



The Heart Machine: “Rhythm” and Body in Weimar Film and Fritz Lang’s *Metropolis*¹

Michael Cowan

“Schließlich gibt es ja auch nur *ein* Thema. Alle Milliarden von bunten und wirbelnden Erscheinungen des Daseins sind nur Variationen des *einen* Themas vom Leben, vom Lebensrhythmus!”

—Gerrit Engelke, *Gottheit, Zeit und Ich* (1913).

MODERNISM / *modernity*

VOLUME FOURTEEN, NUMBER

TWO, PP 225–248.

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UNIVERSITY PRESS

Introduction

When the Austrian critic René Fülöp-Miller set out to account for the increasing appeal of Hollywood film in his 1931 study *Die Phantasiemaschine* (*The Fantasy Machine*), one explanation that seemed to lie ready-at-hand was that of film’s “optical rhythms” (*optische Rhythmik*). Pointing both to the physiological rhythm constituted by the succession of twenty-four frames per second and to the rhythms represented on the screen, Fülöp-Miller argued that rhythm in the cinema acted as a subliminal, suggestive force: “How difficult it is to turn your eyes from the screen!”² But while the cinema might represent a new technology, its irresistible rhythms in fact constituted a modern manifestation of a much more primitive and vital *Urrhythmus*, a primal rhythm that had animated all art forms from Homeric times to the present: “From the dawn of time, the primal rhythm created by the embrace of the sexes has brought forth all art, and this primal rhythm is now said to celebrate its resurrection—in a form corresponding to our own epoch—in film.”³

Michael Cowan is an Assistant Professor of German at McGill University. He works on questions of media and embodiment in modern culture and is the author of a forthcoming book entitled *The Cult of the Will: Nervousness and the Forging of a Modern Self in German Culture*. The present article forms part of a broader research project on modernity’s preoccupation with rhythm, technology and the body.



226 For anyone familiar with the discussions of avant-garde filmmakers and critics from the 1920s, Fülöp-Miller's euphoric celebration of filmic rhythm no doubt evokes a whole host of utopian associations. Like other key concepts from the early cinema debates such as that of a "universal language" or an art of "hieroglyphs," the notion of cinema as an art of "rhythm" was suffused with the sorts of progressive aspirations that broadly defined what Gilles Deleuze called the cinema of the "movement image" in the years before the Second World War.⁴ By the time Fülöp-Miller published *Die Phantasiemaschine* (1931), the notion of film as an art of rhythm already had a long history among the filmic avant-garde of the 1920s. Most specifically, as Standish Lawder demonstrated in his seminal book *The Cubist Cinema*, it emerged in the wake of Abel Gance's 1922 film *La roue*, in which Gance and then editor, Blaise Cendrars, introduced the accelerated montage sequences that would come to characterize French filmmaking throughout the decade.⁵ For younger filmmakers such as Germaine Dulac, Jean Epstein, Fernand Léger and Marcel L'Herbier, the real "story" of *La roue* lay not in the narrative of a train conductor's illicit desire for his adoptive daughter, but rather in the film's *rhythmical editing itself*, which they saw as a demonstration of the cinema's unique ability to capture modern experience. Léger, in particular, as Lawder has shown, seems to have drawn upon the montage of the train in *La roue* for his own famous experiments in rhythmical filmmaking in *Ballet mécanique* (1924), in which the rhythmical movements of human bodies and industrial objects are juxtaposed in an effort to underscore "the reaction of man to his mechanical environment."⁶

Certainly, the appeal exerted by the very fantasy of a rhythmical cinema on avant-garde artists stemmed in large part from a problem of legitimacy: the cinema's ability to visualize movement differentiated it not only from literature, but also from painting and static photography and so seemed to offer a key to claiming a unique aesthetic domain. This desire to construct a specificity of cinematic aesthetics has often been cited to explain the vehemence with which directors sought to valorize abstract form over concrete content, defining avant-garde cinema effectively as an anti-mimetic art and severing it from the realm of referentiality. But the excitement about "rhythm" in the 1920s cannot be explained by aesthetic concerns alone. In what follows, I wish to show this by examining the relationship between "rhythm" as a term of filmic aesthetics and a much broader discussion of rhythm, the body and modernity in the early 20th century. While such a cultural-historical investigation will never allow us to attach any unambiguous denotative meaning to the images of "pure cinema," it might help better to understand the stakes behind the desire to reduce film to its rhythmic component.

For the proponents of the abstract film, that desire was thoroughly bound up with a belief that rhythmical movement could appeal directly to the emotions, bypassing rational intellection, as it were, by eliminating the conscious content of plot. The desire for such an affective appeal was precisely what motivated Germaine Dulac, for example, to praise Gance's rhythmical experiments in *La roue* in her 1926 book *L'art cinématographique* and call for a further reduction of the cinema to purely abstract rhythmical movement: "Can lines unwinding in profusion according to a rhythm [. . .] not affect one's emotions by themselves, without sets, solely through the activity of

their development?”⁷ While Dulac’s call to divest film of plots recalls Léger’s *Ballet mécanique*, her question about the emotional appeal of purely abstract forms set into rhythm also recalls other experiments occurring across the Rhine—most notably Hans Richter’s abstract rhythmical studies *Film ist Rhythmus* (later renamed as *Rhythmus 1921* for the year in which it appeared), *Rhythmus 1923* and *Rhythmus 1925*, in which Richter animated abstract rectangular shapes over a blank background. Like Dulac, Richter—who as a painter involved with the Zurich Dada movement had long sought to create a “universal language” of pure forms—saw the reduction of cinema to abstract optical rhythms as a means of bringing the medium into its essence: “Rhythm, tempo and cadence [. . .]: the new film resides in the significance that details lend to the plastic object and its movement—that is, precisely in that which occurred unconsciously and haphazardly alongside the action, the actors and the scenery.”⁸ But like Dulac, Richter also saw in rhythm a means of affecting the spectator *bodily* by accessing the elementary laws of sensation and emotion. In an article for the influential ex-patriot journal *Little Review* from 1926 entitled “Rhythm,” Richter described rhythm as “the essence of emotional expression,” “the inner nature-force [. . .], through which we are bound up with the elemental nature-forces.”⁹ Rhythmical composition thus seemed to offer a direct route to the spectator’s emotional life without the detour through characters, story and setting: “This film here offers no ‘stopping points,’ at which one could look back through memory. The viewer is—exposed—forced to ‘feel’—to go along with the rhythm—breathing—heartbeat: — . . . through its rising and sinking, the rhythm makes clear *what* it really means to feel and sense . . . a process—movement.”¹⁰

Like Fülöp-Miller’s characterization of filmic rhythm as a modern avatar of a vitalistic “primal rhythm,” Dulac and Richter’s insistence on the link between rhythm, emotion and sensation also points to a broader connection between questions of filmic aesthetics, on the one hand, and the modern understanding of the body on the other. In what follows, I wish to explore this connection more closely, particularly as it played out among German intellectuals. After examining the broader interstices between discourses on the body and discourses on film, I will then turn to an extended reading of one film that encapsulates some of the central stakes of the rhythm debates: Fritz Lang’s *Metropolis*.

Modernity, Acceleration and Montage

“Der Rhythmus ist jeder menschlichen Tätigkeit eigentümlich, er ist das erste Gesetz aller Äußerungen unseres Selbst. Und er ist noch deutlicher erkennbar im Jugendzustande des Individuums, und in den primitiven Kulturen, als in vorgerückteren Entwicklungsstadien. [. . .] In den Gebärden prägt sich der Drang nach dem Rhythmischen schon bei den Urvölkern als Tanz aus. Auch alle gemeinsamen Arbeitsverrichtungen geschehen bei ihnen im Takt und von Gesang begleitet.”

Hermann Muthesius, *Die Einheit der Architektur* (1908)

228 Coinciding with the emergence of cinematic technology itself around 1900, the very term “rhythm” came to play a key role in European modernity’s understanding of the relation between the body and technology. Any investigation into this broader understanding of rhythm and modernity would have to begin with the immensely influential study *Arbeit und Rhythmus* (*Work and Rhythm*), published in 1896 by the economist Karl Bücher. Concerned above all with the effects of industrial labor on the working body, Bücher relied on ethnographic sources and his own observations of exotic “human zoos” at the World Exhibition in Paris to undertake a systematic survey of pre-industrial and ‘primitive’ work forms. The result, in his own words, was the rediscovery of a “lost world” of “joyous work [*fröhliche Arbeit*],” one diametrically opposed to the alienated labor of modern industrial societies.¹¹ For Bücher, the key difference between the two forms of work resided not only in the introduction of the division of labor, but also and most centrally in the role of the *body*. The “joyous work” of traditional societies was a form of labor attuned—in its duration and tempo—to the body’s organic rhythms, which Bücher saw expressed in chants, songs, spirituals, hand-clapping, foot-stomping and the like. But whereas traditional societies had used the body’s rhythms to guide the tools of labor, industrial society had subordinated the body itself to the rhythm of machines, with their fixed work schedule and—above all—their accelerated tempo. The body, Bücher concluded, had become a servant of its own tools: “The working man is no longer master of his own movements. His tools no longer act as his servants, as enhanced bodily limbs. Rather, the tools now lord it over him. They dictate to him the measure of his movements. The speed and duration of his labor no longer obey his will.”¹² For Bücher, the predicament of modern work, particularly in its Tayloristic variants, resided first and foremost in the problem of tempo: the rhythms of industry had left those of the body behind.¹³

Bücher’s focus on “rhythm” as the mark of bodily being formed part of a much broader medical mapping of the body as a network of organic “rhythms” by physiologists and psychologists around the turn of the century.¹⁴ But it was *Arbeit und Rhythmus*, more than any other study on the subject, which helped to catalyze debates about tempo and bodily experience in the industrial world.¹⁵ More broadly, one might say, Bücher’s study provided a new vocabulary for conceptualizing modernity in terms of accelerated rhythms. Thus in his famous essay “Die Großstädte und das Geistesleben” (“The Metropolis and Mental Life,” 1903), Georg Simmel saw *rhythm* as one of the decisive factors distinguishing rural and city life. In small towns, Simmel wrote, “the rhythm of life and sensory mental imagery flows more slowly, more habitually, and more evenly” than in the metropolis.¹⁶ As suggested by Simmel’s own famous characterization of the city as an “intensification of nervous life,” this sense of having lost touch with natural rhythms was directly linked to the question of neurasthenia. Precisely the desire to counter neurasthenia gave rise to a whole array of reform movements designed to reawaken the body’s natural rhythms. The eurhythmical dance teacher Emil Jaques-Dalcroze, for example, used the terms “Neurasthenia” and “Arhythmia” (*Arhythmie*) synonymously and explicitly drew on Bücher’s work while formulating his system of eurhythmical gymnastics in the 1910s.¹⁷ Around the same time, rhythm

also became a key topic in theosophical and anthroposophical circles, where Rudolf Steiner developed his own system of eurhythmical gymnastics in 1912, designed to “set modern nerves back to earlier states.”¹⁸ In his book *Das Gesundheitsproblem: der Rhythmus des Lebens* (*Health and the Rhythm of Life*) from 1912, the English theosophist Archibald Keightley broadly summarized the understanding of the “rhythm problem” among cultural reformers when he asked: “Have we kept up with the real rhythm of life?” I do not believe so! Many—and probably most—people today suffer from some sort of physical, nervous and mental agitation. They can control neither themselves, nor the circumstances of their lives, which in one way or another are too much for them.”¹⁹

It would be difficult to overlook the connection between the experience of modernization in terms of accelerated rhythms and the fascination with accelerated montage in 1920s cinema. To take one of the best-known examples from the German context, Walter Ruttmann’s 1927 film *Berlin. Die Sinfonie der Großstadt* (*Berlin. The Symphony of a Great City*) constructs its vision of urban modernity through the motif of accelerating rhythms right from the opening sequence. Beginning the film with an establishing shot of slowly lapping waves, Ruttmann quickly interrupts this scene of natural motion with a superimposition of two abstract geometric figures—themselves reminiscent of Richter’s rhythm films as well as Ruttmann’s own abstract films such as the surviving *Opus I* (1921)—that begin to turn at an increasingly accelerated pace. In a graphic match-cut, these figures then morph into a rapid montage sequence of a train on its way to Berlin. With its rapid and hard cuts between shots of furiously turning wheels, speeding tracks and telephone lines, all set to a fast-paced rhythmical musical score, Ruttmann’s train montage appears as an almost direct citation of Abel Gance’s *La roue*. Through such interfilmic references, Ruttmann suggests a vision of filmic montage as a particularly apt medium for capturing an experience of modernity as the overcoming of natural rhythms.

Nor is the focus on acceleration by any means limited to this opening sequence, but rather returns like a leitmotif throughout *Berlin. The Symphony of a Great City*. To take one example, at the end of the second act, in a sequence linking acceleration to the rise of mass communications, Ruttmann inserts an accelerated montage sequence in which female typists and telephone operators can be seen working furiously as the typewriters and switchboards begin to spin in circles. As Joachim Radkau has shown, the nervous system itself was often compared to a vast system of telephone (or telegraph) wires, and telephone operators were thought to be particularly susceptible to neurasthenia and hysteria.²⁰ In this sense, this entire sequence can already be read as a metaphor for the modern nervous system, overloaded by its exposure to the accelerated rhythms of industrial life. As the rhythm of this montage sequence continues to accelerate, Ruttmann drives the point home by inserting shots of screaming monkeys and fighting dogs in a textbook example of Eisensteinian “intellectual” montage. Unable to exert any self-control, the animals here function as symbols for the nervous inhabitants of the metropolis, in a manner analogous to the slaughtered cows Eisenstein inserted into the final scene of *Strike* to illustrate the repression of the striking workers.

230 If the montage of telephone operators represents the height of acceleration during the morning shift, another key image of acceleration will come after the lunch break. In a sequence set off by images of the printing press turning out newspapers,²¹ Ruttmann underscores, on a clearly symbolic level, the dangers of surpassing the body's organic rhythms. In shots reminiscent of Richter's short film *Inflation* from the same year (1927), the animated word *Geld* (*Money*) flies repeatedly toward the spectator in an accelerating rhythmical succession. This is then followed by another sequence of intellectual montage, unfolding in an ever-increasing tempo and associating images of a building storm, whirling shots taken from within a moving roller coaster, and the electrified eyes of a woman who looks down from a city bridge as she prepares to jump to her death.

Siegfried Kracauer, in his own reading of Ruttmann's *Berlin* film in *From Caligari to Hitler*, criticizes Ruttmann for what he sees as an overindulgence in formalistic rhythmical compositions that overshadow any concern with the denotative referents of the individual images.²² Indeed, as David Macrae observes, Kracauer uses the terms "rhythm" and "reality" in strict opposition, so that rhythmical formalism would signify a flight from social concerns into a kind of new objective *l'art pour l'art*.²³ Defending Ruttmann against Kracauer's critique, Macrae rightly suggests that the social significance of the film might be sought precisely at the formal level itself, rather than falling into any either-or oppositions between denotative content and formalistic games. For Macrae, *Berlin* would practice a kind of Eisensteinian "collision and interaction of multiple layers of visual signification," producing "a transcendental level of signification" through the combination, arrangement and juxtaposition of different elements.²⁴ In my own reading, however, I would suggest that we look for the film's cultural-historical significance at the level of Ruttmann's *temporal* compositions, and more specifically in his manipulation of tempo. Given the centrality of "rhythm" as a category for German modernity's understanding of its own experience, it seems crucial to me to understand how *Berlin* comments on that experience through the very use of accelerated montage. Far from a formalist game, Ruttmann's montage performs a kind of mimesis of the very industrial tempo that so preoccupied writers on rhythm since Bücher. While Ruttmann's rhythms might not carry any denotative meaning in themselves, they do carry a *connotative* one, gesturing toward a much broader perception of the disjuncture between organic and technological rhythms in the modern world.

Rhythm as the Movement of "Life"

"Das Leben zeigt Unstetigkeit im Stetigen, regelmäßige Unregelmäßigkeit. [. . .] Dynamisch tritt regelmäßige Unregelmäßigkeit [. . .] in den Phänomen der Rhythmik auf. Ihre Verbreitung ist ungeheuer, so daß man sehr wohl verstehen kann, wie der Rhythmus geradezu zum Zentralmoment alles Lebendigen proklamiert werden konnte."

—Helmuth Plessner, *Die Stufen des Organischen*

But while the aspect of acceleration played an important role in the rhythm debates, it was not the only question at stake. Coming in the wake of Ferdinand Tönnies's classic study of modern anomie, *Gemeinschaft und Gesellschaft* from 1887, Bücher's vision of collective, rhythmical labor also represented a fantasy of community, one opposed to the growing sense of isolation and anonymity accompanying life in the city.²⁵ At the same time, however, it was only a step from Bücher's rhythmical collective labor, with its workers all performing the same gestures in unisons, to the mass ornaments and serialized movements that would come to be associated with industrial work and urban entertainment.²⁶ The question of how to distinguish 'rhythm' from sterile seriality would come to occupy an increasingly important place within the rhythm debates after Bücher, especially in the domain of vitalist philosophy, and it stood at the center of the most influential work on the subject from the 1920s: *Das Wesen des Rhythmus* (*The Nature of Rhythm*) by Ludwig Klages (1923).²⁷ Written specifically for a convention of body culture schools in Berlin (the *Tagung für künstlerische Körperschulung*), Klages's essay quickly became a central reference point for discussion on rhythm and the body. In it, he sought to demonstrate what he saw as the irreconcilable opposition between organic and machinic rhythms—or in his terminology between *Rhythmus* and *Takt*.²⁸ For Klages, "rhythm" resided not in the succession of identical elements characteristic of mass production,²⁹ but rather precisely in the *deviations* from mechanical succession. Visible in biological processes (e.g., heartbeat, breath) and diurnal cycles (planets, tides, etc.), rhythm expressed the essence of life,³⁰ while *Takt* made visible the rational, ordering and segmenting activity of the intellect (or "spirit"—*Geist*—in Klages's terminology).³¹ In terms of the experience of time, rhythm could express the flux of becoming in a manner reminiscent of Bergsonian *durée*, while *Takt* emphasized the artificial divisions of time into discreet segments. Where *Takt* could best be observed in the staccato movement of clocks, metronomes, and pendulums, rhythm found its most perfect phenomenal expression in the undulating flow of waves:

The crests and valleys [of waves] correspond to the pendulum's delimiting strokes [*begrenzende Schläge*]. But here, the boundaries are not clearly marked. [. . .] The upward movement glides into the downward movement and vice versa in such a way that neither the upper nor lower turning points display any hard edges. What appears is rather a curve, which clearly shows us the unsegmented continuity [*unzergrenzte Stetigkeit*] of a movement that is nonetheless structured.³²

For Klages, the real "nature of rhythm"—the etymology of which he locates in the Greek verb *rhein* or "to flow"³³—resided precisely in this quality of continuity (*Stetigkeit*), which he opposed to the segmentation of time through the imposition of temporal pauses and clearly defined boundaries. The goal of vitalist phenomenology was to access the Dionysian world of rhythm hidden below the machinic *Takt* of modernity.

Returning briefly to Ruttmann's *Berlin. The Symphony of a Great City*, it might not be by chance that Ruttmann chose to begin with an image of slowly lapping waves. In a film intent on drawing parallels between the movement of human bodies in the city and that of machines and automatons in repetitive motion, the transition from

232 organic movement of the waves to the precision cutting of the train sequence could be read as a kind of rudimentary narrative of modernity. Modernity, in Ruttmann's *Berlin*, would involve the expulsion from the warm folds of Klagesian rhythm into the cold and "sober" domain of mechanical *Takt*, a *Takt* embodied by the mass ornaments that increasingly come to dominate Ruttmann's film in the entertainment sequence toward the end [Figure 1].

In staging modernity as the definitive overcoming of Klagesian rhythm, *Berlin. Symphony of a Great City* could be read as an answer of sorts to another popular film from two years earlier no less preoccupied with questions of rhythm and filmic representation: Wilhelm Prager's body culture showcase *Wege zu Kraft und Schönheit (Paths to Strength and Beauty)* from 1925. Where Ruttmann's film begins with an image of flowing rhythm only to catapult the viewer into a world of accelerated, mechanized movements, *Paths to Strength and Beauty* opens with a demonstration of nervous mechanization only to proclaim, subsequently, the restoration of organic rhythm. Before showing a single image of beautiful bodies, Prager's film opens with an extended vision of urban modernity as a neurasthenic nightmare.³⁴ We see images of a bourgeois family caught in the throws of nervous convulsions and shot in a rapid and abrupt montage style reminiscent of Gance; an impressionist collage of superimposed images of hustling city traffic; and endless tracking shots showing lines of workers attached to oppressive factory machines. Clearly, Prager's film presents body culture as an answer to modernity's neurasthenic dilemma, and among the demonstrations of body culture that follow, he includes an entire section on eurhythmical gymnastics and dance. Here too, we see a Klagesian subtext when Prager introduces this sequence with a shot of ocean waves and flowing fields—both paradigmatic manifestations of rhythm for Klages³⁵—followed by an intertitle reading: "Movements are made beautiful by rhythm. This is a law of nature." The section that follows illustrates all of the most important schools in rhythmical dance and gymnastics, including (among others) Jaques-Dalcroze, Rudolf von Laban, Mary Wigman, Rudolf Bode and the Loheland School.

Many of the performers included in the "rhythm" section of *Paths to Strength and Beauty* would have adhered to Klages's theories, and the film certainly presents eurhythmics as a whole as part of Klagesian project to access the body's primal rhythmical flows. Most of the exercises shown consist of flowing bodily movements, and some performances are even staged at the edge of a lake in front the lapping waves [Figure 2]. Perhaps the most ardent of Klages's supporters shown in the film was Rudolf Bode, the volkish dance reformer who would go on to become a leading figure in the physical education bureaucracy of the Third Reich.³⁶ In his study *Rhythmus und Körpererziehung (Rhythm and Bodily Education, 1925)*, Bode described modernization as a process of "derhythmification" ("*Entrhythmisierungsprozess*"), in which the body's rhythmical life-force had been suppressed under a regime of technological *Takt*.³⁷ Only eurhythmical gymnastics, Bode argued, could liberate the flow of primal rhythm. Opposed as this section of Prager's film is to the images of mechanization with which the film opens, it clearly intended to visualize such a liberation through the motion picture medium. In that, Prager's film largely portends the flowing images



▲
Fig. 1. "Advertisement for Walter Ruttmann's *Berlin. Die Sinfonie der Großstadt* (1927)"



▲
Fig. 2. "Rhythmical gymnastics performed before lapping waves. Still image from Wilhelm Prager's *Wege zu Kraft und Schönheit* (1925)"

234 of calisthenics and divers that Leni Riefenstahl would later produce in her account of the 1936 Berlin Olympics.³⁸

At least on one level, then, both *Berlin. The Symphony of a Great City* and *Paths to Strength and Beauty* were really about the opposition between machinic *Takt* and organic rhythm, even if the films opted, as it were, for different sides of the opposition. But the stakes of this opposition and of the broader discourse on rhythm, I would argue, extend well beyond the content of these two films to touch upon one of the central questions behind thinking about the cinema as a temporal medium in the 1920s. Examining writings on filmic aesthetics from the 1920s, one is struck by the extent to which the very body cultural discourses I have been exploring here serve as a point of reference in discussions about filmic rhythm. A case in point can be seen in the figure of Sergei Eisenstein. In his essay “The Dramaturgy of Film Form” (1929), Eisenstein described “rhythm” as the central dynamic force animating “every art form and [. . .] every form of its expression.”³⁹ Using the term “rhythm” nearly synonymously with his key concept of “conflict,” Eisenstein defined rhythm as the result of a tension between the organic and the technological, “formlessness” and “rational form” or “nature and industry.”⁴⁰ In poetry, he argued, this rhythmical dynamic translates into a “conflict between the metric measure adopted and the distribution of sounds that ambushes that measure.”⁴¹ Analogously, Eisenstein locates the “rhythm” of filmic montage in the dynamic conflict between the metrical regularity of shot lengths and the distribution of movement within the individual shots. Precisely this concept of rhythm as a dynamic tension between metric and organic elements stood at the center of Eisenstein’s critique of quantitative models of rhythmical montage such as that of Pudovkin: “We cannot characterize this kind of relationship between lengths [proposed by Pudovkin] as rhythm.”⁴²

In formulating his model of rhythmical montage, Eisenstein draws an explicit analogy to the debates already underway in body cultural circles. Although he faults Klages for the latter’s one-sided focus on the irrational, Eisenstein’s concept of rhythm as a struggle between the organic and the technological clearly bears some affinities with Klages’s distinction between flowing rhythm and mechanical *Takt*. Accordingly, in comparing his own model of dynamic rhythm to Pudovkin’s metrical concept of shot lengths, Eisenstein looks for authority to none other than Rudolf Bode, whose Klagesian understanding of eurhythmical gymnastics he opposes to the quantitative muscle training of the popular American calisthenics teacher Bess Mensendieck. Pudovkin’s effort to equate rhythm with the mathematical determination of shot duration, Eisenstein argues, “would give rise to a metre that was as opposed to rhythm as such as the mechanical-metric Mensendieck system is opposed to the organic-rhythmic Bode school in matters of bodily expression.”⁴³ Passages such as this suggest the extent to which Eisenstein’s notion of filmic “conflict,” while derived from Marxian dialectics, also resonated with the vitalist models of rhythm so important for the early 20th century’s understanding of the body.⁴⁴

That filmmakers would take an interest in the opposition between rhythm and *Takt* should hardly come as a surprise. At stake in that opposition was a question of movement and time already articulated in the philosophy of Henri Bergson. Indeed, as Christine

Lubkoll has argued, Bergson's efforts to distinguish between analytic conceptions of time as a series of fixed points and the experience of becoming as *durée* must be seen as one of the key sources for the model of rhythm proposed by Klages, with its opposition between flowing and punctual movements.⁴⁵ As is well known, Bergson considered the cinematographic filmstrip the very model of a punctualized, spatialized conception of movement as a series of static points, whereas authentic movement consisted in the continuum of development between the points. In his *Creative Evolution*, Bergson compared the intellect, with its tendency to spatialize movement and becoming into so many static points on a line, to an interior strip of film.

More recently, Gilles Deleuze has attempted to defend the cinema against Bergson's critique. In his 1983 study on the "movement-image" in early cinema, Deleuze argued that Bergson himself had access only to the earliest films, shot with stationary cameras before a static stage. With the development of montage and mobile camera work, however, subsequent filmmakers would increasingly explore the possibilities of motion pictures to represent movement as a formless flow.⁴⁶ Deleuze's distinction between a (pre-WWII) "movement image" and a (post-WWII) "time-image" has been the subject of some critique, and it is not my intention to take up this debate here.⁴⁷ But I *do* wish to recall the extent to which Deleuze saw the film of the 1920s—and particularly the avant-garde experiments in rhythmical filmmaking—as a series of eminently Bergsonian experiments: namely an effort to return to a primary state of pure movement or "universal variation" described by Bergson in the first chapter of *Matière et mémoire*.⁴⁸ For Deleuze, the cinema of the "movement image" is almost inherently Bergsonian, tending quasi-teleologically toward the restoration of pre-subjective "gaseous" states of pure movement.⁴⁹ In order to demonstrate this conception, it might not be by chance that Deleuze himself focuses on the predilection of experimental filmmakers for the beloved motif of water:

Water is the quintessential milieu in which one can extract movement from the object moved and show the mobility of movement itself. Hence the importance of water as a visual and auditory element in rhythmical experiments. What [Abel] Gance had begun with his images of railroads would find its continuation—transmitted and diffused in all directions—precisely in the liquid element. In his own experiments, Jean Mitry started by filming the railroad (in *Pacific 231*) and then turned to water (in *Images pour Debussy*) in the hopes of delivering a more profound image of reality as pure vibration. The documentary work of Jean Grémillon passes through the same stages, from the mechanics of solids to the mechanics of fluids, from industry to the marine element underneath [*à son arrière-fond marin*].⁵⁰

According to Deleuze, then, the project of rhythmical filmmaking lay precisely in the effort to access a realm of pure Bergsonian movement hidden beneath the habitual world of solid bodies and geometric space.

Deleuze's claims about the Bergsonian possibilities of early cinema have been echoed by other contemporary critics, most recently by Tom Gunning in his reading of Loïe Fuller's *Serpentine Dances* as a Bergsonian flow of uninterrupted movement.⁵¹ In

236 citing these arguments, my own point is not to take sides in the debate as to whether the filmic medium in itself has access to the world of flowing rhythms or whether it is bound to the world of division, seriality and *Takt*. But I do wish to underline the ongoing pertinence of a question about the filmic medium that I have been attempting to delineate from films and film theory in the 1920s. If that question has remained so central to our understanding cinematic aesthetics, I would argue that the reason for this might lie precisely in the cinema's ambiguity. As an "art of the machine," film seemed to be bound up with the tempo of modern technology and—as Walter Benjamin argued—with the aesthetics of fragmentation and seriality. However, as an "art of motion," in Gunning's phrase, the cinema's animated pictures also seemed to hold out the promise of recapturing the movement of life in its most vitalistic aspect.⁵² Precisely in this ambiguity, the cinema seemed to embody what Christine Lubkoll has identified as the general function of rhythm in the modern imagination since Bergson: that of a dynamic "interface" (*Schnittstelle*), "in which nature crosses over into culture and culture can also point back to nature."⁵³ As we will see, this concept of rhythm—and the rhythmical cinema—as an interface between nature and culture underlay an extended reflection on rhythm, body and film in Fritz Lang's *Metropolis*.

Rhythm in *Metropolis*

Although widely criticized upon its release in 1927 for what viewers saw as a contrived plot, *Metropolis* was almost universally praised for its formal visual constructions, particularly its choreography of movement. In an article for *La gazeta literaria de Madrid*, for example, Luis Buñuel exclaimed: "What a captivating symphony of movement! How the engines sing amidst wonderful transparent triumphal arches formed by electric charges! [. . .] [T]he rhythmic succession of wheels, pistons [and] mechanical forms is an admirable ode, a new poetry to our eyes. Physics and chemistry are miraculously transformed into rhythm."⁵⁴ Although *Metropolis* has rarely been seen as part of the project for a rhythmical cinema, a glance at the critical reception such as that of Buñuel suggests that it ought to be read at least in part within this context. After all, Lang's film focuses on the central question at stake in the broader rhythm debates: namely that of the limits between technology and organic life.

In its attempt to articulate those limits, moreover, the film employs a thoroughly Klagesian opposition. Right from its opening sequence, *Metropolis* stages industrial modernity as a regime of machinic *Takt* in Klages's sense. After an initial montage of pistons, flywheels and gears in repetitive movement, the film zeros in on a shot of the 10-hour work-clock that organizes the time of the city. In fact, what we see are two clocks: The first, marked with twenty-four hours, appears to retain some connection to the rhythms of diurnal time. Below it, however, the face of the rationalized 10-hour clock looms some five times as large. To the difference of the diurnal clock, which features only the hour and minute hands, the 10-hour clock is distinguished by the marked presence of two rapidly flashing lights and a second hand, which races around the clock face in a jerky, staccato movement.⁵⁵

Recalling Klages's definition of *Takt* as a motion emphasizing the segmenting of time through the imposition of temporal boundaries into the flow of rhythm, the staccato movement of the second hand defines a pattern that will be repeated throughout the film—and nowhere more explicitly than in the choreography of working bodies. In the sequence immediately following the shot of the two clocks, the film cuts to the machine halls underground, where two lines of serialized workers can be seen walking in different directions, their highly stylized, staccato gait recalling the movement of the second hand from the previous scene. Soon after these shots, we then see what exactly has transformed the workers' bodies when Freder catches his first glimpse of the machine hall in the famous "Moloch" sequence. From Freder's point of view, we observe the workers twitch back and forth like pendulums in a mechanical dance [Figure 3]. Through this meticulous choreography of cadenced bodily movement, *Metropolis* constructs modernization in a manner similar to that of Klages and the proponents of eurhythmical body culture. Modernization, here, appears as a process entailing the temporal disciplining of the body through a regime of industrial *Takt*, where the body's natural rhythms are subordinated to the rhythms and the tempo of the industrial clock.⁵⁶

Indeed, this model of the suppression of rhythm by *Takt* informs not only the representation of the workers' bodies in *Metropolis*, but also that of the city itself, which is repeatedly figured as a kind of meta-body suffering under the tyranny of the intellect. While this motif of the city as body comes out most distinctly in the repeated allegory of the head and the hands, it is also inscribed into the city's very geographic layout. In Thea von Harbou's novel version of *Metropolis*, the narrator recounts how Fredersen, the head of Metropolis, originally built his city over an ancient river, which he had dammed up, but which constantly threatens to flood over again.⁵⁷ The novel then ends with the liberation of this vital source in the form of a cathartic flood, which Harbou celebrates as a metaphor for the return of life to a rigidified modern body: "The stones of the dead city came to life."⁵⁸ In this, the city undergoes a process directly parallel to Joe Fredersen himself. Repeatedly, the hyperintellectual Fredersen is compared to a block of stone erected over an ancient source, and the novel culminates with Maria describing Fredersen's healing process in terms of water flooding breaking through rigid stone. "Oh Freder!" Maria exclaims to Fredersen's son. "As your father stood here, it was as if I could hear a source rumbling beneath the stone [*als hörte ich eine Quelle in einem Felsen rauschen*]. The water was red with blood and heavy with salt. And I knew that if this source gained enough strength to break through the stone, it would be sweeter than dew and whiter than light."⁵⁹

Harbou's allegory of rationalization as the suppression of flowing sources under the rigid stone of urban architecture recalls nothing so much as the vitalist discourse on modernization as the repression of primal rhythms. In his *Rhythmus und Körpererziehung* (1925), for example, Bode repeatedly resorted to the allegory of an ancient source covered over by blocks of stone to describe the process of "derhythmification" that eurhythmical gymnastics would help to overcome. Bode compared the liberation of the body's repressed rhythms to the unleashing of this source in the form of a



▲
Fig. 3. “The mechanical dance of the workers operating the machines. Still image from *Metropolis*”

vitalistic flood, which would tear down all of the barriers erected by the intellect in its segmentation of nature. “All we can do,” Bode explained,

is to clear the way in case the wave of life [*Woge des Lebens*] should rise up again to assault the fortress of rationalism, flooding it with the forms of rhythmically moving life [*es überflutend mit den Formen rhythmisch bewegten Lebens*]. Whether this flood will come, whether this wave will crash once again, we cannot know. We can only point to symptoms that suggest that the flood [*Flut*] is rising.⁶⁰

But such a cathartic destruction of the architecture of rationality, Bode argued, would be possible only if the rhythmical source of life had not already dried up: “Where the water of life has definitively run dry, no removal of stone rubble our boulders [*Felsen-geröll*] can create a source [*Quelle*] of bubbling rhythm.”⁶¹

Clearly, Harbou’s novel sought to stage a similar cathartic movement to that of the dance reformers—right down to the “tanzendes Mädchen” that leads the crowd during the destruction of the city.⁶² The novel’s obsessive preoccupation with stone and vital waters clearly also provided the groundwork for the famous flood sequence in the film version of *Metropolis*. Most specifically, the film recalls Harbou’s allegory of the buried spring in the many images of water smashing through the geometric stone buildings of the underground city [Figure 4]. But while the film retains Harbou’s critique of rationality, it largely plays down the positive connotations of the flood to present the unleashing of vital forces more specifically as a source of danger. Like the novel, the film draws a direct parallel between the images of flooding water and the



▲
 Fig. 4. "Water smashing through the geometric buildings in the workers' city underground. Still image from *Metropolis*"

movement of the revolting workers as they tear down every barrier on their unstoppable flow toward the machine rooms.⁶³ And this formless flowing mass is, of course, unmistakably coded as feminine, marked as it is by the presence of the workers' wives, who appear in this scene for the first time in the film. If this characterization of the masses as a feminine flood recalls the paranoid male fantasies investigated by Klaus Theveleit, it also recalls the understanding of primal rhythm by reformers like Bode, who championed the rhythms of nature as a feminine, liquid element opposed to the masculine activity of rational segmentation.⁶⁴

And yet, if Lang presents this Dionysian flood as a force no less threatening than the rigid regime of *Takt* it opposes, the film does attempt to imagine a kind of productive relation between the two poles: according to the central motto, it is the *heart* that ought to mediate between the intellect and the body. Certainly the topos of the mediating heart in *Metropolis* functions on one level as a metaphor for the cinema itself, which Lang largely understood—under the influence of Bela Balázs—as a forum for mediating linguistic, social and cultural barriers through the establishment of a universal language of gestures and expressions. We first encounter the figure of the mediating heart in Maria's catacomb sermon on the Tower of Babel, which offers an allegory of *Metropolis* itself in its call for mediation between the classes, and which is presented as a kind of film within the film.⁶⁵ In what follows, however, I would like to suggest that *Metropolis* also attempts to imagine motion pictures as a forum for mediating between technological and organic rhythms—and that the pulsating heart forms a metaphor for *this* mediating function.

240 To see this, we need to look more closely at the web of heart imagery recurring throughout the film, starting with the famous “heart machine” at the center of the city’s technological apparatus. In her novel, Harbou describes the heart machine as a pumping mechanism, audible throughout the underground city as a “beating pulse” (*Pulsschlag*), which functions to keep the danger of flooding in check by continually pumping away the excess water building up beneath the city.⁶⁶ Thus mediating between technology and the forces of nature by imposing rhythmical order over nature’s dangerous flows, Fredersen’s allegorical city itself can be seen to embody a certain fantasy of cinematic movement as a constructivist machine for controlling the rhythms of nature.

This interpretation becomes even more plausible when one considers the design for the heart machine in *Metropolis*. As Standish Lawder long ago remarked, the appearance of Lang’s heart machine, with its circular form featuring groups of four hooked lines on the outer edges [Figure 5], makes an unmistakable reference to a specific work of rhythmical filmmaking: namely the 1923 film *L’Inhumaine* (*The Inhuman Woman*) by Marcel L’Herbier. There—in lavish sets designed by Fernand Léger himself—a similar design adorns the centerpiece of the laboratory of the engineer Einar Norsen: a machine for “reanimating the heart of the deceased,” as Einar explains in one scene. L’Herbier’s film tells the story of the concert singer and femme fatale Claire Lescot, whose ruthlessness toward her male suitors is matched only by her penchant for “primitive” sexuality. Throughout the early part of the film, Claire can be seen giving bizarre soirées, in which black performers dressed in tribal attire entertain her with rhythmical dances, filmed in chaotic accelerated montage sequences. What Claire’s suitors all share is the desire to bring her sexuality under control and tame the “inhuman” woman with her exotic rhythms. It is the engineer, Einar, who will win the contest, and his ‘heart machine’ plays a key role in the process. First, Einar invents a kind of proto-television device, which allows Claire’s concerts to be transmitted instantly anywhere in the world, thus rendering her physical mobility unnecessary. Then, when Claire is subsequently poisoned by another jealous suitor, Einar sets his laboratory into motion—in a final montage sequence unwinding in furious acceleration—and uses his heart machine to reanimate the deceased Claire. As Richard Abel has argued, L’Herbier’s audiences would clearly have understood the engineer’s machine as a metaphor for the cinema in its capacity to preserve or reanimate life.⁶⁷ But I would add that this reanimation of the heart’s pulse also embodied a fantasy—one once again played out in gendered terms—of subjecting the rhythms of nature to the order of male technology. The engineer Einar not only reanimates Claire’s heart, he also controls the threatening rhythms—we see him literally struggling to make it through the montage sequence at the end—embodied in Claire’s primitivist soirées with their rapid montage. Receiving an artificial electric heartbeat, Claire thus becomes a metaphor of the cinema’s power to impose temporal order over life.

Coming back to *Metropolis*, beyond the heart machine itself, what functions to keep the dangerous flow of primal rhythm in check is, of course, precisely Maria’s catacomb sermon on the need for a mediating heart, by which she continually diffuses the workers’ desire for revolt. But as anyone who has dealt with *Metropolis* at any



▲ Fig. 5. "The heart machine at the center of the city's technological apparatus. Still image from *Metropolis*."

length knows, this "good Maria" is never far from her wicked double—or to borrow Andreas Huyssen's terms, the virgin is never far from the vamp.⁶⁸ It should come as no surprise, then, to see the robot Maria embodying something of a nightmarish double of the orderly "heart machine." Accordingly, at the climactic moment of Rotwang's transformation of the robot, Lang superimposes the image of a pulsing heart onto the robot's chest, whose rhythmical movement sends vital currents soaring through the entire mechanical body. The suggestion here, I think, is that Rotwang has endowed the robot not only with Maria's external appearance, but also—as Huyssen points out—with her sexual life force.⁶⁹ The image of the pulsing heart follows almost directly upon shots of Rotwang's glass tubes and flasks, which appear to fill with Maria's blood as he effectuates the transformation.

In many ways, Rotwang's experiment also recalls the resuscitation of Claire in *L'Inhumaine*, and both Rotwang and L'Herbier's engineer could be seen as stand-ins for the filmic artist. But in fact, the "cinema" that Rotwang creates with his construction of the robot is precisely the opposite from that of Einar Norsen. Whereas Einar used technological rhythms to create an obedient machine from an uncontrollable female sexuality, Rotwang's experiment, by infusing the robot with the life-force of organic rhythm, transforms what was a thoroughly obedient machine—Rotwang's *Maschinen-mensch*, which the audience saw following his every command in an earlier scene—into an agent of uncontrollable sexual chaos. In this sense, Rotwang also creates a precise counterpart to the controlling "heart machine" at the center of Fredersen's industrial



Fig. 6. “Maria’s ‘primitive’ erotic dance. Still image from *Metropolis*.”

city. And it is hardly a coincidence that the ‘false’ Maria will lead the flood of raging workers on a rampage to destroy that very same heart machine.

In parallel to this attack, the false Maria also institutes an alternative rhythmical spectacle with her famous erotic dance at Yoshiwara’s. In a scene reminiscent of Claire Lescot’s sexualized soirées in *L’Inhumaine*, Maria arrives atop a giant pedestal held up by a circle of nearly-nude black male figures bearing primitivist tribal attire [Figure 6]. Maria’s subsequent Josephine-Baker-style dance—which Lang’s editing stages as an ever accelerating rhythmical frenzy—will then send her male audience into convulsions, causing them to lose all self control and attack one another before the stage. In terms of its effects upon its audience, Maria’s erotic spectacle recalls the belief, widespread in the early 20th century, that violent or erotic representations in the cinema could provoke an atavistic regression in spectators. Indeed, Lang specifically constructs Maria’s dance as an example of what contemporaries called *Schaulust* or “visual pleasure,” which was understood to reside precisely in the pleasure of atavistic regression before the screen.⁷⁰ Through editing, close-ups and superimposition, Lang gradually reduces Maria’s spectators to a collage of lustful eyes. Through this emphasis on the staring eyes, Lang presents the male audience here not so much as *voyeuristic*—in the sense of a distanced, controlling gaze—but rather as mesmerized, Maria’s rhythmical spectacle causing them to *lose* all self-control.⁷¹

This cinema of rhythmic contagion stands diametrically opposed to the good heart machine, and it must, like the rebellious Claire Lescot in *L’Inhumaine*, be brought

under control at the end of the film. As Siegfried Kracauer recognized, this exorcism occurs not only through the burning of the bad Maria, but also through the re-ordering of the mass flood into a perfectly geometric mass ornament. The crowd's unified and disciplined movement in the final handshake scene seems to suggest that the "heart machine"—mediating between the body and the intellect, nature and technology, rhythm and *Takt*—has once again regained its function of imposing order over life's formless flows. Given the complex history of the rhythm debates and the wide range of positions they encompassed, I see no reason to follow Kracauer in interpreting this reimposition of order as a necessary premonition of Nazism.⁷² I would reiterate, in closing, that it looks back to a certain conception of the cinema: one embodied by L'Herbier's rhythmical heart machine and whose imaginary power consisted in subordinating the rhythms of nature to mechanical order.

Notes

1. I wish to thank Peter Latta from the Fotoarchiv of the Deutsche Kinemathek for permission to reprint the photo material accompanying this article.

2. René Fülöp-Miller, *Die Phantasiemaschine. Eine Saga der Gewinnssucht*. Berlin: Paul Zsolnay Verlag, 1931, 135. All translations are mine unless otherwise stated.

3. *Ibid.*

4. See Gilles Deleuze, *Cinéma I. L'image-mouvement*. Paris: Les Éditions de Minuit, 1983.

5. For more on the discussions surrounding *La roue*, see Standish Lawder, *The Cubist Cinema*. New York: New York University Press, 1975, 79–99.

6. *Ibid.*, 90. For an extended analysis of *Ballet mécanique*, see *ibid.*, 117–169.

7. Germaine Dulac, "Aesthetics, Obstacles, Integral *Cinégraphie*." Trans. Stuart Liebman. In: *French Film Theory and Criticism. A History/Anthology I: 1907–1929*. Ed. Richard Abel. Princeton: Princeton University Press, 1988, 396f.

8. Hans Richter, "Der Gegenstand in Bewegung." In: *Hans Richter: Film ist Rhythmus*. Ed. Jeanpaul Goergen. *Freunde der Deutschen Kinemathek e.V.* 95 (2003), 42.

9. Richter, "Rhythm." In: Jeanpaul Goergen (ed.), *Hans Richter: Film ist Rhythmus*, 38. Elsewhere Richter calls rhythm "ein unwiderstehlichen Naturprinzip" (57). On Richter's notion of rhythm as the essence of emotion, see also Robin Curtis and Marc Glöde, "Haptische Rhythmen: Visuelle Intervalle in der filmischen Wahrnehmung." In: *Aus dem Takt. Rhythmus in Kunst, Kultur und Natur*. Ed. Christa Brüstle, Nadia Ghattas, Clemens Risi, Sabine Schouten. Bielefeld: transcript-Verlag, 2005, 273–275.

10. Richter, "Die schlecht Trainierte Seele" (1924). In: Goergen, *Hans Richter. Film ist Rhythmus*, 28.

11. See Karl Bücher, *Arbeit und Rhythmus*, 6th ed. Leipzig: Verlag Emmanuel Reinicke, 1924, 455: "In den schier endlosen Tatsachenreihen, die sich [. . .] vor unseren Augen entfaltet haben, ist eine versunkene Welt aus den Fluten der Menschheitsgeschichte aufgetaucht: die Welt der fröhlichen Arbeit. Der Nationalökonom, der diese Welt zuerst betritt, reibt sich verwirrt die Augen, als wäre er durch ein Wunder in das Land Utopia versetzt, von dem ihm die Staatsromane erzählen. Hier ist die Arbeit keine Last, kein schweres Lebensschicksal, keine Marktware, ihre Organisation kein Ergebnis kalter Kostenberechnung."

12. *Ibid.*, 460.

13. In later editions of his study, Bücher proposed to counter the Tayloristic model with his model of 'rhythmical' work, specifically by reintroducing singing into German factories. See Bücher, 461f.

14. See Michael Golston, "'Im Anfang war der Rhythmus - rhythmic incubations in discourses of mind, body and race from 1850–1944. *Stanford Electronic Humanities Review*. Supplement 5: *Cultural and Technological Incubations of Fascism* (1996). <http://www.stanford.edu/group/SHR/5-suppl/text/>

244 *golston.html*. Updated December 17, 1996. Bücher's linkage of rhythmical movement and "pleasure," for example, was a commonplace in turn-of-the-century psychology. As one American psychologist described it in an article from 1902: "The great pleasure which children find in rhythm is due to the efficacy of rhythm to set up vibrations in other organs of the body, and the consequent harmonious activity of the several bodily organs. The affective tone increases in proportion as the summation of excitation increases, till a state bordering on ecstasy may be reached" (ibid.)

15. Among other things, Bücher's arguments gave rise to a series of studies designed to weigh the benefits of "pleasurable" tempos on worker efficiency. See for example Margaret Keiver Smith, *Rhythmus und Arbeit*. Dissertation. University of Zürich. Leipzig: Wilhelm Engelmann, 1900; Dobri Avramoff, *Arbeit und Rhythmus. Der Einfluss des Rhythmus auf die Quantität und Qualität geistiger und körperlicher Arbeit, mit besonderer Berücksichtigung des rhythmischen Schreibens*. Leipzig: Wilhelm Engelmann, 1902. For more on the place of rhythm in turn-of-the-century work science, see Anson Rabinbach, *The Human Motor. Energy, Fatigue, and the Origins of Modernity*. Berkeley: University of California Press, 1990. 172, 189–192.

16. Georg Simmel, "Die Großstädte und das Geistesleben." In: *Gesamtausgabe* 7. ed. Otthein Rammstedt, Frankfurt am Main: Suhrkamp, 1995, 117.

17. See Emil Jaques-Dalcroze, *Rhythmus, Musik und Erziehung*, 62f. As one can gather again and again in the various articles of the Dalcroze-Institute yearbook *Der Rhythmus*, Bücher's study constituted a central point of reference for the Dalcroze circle. On this relationship, see my forthcoming book *Cult of the Will. Nervousness and German Modernity*. (Penn State Press).

18. "Aber bedrohlich für unser Menschtum ist dies: Überall blökt das Radium, meckert das Grammophon, schwirrt der Film; die Maschine hat auf allen Liden gesiegt, selbst auf denen der Kunst; wo Lebendiges versucht wird, muss es schnelle weichen und wird mechanisiert. [. . .] Es wirkt antiquarisch, aber wenn man seine modernen Nerven zurückschraubt auf frühere Einstellungen und nicht zapplig wird, wirkt es auch wohltuend." Marie Steiner, "Vorwort." In: Rudolf Steiner, *Eurhythmie als sichtbare Sprache. Ein Vortragszyklus vom 24. Juni bis 12. Juli 1924 im Goetheanum*. Dornach, Switzerland: Philosophisch-Anthroposophischer Verlag am Goetheanum, 1927, ii. Steiner's system, with its goal of rendering visible otherwise imperceptible ethereal forces, differed from that of Jaques-Dalcroze. Nonetheless, both shared the motivation of countering the nervousness of modern life. See also Annemarie Dubach-Donauth, *Die Grundelemente der Eurhythmie*. Dornach: Philosophisch-Anthroposophischer Verlag am Goetheanum, 1928, i–xi.

19. Archibald Keightey, *Das Gesundheitsproblem. Der Rhythmus des Lebens*. Trans. Thersa Panizza. Berlin: Paul Raatz Verlag, 1912, 10.

20. See Joachim Radkau, *Das Zeitalter der Nervosität: Deutschland zwischen Bismarck und Hitler*. Munich: Carl Hanser Verlag, 1998, 227, 239.

21. On the connection between the printing press and modern tempo, see Peter Fritzsche, *Reading Berlin 1900*. Cambridge: Harvard University Press, 1998, 51–87.

22. Kracauer, *From Caligari to Hitler. A Psychological History of the German Film*. Revised and Expanded Edition. Ed. Leonardo Quaresima. Princeton: Princeton University Press, 2004, 183–187.

23. See David Macrae, "Ruttman, Rhythm, and 'Reality': A Response to Siegfried Kracauer's Interpretation of *Berlin. The Symphony of a Great City*." In: *Expressionist Film. New Perspectives*. Ed. Dietrich Scheunemann. Rochester: Camden House, 2003, 256.

24. Ibid., 258.

25. On the role of "rhythm," and particularly dance, in constructing the fantasy of a national "community" in Germany, see Inge Baxmann, *Mythos: Gemeinschaft. Körper- und Tanzkulturen in der Moderne*. Munich: Fink, 2000.

26. See of course Siegfried Kracauer, "Das Ornament der Masse." In: *Das Ornament der Masse. Essays*. Frankfurt am Main: Suhrkamp, 1963, 50–63.

27. For a more detailed reading of the "rhythm" discussion in vitalist philosophy, see especially Christine Lubkoll, "Rhythmus. Zum Komplex von Lebensphilosophie und ästhetischer Moderne." In: Christine Lubkoll (ed.), *Das Imaginäre des Fin de siècle. Ein Symposium für Gerhard Neumann*. Freiburg: Rombach, 2002, 83–110.

28. Ludwig Klages, *Vom Wesen des Rhythmus* (1923/33). Kampfen auf Sylt: Niels Kampmann Verlag, 1934. I have chosen to leave Klages's term *Takt* in the original German here rather than use the standard English translations of "cadence" or "meter," since neither of these terms quite captures the technological connotations the term assumes—with the key connection between *Takt* and the "tic tac" of clocks—in Klages's vocabulary.

29. On *Takt* and serial production, see *ibid.*, 36f. Discussing the difference between medieval and modern architecture, Klages asks: "Was [. . .] läßt uns mittelalterliche Bruchsteinbauten durchweg rhythmischer erscheinen als neuzeitliche des nämlichen Stils? [. . .] der Umstand, daß man es damals vermied, mit fabrikmäßigen zugeschnittenen Steinen von genau gleicher Größe zu bauen, und dergestalt die Wandflächen mit einer fesselnden Mannigfaltigkeit merklich verschiedener Fugenlinien belebte. Und damit hätten wir denn gleich den entscheidenden Grund für das rhythmische Übergewicht ausnahmslos jeder Handarbeit über die sachlich gleiche Maschinenleistung! (36f.)."

30. *Ibid.*, 33: "Niemals in grenzgenauen, wohl aber in ähnlichen Zwischenzeiten wechseln Helle und Dunkelheit, Ebbe und Flut, die Phasen des Mondes, die Jahreszeiten, die Bilder der Pflanzenwelt; und es wechseln in gleicher Weise Wachen und Schlafen, Frische und Müdigkeit, Hunger und Sättigung, Durst und Flüssigkeitswiderwille, ja beim ursprünglichen Menschen sogar das Paarungsverlangen mit geschlechtlicher Gleichgültigkeit."

31. One of the keywords to describe the activity Klages associates with *Geist* and *Takt* is *Grenzensetzung*. See for example p.13: "Die Einteilungsleistung ist Teilungsleistung, und alles Teilen geschieht durch Grenzensetzung. Grenzen zu setzen 'in der Erscheinungen Flucht', darin besteht die einzige originäre Tat des Geistes."

32. *Ibid.*, 17.

33. *Ibid.*, 16.

34. This section is introduced by an intertitle reading: "Not everyone today is in good shape; not everyone is strong. But without exception, everyone is nervous."

35. Flowing fields constituted another paradigmatic manifestation of rhythm for Klages. See *Das Wesen des Rhythmus*, 33f: "Nicht nur die See bewegt sich in Wellen mit wiederum periodischem Wechsel von Steigen und Fallen, sondern nicht minder unter dem Winde der Wald, das Getreidefeld, der bewegliche Sand."

36. On Bode's career, see Karl Toepfer, *Empire of Ecstasy. Nudity and Movement in German Body Culture, 1910–1935*. Berkeley: University of California Press, 1997, 127–129. In his espousal of a specifically "German" rhythm, Bode was a key player in what Inge Baxmann has labeled the "nationalization of rhythm" in Germany beginning in the 1920s and continuing in the conception of racial rhythms under the National Socialists. See Baxmann, *Mythos: Gemeinschaft*, 232–252. On the connection of rhythm and race, see also Golston, "Im anfang war der rhythmus."

37. Rudolf Bode, *Rhythmus und Körpererziehung*. Jena: Eugen Diederichs, 1925, 33.

38. On the place of rhythm—and Klages and Bode's theories in particular—in Riefenstahl's work, see Michael Mackenzie, "From Athens to Berlin: The 1936 Olympics and Leni Riefenstahl's Olympia." *Critical Inquiry* 29 (Winter 2003): 302–336.

39. Sergei Eisenstein, "The Dramaturgy of Film Form." In: Leo Braudy and Marshall Cohen (ed.), *Film Theory and Criticism. Introductory Readings*. 5th Edition. New York, Oxford: Oxford University Press, 26.

40. *Ibid.*

41. *Ibid.*, 28.

42. *Ibid.*

43. *Ibid.*

44. One could make a similar point for Hans Richter. In the dada circle in Zurich during the war, Richter had developed close contacts with the Laban dance group and—just before making *Film ist Rhythmus* in 1921—married the Laban dancer and dada artist Sophie Täuber. As we saw above, Richter considered rhythm the essence of emotional expression. Like Eisenstein, he sought to oppose rhythm to any simple metrical determination of frame lengths: "Rhythm," he wrote in one passage, "is not definite, regular succession in time or space, but the unity binding all parts into a whole. [. . .] It [. . .] is the inner, nature-force [. . .], through which we are bound up with the elemental nature-

246 forces" (Richter, "Rhythm," 34). Again, this is not to suggest that Richter would have identified with the anti-rational vitalism of Klages and Bode. As Malcolm Turvey has argued, Richter saw his films as an attempt to perform a much more complex balancing act of order and disorder, intentionality and chance, intellect and feeling (see Turvey, "Dada Between Heaven and Hell: Abstraction and Universal Language in the *Rhythm* films of Hans Richter." *October* 105 (2003): 13–36). Following Standish Lawder, Turvey points to the interplay, in the *Rhythm* films, between established patterns of regular movement—the parallel and perpendicular movements of white squares over a black background—and the "surprises" and "deviations" that continually interrupt these patterns (30). To Turvey's analysis, I would only add that Richter largely conceived of such a balancing act as an effort to harness the affective and power of "rhythm" in the service of the (constructivist) intellect. As Richter described it in an article from 1924 entitled "Die schlecht trainierte Seele" ("The Badly Trained Soul"), "Die lebendige Kraft, die wir in dieser [rhythmischen] 'Bewegung' besitzen, [. . .] kann [. . .] zum Bestandteil menschlicher Macht werden—aber man müßte im Stande sein, diesen Prozeß zu beherrschen, um das Gebiet der Empfindungen ebenso unserem Urteil zugänglich zu machen, wie die anderen menschlichen Willensgebiete, aus deren Entwicklung die 'Seele' bisher ausgeschaltet blieb" (Richter, "Die schlecht trainierte Seele," 28).

45. See Lubkoll, "Rhythm," 87–90.

46. See Deleuze, *Cinéma I. L'image-mouvement*. Paris: Les Éditions de Minuit, 1983, 12: "L'évolution du cinéma, la conquête de sa propre essence ou nouveauté, se fera par le montage, la caméra mobile, et l'émancipation de la prise de vue qui se sépare de la projection. Alors le plan cessera d'être une catégorie spatiale pour devenir temporel."

47. For a discussion of these critiques, see Robert Stam, *Film Theory. An Introduction*. Oxford: Blackwell, 2000, 261–262. See also Tom Gunning, "Loïe Fuller and the Art of Motion. Body, Light, Electricity and the Origins of Cinema." In: Richard Allen and Malcolm Turvey (ed.). *Camera Obscura. Camera Lucida. Essays in Honor of Annette Michelson*. Amsterdam: Amsterdam University Press, 2003, 76.

48. See Deleuze, *Cinéma I*, 83–104.

49. See for example *Ibid.*, p.94: "Si le cinéma n'a nullement pour modèle la perception naturelle subjective, c'est parce que la mobilité de ses centres, la variabilité de ses cadrages l'amènent toujours à restaurer de vastes zones acentrées et décadées : il tend alors à rejoindre le premier régime de l'image-mouvement, l'universelle variation, la perception totale, objective et diffuse."

50. *Ibid.*, 112f.

51. Gunning, "Loïe Fuller and the Art of Motion," 86–87.

52. Jean Mitry (1904–1988), whose experimental films *Pacific 231* (1949) and *Images pour Debussy* (1952) Deleuze mentions in the passage cited above, himself played an important role in this history of conceiving filmic aesthetics in terms of rhythm. In his monumental *Esthétique et psychologie du cinéma* (1965), Mitry devoted an entire chapter to the discussion of filmic rhythm, in which, once again, he differentiated sharply between rhythm and meter. Citing Klages directly, Mitry shares the latter's equation of rhythm and life: "Comme le dit Ludwig Klages, «Le rythme est un phénomène de vie général, auquel participe tout être vivant et aussi l'homme; la mesure est une création humaine; le rythme peut se manifester sous la forme la plus parfaite en l'absence complète de mesure. La mesure par contre ne peut se manifester sans la collaboration d'un rythme»." Jean Mitry, *Esthétique et psychologie du cinéma*. Paris: Cerf, 2001, 157–158. Precisely because of this distinction, Mitry rejects the analogy of filmic rhythm to musical rhythm (with its regular cadence) maintained by the 1920s proponents of "pure" cinema such as Richter, arguing instead that filmic rhythm is akin to the "free" rhythms of prose poetry. Nonetheless, Mitry retains the association of rhythm with emotion, positing that rhythm serves to lend an affective force to intellectual images, reconnecting them to the realm of dynamic movement and experiential *durée* (172–176).

53. Lubkoll, "Rhythmus," 90.

54. Luis Buñuel, "Metropolis." Film review. In: *Great Film Directors. A Critical Anthology*. Ed. Leo Braudy and Morris Dickstein. New York: Oxford University Press, 1978, 591.

55. The film's highlighting of both the second hand movement and the flashing lights takes up Thea von Harbou's descriptions of clocks in the novel *Metropolis*, which repeatedly emphasize the

importance of the *second*. Toward the beginning of the novel, the narrator describes the giant work clock overlooking the city from atop the New Tower of Babel: “Freders Augen hingen an der Uhr des Neuen Turms Babel, wo die Sekunden als atmende Blitze auffunkten und wegloschen, unaufhaltsam im Kommen wie im Gehen.” Thea von Harbou, *Metropolis*. Frankfurt am Main: Ozeanische Bibliothek, 1984, 19. Moments later, as Freder enters his fathers office, he sees an identical clock on the wall: “Es war die gleiche Uhr, wie sie von der Höhe des Neuen Turms Babel, von Scheinwerfern gebadet, ihre Sekundenfunken über die große Metropolis vespritzte” (20). In a (highly filmic) description that likely inspired Freder’s vision of death in the film, the narrator then describes the second hand as a kind of scythe cutting through Fredersen’s head: “Darum stand [Freder] still und blickte unablässig auf den dunklen Schädel seines Vaters und sah, wie der ungeheuere Zeiger der Uhr, unaufhaltsam vorwärtsschreitend, gleich einer Sichel, einer mähenden Sense, wieder hinaufschob an der zahlenumbauschten Rundung, die Höhe überkroch und sich abermals senkte, um den vergeblichen Sensenschlag zu wiederholen” (21).

56. Again, one finds equivalents in the novel, where Harbou underscores the measure of the workers gestures by seconds: “Nach schmalen Sekunden gemessen immer den gleichen Griff auf die gleiche Sekunde, auf die gleiche Sekunde. Sie haben Augen, aber sie sind wie blind außer für eines: die Skalen der Manometer” (*ibid.*, 25).

57. See Theo von Harbou, *Metropolis*, 155: “Es hieß, tief unter der Stadt hin wandere ein Strom. Joh Fredersen hatte ihm den Weg gemauert, als er den Arbeitern von Metropolis die unterirdische Weltwunderstadt erbaute. Es hieß auch, daß der Strom ein gewaltiges Staubecken speise und daß da ein Pumpwerk sei mit neuen Pumpen, die stark genug waren, das Staubecken, in dem eine mittelgroße Stadt Platz hatte, in weniger als zehn Stunden bis auf den Grund zu leeren oder zu füllen. Gewiß war, daß in der unterirdischen Arbeiterstadt das Pochen dieses Pumpwerks als ein leiser, nie unterbrochener Pulsschlag ständig zu hören war, wenn man den Kopf an eine Mauer legte—und daß, wenn dieser Pulsschlag einmal schwieg, kein anderes Deuten möglich war, als daß die Pumpen standen und dann stieg der Strom.” The comparison of the heart to a pumping mechanism forms something of a leitmotif in the novel. In a description of Maria being pursued by Rotwang, for example, the narrator states: “Wie ein Pumpwerk hörte sie ihr Herz, immer schneller, immer dröhnender” (*ibid.*, 65).

58. *Ibid.*, 141.

59. *Ibid.*, 193. Interestingly, the agent of this healing process is the engineer Rotwang, and precisely in his desire to take revenge on Fredersen by destroying the master’s city. In an earlier scene in the novel, Rotwang had explained to Maria: “Alle Quellen des Guten sind in mir zugeschüttet. Ich glaubte, sie seien tot; aber sie sind nur Lebendig-Begrabene. Mein Ich ist ein Felsen-Finsternis. Aber ich höre tief in dem traurigen Stein die Quellen rauschen. Wenn ich dem Willen trotze, der über dir und mir ist, wenn ich das Werk zerstöre, das ich nach dir schuf . . . Es geschähe Joh Fredersen recht, und mir wäre wohler!” (*ibid.*, 129).

60. Bode, *Rhythmus und Körpererziehung*, 33.

61. *Ibid.*, 73.

62. See Harbou, *Metropolis*, 147: “Die Masse wollte sich an der Maschine vergreifen. Ein tanzendes Mädchen führte die Masse an.”

63. In the novel, Harbou repeatedly emphasizes the flowing, watery quality of the masses: “Vor der strömenden, grölenden Masse her tanzte ein Mädchen. [. . .] Die Masse teilte sich. Ein brieter Strom goß sich brodelnd hinab in die Gänge der Tiefbahn” (*ibid.*, 143).

64. See Bode, *Rhythmus und Körpererziehung*, 68: “Der ‘moderne’ Mann ist in der Tat einseitig intellektuell gerichtet, aber dieser Sieg des Intellekts in ihm hat zur Voraussetzung eine Schwächung seiner seelisch-rhythmischen Kräfte.” This is not to make Bode’s protofascist philosophy into any paradoxical sort of “feminism.” On the contrary, Bode specifically attacked the figure of the “new woman,” which he argued represented nothing but a suppression of women’s “motherly” calling. “Nimmt die Sturmkraft der Seele ab, so erliegt der Mann dem Intellekt, d.h. es entstehen jene Typen, die heute die Großstädte bevölkern und in deren instinktlosen Dummheiten und deren Nachahmung unsere ‘Emanzipierten’ das Heil der Seele erblicken. Nimmt andererseits im Weibe die Materie, die Stromschwere der Seele ab, so stirbt die instinktkräftige Mütterlichkeit, und das Weib erliegt gleichfalls dem Intellekt. Es entstehen jene Typen, wie sie gleichfalls nur die zivilisierte Großstadt hervorbringt,

248 weibliche Gestalten, die ohne Muttersehnsucht dem Männlichen nachstreben, ohne aber die fehlende weibliche Stromschwere durch männliche Bildkraft ersetzen zu können, Zwittergebilde und Zeichen einer sinkenden Art" (69).

65. The curse of Babel had itself served as a constant metaphor for the situation that cinema's universal language was supposed to overcome. See Bela Balász, *Der sichtbare Mensch oder die Kultur des Films*. Frankfurt am Main: Suhrkamp, 2001, 22: "Andererseits scheint uns gerade die Filmkunst eine Erlösung von dem babelschen Fluch zu versprechen. Denn auf der Leinwand der Kinos aller Länder entwickelt sich jetzt die erste internationale Sprache: die der Mienen und Gebärden." In an article timed to coincide with the release of *Metropolis*, Lang foreshadowed Maria's sermon in the film when he wrote: "Let us be clear about this. Film is the rhapsody of the twentieth century. But it could be much more for humanity; it could be the traveling preacher who speaks before millions. Through the mute speech of its moving images, in a language that is equally comprehensible in all hemispheres, film can make an honest contribution to repairing the chaos that has prevented nations from seeing each other as they really are ever since the Tower of Babel." Fritz Lang, "Looking Towards the Future. On the Occasion of the Paris Congress." Trans. Sara Hall. Unpublished manuscript (originally "Ausblick auf Morgen. Zum Pariser Kongress" *Lichtbild-Bühne* 19, no. 229, September 25, 1926, 1–2). For an extended reading of the Babel motif in early cinema, see Miriam Hansen, *Babel and Babylon: Spectatorship in American Silent Film*. Cambridge: Harvard University Press, 2005.

66. Harbou, *Metropolis*, 155. In his own reading of the film, Tom Gunning sees the function of the city in a similar light as the periodic diffusion of excess energy and reads the "disaster" sequences—the Moloch scene and the revolt at the end—as manifestations of the same mechanism of "energy release" rather than interruptions of it. See Gunning, *The Films of Fritz Lang. Allegories of Vision and Modernity*. London: British Film Institute, 2000, 63.

67. Richard Abel, *French Cinema. The First Wave 1915–1929*. Princeton: Princeton University Press, 1984, 393.

68. See Andreas Huyssen, "The Vamp and the Machine: Technology and Sexuality in Fritz Lang's *Metropolis*." *New German Critique* 24–25 (Autumn 1981–Winter 1982): 221–237.

69. *Ibid.*, 235.

70. See especially Walter Serner, "Kino und Schaulust." *Die Schaubühne* 9, nos. 34/35 (1913), 807–811.

71. Janet Lungstrum has also emphasized this point, arguing that the collage of eyes represents not a mastering male gaze, but rather a moment of loss of control—one signaled also by the many eye-like shapes that seem to look back at the audience from Maria's stage. See Lungstrum, "Metropolis and the Technosexual Woman of German Modernity." In: *Women in the Metropolis. Gender and Modernity in Weimar Culture*. Ed. Katharina von Ankum. Berkeley: University of California Press, 1997, 131–132.

72. If anything, the opposite might be true. After all, it was the champions of primal rhythm such as Bode, rather than the more rationalist proponents of rhythmical gymnastics such as Laban, who would go on to take leading roles in the Nazi administration.