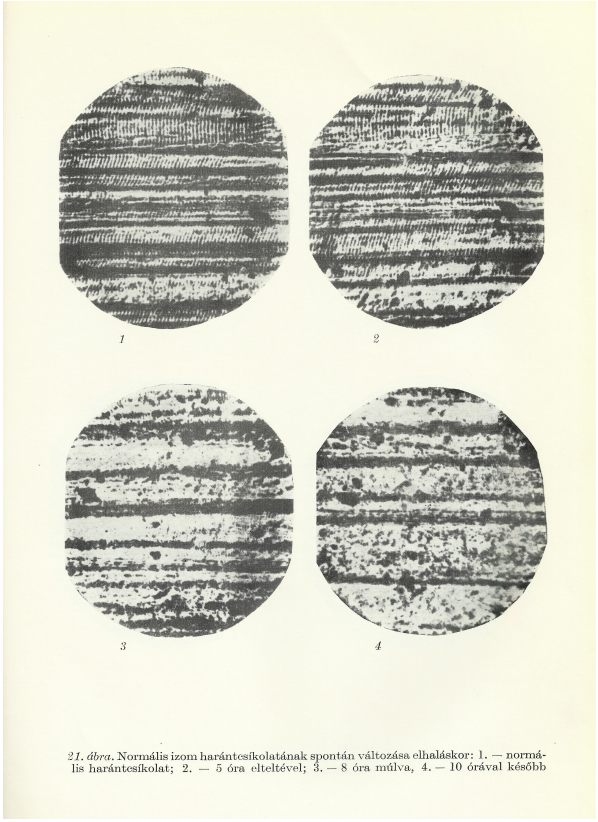

Figure 4. Spontaneous change at time of death in normal muscle: 1.–normal muscle; 2.–after 5hrs; 3.–after8hrs; 4.–after 10hrs. Ervin Bauer. [Theoretical Biology], 1920/1935.

Significantly, most of the evidence Bauer gathered was molecular, and therefore depended on optical devices such as microscopes in order to be observed. (Figure 6) In the Hungarian translation of his 1935 book *Theoretical Biology,* one of the series of experiments is illustrated by four sets of four microphotographs. [30] The experiment Bauer undertook returned to a prior interest of his. We have evidence of him exploring already in Prague in 1921 at the General Biology and Experimental Morphology Institute of the Karolyi University the reactions of cells to the environment through applications of potentially life-threatening stress. [31] Bauer took four photographs of a muscle sample placed under a microscope from an undesignated organism that dies over the period of the experiment. [32] In this first experiment, shots were taken while the organism is still alive (image 1), five hours after its death (2), eight (3) and finally ten hours on (4). The formal makeup of the sample changes with time. It begins as a thick weave of vertical striations divided by horizontal folds; five hours after its death, little has changed; after eight hours, we note a radical loosening of the structure and forces at work such that the striations have dispersed and the horizontal segmentation, though still apparent, are rough and broken up. By now the cells have lost their inner organization and tend toward chaotic scattering. Beyond the contraction of the muscle, the state of disorganization among the cells looks similar in the last image, ten hours after the organism's death. For Bauer, the appearance of structure in the microscopic photograph served as evidence of energy-producing labor. Assuming that the energy

was produced by the freeing up of chemical nutrients or the excitement of electrons within the cell, Bauer measured the electromagnetic field traversing the surface of the cells in order to monitor the stages of sentience they underwent. On the basis of the constancy of magnetic charge in living matter, Bauer concluded that life, unlike dead matter, functioned "in a state of constant inaequilibrium."

Bauer's research confirmed his suspicion that all organized, living matter had a common basis in the laws of movement. Bauer would conduct several more experiments in order to understand the laws of energy-production, or movement, within the cell, which for him defied prior conceptions of energy transfer. Closer to lifeless matter, the tissue loses its ability to maintain its autonomy from the pressure of external forces. Like an inanimate but elastic body such as rubber or wire spring, writes Bauer, if a lifeless muscle is weighted down, it will stretch until the tension between its capacity of resistance and the downward force is zero. [33] The muscle contracts because it depletes its storehouse of potential energy and is missing the ability to produce more.

In normally functioning organisms, the production of energy was constant because only one type of work was devoted to maintaining the cells' metabolic functions. The second type of labor was produced from stored or "free" energy in order to resist precisely the kind of dependence on external conditions that could deplete its energies. In other words, regardless of the circumstances, the living cell was never at rest, as this could result in a depletion of its resources and a consequent passive exposure to changes in its environment. If anything, in a situation of stress, the living cell tended to maximize the amount of energy in its storehouse, i.e. the second type of energy unavailable for metabolic work. The movement autonomously generated by a living organism when it was presumed to be most vulnerable was at its peak. At its greatest moment of disorder, it appeared to the eye as organized. The threshold between life and death was approached with increasing entropy. [34]

Bauer's attempts to define a theory of biological life, no matter their scientific validity, depended on a process of analyzing the visual forms as they appeared in his lenses. Despite the fact that these images were only significant with regards to the organism as a living, physiological whole, its signs of life had formally nothing to do with its external appearance and would have been completely unrecognizable to the naked eye. Bauer's research depended on a device that, in perceiving the same object, yielded an image of a different order. The interpretation performed by the microscope allowed for conclusions to be drawn regarding the entirety of the body it came from without showing anything other than a fragment of the same organism.

In his 1930 section on the close-up, Balázs followed up his example of *Jeanne d'Arc* with a subsection entitled "Microphysiognomy." He writes that film once "used the face *in its entirety*, as a total effect" [35].

> "But the camera has since moved in closer. And lo and behold! *Inside* the face partial physiognomies come into view which betray qualities very different from those that could be gleaned from the overall expression." [36]

Already in his first book, Balázs used the same formal idiom of magnification in order to describe the specificity of cinematic medium. He writes:

> "Close-ups are the film's true terrain. With the close-up the new territory of this new art opens up. It bears the name: 'The little things in life.' But even the biggest things in life consist of these 'little things,' individual details and single moments, while the larger contours are mainly the result of the insensitivity and sloppiness with which we ignore the little things and blur their outlines. The abstract picture of the big things in life arises mainly from our myopia.
>
> But the magnifying glass of the cinematograph brings us closer to the individual cells of life, it allows us to feel the texture and substance of life in its concrete detail." [37]

The metaphor could not be more explicit. Balázs locates the 'face' of an image, in other words its structure and inner organization as a constitutive part of the larger entity that is readily available to the viewer. Just as sand grains make up the desert or "cells" an individual organism, this structure is not physically distinct from its visible form, but an organic part of it. Its invisibility is understood as a symptom of humans' physiological limitations, or "myopia," an awareness that, in comparison with nature, he was left short-handed. The technology of optical correction is therefore the precondition to enhancing man's focal range, without which the essential constituents of the world would pass him by in a "blur." Moreover, although inner organization is ubiquitous throughout the sample, Balázs thematizes it as only available through powerful means of enlargement, or the "magnifying glass of the cinematograph," so that the viewer will only notice the face of physiognomy once he has come closer.

What is also striking in Balázs's metaphor of the camera as a magnifying glass capable of microscopic enlargement is the nature of the material discovered on its other end. In the following section of the chapter, Balázs reiterates what he will state as evident throughout his writings on film –that the camera is none other than an instrument for the observation of life. The cinema enables us to see "the minute atoms of life" and the "hidden corners in which the mute life of things retain their secret mood." [38] Just as Bauer had identified biological life with the capacity of an organism to move with "spontaneity," in other words autonomously from impulses in its environment, Balázs defined the cinematic subject as alive on the basis of the particular behavior of its particles. In this, Balázs would not have been alone. The historian Hannah Landecker has noted Kracauer's tangential interest in the history of "concept of life as such" in his 1960 *Theory of Film: The Redemption of Physical Reality.* [39]On the subject of the success of the biological film, Kracauer writes:"it would be tempting to try to follow the evolution of this concept, say, from the time of the Romantics via Nietzsche and Bergson up to our days, but such a study goes beyond the scope of the present book," hereby outlining a train of thought that was not far off from that

elaborated in Foucault's 1966 *The Order of Things* (1966), nor, as we shall see, from that of Balázs thirty years prior. [40]

References to microcinematography are nearly as often paired with the idea of the essence or medium-specificity of cinema as they treat it as its bastard sibling, so to speak. For example, in 1921 the former biomedical student Jean Epstein described the close-up as "the keystone of cinema…the maximum expression of this *photogenie* of movement." [41] In the same year, he wrote in the essay *The Senses* that "once the cinema ceased to be a hermaphrodite, with art rather than science proving to be its sex, we were baffled." [42] Similarly, in the section of the *Work of Art* essay in which Benjamin refers to Luc Durtain's microcinematography, he describes the revolutionary functions of film as "demonstrating that the artistic uses of photography are identical to its scientific uses – these two dimensions having been separated until now." [43] Or Kracauer again, "[cinema sensitizes] us to the tremendous energies accumulated in the microscopic configurations of matter…Is it really surprising that a medium so greatly indebted to a nineteenth-century concern for science should show characteristics inherent in the scientific approach?" [44] All three writers imply the common roots of cinema as both art and science in the microscopic sciences.

The relationship between the cinema of art and that of scientific research has begun to be explored by historians in a range of productive ways. [45] For example, Lisa Cartwright opens her gripping book on medicine's visual culture by noting that Auguste Lumiere's obituary appeared on the same page of the biographical files of the New York Academy of Medicine as news entries for international railway speed and air flight records. [46] The obituarist "barely notes Lumiere's reputation as a founder of the cinema. Instead, he extols his near-lifelong commitment to medical biology, pharmacology and experimental physiology." [47] It is a typical elision from most standard histories of cinema that after "fathering" cinema, Lumiere turned much of his plant's production after 1900 toward medical research and production. Cartwright suggests that historians consider the "particular visual modes that were operative in laboratory techniques like kymography and chronophotography or the science film" as "integral to other genres of the cinema and of popular visual culture." [48] In line with the work of writers like Olivér Botár, Hannah Landecker, Yuri Tsivian and others, I would like to continue the effort by suggesting the specifically aesthetic concerns of the laboratory technique of microcinematography.

Of all the techniques of magnification, the microscope in the life sciences was most clearly built with the purpose of taking the eye where it had never been before. By going "inside" of the fabric of life, it confounded all notion of limitation between outer and inner, self and other, private and public, shredding the illusion of the body's solidity and autonomy. It is little surprising that the microcinematography appealed so greatly to an avant-garde of the 1910s and 1920s also preoccupied with the "penetrative vision" of X-rays. [49] The space of the transparent body was the subject of several plays, such as Velimir Khlebnikov's 1922 *The Tuberculosis Spirochete, or, Shakespeare Under a Microscope* starring a blood cell and a bacterium, or Nikolai Evreinov's 1912 *Inside the Side-Scenes of the Soul* in which a large, suspended, rhythmically beating heart and an in/deflating diaphragm served as the monumental set. [50] Sergei Eisenstein film *Glass House* (1926-

30) was to be a multi-storeyed building built entirely of glass so that it should "look like a person under Roentgen rays. The sole opaque object in the glass house, the elevator (a black iron box with lights like gloomy all-seeing eyes) looks like a backbone or a key in the pocket." [51]

The challenge motivating these experiments was the promise of "closeness" offered up by the science and technologies of perception. For the Romantic principle of total unification with the other in an "aesthetic state" would not have produced similarly transgressive fantasies. The idea of vision as a penetrative act arose from the absence of the "other" that proffered a boundary, a limit beyond which there would have been no desire to see. Instead, the microscope was constructed to conquer an unknown space. As a scientific instrument, it did not renounce the possibility of union with its object; however, given that its purpose was to bring nearer that which was already near, its mechanism was defined by a perpetually displaced endpoint and an open vastness of space. Rather than collapsing distance, the microscope was defined by its exponentiation.

It would be difficult to overestimate the imaginative potency of the idea of broaching the skin of the visible. The microscopic visualized in spatial terms the chaos of this moment of seamy transgression, for it did not provide any guidance beyond plunging the viewer into the unknown. Although the lens of the microscope could be adjusted to a particular focal point on the basis of mathematical calibration, space was and continues to be a complicated issue in microscopy. For the sample under a microscope is both too flat to do justice to the three-dimensional network of life, but also not flat enough to be certain of where one is within the narrow depth of field. An interesting feature of the history of microscopes is the multiplicity of interpretations to which it gave rise, suggesting the extent to which microbes baffled scientists. For example, despite the existence of microscopic observation to describe cells and bacteria since 1644, it was only in 1792 that the cell was identified as a unit separated from other cells by walls and possessing of a structure. [52] Until Christian Gottfried Ehrenberg in the 1830s, the cell was considered to evolve separately from other forms of life on the planet. Similarly, it was only in 1828 through observation of "Brownian movement" that cells were identified as different from atomic matter. [53] It is telling of the cosmic conception of microbes that in 1911, it was the sociologist Gustave Le Bon who commissioned the Nobel Prize winning immunologist Elie Metchinkoff to write about microbes and toxins. [54] Whether it was architecture, disease, crowds, the nature of the microbe's space seemed to depend on the viewer's particular affinity.

It is a quiet but telling testament to the imaginative hold of the microscopic that, although microcinematographic films only started to be produced by the French for public viewing in the early 1910s, by 1912 four film journals on Germanic territories regularly reviewed them (the *Uránia Journals* in Budapest and Berlin, the Viennese *Kastalia* and *FilmKunst,* Stuttgart's *Film und Lichtbild*). [55] Although more than a decade later than the first French microcinematographic films, the first known use of the technique for purposes of public screening on Hungarian and Romanian soil fully exploits the provocative and even traumatic nature of the view on life from the microscopic eye.

Around the same time as Bauer began his experimentation in Prague, Eugene Janovics directed *Menace* [*Világrém*], a film that related the risks of syphilis through a story of a husband's adultery. Working in collaboration with the scriptwriter of medical dramas Eugene Gyalui and the medical researcher Constantin Levaditi, former colleague of the syphilis-specialist Paul Ehrlich, the director Eugene Janovics was by 1920 at the end of an extraordinary career which had established and contributed in major ways to the Hungarian and Romanian film industry. [56] Given his investment in largely the dramatic narrative genres, it is unusual that Janovics would have procured the technical equipment necessary to record microcinematographic films. Although there is little documentation regarding the film, it is clear that it was shot partially in situ the Dermatology Clinic of Cluj, so the instrument may have belonged to the laboratories. [57] It is also possible, however, that the film was the result of the much-anticipated import of such equipment from Paris to Budapest that had originally been coordinated by the ingenious enthusiast of bacteriological microcinematography and temporary director of Radius Film's laboratories, Dezső Polik [58]. What is clear from the sponsorship and distribution of the film by the Transylvanian Inspectorate of Public Health was the expectation that the novelty effect of the technique could underscore its pedagogical intent.

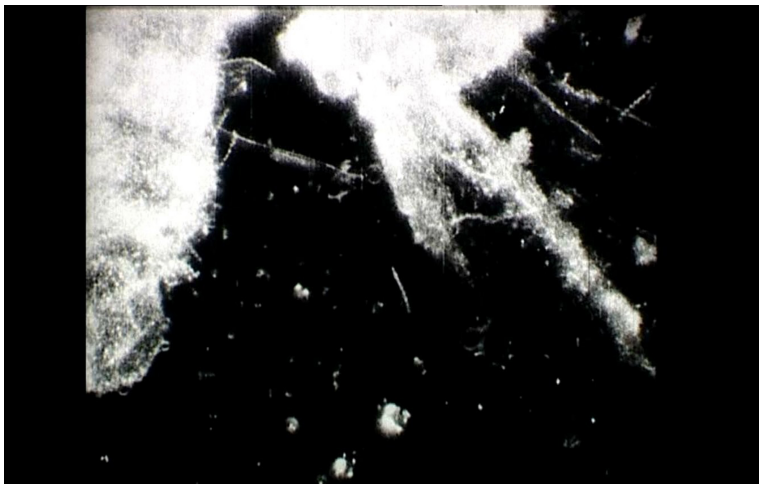

Figure 5. Still from microcinematographic film. Vilagrém (Menace. Eugene Janovics, 1920)

Figure 6 Menace. Eugene Janovics, 1920

Figure 7 Menace. Eugene Janovics, 1920

The film's contextualization of the microscopic viewpoint within a narrative illustrates the particular affective and formal character of this perceptual mode. The microcinematographic shot occurs twice in the film, one when the doctor diagnoses the main character Pierre Sylvain with syphilis, and a second time when Sylvain refuses to believe him. (Figure 6) Realization of the significance of what is viewed is as difficult as it is physically consequent. From the moment Sylvain's microbial self becomes visible, the form in which he appears will no longer be that of his physiognomic self. The protagonist who is Sylvain will continue to appear as the actor Mihály Fekete, but he will drive forward the plot according to the capacities of a different organism. Sylvain assumes two identities in playing the bad patient who will fail to abandon his mistress or to tell his family, resulting in contamination and death of his wife, and a good patient will simply abandon his family and spend the remainder of his days alone and as a menial worker in the US. But his potential fate as carrier of the virus will also be illustrated through the image of entirely other organisms, such as other patients shown to him by the doctor in the syphilitic ward of the hospital. (Figure 7) Sylvain does not resemble these bodies, which range widely in age and gender, but this apparent difference masks a more essential similarity according to which all are configurations of the same biochemical molecule that is syphilis, its various expressions mere accidents of the time and place of its contagion. The semantic equivalence of the various expressions of the virus dictated the logic according to which *Menace* unfolded. This relationship of similarity without resemblance provides the lynchpin of another, thematically similar but comic "microcinematographic" film that is Emile Cohl's *Les Joyeux Microbes* from 1909. (Figure 8) Here, a doctor's patient views a muliplicity of animated selves through the microscope, each a microbial configuration of the original code that is his own mutating into different fates. His destiny in politics is seen in the forms assumed by a "microbe of pestilence," that in bureaucracy is illustrated by the "microbe of phlegm," the fate of his marriage (or mother-in-law) is viewed through the "microbe of rabies," etc. Aided by a microscope, the eye could see past the arbitrary expressions of individuality in physiognomy. By viewing the "cells of life," the cinema claimed to see past what was accident in form to its motivating histories.

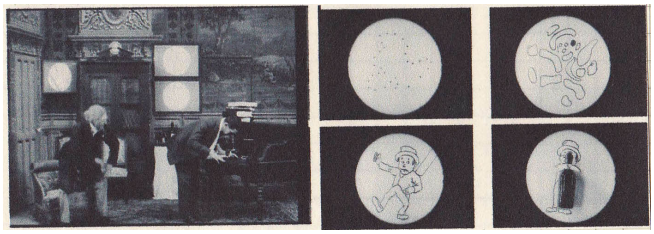

Figure 8 Les joyeux microbes. Emile Cohl, 1909

Method

One of the most frequently quoted passages of Balázs's writings is his definition, at the beginning of *Spirit of Film*, of how the camera is made into a productive instrument, i.e. one of artistic potential. In a section subtitled "We are Right in the Middle!," Balázs writes,

> "The camera takes my eye along with it.[…] I am surrounded by the figures within the film and involved in the action, which I see from all sides." [59]

What "historically is absolutely innovative about film art," as Balázs reiterates from *Visible Man*, is that it shows the viewer "changing distances and points of view." [60] He illustrates the novelty of this viewpoint through a literary reference. The viewer not only watches Shakespeare from his seat, they can see Juliet through Romeo's eyes, and then Romeo from Juliet's. [61] Although the nature of space the viewer "is in the middle" of remains unclear, Balázs appears to be implying that the camera completely displaces the viewer's sense of self with the viewpoint of the camera. In other words, he appears to be claiming that film creates a 1:1 identification between viewer and viewed.

The idea of technical automation has a long history of association with renewed vision in art. The inventor Nicephore Niepce called his first photographs in 1820 "points of view." Impressionism in painting was hailed and derided for its reduction of art to mechanical transcription. Speaking of Monet, Cézanne characterized his work with the statement "Monet, ce n'est qu'un oeil. Mais quel oeil!." [62] More recently, Paul Virilio opened his chapter on the idea of computer-generated sightless vision with a quote by Paul Klee on the viewpoint of a button: "Now objects perceive me." [63] To the extent that Balázs describes the novelty of the camera as replacing the eye of the viewer, he clearly intends to argue for the increased "innocence" of sight, a notion that recurs in his designation of children as more adept at discovering faces in things. [64] Moreover, the idea of an alien eye constitutes a recurring trope in Balázs's writing. Already in 1906, he catches himself constantly wanting to "try things on through [his] eyes," so that he watches people speak but often forgets to listen to what they say. [65] The eye of the landscape in *Visible Man* appears spontaneously, "[gazing] out at us, as if emerging from the chaotic lines of a picture puzzle." [66] Reporting on Dziga Vertov's "cine-eye," he describes the camera in the travelogue as "[eavesdropping] on scenes of everyday life," so that "we look as if through a keyhole" at "phenomena caught unawares." [67] Balázs even retains the notion of "impressionism" in film as the automatic registering of detail: "it is wrong to […] render the image *only* subjective. For the

image should also express qualities that emanate from the filmed object itself." [68]

However, Balázs's camera falls short of the kind of "freestanding, functional double of human functions" that the historian of science Richard Brain has identified in Etienne-Jules Marey's instruments. [69] Citing Goethe's poem "True Enough: To the Physicist," Balázs dispels all conviction in science's power to reconcile viewer with viewed. "Film is a *surface art* and in it whatever is inside is outside," he writes, implying that no matter how much the viewer believes to have penetrated the viewpoint of another, it is still very much their own that they have discovered. [70] If Balázs embraces physiognomics and microscopy, it is because he viewed them both as an imperfect science.

If the camera produced the sensation of immersion, what Bazin would later call the "Myth of Total Cinema," it was not because it replaced the viewer's physiological mechanisms of perception with the mechanical mediation of a "free-standing double." Rather, the eye of the camera displaced the subject's sense of self only insofar as this was associated with his faculty of rational thought. In one of the multiple responses he gave to Sergei Eisenstein on his idea of an "intellectual cinema," Balázs wrote that the discovery of the cinema camera was not that it could " *signify* ideas," but that it could "*give shape* to and *provoke* thoughts that then arise in us as inferences, rather than being already formulated in the image as symbols or ideograms. For in the latter case the montage ceases to be productive." [71] In a turn of thought that resembles Kracauer's skepticism of capitalist or scientific reason, Balázs suggests that a systematic study of life would require constitutional change in the viewer. [72]

> "Unity as an unproblematic, self-evident quality can hardly be capable of realization simply by the cinema. Nor indeed by art of any kind. The precondition for such a unity to emerge would be a complete transformation of civilized mankind into a society of an entirely different kind, whose product would be in an utterly different human consciousness…" [73]

Although he probably could not agree more with Eisenstein's statement that cinema would "instruct our workers and peasants in the nature of dialectical thinking," he expressed his doubts as to the straight trajectory traced by Eisenstein "from image to emotion, from emotion to thesis." [74] While stating that Eisenstein's idea for the filmic essay "amount[s] to a historical document of crucial importance for the history of film," he qualifies what he feels to be his "tremendous insight" is not a unity between emotion and speculative thought, but an allowance given to emotion to modify "scientific thinking." [75] For when the image solicits an emotion, "the sentiment aroused by the image will combine with fortuitous moods already pre-existing in the spectator. The associations that will be aroused by this cannot be predicted in advance." [76] Rather than following paths predicted by reason, the influence of the image on the viewer's constitution can only be foretold in an approximative sense. Balázs continues to state that the "situation will be comparable to the emotional impact of music. A warlike march tune can inspire combatants on both sides of the barricades."[77] Without yet broaching the acoustic dimension of the cinematic sign, it must be noted that, while studying in Paris with Henri Bergson in 1906-7, Balázs would

have gained familiarity with William James's notion of "apperception," or the idea of a sense perception as bearing the imprint of the habits and desires that already formed the body. Even before, however, Balázs would have been exposed to the idea of training the mind through sense impression through his father, who in 1876 submitted a dissertation on the pedagogical nature of logical reasoning. In particular, Simon Bauer argued for a materialist approach to knowledge-acquisition by citing Helmholtz on learning to "read" the non-representational "signs" of the senses.

> "We arrive at the following significant conclusion […], that as far as the qualities of our senses are concerned, these are merely signs of our recognition/cognizance of external objects, but they are not images [*képek*], which would resemble these in the least…That which is sensed by the senses are merely signs that we learn to read, the words of that language by which external objects speak to us, and which, although our organism enables us to understand, is still learned through practice and experience, just as our mother tongue." [77]

Once it is looking at reality through the eye of the camera, the eye of the viewer may indeed perceive it as an objective experience of another's viewpoint. However, because vision is necessarily run through the landscape of the sensory memory and practices, the viewer can only consider themselves "united" with the other insofar as the two neural trajectories, or somatic maps of the same experience overlap. Rather than "identification," the act of assuming the viewpoint of another should be thought of as the after-image or footprint of a sense impression, a prioprioceptive depression left by a stimulus.

If the apparatus of the cinema creates its signs through activating pre-existing configurations of form on the physiological surfaces of the viewer, how does it create anything new at all? How do the images created by the camera become "productive" if they do not leave the human body? One of the longstanding criticisms of Balázs's aesthetics of cinema has been that it preserves a Fichtean form of transcendental idealism, or an absence of knowledge of the other. [78] Assertions of his such as "the body becomes unmediated spirit, spirit rendered visible" have discredited his claims to discovering objective mechanisms of meaning production, as it would seem that Balázs's physiognomic sign does not allow for the signifier (body) to exist outside of the signified (spirit). [79] Although the epistemological basis of Balázs's cinema does seem to be the self, it must be noted that this cinematic "I/eye" is divided or estranged from its own self.

On the one hand, we have seen that what Balázs considers most innovative about cinema is the splitting of the optical viewpoint, so that what is gained is an eye that can see from the viewpoint of multiple selves (Romeo looking at Juliet, Juliet looking at Romeo, etc.). This "sharing" of the optical capacity has an equivalent in the "I" or ego of the viewing subject. If there is a conscious self that behaves according to the accepted practices of social convention, there is also an unconscious self that arrogates to itself the right to behave in ways often contrary to the will. Although we have suggested above that this "unconscious" is not to be understood in relation to Freud, Balázs's conception of a self capable of producing meaning can be understood as the

physiological equivalent to the Surrealists' idea of doubling.

When in the 1924 Manifesto of Surrealism Breton describes Freud's discovery of a mental world "with which we pretended not to be concerned with any longer," one that was "banished from the mind" for reason of "superstition or fancy," it is as though Balázs were reiterating the same paradigm of "yearning" for a "forgotten" and silenced realm of being that has once again become "visible." [80] Balázs ultimately rejected Surrealist film for presenting what he saw as an exclusively "internal state of affairs" with little regard for historical circumstance. [81] However, he appeared to agree with the Surrealists in their description of cinema as tapping into a realm of automatism suppressed by intellectual life, but over which the mind occasionally lost its bearings. [82] Moreover, the moment at which the hidden part of man became "visible" was understood to potentially unleash revolutionary energies, as the experience of its return could reveal and liberate man from the mechanisms of its repression. For this reason, the cinema recurs in Balázs's writings under the guise of not only the dream, but also political revolution.

Science represented another important commonality between Balázs and Surrealism. Even though the signs emerging from the "world of the invisible" lacked accountability, there existed method in their interpretation. Similarly to Breton's description of the images in dreams, "within the limits where they operate (or are thought to operate)" physiognomic signs "give every evidence of being continuous and show signs of organization." [83] For Balázs, it was precisely because physiognomic signs manifested themselves in a systematic manner that he argued that they were fundamentally alien to the self. As with the linguistic sign in Surrealism, the nature of the physiognomic sign was characterized by the paradox that it inhabited the body of the viewer and yet was alien to it. Much like objects perceived in the environment (such as the actual Romeo and Juliet), the depths of the somatic experience from which the physiognomic sign had originated were deemed autonomous from the self.

Interpretations of Balázs's claim that cinematic signs constituted a "language" have consistently neglected the implications of "othering" or estrangement that this statement entailed. Balázs's characterization of gestural expressivity in objects as a language has been largely invalidated not only for its assumption of an idealized subject at the performing and receiving end (all of mankind's "mother tongue"), but also – somewhat paradoxically – for what appears to be physiognomy's lack of semantic consistency. And yet, for Balázs it was because the signs of "visible man" were immanent and legible that the cinema would eventually take over the job of teaching that had once been held by the press.

> "Now another device is at work, giving culture a new turn towards the visual and the human being a new face. It is the cinematograph, a technology for the multiplication and dissemination of the products of the human mind, just like the printing press, and its impact on human culture will not be less momentous." [84]

In order to distinguish between the two semiological orders within the self, Balázs resorted to the separation of the audible from the visible. Throughout his writings, Balázs repeatedly states that

the physiognomic sign resounds through the frame of the body, much like music [85]. These statements are partially explicit references to the work of Bergson, such that Balázs implicated the cinematic sign in a physiological notion of time and memory. In this, his understanding of a "spiritual dimension" to the sign recalls Bergson's notion of the *duree,* an originary state of elementary change that draws out impulses of a biological nature. [86] In addition, however, given that the cinematic image is originally mute (i.e. silent), Balázs's reference to an acoustic dimension of its sign system also constituted a deliberate and strategic association of cinema with the discourse on language.

Figure 9. Ferdinand de Saussure, diagrams from "Place de la Langue dans les faits de Language," Cours de Linguistique Generale, (Paris: Editions Payot&Rivage, 1972), 27-8.

The semiotic particularity of the physiognomic sign can be conceptualized along the lines of Saussure's later distinction between language that is spoken (*parole*) and that which exists in and of itself (*langue*). Saussure's diagrammatic visualization of the passage of the sign between two *discussants* illustrates the way in which the subjective element in language is managed and produced. (Figure 9) In moving from the ideational contents of the *concept* or signified to the psycho-physical density of the *image acoustique* or signifier, the spoken sign traverses the somatic terrain by virtue of its physical nature as a wave. Its contents are consequently distorted by the body's act of receiving and producing sound. Balázs's physiognomic gesture functions like Saussure's sound-image in that the filmed object emits the equivalent of "visible speech." Balázs believed film would replace the cultural mechanisms of meaning-production represented by language in the Saussurian sense of *langue* because it could give way to *parole*, the personal and accidental signs produced by the physiology of the individual. [87] Unlike language, which Saussure defines as a dictionary that has been distributed in identical copies to all members of a given linguistic collective, cinema exists in a heterogeneous community of "living signs" of which each member distorts the original meaning of the *concept* in unique ways. It is therefore not despite what Balázs calls the absence of a "grammar" or rules that the physiognomic sign constitutes a language in its own right, but precisely because of its contingency on individuals and history that visible-speech can renew prior media of communication.

Again, the aesthetic qualities of the cinematic sign depended on a minute but ultimately critical difference from its scientific aspects. The physiognomic sign lacked the kind of stable identification between its signifier and signified that allowed for verbal language to develop into a socially conservative institution. Whereas verbal language not only mirrored but actually

constituted a part of the apparatus of the nation-state, Balázs conceptualized cinema's signs as belonging to the realm of the multiform, heterodox and utilitarian *Gemeinschaft,* a community "united by will." [88] Far from advocating an idealized cinematic spectator, Balázs's sign-system drew on an intellectual tradition of subverting absolute, rational values in matters regarding "life," much like Bergson, James, Kracauer, Benjamin and others like Georg Simmel and Lukács. Associating science with the written word, Balázs writes: "the culture of words is dematerialized, abstract and over-intellectualized; it degrades the human body to the status of a biological organism." [89] If modern man were to be more than a specimen of science, it would have to defeat reason at its own game.

Madness

Sometime between 1923 and 1924, Balázs wrote a short article for the Viennese *Der Tag* entitled "Daydreams." [90] Rather than his usual format of a film review, this piece is written in the short essayist style in which Balázs reports on his encounter with a scientific microscope. It opens with the following:

> "The other day I observed a live cell growth. The cell, however, did not see me. This fact shook my view of the world. For, in fact, if the cell had had an eye, and it had looked straight into my eye, because of its particular perspective, it still would not have perceived my being, my human form [*alak*]. What is the point of all body culture [*testkultura*]? Something cell-like comes along and does not even see you. Is it generally a complete illusion, that we are 'forms' [*alakok*]?" [91]

Composed as he was piecing together his first book on cinema, *Visible Man*, the essay describes with unusual clarity the mechanism of alienation involved in the perceptive mode associated with filmic spectatorship. Balázs notes a discrepancy between his perspective on bodily life and that of his body on the same life. This feeling of estrangement comes simultaneously with the recognition (regardless of whether it is warranted) that the cell is his own. He draws the conclusion, not without some surprise, that the impulse to interpret reality on the basis of its visual appearance, or to take forms at "face value" is unfounded. The cell doesn't recognize him because the quality they share does not become apparent in an exchange of unmediated glances. Instead, what was once imagined as identical because metonymic (the molecule and the body) is now only close. It is close in the sense of sharing a common feature, but also close in the sense of being at only an infinitely small remove. Both types of proximity pertained uniquely to the vision of the microscopic rather than physiognomic eye.

The consequences on the experience of estrangement that are implied in the microscopic eye are vast and impute to cinema a unique potential for subversiveness. As cinema was a product of the very apparatus of capitalism that generated the phenomenon of alienation, the spectatorial response it solicited in the viewer was that of distancing from the self. Balázs writes,

> "Film [in contrast with the pre-capitalist medium of literature] is perhaps the only art to

emerge as a child of capitalist industry and it embodies its spirit. However, it need not remain within the confines of capitalism." [92]

Although the cinematograph had emerged as one among many technologies of industrial capitalism, Balázs reiterates the optimism articulated by Lenin when he called film the most important art of the Communist revolution. [93] Similarly to Lukács's interest in the phenomenon of alienation in the early 1920s as he gathered together material for his own first major Marxist contribution, *The History of Class Consciousness*, Balázs integrated the reflexive experience of distance into his conception of the Communist revolution. [94] For both Lukács and Balázs, a collective could only gain awareness of itself as determined by history and as an agent of its fate if it split into both "the subject and object of knowledge." [95] Although Balázs formalizes the Marxist-Hegelian term of "alienation" in the visual device of distance, it is important to note that in the early twenties, Lukács and Balázs were both engaged in a series of discussions called the "Sunday Circle" whose pre-war incarnation had gathered together artists, art historians and sociologists to discuss the reconciliation of life with art. [96]

In order for the experience of alienation to be rendered productive to the aims of Marxist revolution, it would have to convey knowledge of the self as constituted by a history other than its own, in other words, the evolution of a body of the collective. Arguably, one of the motivations for Balázs's analogy of the cell was the need to articulate a relationship between the individual and collective as metonymic and natural. Implied in Balázs's invocation of biomolecular life is a metaphor for conceiving of the cinematic spectator as at once autonomous and dependent on a socio-economic class. More specifically, the need to enlighten the individual of their shared identity as proletariat would be guaranteed through the kind of communication that, like the Saussurian notion of p*arole,* drew on mechanisms ensuring not only transmission of information, but its appropriation within the body's systems of automatic response.

Generally speaking, the "closeness" to nature characterizing estrangement from the cinematic image seems to have been modeled on the relationship to nature under capitalist reification, although this Lukácsian term is not used by Balázs. Nature, according to Lukács, "refers to authentic humanity, the true essence of man liberated from false, mechanizing forms of society." [97] Cinema was understood to "speak" in signs of the viewer's suppressed and originary relationship to nature, so that nature's appearance would feel as a return more than an intrusion after centuries of adaption to industry. This meant that the alien other encountered in the cinema remained fundamentally familiar. "'They are what we once were,' says Schiller of the forms of nature 'they are what we should once more become,'" writes Lukács. [98] Benjamin's later contextualization of an "aura" in nature was, in this sense, not far removed from the Hungarians' embodied conception of distance:

"What, then, is aura? A strange tissue of space and time: the unique appearance of a distance, however near it may be. To follow with the eye—while resting on a summer afternoon—a mountain range on the horizon or a branch that casts its shadow on the beholder is to breathe

the aura of those mountains, of that branch." [99]

The intimacy implied in the experience of distance expresses the hope that in the act of alienation there could be recognition of the self in the other, endowing the phenomenon with the "ability to look back at us," to open its eyes or raise its gaze. [100] By naturalizing the gaze of the other through the body of the self, Balázs and Benjamin made vision into a metaphor for desired communion.

However much nostalgia and yearning may have characterized the self's recognition in an objectified nature, as we have seen with microcinematographic films such as *Menace*, the moment of its occurrence was that of trauma and loss. Like the talismanic objects of Surrealist "marvelous," the experience of the self's objectification or "doubling" resulted not in harmony but, in Aragon's words, an "eruption of contradiction in the real." [101] When the Surrealist Ivan Goll acknowledged in the 1924 edition of *La Revue Surrealiste* that "Everything the artist creates originates in Nature," the implications of this statement were appropriately illustrated by images of nature at its most alien, namely the contribution of a "Neo-Zoological Drama" on behalf of one of the first underwater film makers, Jean Painlevé. [102] To place the origins of creativity in "nature herself" meant to plumb the depths, distances and dimensions of what was, by definition, unknown. Much like the conception of *écriture automatique* introduced by André Breton and Philippe Soupault in 1919, objectification could be integrated within the performative abilities of the body; however, this represented a source of creativity over which the viewer continued to have no agency.

One of the aspects of Balázs's physiognomics in *Visible Man* that have continually exasperated his criticswas his essentialist treatment of the question of "typology." Balázs's recurring reference to the visible face and insistence on a "comparative physiognomics" of an oftentimes explicitly racial sort can recall efforts at hijacking nature's call in the late twenties such as Hans Günther's 1929 *Kleines Rassenkunde des deutschen Volkes.* [103] Without excusing Balázs from an entirely too enthusiastic embrace of the "languages" spoken by the body, I would like to consider the implications of emphasizing the nature of the other as alien according to Balázs. [104] When Balázs asks "how much" of a given face "is type and how much individuality, how much is race and how much the human personality," he describes the semiotic origins of facial expression as pockets of temporal and spatial otherness – "it is not true that our *entire* face is our own." [105] In the following section entitled "Alien Races," Balázs illustrates "the capacity of film to show how changes in facial expressions arise from the nature not of the individual but of the race." [106] Here otherness clearly designates a geographical other, "Negroes, Chinese, American Indians and Eskimos." [107]However, other qualities of the other invoke distance in time, such as his passage on the other'sforefathers' ghosts becoming apparent through cinema: "When we see a person's movements orhis sensitive hands, do we not recognize the spirit of his ancestors?" [108] Rather than a humanist-internationalist attempt at collapsing differences between all known (and unknown past andfuture) peoples of the planet, what becomes apparent in Balázs's repeated effort to describe whatthe other looks like up close is the suggestion that the visual assumptions behind resemblance arenot to be trusted.

Although inexcusably blunt, Balázs's use of race as a marker of difference must be understood as at least partially a form of "ocular-skepticism" that defined his interpretation of cinema. Focusing on the mechanics of perception in the most basically physiological sense of the act, Balázs's physiognomics constituted an analysis, pursued somewhat unsystematically but nonetheless cogently, of what might lead the eye to think it was perceiving something significant. What accounted for the fact that, as he put it, the film

> "will show you your shadow on the wall, something you live with without noticing, […] and the ultimate fate of the cigar in your unsuspecting hand and the secret – because unheeded life of all the things that accompany you on your way and that taken together make up the events of your life. [109]

Precisely those things acquired the capacity to generate meaning that are not normally even visible, they are so distant from our consciousness. This may be because they are everyday, or because they are unusual. Most important is that this expressive ability corresponded in inverse fashion to how little the object resembled the viewer, or how far off it was before being brought in "closer" to them.

The visibility gained by objects through filming arose from their absence from everyday vision. Their ghostly apparition could not be triggered by a mere resemblance, a 1:1 reproduction of the original object, as this would remain equally unperceived. The other could only appear on the

basis of a more abstract connection established with the self. Balázs's distinction between the visible image and the invisible countenance followed the logic of his separation of the aesthetically productive from the scientifically reproductive gaze. Whereas the former produced likenesses, or copies, the latter operated without resemblance. The cinema camera produced images in the sense of simulacra, an anti-Platonic notion of visuality whose recognition should profoundly alter our conception of any purported idealism in Balázs's thought. Originating in dialogues of Plato such as the *Republic* and *Sophist*, the simulacrum constituted an attempt by the Greek philosopher to distinguish essence from appearance, idea from image, both of which we have seen Balázs worked toward collapsing. Moreover, Plato believed that the making of semblances (*phantasmatic simulacra*) deviated from and perverted the making of likenesses (*eikons*) on the basis of what Deleuze later interpreted as the separation "between good and bad copies, or even more, the always well-founded copies from the simulacra, ever corrupted by dissemblance." [110] If what characterized the original was distance, its "corruption" according to Balázs consisted in closeness, in an approximation of the image based on its similarity with the viewer.

Balázs's physiognomics should therefore be placed within a thematization of similarity not as the diminished version of an originary and "real" model, but as a "trick" or "effect" creating the Same. The creation of such an image might be compared with the "likeness-making" procedure by which Plato's Theaetetus and the Stranger describe sculptors and painters making "works of great magnitude." [111] Having to correct the "proportions of the original" because of its distortion through distance, these artists must take into account the point of view of the viewer, so that "the upper part, which is farther off, would appear to be out of proportion in comparison with the lower, which is nearer; and so they give up the truth in their images and make only the proportions which appear to be beautiful, disregarding the real ones." [112] With the intention of resurrecting the banished simulacrum, Balázs remains loyal to Plato's characterization of this kind of image to the point where he also describes the "trick" by which film makes likenesses one of viewpoint: "the camera shows us not merely a constant flow of new things, but also changing distances and points of view. And this pinpoints what historically is absolutely innovative about film art." [113] If film can create the impression of identity between viewer and viewed, this is because of the particular nature of the cinematic sign as accommodating the viewer's perspective, not because it reproduces the three-dimensional proportions of the original.

The sense in which cinema's simulation of life gained the upper hand over "real" life should be understood not through the experience of immersion but analysis. To explain this procedure I will refer to another tradition of simulacral representation employing reason for aesthetic purposes, namely Renaissance perspective. Although I do not know of Balázs writing explicitly about the technique, he repeatedly reported on exhibitions of painting in his diaries and is known to have tried his hand at drawing. [114] Balázs regarded the experience of "identification" as a process of spatial construction organized around a viewpoint much like that of a vanishing point. As we know, Renaissance perspective created the impression of spatial recession by drawing or implying orthogonals that converged at the vanishing point, thereby managing the proportions of

all figures within the painting. It constituted an imaginary point from which the viewer could understand the world of the painting as organized. Insofar as it stood for infinity on both an imaginary and symbolic level, moreover, the vanishing point was both invisible and empirical. Apprehending infinity was an act that could be circumscribed by reason, but ultimately only achieved by a subjectivity. Similarly to Kant's notion of the sublime, Balázs's viewpoint demonstrated the internally consistent but sensual nature of space.

The absence represented by the perspectival vantage point also demonstrates the anti-humanism of Balázs's cinematic viewpoint. Before building up a phantasmatic sense of space, the camera had to abolish viewer's own, originary "worldview." [115] Here Balázs's repeated preoccupation with "identification" suggests the effort he made to distance himself from the idea of an "authentic" sense of subjecthood. If the other was a sensual reconstruction on behalf of the viewer, the self only existed by virtue of its sensual de-construction. Like a symbol representing infinity toward which tended all parameters of the self, the other asserted its dominion over the self through an incremental process. Balázs calls this process of continuous disintegration by which the self yielded to the other "atomization." The opposite of "construction," atomization describes the operation by which the visible image gradually loses its form, and hence perceptibility. Much like Ervin's microscopically observed event of death, all structure in the image dissolves into disorganized chaos. In a crucial passage entitled *The Mutual Equality of Atoms*, Balázs defines atomization in film as a process of material elementarization.

> "The elements contained in nature and in an artefact are one and the same. A stone remains a stone regardless of whether it is found in a mountain or a cathedral. […] Only atomization leads to totality. If a piece of furniture is to rediscover its roots in the forest, it has first to be broken up, reduced to its status as purely a piece of wood." [116]

The identification of building blocks of an organism through its "death" returns us to Balázs's metaphor of closeness. Through the procedure of distancing, the other had first to disappear, to recede to a point on the horizon line as far as it was minuscule. It had to become transparent to the eye in order to be of service to the senses. Recalling the elementary units or *Urformen* pursued by other theorists of the "eye" such as El Lissitzky, László Moholy-Nagy, Balázs drew on a theorization of life in the 1920s and 1930s that conceived of aesthetics in the sense attributed to aesthetics by Alexander Gottlieb Baumgarten, or as the training of the senses. [117]

Like images of *Grundformen* in nature that were reproduced by these artists side by side with images of new media, Balázs repeatedly identified the elementary forms governing perception as natural (wood, stone, elsewhere particles, atoms, cells). [118] On the one hand, Balázs implied by this the existence of common "roots" between living and inanimate, suggesting by way of atomization a stark anti-anthropocentrism. The claim that matter was constantly being either de- or re-composed by sense impression assumed that any one form, including that of the human appearance, was an arbitrary segment of a process of becoming. By plunging into infinite vantage points, the image generated by the microscopic eye of the world was one of the most powerful

distantiation and isolation of segments of life that was imaginable to the scientific mind in the 1920s. [119] On the other hand, the cinematic image could move "closer" to the viewer only because it was the viewer's "nature" that generated its elementary symbols. Benjamin would note in 1933 that "nature creates similarities. One need only think of mimicry." [120]

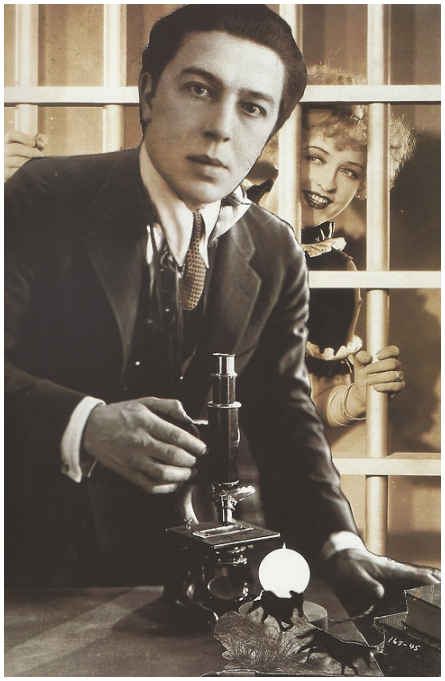

Figure 10. Andre Breton. Ecriture Automatique. 1938

In André Breton's 1938 self-portrait *L'Ecriture Automatique*, the Surrealist montaged a photograph of himself looking up from a microscope against a still from a Phyllis Haver film. (Figure 10) Rosalind Krauss interprets the presence of the microscope in the photomontage as "[heightening and intensifying]" the process of visuality understood as automatic writing. [121] Following a Derridean reading of spacing as necessary to the creation of meaning, we might ask: what sense could the eye of the microscope make of pockets of infinity that were its own creation? As Deleuze has written,

> "The simulacrum implies great dimensions, depths and distances which the observer cannot dominate. It is because he cannot master them that he has an impression of resemblance. The simulacrum includes within itself the differential point of view and the spectator is made part of the simulacrum, which is transformed and deformed according to his point of view. In short, folded within the simulacrum there is a process of going mad, a process of limitlessness." [122]

Jegyzetek

1. Béla Balázs, *Geist des Films* (Halle (Saale): Verlag Wilhelm Knapp, 1930). A version of this paper was delivered at the "Sensation, Perception, Mediation" conference organized by the University of Szeged, 2012 and at the SECAC conference in Durham, NC, 2012. The author would like to recognize the important part played by Izabella Füzi, Zsolt Kőháti and Oliver Botár in inspiring the contents of this paper, and Noam Elcott for his thoughtful feedback.
2. B. Balázs, *Béla Balázs: early film theory: Visible man and The spirit of film*. Ed. E. Carter, trans. R. Livingstone (New York: Berghahn Books, 2010), 102, 105, 106.
3. Carter, *Béla Balázs*, 38.
4. Carter, *Béla Balázs*, 101-102.
5. Dreyer's full quote is the following: "It is necessary to give the public the true impression of watching life through a keyhole in the screen … I am searching for nothing but life." C. Th. Dreyer, *Cine-Magazine,* Issue 36, September 9, 1927.
6. For example, see George Albert Smith's 1900 *Grandma's Reading Glass*.
7. Carter, *Béla Balázs*, 38.
8. Carter, *Béla Balázs*, 102.
9. One thinks of *Burlesque Suicide* (1902, Edison Manufacturing Co.) or the *Comic Grimacer* (Cecil M. Hepworth, 1900).
10. A. Gaudreault, *From Plato to Lumiere: Narration and Monstration in Cinema and Literature.* Trans. T. Barnard (Toronto; Buffalo: University of Toronto Press, c2009).
11. A. Gaudreault, "From 'Primitive Cinema' to 'Kine-Attractography'," in *Cinema of Attractions Reloaded* (Amsterdam: Amsterdam University Press, 2006), 85-104.
12. M. A. Doane, "The Close-Up: Scale and Detail in the Cinema," *differences: A Journal of Feminist Cultural Studies,* Vol.14, No.3 (Fall 2003), 97.
13. This was published in two parts, the second of which bears the same name with the addition of "Metaphor." Although he does not call "comparison" by the name of "allegory," given the similarities of his argument with Siegfried Kracauer's "On Simmel," it is probable that Balázs is here developing Simmel's use of allegory. Béla Balázs, "A hasonlat metafizikája," *Nyugat*, vol.6, 1919, 4-14.
14. Ibid, 6.
15. Ibid, 6.
16. Jean Epstein, "Magnification and Other Writings," (trans. Stuart Liebman) *October*, Vol. 3 (Spring 1977), 9.
17. Balázs, 2010, 103.
18. Carter, *Béla Balázs*, 2010, 102.
19. "The Invisible Countenance" is the title of subsection in "Close-Up" in *Spirit of Film*, 103-4.
20. A. Sanders, Antlitz der Zeit: 60 Aufnahmen deutscher Menschen des 20. Jahrhunderts. München: Transmare-Verlag, 1929.
21. Richard Grey, *About Face: German Physiognomic Thought from Lavater to Auschwitz* (Detroit: Wayne State

University Press, 2004), xxxvii.

22. M. Bullock and M. Jennings, "Elective Affinities," *Selected Writings of Walter Benjamin,*, vol. I (Cambridge, Mass. ; London: Belknap Press of Harvard University Press), 350.

23. In her enlightening book on Weimar surfaces, Janet Ward has described this flattening as "tactile" and yet "transparent." See "Modern Surface and Postmodern Simulation: A Retrospective Retrieval," in *Weimar Surfaces. Urban Visual Culture in 1920s Germany* (Berkeley: University of California Press, 2001), 1-43.

24. Lavater, J.C., *Essai sur la Physiognomie Destine a Faire Connoitre l'Homme et a la Faire Aimer.* Vol. 1, 17. http://archive.org/details/essaisurlaphysio04lavaaccessed September 2012.

25. Balázs, 2010, 32.

26. Benjamin, "The Work of Art in the Age of its Reproducibility," 2nd Version, *Selected Writings* Vol. 3: 1935-1938. (Cambridge, MA: Harvard University Press, 2002), 118-9.

27. Carter, Balázs, 2010, 31.

28. Although I have only been able to read two biographers of Bauer, it appears that his significance to the history of Biology has been undervalued, partially on account of its linguistic and archival inaccessibility. Bauer was executed along with his wife in 1938 and his writings were suppressed until his rehabilitation in 1954. Much of his theory of life has been rendered obsolete by genomics, but his work was translated into Hungarian in the 1960s and English in the 1980s because it was deemed relevant to the fields of cybernetics and systems theory. M. Mueller, "A Martyr of Science: Ervin Bauer (1890-1938), *The Hungarian Quarterly*, 78 (2005), 123-131; B. P. Tokin, *Theoretical Biology and the Work of Ervin Bauer [Az elméleti biológia és Bauer Ervin munkássága]*Budapest: Akadémiai Kiadó, 1965.

29. As an instance of his broad-reaching interest, the laboratory he established at the All-Union Institute of Biology in Moscow for the study of life comprised of a specialist of single-cell behavior, a zoologist, a physiologist with particular focus on muscular development, a biochemist and an immunologist (Tokin, 22).

30. E. Bauer, *Elméleti biológia,* trans. Miklós Müller, Budapest: Akadémiai Kiadó : Zrínyi Kiadó, 1967.

31. Reported on by the biology Imre Fuchs-Forbath, a colleague at the time. Tokin, 14.

32. The muscle was probably a gastrocnaemius taken from a frog, the creature that in the words of the French physiologist Claude Bernard was the "Job" of physiology. E. Bauer, *Biológia,* figure 20, 161-183.

33. E. Bauer, *Biológia,* 37.

34. While Bauer rejected the first theory of thermodynamics as applying to living matter, which presumed that the internal energies of a system were subject to change depending on their transfer outside of the system, he accepted that it conformed to its second law, according to which energy unavailable for work would be maximized, resulting in the random disorder or entropy. See chapter 3, "The opposition between 'external' and 'internal' work in living systems. The theory of the increase in external work as historical certainty" [*A "külső" és a "belső" munka ellentéte az élő rendszerekben. A külső munka növekedésének elve, mint történeti törvényszerűség*], 66-78. The author wishes to thank Ágnes Jánosházi for her feedback on this section.

35. Emphasis in original, Balázs, 2010, 102.

36. Balázs, 2010, 102.

37. Balázs, 2010, 38.

38. Balázs, 2010, 38.

39. S. Kracauer, *Theory of Film: The Redemption of Physical Reality* (1960; Princeton: Princeton University

Press, 1997), 50., cited in H. Landecker, "Cellular Features: Microcinematography and Film Theory," *Critical Inquiry*, Vol. 31, No. 4 (Summer 2005), 905.

40. Kracauer, *Theory of Film: The Redemption of Physical Reality* (1960, Princeton, NJ: 1997), 169; Cited in H. Landecker, "Cellular Features: Microcinematography and Film Theory," *Critical Inquiry*, Vol. 31, No. 4 (Summer 2005), 908., footnote 10.

41. J. Epstein, "Grossisement," in *Bonjour Cinema* (1921; Paris: Maeght, 1993), 93-108.

42. Although there is no room in this essay to develop Epstein's relationship to the scientific technologies of magnification, it should be noted that he joined Lumiere's factory in 1916 after receiving a medical degree. His first film was about Louis Pasteur (1922). J. Epstein, "The Senses," in *French Film Theory and Criticism,* ed. R. Abel (1921; Princeton: Princeton University Press, 1988), 241.

43. This footnote only appears in the third version of the essay, *Walter Benjamin: Selected Writings, Vol. 4, 1938-1940* (Cambridge: Harvard University Press, 2005), 265., footnote 31.

44. S. Kracauer, 1997, 50, cited in H. Landecker, 2005, 905.

45. O. Botár, "Ernő Kállai and Wilhelm Kolle. Science and Art in Weimar Germany," *Acta Historiae Artium Academiae Scientiarum Hungaricae* 37 (1994-95): 273-77.; D. Canguilhem, *Le Merveilleux Scientifique.* Paris, Gallimard, 2004., J. Maddison, "Experiment in the Scientific Film," in *Experiment in the Film*, ed. Roger Manvell, London, Grey Walls Press, 1949; S. Curtis, *Managing Modernity: Art, Science and Early Cinema in Germany* (forthcoming), M. A. Doane, *The Emergence of Cinematic Time: Modernity, Contingency, the Archive.* Cambridge, Mass.; London: Harvard University Press

46. L. Cartwright, *Screening the Body: Tracing Medicine's Visual Culture* (Minneapolis: University of Minnesota Press, 1995), 1.

47. Cartwright, 1.

48. Cartwright, 2.

49. The man responsible for bringing microcinematography to the public through the sponsorship of Pathé, Jean Commandon, also was one of the first to use Roentgen rays in cinema. See John Maddison, " *Experiment in the Scientific Film*," in *Experiment in the Film*, ed. Roger Manvell (London: *Grey Walls Press*, 1949), 266-274.; Th. Lefebvre, "The Scientia Production (1911-1914): Scientific Popularization Through Pictures," *Griffithiana*, 47 (1993), 137.

50. See Tsivian, 1996, 85, 93-95.

51. S. Eisenstein, "S. Eisenstein's *Glass House,*" ed. N. Kleiman, *Iskusstvo kino*, 3 (1979), 95-96. Cited in Tsivian, 96.

52. Although Anton Van Leeuwenhoek is considered the first microbiologist, the microscope had been used to record the life of insects at least since 1625, when members of the Roman *Accademia dei Lincei* reproduced by hand the magnified body of a bee from three different angles on the cover of *Melissographia* (1625) (D. Freedberg, "Iconography between the History of Art and the History of Science: Art, Science, and the Case of the Urban Bee," in P. Galison and C. Jones, *Picturing Science Producing Art* (New York : Routledge, 1998), 272-295. and D. Freedberg, *The Eye of the Lynx: Galileo, his friends, and the beginnings of modern natural history.* Chicago : University of Chicago Press, 2002. The autonomous structure of the cell was discovered by the Italian physiologist Stefano Gallini (1756-1836), see M. Bruhn, "Life lines: An art history of biological research around 1800," *Studies in History and Philosophy of Biological and Biomedical Sciences*, 42 (2011), 368-9.

53. H. Landecker, 2005, 125.

54. E. Metchnikoff, *Microbes et Toxines.* Ernest Flammarion: Paris, 1911.

55. Between 1913 and 1914, *Film Kunst* reviewed at least 24 films using the technique (*FilmKunst: Illustrierte Wochenschrift fuer Moderne Kinematographie*

, Vienna Film Archive). There seems to have been at least 40 scientific films produced by Pathé alone between 1912-14 using either microcinematography or extreme close-ups (*Pathé Catalogue, 1896-1914,* ed. H. Bousquet([Bures-sur-Vyette]: Edition H. Bousquet, 1993-6). The titles were widely distributed on Germanic territories. At least eight film companies produced microcinematographic films in the period before the 1920s, including Gaumont, Pathé, Eclair and Edison (O. Gaycken, "'A Drama Unites them in a Fight to the Death': some remarks on the flourishing of a cinema of scientific vernacularization in France, 1909-14," *Historical Journal of Film, Radio and Television,* 22 (2002), 353-374.).

56. Some maintain that the film was shot by his colleague Mihály Fekete, who also starred in the film. Janovics was a successful theater director in Cluj-Napoca who transformed his theater into a film studio. Collaborating with the Pathé studios from Paris, Janovics shot the first Hungarian film, *Sárga Csikó* in 1913. Although with political changes to the area of Transylvania, Janovics lost his theater and studio to Romanian authorities, he had by then made over thirty films and had helped establish the careers of Mihály Kertész (Michael Curtiz) and Sándor Korda (Alexander Korda), and the actors Istvan Szentgyörgyi, Mari Jászai, Lujza Blaha, Lili Berky and Mihály Várkonyi (Vincent Varconi).

57. Gy. Balogh, B. Zágoni, eds., *A Kolozsvári filmgyártás képes története 1913-tól 1920-ig* (Kolozsvár: Filmtett Egyesület, Magyar Nemzeti Filmarchívum, 2009), 96-97, 116. Thanks to Bálint Zágoni for sharing documents relating to the filming, including a radio interview with the actors and a historian of science in 1960 on occasion of the 1959 International Medical Film Festival in Switzerland and Health Symposium in Bucharest.

58. "Mikrokinematográfikus felvételek készülnek," *Vörös Film*, May 17; May 31. On Polik see *Új Magyar Életrajzi Lexikon*, vol. V (Budapest: Magyar Könyvklub, 2004), 409.

59. Carter, *Béla Balázs,* 99.

60. Carter, *Béla Balázs,* 98.

61. Carter, *Béla Balázs*, 99.

62. A. Vollard, *Paul Cézanne* (Paris: Galerie A. Vollard, 1914), 88.

63. P. Virilio, *The Vision Machine* (London: British Film Institute, 1994), 59.

64. "Children have no difficulty understanding these physiognomies." "The Face of Things," 2010, 46.

65. Carter, *Béla Balázs,* 337.

66. Carter, *Béla Balázs,* 53.

67. Carter, *Béla Balázs,*152-3.

68. Carter, *Béla Balázs,* "Impressionism," 119.

69. R. Brain "The pulse of modernism: experimental physiology and aesthetic avant-gardes circa 1900," *Studies in the Historical Philosophical Sciences* 39 (2008), 401.

70. Goethe, "Allerdings (Dem Physiker)," in *Gott und Welt* (1815)(http://www.kuehnle-online.de/literatur/goethe/gedichte/22.htm) accessed September 2012. A text on the scientist's gaze that also may have influenced Balázs is "Bildung und Umbildung Organischer Naturen" (1807); *Zur Morphologie* . Band 1 Heft 1, 1817; for a treatment of Goethe's science see K. J. Fink, *Goethe's History of Science.* Cambridge: Cambridge University Press, 1991.

71. "No Ideograms, Thank You," Balázs, 2010, 128.

72. Balázs's conception of "closeness" in scientific reasoning recalls Kracauer's account of Max Weber, who works from "ideal-types" that are "simplified and schematized." See "The Crisis of Science," in *The Mass Ornament*, ed. by Thomas Y. Levin (Cambridge: Harvard University Press, 1995), 213-223.

73. Balázs's report on the lecture given by Eisenstein is as lengthy as it is unusual, as in neither book does

he devote much space to contemporary theories (rather than practices) of cinema. “Eisenstein on Intellectual Cinema,” Carter, *Béla Balázs,* 149-151.

74. Balázs citing Eisenstein, Carter, *Béla Balázs,* 149.

75. Carter, *Béla Balázs,* 150-151.

76. Carter, *Béla Balázs,* 150-151.

77. “Ezen tényekből azon nagyfontosságú következtetéshez jutunk, hogy érzeteink minőségüket illetőleg csupán jelek a kültárgyak megismerésére, de nem képek, melyek hozzájuk csak legkevésbé is hasonlíthatnának…Az érzéki érzetek csupán jelek, melyeket olvasni tanultunk, csupán ama nyelvnek szavai, melyben s kültárgyak hozzánk beszélnek, s melyet, bár szervezetünk annak megértésére képesít, mégis gyakorlás és tapasztalatok útján kell megtanulnunk, ép ugy mint anyanyelvünket.” S. Bauer, *Gondolkodás és tudás (Bölcsészeti értekezés)* (Szeged: Burger Zsigmond Özvegye, 1876), 10.

78. Although such an interpretation of Balázs may have been expected under Stalin, the criticism of “idealism” has persisted in his reception by R. Dyer (London, 1998), M. Hansen and G. Koch (Cambridge, 1987), E. Carter (New York, 2010).

79. Quote Balázs, 2010, 9. See Erica Carter’s cogent summary of the problem in “Balázs’s Phenomenology of Perception,” *Béla Balázs,* xxiv-xxv.

80. A. Breton, “Manifesto of Surrealism,” trans. R. Seaver and H. R. Lane, *Manifestoes of Surrealism* (University of Michigan Press, 1972), 12.; “Visible Man,” Carter, *Béla Balázs,*11.

81. “Surrealist Films,” Carter, *Béla Balázs,*164.

82. For the Surrealists and scientific film see S. Lawder, “Modern Painters Discover the Cinema,” in *The Cubist Cinema* (New York: New York University Press, 1975), 1-17.; David Robinson, *Luis Bunuel* (New York: Da Capo Press, 1976, c1975), 51.; A. M. Bellows and M. McDougall, *Science is Fiction: The Films of Jean Painleve.* Cambridge: MIT Press, 2000. For Balázs’s opinion of Surrealism, see chapter in *Spirit of Film* called “Absolute Film,” in particular “Surrealist Films,” “Un chien andalou,” ‘Segments of the Soul,” “Objectification of Internal Images,” 164-168.

83. A. Breton, 1972, 11.

84. Carter, *Béla Balázs,* 9.

85. See section on “Physiognomy and Melody,” 101; “Eisenstein on Intellectual Cinema,” 149-151.

86. Bergson, *Creative Evolution,* F. Burwick, *The Crisis in Modernism: Bergson and the Vitalist Controversy.* Cambridge: Cambridge University Press, 1992.

87. For distinction between *langue* and *parole* see “Linguistique de la Langue et Linguistique de la Parole,” in *Cours de Linguistique Generale* (Paris: Payot, 1972), 36-39.

88. F.Tönnies, *Gemeinschaft und Gesellschaft : Grundbegriffe der reinen Soziologie* (Leipzig : H. Buske, 1935).

89. Carter, *Béla Balázs,* 11.

90. For translation see *Apertúra* (Fall 2012) (this issue).

91. Béla Balázs, “Álmodozás/Trauemerei,” in Bécsi cikkek 1923-28 (manuscript), Hungarian National Digital Archive, Ke 148/23-1, LSz: 1127.

92. “Worldview,” Carter, *Béla Balázs,* 81.

93. V. Lenin, “Anatoli Lunacharsky: Conversation with Lenin. I. Of All the Arts…” in R.Taylor and Ian Christie (eds.), *Film Factory* (London: Routledge, 1994), 56-57.

94. G. Lukács, *History and class consciousness; studies in Marxist dialectics.* Transl. R. Livingstone. Cambridge: MIT Press, [1920] 1971.

95. G. Lukács, “Reification and the Consciousness of the Proletariat,” *History,* 136.

96. See Mary Gluck, *Georg Luka[]cs and his generation, 1900-1918*Cambridge, Mass.: Harvard University Press, 1985., E. Karádi and E. Vezér, *A Vasárnapi Kör Világnézete.* Budapest: Gondolat Kiadó, 1980.

97. G. Lukács, "Reification and the Consciousness of the Proletariat," *History*, 136.

98. G. Lukács, "Reification and the Consciousness of the Proletariat," *History*, 136.

99. W. Benjamin, "The Work of Art," 104-5.

100. M. Hansen's two-point summary of Benjamin's notion of "aura" in "Aura: the Appropriation of a Concept," in *Cinema and Experience* (Berkeley: University of California Press, 2012), 106. Balázs's own definition of aura in *Visible Man* could continue Hansen's revision of the concept. See "'Aura'," Carter, *Béla Balázs,* 51.

101. L. Aragon, *La Révolution Surréaliste* 3 (April 15, 1925), cited in H. Foster, *Compulsive Beauty* (Cambridge, Mass.: MIT Press, c1993), 20.

102. Reproduced in A. M. Bellows and M. McDougall, *Science is Fiction: The Films of Jean Painleve* (Cambridge, Mass.: MIT Press, c2000), 116-117.

103. "Alien Races," 2010, 30.

104. Notions of race are absent from *Spirit of Film*, suggesting that Balázs recognized the dangers of his physiognomics.

105. Carter, *Béla Balázs,* 30.

106. Carter, *Béla Balázs,* 30.

107. Carter, *Béla Balázs,*30.

108. Carter, *Béla Balázs,* 13.

109. "The Close-Up," Carter, *Béla Balázs,* 38. Note that Benjamin uses very similar examples, also to describe the close-up: "Whereas it is a commonplace that, for example, we have some idea what is involved in the act of walking (if only in general terms), we have no idea at all what happens during the split second when a person actually takes a step. We are familiar with the movement of picking up a cigarette lighter or a spoon, but know almost nothing of what really goes on between hand and metal." "Work of Art," 2nd version, 117.

110. G. Deleuze, "Plato and the Simulacrum," trans. R. Krauss, *October* Vol. 27 (Winter 1983), 48.

111. *Sophist*, 236 a-d

112. *Idem*.

113. "We are Right in the Middle," 2010, 98.

114. B. Balázs, *Napló* vols. I and II, ed. A. Fábri. Budapest: Magvető Könyvkiadó, 1982. See MTA for collection of sketches (1886-1908), including portraits, nudes, dogs, landscapes. There is a particularly interesting sketch of the seating arrangement at a theater on which Balázs has marked the 7th, 17th and 16th rows starting from the proscenium.

115. For the sense of "worldview" as *Weltanschauung*, see "World View," Carter, *Béla Balázs,* 80-84.

116. Carter, *Béla Balázs,* 148-149.

117. For Lissitzky's biologism, see his special issue "Nasci," in Kurt Schwitters' "Merz," July 1924 in which he writes "modern art, following a completely intuitive and obvious course, has reached the same results as modern science. Like science, it has reduced form to its basic elements, in order to reconstruct it according to the universal laws of nature" (Cited in O. Botár, 1998, 426). For a thorough treatment of Moholy's relationship to biologism, see Botár, Chapters 4 and 5, 1998, *Technical Detours: the early Moholy-Nagy reconsidered* (New York: Art Gallery of the Graduate Center, the City University of New York in association with the Salgo Trust for Eduction, 2006) and also *Természet és technika: Az újraértelmezett Moholy-Nagy 1916-1923*

(Budapest: Janus Pannonius Múzeum Vince Kiadó, 2007). For A. G. Baumgarten's invention of the technical term see *Aesthetica* (1735), on W. Benjamin's appropriation of the term in the 'Work of Art' essay without citing his predecessor see A. Benjamin, *Benjamin and Art* (London: Continuum, 2005), 63-64.

118. The term *Grundformen* was coined by the science popularizer Raoul Francé, a botanist with an extraordinary if understudied impact on the avant-garde production of the 1920s. Although there is no room to develop the relationship between Francé and Balázs, it is worth mentioning that Francé originated in the Austro-Hungarian monarchy, published many of his hundreds of books in Hungarian and founded multiple journals on microscopy, of which Ervin would have been aware. See "Nasci" for reproduction of the *Grundform* of a crystal, juxtaposed with image from Lissitzky's Kestnermappe, and Moholy's illustration of all of the seven forms in *The New Vision; fundamentals of design, painting, sculpture, architecture* (New York, W. W. Norton & company, inc., 1938), 120-23.

119. See Lukács's equally biologist use of the term "atomization" in the sense of isolation in "Reification and Consciousness of the Proletariat," namely that "the atomization of the individual is, then, only the reflex in consciousness of the fact that the 'natural laws' of capitalist production have been extended to […] a unified economic process, and that the fate of every member of society is determined by unified laws."

120. W. Benjamin, "On the Mimetic Faculty," in *One-Way Street and Other Writings,* trans. E. Jephcott and K. Shorter (Frankfurt: Suhrkamp Verlag, 1970), 160.

121. R. Krauss, "The *Photographic Conditions of Surrealism,"October*, Vol. 19 (Winter 1981), 19.

122. G. Deleuze, 1983, 49.

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