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Cinema as Environment: The Emergence of German Film Culture

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Committee in charge:
Professor Anton Kaes, chair
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Abstract

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This dissertation explores early twentieth-century German film culture in the context of industrialization and its environmental effects. I argue that efforts to manage the environmental impacts of industrialization on urban space shaped film exhibition, production, and aesthetics.

Rapid modernization beginning in the late nineteenth century generated crowded and unsanitary living conditions in German cities. These problems in turn led to a range of responses on the part of public health experts, urban planners, architects, engineers, and others. As a paradigmatic technology of urban modernity, which many viewed as a symptom and agent of industrial blight, cinema became an object of environmental management. Municipal authorities regulated exhibition sites in order to safeguard urban space. Commercial theater operators saw potential profit in creating inviting and temperate spaces distinct from the urban environment outside. Advocates of the German film reform movement saw the image itself as an environmental hazard that placed excessive demands on the viewer's psyche and exposed audiences to undesirable aspects of modern life. Environmental controls were also instituted in film production in order to manage what would appear within the space of the frame.

Reformers and artists also worked to identify and exploit the medium's possibilities for promoting health. For the film reform movement, this meant disseminating hygienic knowledge (through educational films) or providing exposure to healthy environments (through nature films). Studio filmmaking privileged an aesthetic of individuation, in which objects in the image—particularly human bodies and faces—could be clearly distinguished from their surroundings. Street films like *The Street* (1923) and *M* (1931), moreover, used the studio and the camera to model urban space and render its ecology visible for consumption by film audiences.

Others saw in film a chance to transgress normative ideals of the relationship between environment and organism. For critics like Béla Balázs, rather than maintaining the organism-environment boundary, the film experience solicited a pleasurable fusion between spectator and

image. In *Berlin, Symphony of a Great City* (1927), Walter Ruttmann depicted urban space as an inhuman visual ecology accessible only through the perceptual prosthesis of cinema. The political modernism of artists such as László Moholy-Nagy, Walter Gropius, and Erwin Piscator amalgamated transformative and normative visions of the organism-environment relationship. In projects like the poly-cinema and the Total Theater, they hoped to harness the moving image to recalibrate the spectator in a way that re-established human mastery over a mechanized environment.

To Robin

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Note

Significant portions of Chapter Five previously appeared in "The Institution of Pleasure: From Display to Environment at the Berlin Lunapark." *Studies in European Cinema* 10, no. 2 & 3 (2013): 157–78.

This work contains many translations from German. When an English-language edition is not cited, the translation is my own.

Introduction

> We see once again that it is the essence of culture to *offset natural extremes*, which would otherwise obtain without human intervention. The astrophysical constitution of the earth produces daily and yearly thermal periodicities with regard to light and warmth, and culture tends to compensate for the resulting fluctuations. If one imagines the life of the mountain farmer during winter, which still consists in large part of hibernation, as compared to that of the city dweller, which absolutely depends on artificial light and warmth during the darkest and coldest times of the year, one has an instructive image as to the general development of culture.
>
> —Wilhelm Ostwald, *Energetische Grundlagen der Kulturwissenschaft* (1909)

> *The most important social function of film is to establish equilibrium between human beings and the apparatus.* Film achieves this goal not only in terms of man's presentation of himself to the camera but also in terms of his representation of his environment by means of this apparatus. On the one hand, film furthers insight into the necessities governing our lives by its use of close-ups, by its accentuation of hidden details in familiar objects, and by its exploration of commonplace milieux through the ingenious guidance of the camera; on the other hand, it manages to assure us of a vast and unsuspected field of action [*Spielraum*].
>
> —Walter Benjamin, "The Work of Art in the Age of Its Technological Reproducibility: Second Version" (1936)

The history of cinema in Europe begins in a greenhouse. On November 1, 1895, the brothers Max and Emil Skladanowsky presented a series of short moving picture subjects to a paying audience in Berlin's Wintergarten. At that time a prominent variety theater, the Wintergarten had opened in 1880 as precisely that—a winter garden, a greenhouse attached to the likewise newly established Central-Hotel on Friedrichstrasse. "The goal," reported a contemporary architectural journal,

> was to create a large concert and gastronomic establishment; which during any season of the year would offer a garden-like space that was decorated with greenery, well lit and ventilated, and moderately warmed, in the style of Paris's Café Concerts; in which visitors, sitting at any table they like, can enjoy musical or theatrical performances any day of the week, independent of the fickle mood of the weather in our climate.[1]

Under its expansive, seventeen-meter high vaulted glass ceiling, the Wintergarten housed palm trees and other non-European plants, two aquariums with exotic fish, and a stage for concerts and other performances. The space was to serve travelers as well as Berliners as an escape from the city's harsh and often gray weather; it was important for the architects that "even on the coldest days a temperature of twelve to twenty degrees Celsius will be set and held with certainty."[2] Moreover, both the hotel and its greenhouse were part of a larger effort to modernize Berlin's city center, which was seen as lagging behind the more cosmopolitan European capitals (especially Paris). Modernization meant climate control. In 1886, the Wintergarten was repurposed as a variety theater. In November 1895, audiences enjoyed the Skladanowsky's moving images while the temperature outside hovered around freezing.

In large parts of the world, life now seems unthinkable without the technologies of environmental control that produce spaces in which human beings can work, live, and play. Homes, factories, and offices depend on a wide-ranging material infrastructure that allows them to function independently of the natural environment. Gas and electricity provide the heat and light that frees people from the fluctuations of the external world, from winter's cold to the

1 v. d. Hude and Hennicke, "Das Central-Hôtel in Berlin," *Zeitschrift für Bauwesen* 31 (1881): 180.
2 Ibid., 184.

setting of the sun. Air conditioning keeps people cool and refrigeration protects food from spoilage and decay. A cheap and constant supply of water quenches thirst and washes away the dust, dirt, and waste that continually accumulate on bodies and their surroundings. Sewers and trash removal services ferry these waste products out of the immediate environment for dumping or processing and recycling. For many, this environmental infrastructure has become second nature, so fundamental to everyday life that even brief interruptions of the system are felt as a major disturbance.

What many today might take for granted, nineteenth-century industrial societies could not. The early phases of industrialization were carried out with little or no regard for the effects on surrounding environments. Due to the concentration of factories in cities, rapid population growth, and a lack of corresponding infrastructure, urban areas were the worst affected by industrial blight. As the environmental historian Frank Uekötter has written, in nineteenth-century cities "the new environmental problems possessed an immediacy that today, at least in central Europe, is only seldom to be experienced."[3] Factories polluted urban water sources with chemical byproducts, poured smog into the air, poisoned the ground, and filled streets and residences with the clamor of industrial production. By the late nineteenth century, however, municipal authorities were working to provide populations with water from unpolluted (or, at least, less polluted) sources and building sewage systems to remove waste water. Cities also began to divide industrial and residential areas (although zoning efforts were haphazard and encountered resistance from industrial interests). Bureaucratic institutions developed to deal with environmental issues and complaints, and groups within civil society concerned with the effects of industrialization also made themselves heard. New technologies emerged, moreover, such as glass and steel construction, interior electric lighting, and ventilation, which could insulate people from industrial blight and transformed the ways in which built space was designed and experienced. From our perspective, such measures clearly did not go far enough to prevent ecological catastrophe; for the historian of technology Lewis Mumford, however, writing in 1934, these developments represented an epochal shift within industrial society, from a destructive "paleotechnic" phase to a "neotechnic" phase that placed value on human health and ecological balance.[4]

An important model for technologies of environmental control was the greenhouse (also known in English as a glasshouse or hothouse). Greenhouses had existed for centuries, but were rare until glass became relatively cheap to produce in the nineteenth century. In combination with discoveries in soil science by chemists such as Justus von Liebig, greenhouses became widespread in agriculture and beyond. For Mumford, the greenhouse was an exemplary artifact of neotechnic culture: "No longer content with taking Nature as it comes, the neotechnic agriculturist seeks to determine the exact conditions of soil, temperature, moisture, insolation that are needed for the specific crop he would grow. Within his cold frames and his hothouses he brings these conditions into existence."[5] By the mid-nineteenth century greenhouses were built on a scale previously unimaginable, culminating in London's famed Crystal Palace—a shining symbol of technological dominance over nature, in the guise of their reconciliation. In his 1907 history of iron and glass architecture, Alfred Gotthold Meyer remarked that by the seventeenth

3 Frank Uekötter, *Umweltgeschichte im 19. und 20. Jahrhundert* (München: Oldenbourg, 2007), 15.
4 See Lewis Mumford, "Chapter IV. The Paleotechnic Phase" and "Chapter V. The Neotechnic Phase," in *Technics and Civilization* (New York: Harcourt, Brace, and Co., 1934), 151–267.
5 Mumford, *Technics and Civilization*, 258.

century, "the development of space by means of glass and iron had come to a standstill," but that in the nineteenth,

> it gained new strength from a perfectly inconspicuous source.
> Once again, this source was a "house," one designed to "shelter the needy," but it was a house neither for mortals nor for divinities, neither for hearth fires nor for inanimate goods; it was, rather, a house for plants. The origin of all present-day architecture in iron and glass is the *greenhouse*.[6]

Glass and steel construction subsequently became the hallmark of modern architecture, with the greenhouse providing a template for commodity display in great exhibitions, arcades, and department stores. These were spaces in which the world of commodities was miniaturized and put on view, in turn becoming habitations for people looking to escape the cold, to see exotic things, to travel to a modern architectural paradise. As a mise-en-scène for capitalist consumption, glass and steel structures were climatic no-places in the hearts of European cities, in which the most foreign and exotic objects could circulate and mingle with the familiar.

Figure 1. The Berlin Wintergarten in 1881, before its incarnation as a variety theater.

Film and media histories have generally regarded European cinema's hothouse origins as unremarkable. What do the movies have to do with the climate-controlled architecture of the greenhouse? For Mumford, the neotechnic concern for environmental conditions was driven in large part by nineteenth-century developments in biological, physiological, and chemical studies of life, which sought to identify and quantify the material conditions on which living things depended for their existence. "Similarly," Mumford notes, citing the motion studies of Étienne-Jules Marey and Eadward Muybridge, "the moving picture was in essence a combination of

6 Alfred G. Meyer, *Eisenbauten: ihre Geschichte und Ästhetik* (Esslingen: Neff, 1907), 55. English quoted from Walter Benjamin, *The Arcades Project*, ed. Rolf Tiedemann, trans. Howard Eiland and Kevin McLaughlin (Cambridge, MA: Belknap, 1999), 158.

elements derived from the study of living organisms."[7] Technical media such as photography and film were valuable to the science of life because they could fix and preserve its movement, thus insulating it from the passage of time. The greenhouse was likewise a technology of preservation—by housing plants and allowing them to be reproduced and circulated far from their point of origin, greenhouse architecture did for tropical flora what film did for the impression of movement. The winter garden and the moving image, in other words, were both life media, which provided the conditions necessary for (certain forms of) life to be stored, controlled, and re-experienced.[8]

Technologies of environmental control came to play a crucial part in the political, economic, and cultural life of modern societies. The European tradition of social medicine, for instance, strove to produce knowledge about the aggregate health or sickness of populations as well as possible modes of influence, which were often environmental. As described by Michel Foucault, social medicine, and particularly its application in cities, was "not really a medicine of man, the body, and the organism but a medicine of things—air, water, decompositions, fermentations. It is a medicine of the living conditions of the existential milieu."[9] This environmental science *avant le lettre* was taken up in political projects that sought to quantify and manage the health of national populations, in order to optimize their productive (and military) potential.[10] Environmental knowledge found application, as well as a rich field for further research, in European colonial projects, as colonizing nations worked to identify and extract natural resources (and preserve the lives of colonizers in foreign climates).[11] Environmental techniques were also deployed for purposes of industrial production. Hygienic management of factories and chemical plants protected workers from health hazards and also increased industrial efficiency.[12] Controlled environments, moreover, such as those of the department store, the zoo, or the cinema, served to encourage consumption of goods, but were also attractions in themselves as leisure spaces providing comfort, luxury, or novelty.

This study explores the intersection of cinema in Germany and technologies of environmental control, whose political, economic, and cultural uses were all brought to bear on

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7 Mumford, *Technics and Civilization*, 251.

8 This affinity points to a discourse of life that remains embedded in the very language of media, although it is rarely activated in discussions of film. Media studies remain dominated by a rhetoric of information—of recording, storage, and transmission. In biology and medicine, however, a growth medium is an experimental substance for growing cell cultures; in agriculture and civil engineering, a 'channel' is a way to guide water into arid land; in epidemiology, 'communication' refers to the communicability of disease. (In German—"Medium," "Kanal," "Übertragung.") These meanings indicate the possibility of an alternative genealogy of cinema, which embeds it not within a history of communicative media (print, photography, magic lantern, etc.) or even necessarily within a history of mass culture (fairground, variety, circus, amusement park, etc.); while these dimensions will remain important touchstones, I propose in the following chapters to locate cinema within a framework of life media.

9 Michel Foucault, "The Birth of Social Medicine," in *Power*, ed. James D. Faubion (New York: New Press, 2000), 150.

10 See Matthias Weipert, *"Mehrung der Volkskraft": die Debatte uber Bevölkerung, Modernisierung und Nation 1890-1933* (Paderborn: F. Schöningh, 2006); and Brian Ladd, *Urban Planning and Civic Order in Germany, 1860-1914* (Cambridge, MA: Harvard University Press, 1990), 36–76.

11 On infrastructural science in German colonial ambitions, see Dirk van Laak, *Imperiale Infrastruktur: deutsche Planungen für eine Erschliessung Afrikas 1880 bis 1960* (Paderborn: Schöningh, 2004). On the role of botany, bacteriology, and geography, see the respective articles by Zepernik, Eckart, and Zimmerer in Ulrich van der Heyden and Joachim Zeller, eds., *Kolonialmetropole Berlin: eine Spurensuche* (Berlin: Berlin Edition, 2002).

12 Lehmann provides an exhaustive account of environmental hygiene's benefits to industrial production in K. B. Lehmann, *Handbuch der Hygiene*, ed. Max Rubner, M. v. Gruber, and M. Ficker, vol. 4.2: *Arbeits- und Gewerbehygiene* (Leipzig: S. Hirzel, 1919).

the new medium of film. Part I, "Vital Media," deals with exhibition space and discourses on spectatorship. Chapter One examines the space of the movie house as a site of environmental controls, which were deployed to guarantee the physical and hygienic safety of moviegoers, regulate crowd traffic, and encourage a mode of absorbed spectatorship. Chapter Two discusses the figure of the film spectator and the logic of hygiene in the discourse of the German cinema reform movement and cultural criticism. Reviving the perennial association between spectacle and nutrition ("bread and circuses"), social reformers and hygienists treated the moving image as an environmental hazard that put the bodies and minds of spectators, especially young spectators, at risk.

Part II, "Cinematic Ecologies," turns to issues of climate control in the production and aesthetics of Weimar cinema. Chapter Three deals with Weimar-era studio practice as an environmental art of the image, which constructed spaces tailored to the needs of the camera. Monumental films like Ernst Lubitsch's *Madame Dubarry* (*Passion*, 1919) exemplify how modern technologies of environmental control were used to create atmospheric images and distinguish people and objects from their surroundings. Chapter Four examines images of the urban environment in Karl Grune's *Die Strasse* (*The Street,* 1923), Joe May's *Asphalt* (1929), and Fritz Lang's *M* (1931). By translating contemporary discourses on urban hygiene, circulation, and waste, these films sought to grasp the ecology of the city through visual forms and narratives.

Part III, "Modernist Media Environments," looks at aesthetic and design projects that deployed film as itself a form of environmental technology. Chapter Five discusses Walter Ruttmann's classic film *Berlin, die Sinfonie der Grossstadt* (*Berlin: Symphony of a Great City*, 1927) and the Berlin Lunapark, a popular amusement park of the Weimar period, as attempts to mediate between industrial modernity and the human body. They employed cinematic technologies to immerse viewers (or visitors) in the rhythms and sensations of the urban environment. Chapter Six, finally, turns to the use of moving images in modernist design and avant-garde theater. Focusing on László Moholy-Nagy's engagement with the moving image and Walter Gropius's Total Theater design of 1927, I examine environmental uses of film technology within the political avant-garde.

I argue that German film culture, from the movie houses of the mid-1910s through the German film industry's heyday in the Weimar period, was a laboratory for modern practices of environmental control. As a popular spectacle that combined a potentially dangerous technology (celluloid could catch fire very easily) with large urban crowds, cinemas managed their environments to attract customers through their safety, comfort, and novelty. The industrial process of film production, meanwhile, marshaled extensive material and human resources to constitute the very spectacles that drew these large crowds. The moving image, finally, was itself an environmental technology with a range of spatial and atmospheric effects at its disposal, which were capable of transporting audiences to unfamiliar climes. German filmmakers and cameramen were at the forefront of pioneering and exploring these effects. German film culture was a domain in which modern environmental technologies that would later become integral to everyday life in large parts of the world converged, from artificial light to climate control to the screen spaces that increasingly surround us. Moreover, as a medium that depended on such a range of environmental technologies, film was uniquely positioned to reflect on them in images and narratives.

This work is in dialogue with a number of important current debates in German studies and the humanities more broadly. In the following chapters I address many questions that have been

raised previously in the context of what has been called the spatial turn. Drawing on a range of ideas in sociology, anthropology, and human geography, work in this vein has sought to analyze human constructions of space in textual and visual media, to understand how power is instituted in spatial structures as well as how these structures are negotiated, appropriated, or resisted.[13] Film, with its ability to represent and temporalize space, has been a fruitful object for reflection on human constructions of space in modernity, and German cinema has been no exception. German silent cinema, with its stylistically flamboyant and meticulously controlled sets, has often been thought of as particularly "spatial," or "architectural."[14] To a certain extent, this view is consonant with Weimar cinema's own image of itself, in which set designers such as Walter Reimann coined the term "film architecture" to designate the object of their work.

The term resonates with early twentieth-century German culture's confidence in man's ability to bend nature to his will and form the world according to his own design. Incredibly, the First World War did little to shake this belief. While the war did lead many to be more suspicious of technological progress, others came to the conclusion that technology simply needed to go further and remake the human being itself. In 1919, the Bauhaus founder Walter Gropius expressed the constructivism of the age when he proclaimed building (*bauen*) the essence of all arts and the solution to society's spiritual decay: "Painters and sculptors . . . smash the salon frames around your images; go into buildings, give them the benediction of fairy tales in color, carve ideas into the bare walls, and *build* in your imagination, undismayed by technical difficulties. Imagination is more important than technique, which always submits to the human creative will."[15]

This sentiment resembles what the anthropologist Tim Ingold has called the "building perspective," according to which human beings are seen as "the authors of their own designs, constructed through a self-conscious decision process."[16] This view, which has dominated Western writing on culture and architecture, distinguishes strongly between nature and culture, and assumes nature to be a passive material formed by human activity. The sensibility I pursue here is closer to Ingold's "dwelling perspective," in which building is re-conceived as "a process that is continually going on, for as long as people dwell in an environment. It does not begin here, with a pre-formed plan, and end there, with a finished artefact."[17] By shifting attention from structure to process, from space to environment, Ingold's dwelling perspective helps deconstruct the fantasies of mastery that so often accompany technologies of environmental control, in cinema and elsewhere. This environmental view, which often stresses the limitations

13 Seminal works in this tradition include, of course, Henri Lefebvre, *The Production of Space* (Oxford: Blackwell, 1991); Michel de Certeau, *The Practice of Everyday Life* (Berkeley: University of California Press, 1984); and treatments of urban space by Georg Simmel, Siegfried Kracauer, and Walter Benjamin. For a recent compendium of essays from the perspective of German studies, see Jaimey Fisher and Barbara Caroline Mennel, eds., *Spatial Turns: Space, Place, and Mobility in German Literary and Visual Culture* (Amsterdam: Rodopi, 2010).

14 For architectural perspectives on Weimar cinema, see Sabine Hake, "Architectural Hi/stories: Fritz Lang and the Nibelungs," *Wide Angle* 12, no. 3 (1990): 38–57; Dietrich Neumann and Donald Albrecht, eds., *Film Architecture: Set Designs from Metropolis to Blade Runner* (New York: Prestel, 1996); Janet Ward, *Weimar Surfaces: Urban Visual Culture in 1920s Germany* (Berkeley: University of California Press, 2001); and Tim Bergfelder, Sue Harris, and Sarah Street, *Film Architecture and the Transnational Imagination: Set Design in 1930s European Cinema* (Amsterdam: Amsterdam University Press, 2007).

15 Walter Gropius, "The New Architectural Idea," in *Metropolis Berlin: 1880-1940*, ed. Iain Boyd Whyte and David Frisby (Berkeley: University of California Press, 2012), 287.

16 Tim Ingold, "Building, Dwelling, Living: How Animals and People Make Themselves at Home in the World," in *The Perception of the Environment: Essays on Livelihood, Dwelling & Skill* (London: Routledge, 2000), 175.

17 Ibid., 188.

that material phenomena place on human action, thus finds alliances with new materialist and object-oriented approaches in the humanities as well.[18]

Technologies of environmental control are also relevant to ecological questions that have found resonance in virtually all humanistic and social science disciplines. Historians have traced the changing interactions between human societies and the natural world, and located the beginnings of environmentalism in the anti-industrial sentiments of the nineteenth and early twentieth centuries.[19] Political scientists have investigated the politics of resource extraction and allocation and the uneven distribution of environmental devastation.[20] Philosophers and theorists have reflected on the anthropological and epistemological ramifications of global ecological disaster, while 'ecocritics' of art, literature, and other media have given renewed attention to representations of nature and their role in environmental awareness.[21]

In dealing with history, however, it is all too easy to judge the past for its unsustainable practices or supposed lack of ecological awareness. To do so, in my view, condescends to the past and fails to recognize the situational nature of our own knowledge in the present. The early twentieth century did not lack for ecological awareness. On the contrary, the period had its own ecologies, a wealth of discourses that sought to understand and manage relationships between organisms and their environments. These ecologies were different from ours, in sometimes uncomfortable ways. The historian Peder Anker argues that ecological science in Britain, for instance, developed largely in dialogue with processes of colonial expansion and domination: "The new economy of nature" described by ecology "also became a model for empowering national economies," aiding colonizing powers in better extracting and managing resources.[22] The work of historians like Anker reminds us that ecological knowledge is implicated in political projects, and defamiliarizes the common view of ecology as a necessarily beneficent political force. My project thus involves tracing ecological ideas manifested within a wide range of discourses around 1900. While often informed by natural science, these ideas appeared far afield from the 'natural' contexts with which we typically associate ecology. As an urban, industrial phenomenon, the new medium of film was repeatedly framed within ecological modes of thought as they materialized in discourses on the modern city—in social reform and social hygiene, in urban planning and architecture.

My work is thus closer to recent archaeological and ecological work in media history, which has placed renewed emphasis on the material networks in which media function and on which they depend. Citing the work of Richard Maxwell and Toby Miller, the media

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18 For a recent summary of these approaches, see Diana H. Coole and Samantha Frost, eds., *New Materialisms: Ontology, Agency, and Politics* (Durham, NC: Duke University Press, 2010).

19 The list of works is too large to present here. Recent global histories include John Robert McNeill, *Something New under the Sun: An Environmental History of the Twentieth-Century World* (New York: W.W. Norton & Company, 2000); I. G. Simmons, *Global Environmental History* (Chicago: University of Chicago Press, 2008); and Joachim Radkau, *Nature and Power: A Global History of the Environment*, trans. Thomas Dunlap (Cambridge: Cambridge University Press, 2008).

20 For a summary of such approaches, see Paul Robbins, *Political Ecology: A Critical Introduction* (Malden, MA: Blackwell, 2004). On urban contexts see Nik Heynen, Maria Kaika, and Erik Swyngedouw, eds., *In the Nature of Cities: Urban Political Ecology and the Politics of Urban Metabolism* (London; New York: Routledge, 2006).

21 For recent approaches see Timothy Morton, *The Ecological Thought* (Cambridge, MA: Harvard University Press, 2010); Jane Bennett, *Vibrant Matter: A Political Ecology of Things* (Durham: Duke University Press, 2010); and Axel Goodbody and Catherine E. Rigby, eds., *Ecocritical Theory: New European Approaches* (Charlottesville: University of Virginia Press, 2011).

22 Peder Anker, *Imperial Ecology: Environmental Order in the British Empire, 1895-1945* (Cambridge, MA: Harvard University Press, 2001), 240.

archaeologist Jussi Parikka writes that "media is concretely and constantly related to nature, both through perspectives of human labour and through the environmental costs of media technologies."[23] An earlier generation of media ecologists inspired by Marshall McLuhan employed ecology as a metaphor, conceiving of different media (print, film, television) as competing 'species' within a media ecosystem. Parikka asks, rather, what it would mean to do media ecology literally, investigating the environmental relations and material practices that sustain media as well as their environmental impacts. In a similar vein, a recent article on institutions of contemporary art by Fernando Dominguez Rubio and Elizabeth B. Silva advocates, "an object-oriented approach that focuses on the temporal and spatial trajectories of artworks," analyzing how they effect a kind of material agency within different institutional spaces—a methodology Dominguez Rubio has elsewhere called a "material ecology" of contemporary art.[24] Most work in this more literal media ecology focuses on contemporary objects; yet as Parikka writes, it is "not only the new media sphere of energy intensive cloud computing or toxic material-filled devices . . . [that] demand an ecologically-aware eye—'old media' too, from paper to film, had their own health and environmental hazards."[25] In part, my project is an inquiry into the material ecologies of cinema in Germany during its first decades.

Lastly, an investigation of environmental controls in German cinema intersects with questions that have fallen under the rubric of biopolitics. The environmental discourses I deal with in these chapters are all concerned in some way with managing and optimizing life—indeed, it is the concern with biological life that defines environmental thinking in modernity. To pose the question of environment is necessarily to ask about the conditions of life, the relationship of living organisms to their surroundings. Beginning with Foucault, most discussions of biopolitics in German history have focused on theories of race and degeneration, but as Corinna Treitel has written, "although eugenics certainly belongs to any adequate history of German biopolitics writ large, to focus only on this aspect of Germany's troubled modernity is to skew the historical picture, both by keeping other biopolitical projects out of sight and, relatedly, by ignoring the multiple paths that German biopolitics in fact took in the twentieth century."[26] Environmental conditions arguably constituted a more urgent field of action for biopolitical goals than race, because these conditions were much more susceptible to intervention than hereditary traits. In the perceived effects of the encounter between human organism and film technology, in the movies' capacity to stimulate or stupefy, cinema in Germany became an object of biopolitical concern.

In a survey of environmentalist ideas around 1900, Radkau notes that "to find pendants to today's environmental policy in the late nineteenth or early twentieth century, one should not get too hung up on the term 'nature': much in those days came under such rubrics as 'hygiene', 'national or public health', 'urban sanitation' or 'sanitary movement.'"[27] Conservationism, which in the German context focused largely on preserving forests and rivers against industrial development, was accompanied by a discourse of public health concerned with the

23 Jussi Parikka, "Media Zoology and Waste Management: Animal Energies and Medianatures," *NECSUS: European Journal of Media Studies* 2, no. 2 (2013): 527; see also Richard Maxwell and Toby Miller, *Greening the Media* (New York: Oxford University Press, 2012).

24 Fernando Dominguez Rubio and Elizabeth B. Silva, "Materials in the Field: Object-Trajectories and Object-Positions in the Field of Contemporary Art," *Cultural Sociology* 7, no. 2 (2013): 163.

25 Parikka, "Media Zoology and Waste Management: Animal Energies and Medianatures," 528.

26 Corinna Treitel, "Max Rubner and the Biopolitics of Rational Nutrition," *Central European History* 41, no. 1 (2008): 2.

27 Joachim Radkau, *The Age of Ecology: A Global History*, trans. Patrick Camiller (Cambridge: Polity, 2014), 32.

environmental effects of industrialization in cities. While conservationism and hygiene dealt with very different fields of application and developed with little dialogue between them, Radkau points out that they shared a "common denominator: *health*."[28] Hygiene, for its part, included efforts to guard the health of urban populations by improving housing and working conditions, preventing the spread of disease, maintaining clean public spaces, and managing the massive amounts of waste generated by cities; conservationism, meanwhile, in part justified the protection of nature by asserting its salubrious effects, as a place of respite from the artificiality and nervousness of city life. Given cinema's historical ties to urbanization, the following chapters will deal primarily with various forms of hygienic discourse.

In search of the historical origins and evolution of ecological consciousness, Radkau writes that "conservation and urban sanitation . . . were both typical movements of the high industrial age that sought to grapple with its dark sides."[29] This rather Manichaean picture of a proto-environmentalist movement opposed to the evils of industry obscures the ways in which environmental ideas around 1900 were embedded in existing knowledge formations and power structures. Given conservationism and hygiene's shared interest in human health, the framework of biopolitics outlined by Michel Foucault in his late lectures is useful for understanding the historical role of environmental ideas in the period of industrialization. Foucault argues that over the course of the nineteenth century European societies began embedding disciplinary techniques of power, which focused on individual bodies, within a "'biopolitics' of the human race."[30] Biopolitics was concerned with quantifying the health of entire populations (through statistical measurements of births and deaths, prevalence of illness, longevity, and so on), and managing aggregate health in relation to statistical norms. Disciplinary techniques were thus complemented by, and ultimately organized according to what Foucault calls techniques of security: indirect, "overall mechanisms" that act "in such a way as to achieve overall states of equilibration or regularity; it is, in a word, a matter of taking control of life and the biological processes of man-as-species and of ensuring that they are not disciplined, but regularized."[31] Examples of such mechanisms are insurance schemes and public health campaigns, which aim to distribute risk and optimize the aggregate health of whole populations. These examples point to how biopolitical interventions emerged alongside nineteenth-century developments in medical and social science—as Thomas Lemke writes, biopolitics for Foucault "stands for a constellation in which modern human and natural sciences and the normative concepts that emerge from them structure political action and determine its goals."[32]

Over the last few decades, biopolitical questions have figured centrally in attempts to understand German history in the first half of the twentieth century—specifically, what role biopolitical discourses played in the genocidal project of National Socialism. For the historian Detlev Peukert, the human and social sciences were racist in their "differential assessment and treatment of people according to their 'value,' where the criteria of 'value' are derived from a normative and affirmative model of the '*Volkskörper'* [body of the people] as a collective entity, and the biological substratum of 'value' is attributed to the genetic endowment of the

28 Ibid., 35.
29 Ibid., 41–42.
30 Michel Foucault, *"Society Must Be Defended": Lectures at the Collège de France, 1975-76*, trans. David Macey (New York: Picador, 2003), 243.
31 Ibid., 246–47.
32 Thomas Lemke, *Biopolitics: An Advanced Introduction*, trans. Eric Frederick Trump (New York: New York University Press, 2011), 33.

individual."[33] By quantifying biological life functions and evaluating them according to statistical norms, science categorized some lives as less valuable and thereby raised the prospect of their elimination. In other words, the logic of biopolitics made it possible to murder in the name of optimizing the health of the many; in this way, Peukert sees "the genesis of the 'Final Solution' from the spirit of science."[34] With echoes of Max Horkheimer and Theodor W. Adorno's *Dialectic of Enlightenment*, this reading of biopolitical modernity can be found in contemporary political theory as well, as in Giorgio Agamben's assertion in *Homo Sacer* that the concentration camp "is the hidden matrix of the politics in which we are still living."[35]

As Lemke notes, such a thesis implies genocide at the core of the Enlightenment project and makes "no sharp division between parliamentary democracies and totalitarian dictatorships, liberal constitutional states and authoritarian regimes."[36] Moreover, it aligns public health and social welfare projects with mass murder. More recently, historians have begun to question this thesis, citing the multiplicity of reform projects in early twentieth-century Germany; their varying goals and political orientations; and the marginal position of racial eugenics in debates over the "social question" before the Nazi period. Indeed, Dickinson notes, "in the recent literature . . . there is often an implicit or explicit reluctance to subsume the history of reform movements into any 'logic' or 'dynamic' of socio-cultural or political-economic development, much less any culminating in 1933."[37] Emphasis on scientific expertise and state institutions also ignores the ways in which biopolitical projects generated new forms of political conflict. As Lemke argues, "processes of power that seek to regulate and control life provoke forms of opposition, which formulate claims and demand recognition in the name of the body and of life. The expansion and intensification of control over life makes it at the same time the target of social struggles."[38] In the following chapters I will explore how cinema in Germany became an object of biopolitical intervention, as well as a space in which spectators could claim new forms of vital experience that sometimes diverged from the normative prescriptions of experts and institutions.

Foucault proposes that an important mode of biopolitics was to establish

> control over relations between the human race . . . and their environment, the milieu in which they live. This includes the direct effects of the geographical, climatic, or hydrographic environment: the problem, for instance, of swamps, and of epidemics linked to the existence of swamps throughout the first half of the nineteenth century. And also the problem of the environment to the extent that it is not a natural environment, that it has been created by the population and therefore has effects on that population. This is, essentially, the urban problem.[39]

Environmental controls were thus "overall mechanisms" of security, which sought to optimize the health and productivity of populations by intervening in the basic conditions of life. By 1904, public health in Germany was understood to include monitoring wells and rivers and providing cities with clean water; maintaining air quality in urban areas, especially near factories; managing soil and ground water; supervising waste disposal practices and constructing sewers;

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33 Detlev J. K. Peukert, "The Genesis of the 'Final Solution' from the Spirit of Science," in *Nazism and German Society, 1933-1945*, ed. David F. Crew (London: Routledge, 1994), 279.
34 Ibid., 296.
35 Giorgio Agamben, *Homo Sacer: Sovereign Power and Bare Life*, trans. Daniel Heller-Roazen (Stanford, CA: Stanford University Press, 1998), 175.
36 Lemke, *Biopolitics*, 55.
37 Edward Ross Dickinson, "Not So Scary After All? Reform in Imperial and Weimar Germany," *Central European History* 43, no. 1 (2010): 151.
38 Lemke, *Biopolitics*, 50.
39 Foucault, *"Society Must Be Defended,"* 246.

ensuring proper ventilation and heating; and monitoring the sanitary conditions in homes, schools, factories, hospitals, and other spaces in which disease could be transmitted.[40] I will now turn to the unique place cinema occupied within this biopolitical landscape. As an urban, industrial phenomenon it was an object of environmental management; at the same time, however, it was a space apart, sealed off from the city outside and home to unique forms of environmental design.

40 "Gesundheitspflege (Hygiene)," in *Meyers Großes Konversations-Lexikon*, 6th ed., vol. 7 (Leipzig: Bibliographisches Institut, 1906), 753.

I. Vital Media

CHAPTER ONE
The Well-Tempered Movie House

> Any new social phenomenon that becomes an event for the masses must seek out proper accommodation.
> —Leo Witlin, "Das Aufbauprinzip von großen Lichtspielhäusern" (1926)

In Thomas Mann's novel *The Magic Mountain*, three patients at the Berghof sanatorium make an excursion to a nearby village. During their trip, the protagonist Hans Castorp, his cousin Joachim, and Karen Karstedt, a patient the two cousins have taken under their wing, go to the movies. The novel takes place on the eve of World War I, before the famous movie palaces of the 1920s, and the establishment where they take in the picture show is accordingly small and poorly appointed—a cheap nickelodeon called the Bioskop-Theater. For this group of patients suffering nervous disorders, the first impression is made not by the images on screen, but by the theater's atmosphere. Reflecting the refined sensibilities of the protagonists, the narrator reports:

> The bad air they sat in was offensive to the three, used as they were to breathing the purest; it oppressed their breathing and made their heads feel heavy and dull. Life flitted across the screen before their smarting eyes: life chopped into small sections, fleeting, accelerated; a restless, jerky fluctuation of appearing and disappearing, performed to a thin accompaniment of music, which set its actual tempo to the phantasmagoria of the past, and with the narrowest of means at its command, yet managed to evoke a whole gamut of pomp and solemnity, passion, abandon, and gurgling sensuality.[41]

Rather than welcoming the guests into the film, coaxing them into immersion in the images, the nickelodeon is experienced as alienating. The theater's bad air interferes with aesthetic perception, blocking the smooth integration of the would-be spectators. As a medium for exhibiting images, the nickelodeon seems at first to serve poorly—the medium is literally too dense, too impure, and as such it obscures the film. Just as the small group of sensitive spectators must struggle with an imperfect medium, so must the reader grapple with an extended preface to the images on screen. Slowly, however, the images take over and the narrator goes on to recount a series of newsreel scenes and a thrilling orientalist fiction.

Scholarship on the movie house has most often approached it as architecture, a structural view that makes it the domain of artists and architects.[42] The transition from fairground and variety theater to movie house exhibition—cinema's institutionalization—is equated with the increasing specificity of film's architectural surroundings. Hans Castorp's experience of bad air, which straddles the two periods (the story takes place before WWI, but was published in 1924), is striking, however, in its emphasis on the environmental over the architectural. The goal of this chapter is to re-examine movie house design from an environmental perspective, which differs from an architectural approach in two important ways. First, the architectural view typically

41 Thomas Mann, *The Magic Mountain*, trans. H. T. Lowe-Porter (New York: Knopf, 1949), 316.

42 This literature includes Hans Schliepmann, *Lichtspieltheater: eine Sammlung ausgeführter Kinohäuser in Gross-Berlin* (Berlin: Ernst Wasmuth, 1914); P. Morton Shand, *Modern Theatres and Cinemas* (London: B. T. Batsford, 1930); Paul Zucker, *Lichtspielhäuser, Tonfilmtheater* (Berlin: Ernst Wasmuth, 1931); Michael Hanisch, *Auf den Spuren der Filmgeschichte: Berliner Schauplätze* (Berlin: Henschel, 1991); Sylvaine Hänsel and Angelika Schmitt, eds., *Kinoarchitektur in Berlin 1895-1995* (Berlin: Reimer, 1995); Jörg Brauns, *Schauplätze: zur Architektur visueller Medien* (Berlin: Kadmos, 2007); and Joseph Garncarz, *Maßlose Unterhaltung: zur Etablierung des Films in Deutschland 1896-1914* (Frankfurt am Main: Stroemfeld, 2010).

understands structures as static, which, once constructed, exert a force relatively independent of human agency. An environmental perspective, by contrast, attends to the ways in which spaces and structures must be reproduced anew and maintained through material labor. Environments are dynamic, and human beings constantly manage environments with regard to processes of material circulation, renewal, and decay. Second, architectural history tends to focus on aesthetics, thereby locating the movie house first within a genealogy of architectural modernism, and then within the broader history of modernism in the arts. The notion of environment, on the other hand, shifts attention to the relationship between life and its surroundings, a relation that includes but is not restricted to the aesthetic dimension. Rather than focusing on architecture per se, much of this chapter is concerned with providing an archaeology of environmental controls and practices at work in the movie house. Furthermore, as I emphasized in the introduction, the question of the relation between life and environment is itself historical (and political). Approached critically, understanding the movie house as environment requires more than an enumeration of techniques and technologies (architectural arrangements, air conditioning, indirect lighting, and so on). What constituted 'life' in the movie house, according to whom? Who were the different actors that implemented technologies of environmental control, and why? What scientific, political, or cultural logics were employed to justify environmental management?

In his 1926 *Philosophie des Films* (Philosophy of Film), Rudolf Harms asserted that sites of film exhibition should provide "as heightened a sense of disembodiment as possible" and strive "to reduce the deficits caused by the fixed location of the individual." Achieving this form of disembodied spectatorship, however, was no easy feat. On the contrary, it required careful management of the cinema environment, such that other forms of sensory address would not interfere with vision. The sense of one's own body must be calmed "through comfortable seating"; troubling smells should be removed by "appropriate ventilation of the space"; the sound of the projector itself should be muted by sequestering it in a soundproof projection room; the sound of other moviegoers as they come and go should be quieted by "runners, carpets, and appropriately constructed seating."[43] In other words, the movie house offered myriad potential disturbances to aesthetic immersion and the primacy of vision. Mitigating these disturbances became integral to the culture of cinema in its first decades.

Janet Ward has written about movie houses in the context of what she calls Weimar surface culture, a culture that celebrated visual spectacle.[44] Less attention has been given, however, to the infrastructural investments and environmental controls that allowed this culture of visual surfaces to emerge and function. Writing about the public sphere in Victorian England, the historian Chris Otter points out that Victorian visuality depended on a huge number of "material conditions in which sight can prevail," including the "material factors affecting sight—spatiality, air quality, humidity, light and sensory interference (overpowering stench, deafening sound)."[45] For Otter, urban infrastructure "is environmental technology: systems that create, implant and make durable" spaces in which vision can operate unimpeded.[46]

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43 Rudolf Harms, *Philosophie des Films: seine ästhetischen und metaphysischen Grundlagen*, ed. Birgit Recki (Hamburg: Meiner, 2009), 76.

44 See Ward, *Weimar Surfaces*, 163–190.

45 Chris Otter, "Making Liberalism Durable: Vision and Civility in the Late Victorian City," *Social History* 27, no. 1 (January 1, 2002): 2.

46 Otter's insight goes hand in hand with Jonathan Crary's important work on the nineteenth-century science of vision, which acknowledged vision's contingency and embodiment, its dependence on material factors earlier

The Magic Mountain's nickelodeon episode looks back at the moment around 1910 when film became a subject of public debate in Germany among intellectuals, politicians, and moral arbiters. The scene condenses, in literary form, the early public discourse on cinema that will be of central concern throughout the next two chapters. First, as a site of "bad air" and perceptual intensity, in stark contrast to the Berghof sanatorium, the Bioskop-Theater stands in for the deleterious environment of the modern metropolis, the very thing the nervous souls at Berghof went there to escape. In this chapter I will discuss the various ways in which the movie house was an object of environmental concern within an urban context, as well as how film exhibition evolved in dialogue with these concerns. Mann's text probes the links between environmental control and modern forms of aesthetic experience in the movie house. I argue that spaces of film exhibition were shaped decisively by proto-ecological practices of social hygiene and public safety, which aimed to manage urban environments for political and commercial purposes. In the final section of the chapter, I reflect on the movie house environment as a site of competing projects, as well as the various attractions this environment may have had for German spectators of the silent period.

A Dangerous Medium

> Our bars and city streets, our offices and furnished rooms, our railroad stations and our factories seemed to close relentlessly around us. Then came the film and exploded this prison-world with the dynamite of the split second.
>
> —Walter Benjamin, "The Work of Art in the Age of Its Technological Reproducibility: Second Version" (1936)

Celluloid was notoriously flammable, yet it served as film's material base until well after WWII. While a large body of scholarship has traced the artistic, philosophical, social, and political upheavals that occurred in the wake of the moving image, cultural history has paid relatively little attention to the concrete dangers of film as a material object. From a historical distance, the technology of the moving image can seem rather straightforward. Move a strip of film across a bright light in front of a screen, and voilà, the image springs to life! But celluloid burns explosively even at relatively low temperatures, and showing film for a crowd required exposing it to the bright, hot light of a projection lamp. If the film strip got stuck and stopped moving even for a second, the film could catch fire. While smoking in projection rooms was banned quite early, one could not very well ban the projection lamp. Given this unavoidable fact, the desire for public safety demanded a rigorous and wide-ranging set of environmental controls, which shaped the development of film projection practice and movie house architecture in crucial ways. As such, the movie house was a privileged laboratory for experiments in environmental control, from architectural crowd management to air conditioning.

F. Paul Liesegang's *Handbuch der praktischen Kinematographie* (Handbook of Practical Cinematography) of 1908 enumerated some of the earliest strategies for mitigating the danger of fire, which targeted the projection apparatus. This widely read manual, which went through multiple editions, explained best practices (properly centering the lamp, keeping a bucket of cool water on hand) and various technical failsafes (mechanisms that turn off the lamp should the filmstrip slacken or stop moving, valves that prevent fire from spreading beyond the film in the projector gate). In spite of such measures, however, Liesegang warned that "the projectionist

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considered irrelevant. See Jonathan Crary, *Techniques of the Observer: On Vision and Modernity in the Nineteenth Century* (Cambridge, MA: MIT Press, 1990).

therefore should not be permitted to relax comfortably, or occupy himself with the movie on screen or some thrilling novel."[47] For Liesegang, any technological advance brought with it the danger of complacency, a false sense of security "that provides the dangerously flammable film material all sorts of opportunities to catch fire."[48] In other words, it is precisely the automatism of industrial technology, its seeming ability to run on its own, that demanded increased attention on the part of operators. The projectionist was tasked with assuming the vigilance that the moviegoing crowd had paid to abandon.

As early cinema research since the 1980s has emphasized, film was first a thing of the fairground and the variety theater, in Germany as elsewhere. Itinerant showmen, traveling the fairground and variety circuit, integrated film as a new technological curiosity into their presentations; during this period of *Wanderkino* (traveling cinema), mobile movie houses ranged from simple show booths to elaborate, luxurious spaces that could accommodate hundreds of spectators. The first permanent spaces solely devoted to the exhibition of moving pictures were the *Ladenkinos*, or "Kientöppe," as they were more casually known. These store-front cinemas, which sprang up in German cities after 1905, were barebones operations, "usually elongated, tube-like rooms, in which a projector, a screen, and rows of folding chairs had been installed—cinemas completely lacking in luxury."[49] Cheap to operate, store-front theaters saturated the market for moving images, leading to a commercial bubble that burst when competition drove entrance prices too low.[50] Nonetheless, they established the permanent presence of cinema within the urban milieu.

As Peter Boeger recounts, theaters had been sites of catastrophic accidents well before the arrival of cinema. The gathering of large crowds always carried danger, and late nineteenth-century incidents of fire in theaters spurred Prussian authorities to regulate their architecture for purposes of public safety. In Prussia, at least, cinemas were thus first regulated by 1889 and 1909 ordinances, which, however, did not account for the particular dangers of celluloid.[51] Outside Germany, movie houses had been sites of major fires, causing deaths in the dozens, sometimes hundreds. In 1897, a fire at a movie show in a Paris bazaar killed 136. Berlin was spared such catastrophes, but as the number of movie houses grew, fires were a predictable, if not inevitable occurrence. In the years between 1909 and 1912, fires in movie houses happened with some regularity, although few injuries were reported. An exception was a fire in the Frankfurter Allee shortly after Christmas 1911. The fire itself was minor, but two children died and others were seriously injured in the ensuing panic.[52] Cinema's increasingly urban profile, along with such widely reported accidents, moved municipal authorities to stipulate regulation beyond that of other types of theaters and gathering places. Saxony was one of the earliest states to specifically address movie houses with a police ordinance, in 1906.[53] Berlin followed in 1912, and Hamburg in 1913. The Berlin ordinance "Regarding Security in Cinematograph Theaters" worked to ensure safety by regulating materials, dimensions, and spatial arrangements both inside the movie house and with regard to the surrounding urban environment.

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47 F. Paul Liesegang, *Handbuch der praktischen Kinematographie* (Leipzig: Ed. Liesegang's Verlag, 1908), 220.
48 Ibid., 226.
49 Garncarz, *Maßlose Unterhaltung*, 144.
50 See ibid., 157.
51 On these ordinances, see Peter Boeger, *Architektur der Lichtspieltheater in Berlin: Bauten und Projekte 1919-1930* (Berlin: Arenhövel, 1993), 12, 14.
52 On movie house fires in Berlin, see Michael Hanisch, *Auf den Spuren der Filmgeschichte: Berliner Schauplätze* (Berlin: Henschel, 1991), 234–35.
53 Paul Schrott, *Leitfaden für Kinooperateure und Kinobesitzer* (Leipzig: Otto Klemm, 1919), 270–73.

In other words, environmental management meant policing the cinema, more than simply designing it to fit one or another aesthetic or commercial goal. Since the Enlightenment, "police" has historically designated the governmental management of spaces and events in a broad sense. Police, as Michel Foucault has written, is a general apparatus of security that labors "to plan a milieu in terms of events . . . that will have to be regulated within a multivalent and transformable framework. . . . The space in which a series of uncertain elements unfold is . . . roughly what one can call the milieu."[54] As an overall mechanism of security, policing regulates the milieu in which the intercourse of social life takes place. The ultimate horizon of police rationality, however, is not the regulation of space for its own sake, but the maintenance of healthy yet predictable populations. (In Germany, for example, this included the formation of a "medical police" concerned with what was later called public health.)[55] Places where large crowds gathered in dense urban areas, such as theaters, circuses, and movie houses were natural objects of police concern. As sites of sensory experience that relied on potentially dangerous industrial technologies, the movie house and its evolution serve to illustrate the mutual imbrication of modern environmental engineering, modes of social discipline, and aesthetic practices.

Ordinances regulating theaters and movie houses were the domain of the municipal *Baupolizei* (building police). The authority of the German building police can be traced first to notions of *Nachbarrecht* (neighbor law), a tradition in Roman law restricting the use of private real estate according to the interests of neighboring parties. Since the Enlightenment distinction between public and private, the building police was increasingly guided by the interest of the state in maintaining public order and promoting public welfare. The ideal aim of the modern building police, according to the jurist Kurt Krüger, was to regulate "the industry of construction to the good of the entirety of economic life."[56] Accordingly, the German municipal building police can be understood as a kind of environmental protection agency, tasked with ensuring "fresh air, plentiful light, ample public and private access to water . . . the highest possible security of public as well as private life, namely against fire danger and injury from building collapse," and even, where possible, improving "the pleasantness of city life" and fostering "external beautification."[57] Krüger's inclusion of beautification as part of the building police's domain demonstrates the perceived relationship between beauty and hygiene that was common in social reform movements around 1900.

Ordinances such as the one instituted in Berlin in 1912 moved beyond the projector itself to the spaces surrounding it. The ordinance, for instance, dictated that "the projection apparatus must be located in a room completely separated from the auditorium by fireproof walls and ceilings, excepting the projection aperture."[58] (In other words, it prescribed what we know as the projection room.) Moreover, "the exit out of this room must lead directly to the outside."[59] At

54 Michel Foucault, *Security, Territory, Population: Lectures at the Collège de France, 1977-78*, trans. Graham Burchell (New York: Palgrave Macmillan, 2007), 20.

55 On medical police, see Dorothy Porter, *Health, Civilization, and the State: A History of Public Health from Ancient to Modern Times* (London: Routledge, 1999) 97-110, and Patrick E. Carroll, "Medical Police and the History of Public Health," *Medical History* 46, no. 4 (2002): 461–94.

56 Kurt Krüger, *Geschichte der Baupolizei, insbesondere des neuzeitlichen formellen baupolizeilichen Verfahrens* (Halle: Gebauer-Schwetschke, 1914), 5.

57 Ibid., 6.

58 "Verordnung der Polizeibehörde Berlin vom 6. Mai 1912 betreffend die Sicherheit in Kinematographentheatern," in *Leitfaden für Kinooperateure und Kinobesitzer*, by Paul Schrott (Leipzig: Otto Klemm, 1919), 259.

59 Ibid., 260.

most there could be a single room between the projection booth and the outside, and if so, this room could not also be connected to the auditorium, and could not be used for storing film prints. (Film prints could only be stored in fireproof containers, in the projection booth or other properly insulated rooms.)[60] The ordinance further stipulated minimum dimensions for the booth, ease of egress, and proper ventilation; for the projector itself, guidelines were given for the proper installation and storage of lamps. Finally, only trained employees were allowed access to these rooms (in addition, of course, to municipal police and fire officials).[61] Film material and the film projector occupied their own ecosystem, as separate as possible from the spaces occupied by moviegoers. Only light was allowed to cross from the projection booth into the auditorium, through apertures that were "to be kept as small as possible and closed with a five-millimeter thick glass pane, which may not be removed and must be enclosed in cement or iron framing."[62]

From the perspective of the building police, public safety required that film technology be restricted to specially designated areas. Although in the same building, spectators and the technology of representation were not to overlap. Depending on a number of factors, however, this could be quite difficult to achieve, and often did not allow optimal conditions for projection. As Max Gustav wrote in 1926, "the projection room is almost never located where technical necessities would dictate."[63] The need for street access usually meant the projection room had to be located somewhere on the periphery of the building, and surrounding architecture limited possible locations. As cinemas grew larger, to accommodate hundreds and even thousands of spectators, the projector moved farther and farther from the screen. A few cinemas, such as Fritz Wilms's Mercedes-Palast in Berlin-Neukölln, attempted to solve this problem by placing the projection room in the ceiling. In this 2,462-seat theater completed in 1927, the projection room hung overhead, disguised by a large decorative star, from which the projector's light seemed to emanate. This high placement, however, resulted in a less than ideal angle of projection and thus a distorted image on screen.[64] Moreover, finding a creative location for the projection room could make cleaning the outer surfaces of the projection window extremely laborious, leading projectionists to remove the window and clean it themselves (in violation of the police prescription that these windows always stay in place).[65]

While isolating the film material and projection apparatus from the auditorium protected the audience, the projectionist, of course, remained exposed. The projection room posed an especially complex set of environmental design issues, because considerations of safety had to be balanced with practical and technical requirements. The projectionist nonetheless needed to fulfill his tasks efficiently, and the machinery itself demanded certain conditions to function properly. In 1927, the technical journal *Filmtechnik* (Film Technology) conducted an informal survey of projectionists, whose opinions on the design of the projection room space differed widely. Some preferred a relatively spacious area, for instance, because a larger and less cluttered room lessened the chances of fire and offered better ventilation, while others argued a smaller size increased the projectionist's efficiency, because it necessitated less movement within the space. Some liked wood floors, because they made it easier to move around heavy machinery, while others made a case for concrete with linoleum or tile surfacing. The latter

60 Ibid., 264.
61 Ibid.
62 Ibid., 260.
63 Max Gustav, "Der Vorführungsraum," *Filmtechnik* 2, no. 26 (December 25, 1926): 523.
64 Leo Witlin, "Mercedes-Palast in Neukölln," *Filmtechnik* 3, no. 6 (March 19, 1927): 107.
65 See Gustav, "Der Vorführungsraum," 524.

could be cleaned more easily and collected less dust, which could interfere with the film material and projection equipment.[66] The projection room had to be tailored to both human and industrial needs, providing the environmental conditions under which human bodies as well as metal, electricity, and celluloid could function.

The projector was not the only piece of dangerous machinery in the movie theater. As buildings that required electrical power not just for film projection but also for ventilation and lighting systems (for use during regular operations, but especially in case of emergency), they often contained other supplementary appliances, such as dynamos, transformers, and generators, whose secondary effects and potential risks had to be managed as well. Most often this meant minimizing the noise they were bound to produce, which could spill outside the controlled milieu of projection. In 1914, the engineer Paul Levy published an article in *Der Kinematograph* (The Cinematograph) advising theater operators on how to minimize the sounds of these spinning machines. While he noted that noise could disturb the quality of a film presentation, he reminds the reader how important it is to mask noise "from occupants next door, above, and below, in other words *from the entire neighborhood*."[67] He pointed out that legally the theater operator may be held responsible for any noise complaints; prevention was crucial, because such complaints need not be backed up by an objective measure—they depended purely on the delicacy of the ears of one's neighbors. Audible vibrations were not Levy's only concern, however. These appliances, whose spinning parts generated large amounts of kinetic energy, could cause surrounding walls to shake if they were not sufficiently padded and secured. Moreover, if the rotation of a machine happened to trigger the resonant frequency of the walls, structural damage could result. The noise and vibration of machine technologies thus did not just threaten film exhibition, but neighboring architecture as well. Containing them functioned to conserve public order and safety in an urban context in which movie theaters often abutted cafés, restaurants, and other businesses.

Beyond the specific risks of industrial machinery involved in film projection, strategies for ensuring public safety focused on regulating crowd traffic within the movie house. One of the chief tasks of police regulation of the movie theater was to set the conditions under which the bodies and materials involved in the exhibition space would circulate and enter into relationships. In Berlin, both the 1909 and 1912 ordinances gave special attention to the accessibility of theaters—the placement and dimensions of entrances and exits, such that crowds (and, if necessary, municipal authorities) could move in and out of the building with relative ease. As Hans Schliepmann noted in his survey of Berlin movie house architecture in 1914, as cinemas began to adopt the practice of fixed showtimes (rather than a continuous loop of films), the character of the crowds changed. Although film audiences still felt far freer than at the traditional theater to come and go at any time, the growing tendency to watch an extended narrative from beginning to end "led to larger crowds of gawkers flowing in and out at each screening."[68] Rather than a steady trickle of spectators moving in and out of the theater, fixed showtimes meant denser crowds between screenings. Moreover, while reminiscent of theater exhibition practice, cinemas offered numerous shows per day, so dense crowds were also a much more frequent occurrence in the cinema as compared to theater. To prevent jams, the 1912 ordinance prescribed the use of dedicated exits; entrances could only be used as exits after the

66 Lotar Holland, "Forderungen von Innen," *Filmtechnik* 3, no. 26 (December 24, 1927): 457–59.
67 Paul Levy, "Geräuschdämpfung und Schutz gegen Erschütterung bei eigenen Lichtmaschinenanlagen und Umformern im Kinematographentheater," *Kinematograph*, May 14, 1914, (emphasis in original).
68 Schliepmann, *Lichtspieltheater*, 19.

night's final show, or in emergencies.[69] At the same time, movie houses still had to concede the habit of some of the crowd to arrive and depart while the house lights were down. The auditorium had to remain navigable during the show, which required illuminated exits and adequately sized rows, aisles, and hallways. The ordinance dictated that entrance and exit hallways were "to be adequately indicated and illuminated with signs."[70] Articles in the trade press surveyed different technologies of emergency lighting, which could be powered with batteries, in case the building had lost electricity.[71]

In the end, though, environmental controls could only do so much. Numerous writers on movie house architecture and fire safety considered the danger of a panicked crowd equal to that of fire itself. During a fire, Schliepmann wrote, "the audience is gripped by the mass psychosis of panic, and serious accidents and loss of human life are caused by the mindless push to get out."[72] Ensuring the safety of mass audiences thus meant not only fireproofing the projection room and providing adequate exits and wide hallways in case of fire; it also meant making audiences aware that these measures had been taken, as well of their own danger to themselves:

> It [the safety measures and procedures] must be made known to the audience, so that it remains calm during an unlucky event in the projection room, because it is not so much fire but the mindlessness of the crowd that produces danger. Only one who has experienced such a panic can know the sorts of madness the survival instinct leads to in such cases. The awareness of safety is the best protection against such an event.[73]

Five years later, writing in *Der Kinematograph*, Walter Thielemann stressed the importance of not only incorporating adequate emergency exits into movie theaters, but of making film audiences conscious of their existence and use: "One can best acclimate the audience to the use of emergency exits when they are opened at the end of the show and the audiences end up on the street after going through them."[74] In this sense, the movie house was a novel architectural form with unique dangers, whose proper navigation and use was not obvious. Commentators like Schliepmann and Thielemann hoped that a knowledge of proper behavior during an emergency could be inculcated in the movie-going masses.

The problem of the automatism of modern machinery and the danger posed by a lack of vigilance return to haunt the audience. Just as the projectionist should not fool himself to think he is safe, despite the numerous environmental controls in place to protect him, so the audience should not be similarly lulled into complacency. The contradiction is especially acute with regard to the metropolitan movie-going audience, who have paid precisely to let down their guard, to release themselves from the "heightened awareness" required by urban life, to shut off, as Georg Simmel put it, that "protective organ . . . against the profound disruption with which the fluctuations and discontinuities of the external milieu threaten it."[75] The panicked crowd and the hypnotized movie audience are two sides of the same coin—both have forgotten where they are, have given up the presence of mind that could save them. When environmental controls fail, and

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69 "Verordnung der Polizeibehörde Berlin vom 6. Mai 1912 betreffend die Sicherheit in Kinematographentheatern," 265.

70 Ibid.

71 See Paul Levy, "Die elektrische Notbeleuchtung," *Kinematograph*, January 21, 1914; and Leo Witlin, "Das Aufbauprinzip von großen Lichtspielhäusern," *Filmtechnik* 2, no. 26 (December 25, 1926): 510–11.

72 Schliepmann, *Lichtspieltheater*, 7.

73 Ibid.

74 Walter Thielemann, "Notausgänge in Kinotheatern," *Kinematograph*, May 28, 1919.

75 Georg Simmel, "The Metropolis and Mental Life," in *The Blackwell City Reader*, ed. Gary Bridge and Sophie Watson (Malden, MA: Wiley-Blackwell, 2002), 12.

they could at any time, modernity places the burden of vigilance onto the human subject to bridge the gap between safety and death.

"Light and Air"

The environmental safeguards described above were instituted to protect against extreme, catastrophic events. Although infrequent, movie house fires had the potential to cause damage on such a scale that it was in the state's interest, in the name of public safety, to regulate their design. However, while fire prevention was a major goal in the construction of modern venues for mass spectatorship, silent era movie houses were also characterized by a range of environmental controls that went beyond the dictates of public safety and into the realms of public health and social hygiene. In the inaugural issue of the *Deutsche Vierteljahrsschrift für öffentliche Gesundheitspflege* (German Quarterly for Public Health) in 1869, Carl Reclam differentiated between the older tradition of "private hygiene," which dealt with exercise and diet for the individual, and public health, which "should secure, as well as boost the productive capacity of the entire population." The practice of public health promoted "public intercourse," and ultimately served the interests of the state, "because the productive power of the state depends on the abilities of individuals."[76]

While public safety aimed at preventing periodic disorder or catastrophic death, public health was meant to promote life, at the scale of whole populations. It was thus more pervasive and far-ranging, taking into account a huge range of environmental factors that could affect the human organism. Reclam praised the progress hygienic science had made in quantifying the human environment:

> The volume of good air necessary for sick people, schoolchildren, and prisoners; the space necessary for graves and the correct period for rotating them as determined by the type of soil; the weight and combination of food to produce a given sum of calories and to maintain body weight while at rest or while working; the quantity of certain hazardous substances in the air, water, and ground and the limits of their effects in space and time; the quantified effect of ventilation and heating equipment; the area of window glass necessary for sufficient lighting and the heating surface at a given temperature necessary for sufficient heating; the correct relationship between building height and street width, between number of residents, built-up area, and green vegetation; and much else—the most exact possible determination of these things has been sought in nearly all civilized lands.[77]

Public health understood the human being as a biological entity, surrounded by an environment that could promote or inhibit this organism's health. By this reasoning, society had an interest in producing knowledge about and finding ways to manage environmental effects. As a form of ecological knowledge, public health focused especially on urban environments, as Reclam's emphasis on institutional spaces (hospitals, schools, prisons) and infrastructure indicates.

As Brian Ladd has written, "one catchphrase in particular expressed the most general goals of urban hygiene: 'light and air' (*Licht und Luft*)."[78] Influenced by nineteenth-century notions of miasma, hygienic reformers saw cities as breeding grounds for disease, due to their many dark and poorly ventilated spaces. (While miasma theory would be discredited in the late nineteenth century, this supposition had some validity nonetheless.) The darkness and poor ventilation in early storefront cinemas before 1910 drew the ire of urban hygienists. Movie houses operated significantly more hours of the day than traditional theaters, allowing less time for air quality to

76 Carl Reclam, "Die heutige Gesundheitspflege und ihre Aufgaben," *Deutsche Vierteljahrsschrift für öffentliche Gesundheitspflege* 1, no. 1 (1869): 1.
77 Ibid., 3. Translation quoted from Ladd, *Urban Planning and Civic Order in Germany, 1860-1914*, 44.
78 Ladd, *Urban Planning and Civic Order in Germany, 1860-1914*, 45.

recover before the next day's crowds. Smoking was also common, which compounded the ventilation problem. "Consumptive children breath shallowly and shake quietly in their evening fever," Alfred Döblin wrote of a movie theater audience in 1909, and "the eyes of foul-smelling workers nearly pop out of their sockets."[79] Defenders of bourgeois morality were especially sensitive to movie house air; in 1920 Cologne's Municipal Committee for the Protection of Decency and Morals reported that cinemas in working class districts were still in many ways "quite uncomfortable. Some visitors have rightly called their experience a bodily and spiritual torture. The rooms are usually overfull, the ventilation inadequate, adults and youths smoke unhindered, everything is covered in haze and smoke, mixed with perspiration and suspicious odors."[80] Such assessments demonstrate the frequent mixing of moral and medical judgments in hygienic discourse. As prime examples of poor urban hygiene, early movie houses became sites in which new techniques of environmental control could be implemented. Moreover, because film images required a dark auditorium, fulfilling the demand for "light and air" in the movie house was a complicated task.

Dispersing ozone into the auditorium was one early technique for managing air quality in the movie house. As an oxidizing agent, introducing ozone into air was known to have a deodorizing effect. In the mid-nineteenth century the German industrialist Werner von Siemens developed technology that could produce ozone cheaply using electricity, and by the early twentieth century ozone machines became widespread. In 1909, the engineer W. Cramer wrote that ozone represented an important addition to modern ventilating technologies; although it had not be proven that ozone actually killed bacteria in the air, Cramer claimed a deodorant such as ozone provided hygienic benefits insofar as bad air could inhibit breathing and circulation. He recommended the use of ozone for deodorizing rooms in which large numbers of people were typically concentrated for long periods of time, such as barracks, prisons, factories, schools, and theaters. Indeed, the Royal Opera House in Berlin had already implemented an ozone ventilation system. Cramer's article featured numerous illustrations of new ozone devices produced by Siemens, the Allgemeine Elektrizitäts-Gesellschaft (AEG), and other companies.[81] By the early 1910s, ozone seems to have been commonly used as a deodorant in movie theaters. In 1913, an advertisement for the Georg Kleinke company, which specialized in movie house furnishings, offered ozone spray bottles, ozone essence (presumably for filling said spray bottles), and "ozonators," an electric appliance that could be added to an existing ventilation system.[82] As Anna Paech notes, numerous accounts of early movie house spectatorship make reference to the "Spritzenmann" (spray man), who would deodorize the theater with his ozone spray bottle during intermissions.[83] While ozonators, in theaters that could afford them, obviated the need for spray bottle operators, in the 1920s some cinemas opted for more spectacular means of controlling odors in the auditorium. In 1927 Leo Hirsch wrote that in Berlin's Tauentzien-Palast, as well as

79 Alfred Döblin, "The Theater of the Little People," in *German Essays on Film*, ed. Richard W. McCormick and Alison Guenther-Pal (New York: Continuum, 2004), 3.

80 "Aktenstück Nr. 2317. Anlage 3. Bericht über das Ergebnis der Kinobesuche in Cöln durch Beauftragte von der Volksgemeinschaft zur Wahrung von Anstand und guter Sitte," in *Verhandlungen der verfassungsgebenden Deutschen Nationalversammlung*, vol. 341, *Anlagen zu den Stenographischen Berichten* (Berlin: Julius Sittenfeld, 1920), 2511.

81 W. Cramer, "Die Verwendung von Ozon zur Luftreinigung," *Gesundheits-Ingenieur* 32, no. 29 (1909): 496–501.

82 "Advertisement for Georg Kleinke, Berlin SW," *Kinematograph*, September 3, 1913.

83 Anne Paech, "Das Aroma des Kinos. Filme mit der Nase gesehen: vom Geruchsfilm und Düften und Lüften im Kino," in *Erlebnisort Kino*, ed. Irmbert Schenk (Marburg: Schüren, 2000), 75.

in the Ufa-Palast, "ventilation is provided by an electric zeppelin that sweeps through the building during the interval, spraying eau de cologne."[84]

While masking smell, however, ozone could not truly ventilate. An architectural novelty of the movie house, because of the darkness demanded for projection, was its potential lack of windows; previously, spaces for large audiences had rarely strived toward the degree of separation from the outside world that the cinema did. On the contrary, modern architecture had increasingly aimed toward integration with the surrounding environment through generous use of iron and glass, as in London's famous Crystal Palace, erected in 1851. Movie houses built from the ground up, however, could leave out windows altogether, such as in Berlin's Marmorhaus, designed by Hugo Pál in 1912. Doing away with windows meant giving up an important form of ventilation, and movie house designers increasingly turned to mechanical modes of ventilation, such as electrically powered fans and ventilators. By 1913, the engineer Paul Levy optimistically remarked,

> Even the smallest cinematograph theater today possesses a ventilator. The construction of such useful and hygienic apparatuses has been improved, simplified, and made more affordable by modern factory production, such that the ventilator of yesterday, admired as a miracle of technology, has become a mass consumer good affordable to anyone.[85]

While offering increased comfort, ventilation in the auditorium was also seen as a matter of public hygiene. In 1913, the German hygiene journal *Gesundheits-Ingenieur* (Health Engineer) translated a report by a committee of the American Society of Heating and Ventilating Engineers on "Proposed Standards for Ventilation Legislation of Motion Picture Places." They saw their task as part of a larger state initiative to supervise cinemas for the common good, which would encourage "fire protection structural requirements for the protection of *life*," censor films "for the protection of *morals*," and outline "ventilation and sanitation requirements . . . for the protection of *health*."[86] The report delineated minimum requirements for the floor area and cubic air space per audience member, the amount of outdoor air that should be introduced into the theater per minute, proper temperature ranges, and other standards. The engineer Konrad Meier commented on the proposed standards, adding that spacious seating arrangements could also aid air quality by lowering the density of crowds.[87]

As the size and technology of movie houses developed, so did their ventilation systems. True air conditioning meant not only regulating air flow between inside and outside, but altering the temperature and humidity of the air as well. Developed for large office buildings in the United States, air conditioning as we have come to know it found an early adopter in the modern cinema.[88] Georg Otto Stindt's 1926 article "Die Luft im Kino" (Air in the Cinema) gave guidelines for flow, temperature, and humidity, and provided a diagram of how air should be managed differently in the summer than in the winter. Stindt treats the movie house as a kind of microclimate, a space with its own weather system that reacts in specific ways to the surrounding environment. Fritz Wilms's 1926 design for the massive Mercedes-Palast in Berlin's

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84 Leo Hirsch, "Cinemas," in *Metropolis Berlin: 1880-1940*, ed. Iain Boyd Whyte and David Frisby (Berkeley: University of California Press, 2012), 532.

85 Paul Levy, "Betriebsstörungen an Ventilatoren in Kinematographentheatern," *Kinematograph*, no. 636 (December 10, 1913): n.p.

86 Frank T. Chapman et. al., "Report of Committee on Proposed Standards for Ventilation Legislation for Motion Picture Show Places," *Transactions of the American Society of Heating and Ventilating Engineers* 19 (1913): 166.

87 Konrad Meier, "Vorschriften über Lüftung von Kinotheatern," *Gesundheits-Ingenieur* 19, no. 26 (June 28, 1913): 483–84.

88 On the architectural history of air conditioning, see Reyner Banham, *The Architecture of the Well-Tempered Environment*, Second edition (Chicago: University of Chicago Press, 1984).

Hermannstraße included a system of air canals, steam machines, and turbines that could cool outdoor air to the proper temperature in the summer, and heat it in the winter. Air conditioning became a mark of architectural modernity in the movie palace, and an attraction to those for whom such modern hygienic comforts were otherwise out of reach.[89] At the opening of the Universum in 1928, the architect Erich Mendelsohn gave a speech in verse, in which he boasted of his theater's circulation capacity: "Ventilation ducts (air changed three times an hour)."[90]

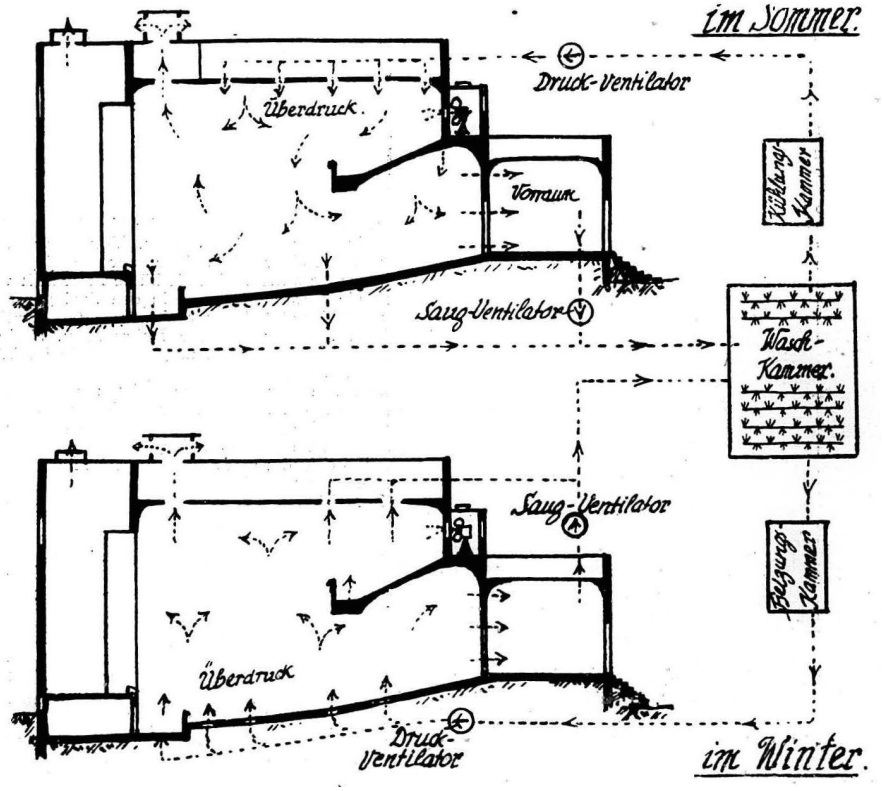

Figure 2. Diagram depicting proper air conditioning and ventilation in summer and winter. From Stindt, "Die Luft im Kino."

Light was also regulated according to hygienic principles. Again, because of the enforced darkness of the auditorium, hygienic use of light did not mean increasing the amount of light per se, but mitigating its potentially harmful effects on the eye and its contribution to the overall atmosphere of the theater. In general, moderation was prescribed, as it was thought that extremes of light or dark could result in discomfort for spectators. In a 1915 article in *Der Kinematograph*, R. Genenncher remarked, "bare walls typically appear very clinical; a few pictures, however, lend the space an intimate, warm character."[91] The Lichtspiele Wittelsbach, a relatively small movie house of 396 seats in Berlin's Wilmersdorf district, can serve as an example of the aesthetic Genenncher outlines in his essay. Opened in 1912, the graphic artist (and future filmmaker) Paul Leni designed the theater's interiors, which worked to soften the potentially

89 On "fresh air as advertisement" see Christoph Bignens, *Kinos: Architektur als Marketing* (Zürich: Hans Rohr, 1988), 81–84.
90 Reproduced in Lotar Holland, "Universum," *Filmtechnik* 4, no. 24 (November 24, 1928): 468.
91 R. Genenncher, "Stimmung," *Kinematograph*, August 11, 1915.

discomforting starkness of the architectural space. The side walls of the auditorium were divided into three roughly equal sections; each section contained a fabric wall covering, set off by the wood around it. In the middle of each wall covering, Leni placed an embroidered image. He did the same for the curtains covering the screen, stitching images of antique theatrical masks symbolizing comedy and tragedy. In the 1920s, movie house design largely forewent pictorial representation such as Leni's embroideries, preferring to control the auditorium atmosphere through fields of light and color alone. This development went hand in hand with modernism's rejection of decorative elements—a preference for purity and simplicity that also carried hygienic overtones.

While preaching the gospel of light, hygienic ideals also prescribed moderation. In an article on the "Form and Hygiene of Film Theater Construction," the architect Hanns Jacob complained that not enough attention was paid to light intensity and contrast, arguing that the auditorium should not be completely dark: "Because the eye always also perceives a part of the walls, the retina must simultaneously adjust to darkness and light. The logical consequence of this is the quick onset of fatigue and exhaustion."[92] He praised newer theaters that maintained a dim light during the film, and pleaded to theater owners to raise the lighting somewhat during intermissions, so that spectators could read the program without straining their eyes. H. A. Rodde saw a similar danger in the contrast between the darkness in the auditorium and the light outside. He advocated a gradual dimming of light as the moviegoer progressed from the street to the auditorium—light in the lobby should be slightly dimmer than the bright external facade, hallways between lobby and auditorium yet dimmer, and so on—to avoid the discomfort of sudden contrasts. In the auditorium, Rodde preferred indirect lighting that would be perceived as gentle or warm, citing Berlin's Gloria-Palast as a successful example.[93] (Sometimes the dictates of safety and hygienic comfort conflicted, however—Rodde complained that emergency lighting often disturbed the auditorium's overall lighting scheme.)[94] The screen itself also needed to be taken into consideration. With regard to the size of the movie screen, K. Retlow recommended,

> Better somewhat too small (making it brighter for those behind, sharper for those in front!), than too big. One should always consider the very front rows, whose occupants have to dart their eyes constantly and swiftly across an excessively large screen in order to catch all the details. It results in severe eyestrain, and these visitors will not return.[95]

For Stindt, theater directors should also take into account light's synesthetic association with temperature. Because certain colors were perceived as cool and others as warm, color's effect on the cinema environment extended beyond vision. Given this, Stindt argued that the use of color in the movie house should respond to seasonal changes in temperature: "The summer visitor looking to cool off in the theater would definitely feel uncomfortable in red or orange surroundings, while in the winter he would experience green walls and decor as cold and inhospitable."[96] Stindt applied the hygienic logic of moderation to light's apparent influence on the sensation of temperature, suggesting that color in the movie house could be a form of air conditioning able to temper extremes of weather outside.

Cloth was another important design element, which functioned to control light in the movie house auditorium and offset the architectural rigidity of such spaces, both visually and texturally.

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92 Hanns Jacob, "Form und Hygiene des Filmtheaterbaues," *Filmtechnik* 2, no. 26 (December 25, 1926): 512.
93 H. A. Rodde, "Beleuchtungstechnische Fragen des Lichtspieltheaters," *Filmtechnik* 2, no. 26 (December 25, 1926): 517.
94 Ibid., 518.
95 K. Retlow, "Die Projektionswand," *Filmtechnik* 2, no. 26 (December 25, 1926): 522.
96 Georg Otto Stindt, "Kalte und warme Farben," *Filmtechnik* 3, no. 16 (August 6, 1927): 304.

Fabrics were used as part of the color scheme within the theater space, as well as to literally soften the hardness of the walls, and as such served to produce a sense of comfort and intimacy. In a sense, fabric within the theater took over the function of outer garments for individual spectators. As film spectatorship became more sedentary, and moviegoers checked their coats and hats before entering the theater, the movie house became, however temporarily, a kind of dwelling space. These sites of mass spectatorship took on something of the character of the bourgeois interior, which Walter Benjamin opposed to the hard impenetrability of glass and steel modernist architecture.[97] Schliepmann's description of the Wittelsbach's interior bears witness to the way in which early movie houses posed an uneasy marriage between mass culture and bourgeois comfort, simultaneously public and intimate:

> The wooden parts are black, the walls pool-ball green, the decorative stripes violet with yellow, the plaster ceiling a yellowish gray; the impression of the room is thus pleasant and attuned toward a comfortable intimacy. Only the lively little painted images, in a burlesque poster style in the middle of the green wall coverings, jump out as a concession to the tastes of the general public.[98]

Cloth functioned similarly with regard to the screen. Genenncher noted that "an empty wall has just as sobering an effect as a bare projection screen," and recommends covering the screen with a heavy velvet curtain.[99] Schliepmann similarly wrote that while the theater was illuminated before and after films, the "garish white patch of the screen, which deviates completely from the color scheme," should be hidden.[100] The modernity of the screen was perceived as jarring, an architectural necessity to be overcome through interior design. (At the same time, commentators realized that the curtain was a vestigial inheritance from the theater, superfluous insofar as there was no real space behind it to cover up.) Finally, cloth masked the crowd from itself. While emphasizing the use of carpets to contribute to the overall color palette of the theater space, Genenncher remarked that they also make "the steps of the guests inaudible as they come and go."[101] Wall coverings likewise helped dampen the sound of voices from the audience. In addition to helping produce the visual and haptic atmosphere of the cinema, fabric thus also facilitated mass spectatorship by reducing occasions in which the crowd's attention would be drawn to itself.

97 Walter Benjamin, "Erfahrung und Armut," in *Gesammelte Schriften*, ed. Rolf Tiedemann and Hermann Schweppenhäuser, vol. 2.1: *Aufsätze, Essays, Vorträge* (Frankfurt am Main: Suhrkamp, 1991), 213–19.
98 Schliepmann, *Lichtspieltheater*, 32.
99 Genenncher, "Stimmung."
100 Schliepmann, *Lichtspieltheater*, 11.
101 Genenncher, "Stimmung."

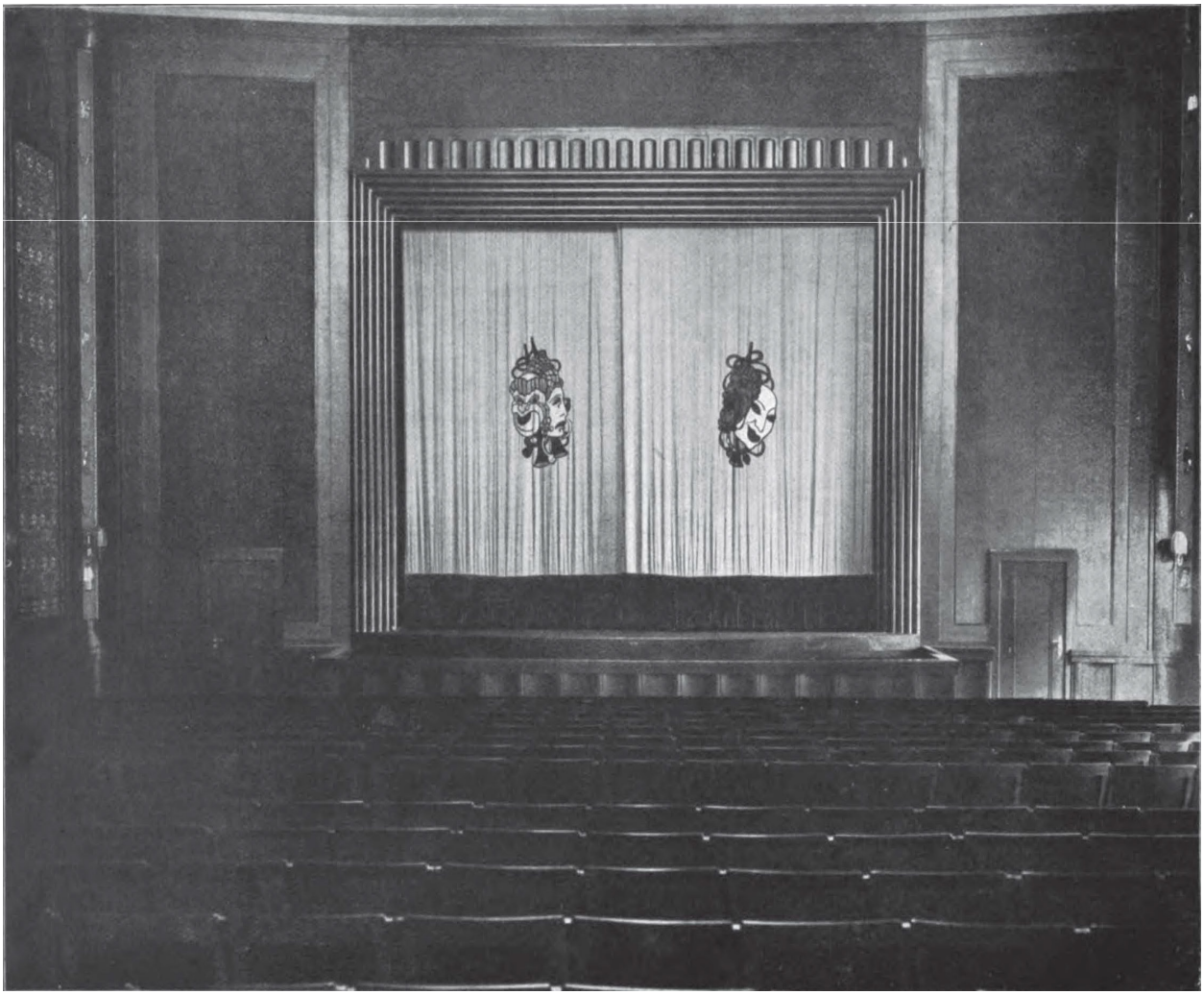

Figure 3. Lichtspiele Wittelsbach, interiors by Paul Leni. From Schliepmann, *Lichtspieltheater*.

Music in the movie house was another medium of environmental control. Like fabric it could mask disturbing noises from the projection apparatus and the crowd itself. Rudolf Harms claimed this was music's original purpose in the cinema: "The distracting hum of the technical projection apparatus should be hidden." However, as technological development allowed the projector to be muted by other means, "music was retained, because meanwhile people had recognized its extraordinary value for stimulating and underscoring mood."[102] As the musical apparatus grew to include full orchestras and massive organs, movie house design had to balance aesthetic, commercial, and technical imperatives (much as it did with the projection apparatus). In 1928, the film composer Hans Erdmann summarized the architectural options for the orchestra pit as "covered," "lowered," or "lowerable-open," going on to outline the various arguments for and against each. Some complained that a covered or sunken orchestra resulted in poor sound quality, while a relatively open plan disturbed the lighting scheme in the auditorium, due to the "'idyllic

102 Harms, *Philosophie des Films*, 79.

firefly scene' created by the many music stand lights." Integrating an organ raised a similar set of issues.[103] Like light, sound could also be considered from a hygienic point of view, insofar as extremely loud or harsh musical accompaniment could hurt the ears. In his article on hygienic theater construction, Jacob warned that "the hard smashing of the sounds against reinforced steel construction," common in movie houses, "destroys the effect of even the best and most expensive orchestra."[104] For a writer in *Filmtechnik*, Berlin's Atrium successfully negotiated the optical and auditory demands of movie house construction. In particular, the writer singled out the placement of the organ, whose two sets of openings, one on each side of the screen, projected sound toward each other, only then to be reflected back toward the audience. Echoing the use of indirect lighting in the auditorium, this method of indirect sound projection helped synthesize the organ's high and low registers, avoiding the auditory "torture" that arises when the ear perceives them as coming from different locations.[105] Indeed, the writer felt Atrium's auditorium had been constructed

> according to achieve the purest possible acoustics. It contains no flat surfaces or lines. Instead, it is molded even in the smallest details to the rounded forms of reflected sound waves; it is built architectonically around the source of the music, the orchestra, and aimed towards it in open surfaces.[106]

The writer suggests that the surfaces of auditorium architecture are less important in their visual presentation than for how they reflect sound. As an architecture that remained dark to facilitate spectatorship, the movie house raised the problem of architecture's non-visual properties.

Misalignments and Transgressions

In a 1915 article in *Der Kinematograph*, the writer R. Genenncher offered filmmakers and movie house operators advice on the art of *Stimmung*. A word that can be variously translated as mood, atmosphere, or attunement, Genenncher characterized *Stimmung* as the precondition of aesthetic reception. If the spectator is not correctly attuned, such reception is impossible: "That is why any work of art will rebound impotently, as soon as we do not find ourselves in the *Stimmung* appropriate to its reception."[107] Some people, able to attune themselves, possess an aesthetic sensibility that can function without regard to external circumstances. Others, however, "must be attuned [*gestimmt*] by external influences, by the artwork's frame, so to speak."[108] The author saw framing as itself an important aesthetic function, one that could not simply be left to chance. For Genenncher, this task fell not only to the film director, but to the movie house operator as well: "In order to make the innermost essence of this art comprehensible and accessible to the public psyche, it is also necessary in the cinema to provide the requisite *Stimmung*."[109] The preceding sections have explored the range of ways the movie house environment framed the moving image and shaped the atmosphere in which it was experienced. As Genenncher's essay makes clear, however, *Stimmung* was also a way of managing the audience. Before performances in a particular Berlin cabaret, he recalls,

> a master of ceremonies would often sweep through the rows of audience members and cry in a high soprano: *Stimmung*, ladies and gentleman! *Stimmung*! Our theater directors should also embrace this

103 See Hans Luedtke, "Kinoorgel und Raumgestaltung," *Filmtechnik* 4, no. 26 (December 22, 1928): 509–11.
104 Jacob, "Form und Hygiene des Filmtheaterbaues," 512.
105 H., "Atrium," *Filmtechnik* 3, no. 11 (May 28, 1927): 209.
106 Ibid., 211.
107 Genenncher, "Stimmung."
108 Ibid.
109 Ibid.

> appeal, even if they cannot call out to their guests in such a vulgar, primitive fashion as appropriate to the cabaret milieu.[110]

While elsewhere *Stimmung* connotes a holistic mood or atmosphere, here it takes the form of an address—indeed, an imperative. Moreover, Genenncher implies, the imperative should be indirect, suggested by the qualities of the environment itself rather than explicitly stated. The art of movie house *Stimmung* thus also aimed to encourage the audience to conform to a desired mode of spectatorship, one that resembled the bourgeois ideal of contemplation.

Film theory and historiography have made much of the disciplining of film spectatorship that occurred with the transition to narrative cinema, and the movie house, as narrative cinema's architectural corollary, has often been painted as an accomplice. For some critics in the 1960s and 1970s, drawing on psychoanalysis and Marxist theory, the movie house was a site of psychic and ideological mystification. In his seminal article on the cinematic *dispositif*, Jean-Louis Baudry argued that because of "the darkness of the movie theater, the relative passivity of the situation, the forced immobility of the cine-subject, and the effects which result from the projection of images, moving images, the cinematographic apparatus brings about a state of artificial regression."[111] In the 1980s and 1990s, critics like Heidi Schlüpmann and Miriam Hansen also emphasized the pacification of the film spectator, albeit with far greater sensitivity to history, gender, and class dynamics. Concerned with cinema's potential function as a space in which the historical experiences of audiences typically excluded from public discourse might be articulated, Schlüpmann sees in the history of film exhibition around 1910 an increasing "repression of the diverse expressions of male and female viewers as physical and social persons."[112] The standardization of film production and exhibition, according to this argument, was a 'bourgeoisification' of cinema that silenced the subjectivity of excluded classes and groups.

To conclude this chapter, I suggest that environmental management and social control are not so easily correlated as has been previously assumed. I argue that the movie house, although carefully controlled, was never a seamless totality. The movie house environment, rather, reflected competing ideals and projects that were not easily reconciled. Moreover, it spoke differently to different audiences, offering different limits and affordances depending on the spectator's social location. To invoke Foucault's distinction, the movie house functioned in the mode of security rather than discipline—although Genenncher clearly desired disciplined spectators, he also emphasized the indirect nature of *Stimmung*. In this way decor and atmosphere resembled the "overall mechanisms" of security described by Foucault, which provide the conditions of social intercourse rather than addressing individual bodies. As such the movie house encouraged norms of spectatorship rather than enforcing discipline, tolerating a range of behaviors and experiences within certain limits.

So far I have attempted to enumerate the range of environmental controls at work in the movie house, tracing these to the principles of public safety and hygiene that guided their implementation. Within this overall framework, we can distinguish between three different perspectives that took recourse to notions of safety and hygiene: political (often municipal), commercial, and technical (or aesthetic). State and municipal authorities, tasked with

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110 Ibid.

111 Jean-Louis Baudry, "The Apparatus," trans. Jean Andrews and Bertrand Augst, *Camera Obscura* 1, no. 1 (1976): 119.

112 Heide Schlüpmann, "'Die Erziehung des Publikums': Auch eine Vorgeschichte des Weimarer Kinos," *Kintop: Jahrbuch zur Erforschung des frühen Films* 5 (1996): 141; see also Miriam Hansen, *Babel and Babylon: Spectatorship in American Silent Film* (Cambridge, MA: Harvard University Press, 1991).

maintaining public order and preventing death, had an interest in regulating movie houses because they had the potential to put large numbers of people at risk. Environmental controls were also profitable to movie house operators, insofar as they made movie-going more attractive to middle class audiences and helped guarantee a smooth flow of comfortable, docile customers. Lastly, technicians and artists (architects, engineers, interior designers, projectionists, musicians, etc.) were concerned with maintaining a safe and healthy workplace as well as providing spectators with a satisfying experience under optimal environmental conditions.

These different perspectives, all concerned with managing the movie house environment, thus differ in important respects. If environmental discourses deal with the relationship between the organism and its surroundings, the political, commercial, and technical perspectives just outlined articulated this relation in different ways. For the state, movie audiences were part of the larger *Volkskörper* (body of the people), whose safety and productivity it was concerned with optimizing; the movie house, likewise, was a single micro-environment within an extensive ecological domain, whose effects on the *Volkskörper* were potentially in need of regulation—through zoning and regulation of land use, controlling traffic, promoting nutrition, monitoring working and housing conditions, preventing disease, and so on. The cinema was just one node in the network of regulated spaces under the jurisdiction of the modern state. By contrast, the artists and technicians actually tasked with designing movie houses largely restricted their view to the building itself and its immediate surroundings. While ensuring their work met regulatory standards, they saw the movie audience not necessarily in terms of its potential contributions to national productivity, but as a collection of breathing, feeling bodies. From this perspective, the movie house was a space of dwelling, a space where life, itself, happened. It was an environment thus worth optimizing in accordance with hygienic principles, for the experiences of comfort and vitality it alone could provide. Although different in scope, political and technical projects applied hygienic discourse to cinema by aligning audience with organism, and movie house with environment.

The logic of capital, however, reversed this equation. "Capital," Karl Marx famously remarked, "is dead labour, that, vampire-like, only lives by sucking living labour, and lives the more, the more labour it sucks."[113] From this perspective, the movie house itself functions as organism, 'consuming' as many spectators as possible. Commercial rationality viewed the pedestrian traffic in front of the cinema as a kind of natural resource, the "Molochlike lure" (to borrow Janet Ward's description) of the bright facade serving to draw an audience from the surrounding environment. Environmental controls thus also worked to help the movie house 'digest' its paying customers with efficiency.

Numerous aspects of the movie house environment were thus overdetermined, simultaneously functioning in service of political, technical, and commercial aims. By sequestering the projection apparatus into its own space, for instance, movie houses both protected the audience from fire and prevented potential disturbances to the image on screen; wide halls allowed for quick evacuation in case of emergency, but also helped audiences more easily transition from street to auditorium and prevented delays and traffic jams in the theater. At the same time, however, political, technical, and economic goals were not always integrated seamlessly. In the cinema, these different aims could compete and interfere with each other. Large audiences generated more profit, but also increased the potential risk of catastrophe; and

113 Karl Marx, *Capital: A Critique of Political Economy*, ed. Friedrich Engels and Ernest Untermann, trans. Samuel Moore and Edward Aveling, vol. 1: *The Process of Capitalist Production* (Chicago: Charles H. Kerr & Co., 1915), 257.

expanding the space of the movie house to accommodate thousands could result in less than optimal image projection. Environmental and hygienic controls advocated by cities, architects, and engineers placed a financial burden on movie house operators, and construction requirements could interfere with interior design aesthetics (as when Rodde complained of emergency lighting disturbing an auditorium's color scheme). The movie palaces of the silent era were not the vernacular total artworks they have often been made out to be; they were, rather, extremely successful compromise formations that balanced political and commercial motives with material necessity and aesthetic experimentation.

Moreover, from the perspective of social hygiene, the movie house could never fully satisfy the ideal of "light and air." No matter how well ventilated, cinema's institutionalized darkness would continue to irk hygienically minded moral reformers, who decried the opportunities for sexual transgression it offered. (There is a startling overlap between the hygienic opposition to darkness and the ideological critique articulated by Baudry and others, which speaks to the shared Enlightenment heritage of hygienic science, psychoanalysis, and Marxism, as well as the deeply ingrained association between light and knowledge.) In this respect, at least, the bourgeoisification of cinema was always an incomplete project—and many bourgeois moviegoers loved cinema for this very reason. Recalling the ambivalent enjoyment of Thomas Mann's moviegoers in *The Magic Mountain*, which seems intensified by their transgression into a non-bourgeois space, enthusiastic bourgeois critics in the 1920s emphasized time and again the overwhelming force of the movie experience, the ability of the film image to overcome the bounds of both the screen and the spectator him- or herself. "Whoever has seen a film with open eyes, with open senses," wrote Curt Wesse in 1928, "has left behind the 'straightjacket of the ego' to merge with other forms."[114] The movie house's unique combination of comfort and safety, on the one hand, and its transgressive darkness, on the other, provided the environmental condition of possibility for such an experience. The sense of self-loss, of cinematic dis- and re-embodiment Wesse describes, cannot be disentangled from the theater's mechanisms of security and controlled milieu—its architectural space, color, lighting, texture, and air. Already in 1914, Schliepmann pointed out the link between architectural safety and aesthetic enjoyment with regard to the lack of windows in the movie house:

> For ventilation and the rescue measures of the fire department in case of fire, windows are absolutely to be welcomed. This fact is so strong in our subconscious, from which our sense of aesthetic pleasure primarily stems, that behind these flat marble surfaces we might guess the room to belong to the freemasons, some side room for secret purposes—certainly not a space for entertainment.[115]

In the cinema, which in the meantime had compensated for the lack of windows with ventilation and emergency lighting, bourgeois spectators felt comfortable enough to leave behind the strict delineation between self and other, self and environment, that they typically required of themselves. The praise of cinematic absorption by Wesse, Béla Balázs, and others was a form of opposition to bourgeois individuality by critics quite familiar with it.

For working-class, immigrant, and female spectators, the movie house environment likely offered different appeals. Histories of early cinema often emphasize the attraction of the film apparatus itself for audiences interested in witnessing the wonders of technology. After the transition to narrative, however, audience attention shifted decisively toward the image on screen and away from the apparatus, which had been sequestered in a space of its own. I would argue, however, that beyond the images on screen, the architectural and environmental apparatus of the

114 Curt Wesse, *Grossmacht Film: das Geschöpf von Kunst und Technik* (Berlin: Deutsche Buch-Gemeinschaft, 1928), 120.
115 Schliepmann, *Lichtspieltheater*, 22.

movie house served as an attraction, as the projector had previously. The picture palaces competed with each other to offer the most luxurious experience possible by implementing the latest climate control technologies. Air conditioning was a novelty, especially to working-class audiences. Movie houses thus provided an escape from the infamously poor housing conditions in the working-class areas of German cities, allowing audiences of lesser means access to environmental technologies that would gradually pervade the everyday life of industrial societies.

The cinema's darkness, furthermore, would have offered a different attraction to working-class and female spectators than male bourgeois critics like Wesse. In his 1926 *Sittengeschichte des Kinos* (Moral History of the Cinema), Konrad Haemmerling noted the moviegoing public's attraction to darkness:

> "Come in ladies and gentleman, our cinema is the darkest in the whole city!" For a certain class of audience the darkest theaters are the most preferred; couples in love are doubtless those most appreciative of this factor. Their preference for the darkness of the theater of course stems from the fact that they can exchange furtive caresses undisturbed, and talk to each other even more undisturbed, because hushed conversation at the movies doesn't bother the other spectators. Depending the location and arrangement of the space, box seating can offer greater freedom to those who visit the cinema in pursuit of goals other than pure satisfaction of visual curiosity or a desire for diversion.[116]

Haemmerling follows this passage with a series of remarkable comments on voyeurism in the cinema that anticipates psychoanalytic film theory. Nonetheless, while his tone less judgmental, Haemmerling echoes the moral norms of social hygiene by focusing on sexual transgression. I would argue that the attraction of darkness is not necessarily erotic per se, but rather that darkness short-circuits the disciplinary gaze that typically operates in public space.[117] The movie house, in other words, offered privacy, a freedom from social sanctioning not otherwise available.

During Germany's rapid industrialization at the end of the nineteenth century and the huge growth of urban populations, privacy could be hard to come by. Anthony McElligott notes that "between 1871 and 1910 average population density in Germany rose from around 77 persons per square kilometre to 120 persons, and continued to rise until the early 1930s."[118] The big cities were seriously overcrowded, and housing conditions notoriously poor. As a report by the International Labour Office in Geneva noted in 1924, the war only exacerbated the housing problem. After WWI there were many more marriages (and therefore more households) than in the preceding years, and emigrants and refugees returned to the country, even as construction of new housing dropped to a virtual standstill. "The general result was a rapid and complete occupation of available dwellings, even the smallest and most unhealthy. From 1919 onwards German housing statistics show no figures for vacant dwellings, their place being taken by the figures of persons without accommodation."[119] Many households took on lodgers, children shared beds, and people slept in kitchens. Eminent physicians such as Robert Koch and Max Rubner linked the spread of tuberculosis to urban overcrowding and especially the density of sleeping arrangements.[120]

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116 Konrad Haemmerling, *Sittengeschichte des Kinos* (Dresden: P. Aretz, 1926), 209. Haemmerling published the book under the pseudonyn Curt Moreck.

117 See Otter, "Making Liberalism Durable," 3.

118 Anthony McElligott, *The German Urban Experience, 1900-1945: Modernity and Crisis* (New York: Routledge, 2001), 68.

119 Quoted in ibid., 74.

120 See Alfons Fischer, *Grundriss der sozialen Hygiene für Mediziner, Nationalökonomen, Verwaltungsbeamte und Sozialreformer* (Berlin: J. Springer, 1913), 100–101.

In crowded conditions, visibility is constant. While it gathered a crowd, however, the movie house organized the crowd spatially and distracted it from itself, thereby reducing the perceived threat of social sanction. By directing the collective gaze, the cinema to a certain extent also freed the individual spectator from the gaze of others. For a time, the spectator could look without also simultaneously being a visual object, suggesting that the allure of voyeurism has less to do with a fundamental "scopophilia" than with reversing or escaping the visual regime of everyday life, in which one is inevitably seen and judged. For female spectators, in particular, to whom norms of visual presentation and social performance applied most strongly, the darkness of the cinema could have offered a certain relief.[121] Curiously, the flight into darkness might itself be understood as a kind of hygienic practice, or at least a form of self-care, albeit one that obviously ran counter to the official slogan of "light and air." By seeking out darkness, audiences looked not to join the crowd but to escape from its attendant social pressures. In the absence of walls, one could make do with darkness.

Chris Otter defines the "bourgeois visual environment" as the "material conditions in which sight can prevail, civil conduct be exposed to view, and those eminently Victorian qualities of reserve and distance maintained." The slum, meanwhile, whose spaces were darkened with soot and smoke, embodied the "anti-bourgeois visual environment," in which "the civil conduct of the respectable could not be seen and emulated."[122] The movie house, I argue, occupied a liminal position between these two poles. It was not an architectural expression of working-class culture, nor was it fully bourgeois. It could appeal to a mass audience and cross class boundaries precisely because it was neither of these things.

In 1926, Siegfried Kracauer published a critique of Berlin's movie palace culture, which he famously called the "culture of distraction." According to Kracauer, the movie palace was a "total artwork of effects," which

> assaults all the senses using every possible means. Spotlights shower their beams into the auditorium, sprinkling across festive drapes or rippling through colorful, organic looking glass fixtures. The orchestra asserts itself as an independent power, its acoustic production buttressed by the responsory of the lighting. Every emotion is accorded its own acoustic expression and its color value in the spectrum—a visual and acoustic kaleidoscope that provides the setting for the physical activity on stage: pantomime and ballet. Until finally the white surface descends and the events of the three-dimensional stage blend imperceptibly into two-dimensional illusions.[123]

Kracauer's essay is often taken as an indictment of 1920s movie culture, but it must be noted that the critique is directed not so much at environmental design elements than the ways they were used as part of the spectacular stage shows that often preceded films at these upscale theaters. For Kracauer, the aesthetics of film montage tended to put the film's constructedness on display, and in so doing accurately reflected the fragmentation of modern society. Extravagant variety programs served an ideological function by integrating the film into a larger, seemingly organic whole. Kracauer's complaint suggests the flexibility of environmental design in the movie house, which, depending on how it was used, could confront spectators with the aesthetic force of the moving image, or "rivet the viewers' attention to the peripheral, so that they will not sink into the

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121 In a similar vein, Schlüpmann has argued that cinema allowed female spectators to observe dynamics of performance and authenticity from a remove that was impossible on the stage. See Heide Schlüpmann, "Cinema as Anti-Theater: Actresses and Female Audiences in Wilhelminian Germany," in *Silent Film*, ed. Richard Abel (New Brunswick, NJ: Rutgers University Press, 1996), 125–41.

122 Otter, "Making Liberalism Durable," 3.

123 Siegfried Kracauer, "Cult of Distraction: On Berlin's Picture Palaces," in *The Mass Ornament: Weimar Essays*, ed. Thomas Y. Levin (Cambridge, MA: Harvard University Press, 1995), 324.

abyss."[124] The movie house environment thus cannot be understood as a static architecture, a fixed quantity with specific effects. It was, rather, a multivalent organization of space and material that could be appropriated for a variety of uses, by theater operators, filmmakers, and audiences alike.

124 Ibid., 326.

CHAPTER TWO
Pollution, Stimulation, and Space: German Discourses on Spectatorship

Visual Pollution

In the previous chapter, I discussed the environmental conditions of the movie house, such as lighting, temperature, ventilation, and crowd traffic. Architects, engineers, municipal regulators, and movie house operators were all concerned with creating spaces that were safe, hygienic, and profitable. For the advocates of the film reform movement (*Kinoreform*), however, these conditions were secondary to the images on screen. Around 1910, a collection of educators, jurists, and politicians began to wage a battle against the movies, which they saw as posing a cultural threat regardless of where they were exhibited. The rhetoric of these film reformers treated cinema as cultural pollutant that endangered both moral and hygienic ideals. Echoing the discourse of social hygiene, the film reformers understood cinema as primarily a danger within urban, working-class contexts. "Nick Carter, the cinema, and Berlin apartment houses," wrote Franz Pfemfert in 1911, "the terms of this trivial triad belong together."[125] Equating sensational movies with Berlin tenements, Pfemfert's remark points to how film was seen as part of a larger complex of environmental deprivation within the modern metropolis. As with the urban slum, reformers both moralized and medicalized the moving image, treating it as an environmental factor, like alcohol or industrial chemicals, that could inhibit or promote (but mostly inhibit) the wellbeing of those who came into contact with it.

For the psychiatrist Robert Eugen Gaupp, the characteristics of the medium itself, regardless of content, were already extremely dangerous. Dime novels are bad enough, he says,

> but the cinema, with its temporal concentration of events, has more damaging and nerve-shattering effects. When reading, we can stop as we like, critique the trash novel, and free ourselves from its hold through reflection. With the cinema it is another story altogether. The rapid succession of images intensifies the pleasurable tension to an unbearable level; there is no time for contemplation and thus no time to compensate psychologically. For children and sensitive people alike, the horrific subject matter severely shakes the nervous system, without giving us the means by which to defend our psyches against these attacks. When reading, very few people have a vivid enough imagination to perceive a three-dimensional version of the story; but cinema offers a plastic, corporeal view, and the milieu proves favorable to a deep suggestive power; the dark space, the monotone humming noise, and the power of the images all numb the critical faculties. In this way, the drama's content turns into a fateful suggestion, which has its way with the powerless, capitulated psyche of the common man.[126]

Gaupp frames the encounter between spectator and image as a struggle between individual psyche and external world. Typical of medium-specific critiques of cinema around this time, the moving image is assumed to possess an immediacy unmatched by literature or even theater. The function of the psyche is to defend against, understand, and master its environment, but film, in combination with an exhibition space that only increases the power of the image, easily

125 Franz Pfemfert, "Cinema as Educator," in *The Promise of Cinema: German Film Theory, 1907-1933*, ed. Anton Kaes, Nicholas Baer, and Michael Cowan, trans. Sara Hall (Berkeley: University of California Press, forthcoming).
126 Robert Gaupp, "The Dangers of Cinema," in *The Promise of Cinema*, ed. Anton Kaes et. al., trans. Eric Ames.

overcomes the viewer's faculties. Gaupp's description of film spectatorship invokes the pervasive discourse of nervousness around 1900, which understood the stimulations of modern life as a ceaseless series of shocks and traumas.[127] For the film reformers, the experience of moving images was a traumatic one, bound to cause pathology in those less able to maintain the boundary between self and environment (usually women, children, and workers).

While often invoking images of passivity and hypnosis, medical perspectives in fact conceived of film spectatorship as a form of mental and physical labor. The psyche may "capitulate," to use Gaupp's word, but this surrender was a strenuous one. Interested in "the damage that cinema does to the eyes and the nerves," Naldo Felke asked "how long can a normal human being withstand such movie shows"? He hoped to answer this question experimentally. For test subjects, Felke chose "an average [man] of robust constitution," "an intellectually active academic," and "a nervous artist suffering from weak optical nerves." He then subjected all three to film after film, while measuring the pulse of each man and chronicling their symptoms as time went on, which ranged from headaches to pupil dilation to exhaustion. To the writer's surprise, after five hours "it was the robust man, the one seemingly fit as a fiddle, who broke down first in the end."[128] Felke also followed up with his subjects the next day, who reported headaches and difficulty sleeping. In attempting to quantify the corporeal effects of engaging in a single activity for prolonged periods, Felke's experiment can be seen as part of the European science of work chronicled by Anson Rabinbach in *The Human Motor*. Emerging in the wake of discoveries in thermodynamics, the science of work quantified bodily labor in terms of energy, and strove to optimize industrial productivity by identifying the physiological limits of the human body.[129] By testing the point at which the moviegoer begins to experience fatigue, Felke stumbled upon a new component of labor that would become increasingly important in the twentieth century and beyond—gazing at screens.[130]

Felke himself linked movie-going to an increasingly de-naturalized urban environment, illuminated by artificial light sources: "Excessive demands are already being made on our eyes by our ever-expanding culture of 'night life'; we really do not need such forms of optical torture

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127 The classic accounts of the experience of shock in modernity and the psychic defense mechanisms that arise to defend against it are Simmel, "The Metropolis and Mental Life," 2002; and Walter Benjamin, "On Some Motifs in Baudelaire," in *Walter Benjamin: Selected Writings*, ed. Howard Eiland and Michael William Jennings, trans. Harry Zohn, vol. 4, *1938–1940* (Cambridge, MA: Belknap, 2003), 313–55. Literature on the discourse of shock and trauma is extensive. On its particular relation to cinema, see Andrea Haller, "Seen Through the Eyes of Simmel: The Cinema Programme as a 'Modern' Experience," in *Film 1900: Technology, Perception, Culture*, ed. Klaus Kreimeier and Annemone Ligensa (New Burnet, England: John Libbey Publishing, 2009), 113–23. and Tom Gunning, "Modernity and Cinema: A Culture of Shocks and Flows," in *Cinema and Modernity*, ed. Murray Pomerance (New Brunswick, NJ: Rutgers University Press, 2006), 297–315. For broader historical considerations, see in particular Paul Frederick Lerner, *Hysterical Men: War, Psychiatry, and the Politics of Trauma in Germany, 1890-1930* (Ithaca: Cornell University Press, 2003); and Anton Kaes, *Shell Shock Cinema: Weimar Culture and the Wounds of War* (Princeton University Press, 2009).

128 Naldo Felke, "Cinema's Damaging Effects on the Health," in *The Promise of Cinema*, ed. Anton Kaes et. al., trans. Michael Cowan.

129 On the science of work in Europe see Anson Rabinbach, *The Human Motor: Energy, Fatigue, and the Origins of Modernity* (New York: Basic Books, 1990), especially 120–45 and 179–237.

130 On the scientific study of spectatorship, see Andreas Killen, "The Scene of the Crime: Psychiatric Discourses on the Film Audience in Early Twentieth Century Germany," in *Film 1900: Technology, Perception, Culture*, ed. Klaus Kreimeier and Annemone Ligensa (John Libbey Publishing, 2009), 99–111. On looking as a form of social production and its role in capitalist society, see Jonathan Beller, *The Cinematic Mode of Production: Attention Economy and the Society of the Spectacle* (Hanover, NH: Dartmouth College Press, 2006).

as the cinema to reduce the eyes' capacity even further."[131] In addition, according to Karl Brunner, film had escaped the movie theater in the form of advertising: "Walking through the streets of our cities—and this is true even in small and mid-sized towns, but especially in big cities—anyone with eyes cannot help but notice the vociferous, often unbearably repulsive advertisements. One sees posters with tasteless, often truly frightful images, generally blown up to gigantic proportions and printed in the most garish colors."[132] Cinema was thus a part of a more pervasive visual pollution, primarily in cities, that was seen as an outgrowth of industrial capitalism. Many critics perceived the new forms of advertising that began to plaster urban surfaces as outright repulsive, destroying any chance at a pleasing urban landscape (*Stadtbild*). The link between advertising and industrial pollution, moreover, can be understood as more than metaphorical, insofar as the constant visual address of advertising placed cognitive demands on those trying to navigate the city. For the sociologist Werner Sombart, advertising had to be treated as an environmental hazard, especially in rural areas not yet despoiled by industry: "We can only erect levees, so that the mudflow of modern culture does not decimate everything around us. Strict laws [are required] for the protection of our homeland [*Heimat*], so that at least rural life can remain free of the plague of advertising. The (big) city is already hopeless when it comes to civilized culture anyway."[133] Indeed, many German cities enacted statutes that regulated the presence of advertising in public spaces.[134]

Some film reformers worried not just that the medium could overwhelm, but that it would actually shape the viewer's senses. The pedagogue Georg Kleibömer feared that cinema, in concert with "the entire urban lifestyle," endangered the very development of an 'individual' in the first place. When exposed the extremes of sensation in the city, and particularly at the movies, Kleibömer claimed that "personalities can no longer grow."[135] Like the man from the country who arrives in the metropolis, the young child "will possess no center or focus, no standard within themselves by which to judge all the phenomena around them." Echoing a decade of fears surrounding the cognitive development of young moviegoers, Konrad Lange wrote in 1920 of the damaging effects of "sensational" films:

> The repeated viewing of such scenes deadens the child's sense of reality and makes it unreceptive and blasé. . . . One can picture . . . the development quite well. First great excitability, blood rushing into and out of the face, pounding of the heart, crying, perhaps even states of anxiety, then gradually with repeated viewing—dullness, disinterest, blasé attitude.[136]

For Lange and others, this was the endpoint of the arms race between mind and moving image—a deadening of the senses, such that the spectator loses contact with reality, both inside and outside of the cinema. The psyche stops mediating between individual and external world and simply lets everything in, without a sense of proportion or consequence.

The "blasé attitude," which Georg Simmel identified as a characteristically urban survival strategy, is here pathologized and framed in moral-hygienic terms. According to Albert Hellwig,

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131 Felke, "Cinema's Damaging Effects on the Health." On the history of "night life," see Wolfgang Schivelbusch, *Disenchanted Night: The Industrialization of Light in the Nineteenth Century*, trans. Angela Davies (Berkeley: University of California Press, 1995), 137–54.

132 Karl Brunner, "Today's Cinema: A Public Menace," in *The Promise of Cinema*, ed. Anton Kaes et. al., trans. Michael Cowan.

133 Werner Sombart, "Die Reklame," *Morgen: Wochenschrift für deutsche Kultur*, March 6, 1908, 286.

134 Richard Birkefeld and Martina Jung, *Die Stadt, der Lärm und das Licht: die Veränderung des öffentlichen Raumes durch Motorisierung und Elektrifizierung* (Seelze: Kallmeyer, 1994), 193–94.

135 Georg Kleibömer, "Cinema and Schoolchildren," in *The Promise of Cinema*, ed. Anton Kaes et. al., trans. Michael Cowan.

136 Konrad Lange, *Das Kino in Gegenwart und Zukunft* (Stuttgart: Ferdinand Enke, 1920), 44–45.

the perceptual deadening of the movies had the accompanying effect of "rendering their audience more brutish," less susceptible to the dictates of propriety and morality.[137] Lange speculated that desensitization among young moviegoers would breed resistance to authority: "When a child, whose development has been influenced by regular visits to the cinema, enters real life, the correct attitude toward reality has been completely lost. He demands continual excitements and adventure and has no more sense for the steady and quiet fulfillment of duty upon which true human happiness is founded."[138] The discourse of film reform thus linked obedience and social discipline to a normalized relation between sense perception and environmental stimuli. According to this logic, if moral and political authorities were to continue to impose behavioral ideals upon the next generation, they had an interest in making sure this population remained receptive at the most fundamental, corporeal level.

This weakening of the individual's capacity to resist stimuli was feared to have consequences for sexual morality in particular. No one could dispute, wrote Hellwig in 1911, "that the presentation of stories of infidelity, prostitutes, and otherwise sexually objectionable films is able to weaken the feeling of shame," such that young people could easily fall victim to sexual predators.[139] The danger of sexual transgression on screen was compounded by perceptions of the movie theater itself. As mentioned in the previous chapter, the dark auditorium was particularly objectionable because it created a space in which men and women could interact with relative privacy outside the home. In 1920, the Cologne Municipal Committee for the Protection of Decency and Morals sent forty observers to nearly as many cinemas, all over the city and its surroundings. The report claimed to have seen many unaccompanied lower-class women, as well as women in the company of "men who are presumably not their husbands." Moreover, "young working-class couples were repeatedly observed in the less illuminated seating areas, behaving themselves in a not inoffensive manner. . . . Even street prostitutes, recognizable by their conduct, sought their victims here."[140] The cinema was viewed as part of an urban milieu whose environmental characteristics allowed sin, crime, and disease to flourish. Like the advocates of social hygiene more generally, film reformers feared consequences not just for moviegoers, but for the nation as a whole. Already in 1912, the physician Ike Spier warned,

> If we do not cut out the tumor created by the cinema, the general sexual decadence it might entail could affect such large segments of the social body that the nation and the state have the deepest interest in blocking and extirpating these infected areas. Whoever performs public service as a doctor—and especially anyone employed at a clinic for venereal diseases—is astounded to see that the age group for sexual infection is lowering; I certainly do not need to spell out where this leads.[141]

The film reform movement turned film spectatorship into a biopolitical issue, by claiming that the unsanitary behavior of moviegoers—especially young, female, and working-class moviegoers—could be detrimental to the nation as a whole.

Film reformers also worried about the movies' ability to provoke young viewers into criminal acts, by showing how crimes were committed (the Cologne report calls the cinema a "crime school") and glorifying criminals.[142] Although jurists like Hellwig had trouble proving a direct link between a criminal case and a specific film, "it cannot be denied that there is a

137 Albert Hellwig, "Trash Films," in *The Promise of Cinema*, ed. Anton Kaes et. al., trans. Michael Cowan.
138 Lange, *Das Kino in Gegenwart und Zukunft*, 45.
139 Albert Hellwig, *Schundfilms: ihr Wesen, ihre Gefahren und ihre Bekämpfung* (Halle: Buchhandlung des Waisenhauses, 1911), 61.
140 "Aktenstück Nr. 2317," 2511.
141 Ike Spier, "Sexual Danger in the Cinema," in *The Promise of Cinema*, ed. Anton Kaes et. al., trans. Sara Hall.
142 "Aktenstück Nr. 2317," 2512.

connection between trash films (and trash literature) on the one hand, and crime, especially among youth, on the other."[143] By remaining at the level of correlation, Hellwig reflected a contemporary tendency in criminology away from assumptions of inborn moral turpitude and toward environmental explanations.[144] In the nineteenth century, criminologists made much of the fact that assaults and murders rose along with seasonal temperatures, for instance, or that people who associated with criminals were more likely to engage in crime. In aggregate, such statistics suggested how crime could be attributed to environmental factors, although it could not be predicted at the individual level (who, exactly, would or would not commit a crime). For reformers like Hellwig, crime films were dangerous because they extended the reach of the "criminal milieu"—what had been restricted to particular social networks or neighborhoods could now seep out into the general population. At the movies, young men could experience the criminal milieu and befriend gangsters by proxy.

At base, the film reform movement was a discourse of public health. Film reformers applied the language of disease and contagion to the new medium by describing its detrimental effects on the health of populations perceived to be vulnerable—youth, women, and the working class. They created an epidemiology of cinema by investigating its influences on the bodies and minds of spectators and developing strategies to counteract the spread of what had become endemic to modern culture. Framing cinema as a matter of public health was part of a larger application of a disease model to social questions within criminology and the social hygiene movement, which saw environmental regulation as a crucial means of prevention. In 1903, the influential German criminologist Gustav Aschaffenburg made an analogy to the disastrous 1892 cholera outbreak in Hamburg:

> The work of the health authorities did not end with the extermination of the cholera. They sought for the causes of the epidemic, and, by providing Hamburg with a better water supply, permanently protected it from similar sad occurrences. This "prevention" has always been considered the first and most important duty of the physician, and I know of no more grateful task for the criminologist and sociologist than the prevention of crime.[145]

In 1900, Germany enacted the so-called *Reichs-Seuchengesetz* (national plague law), which mandated the reporting of cases of disease including leprosy, cholera, and typhus, and empowered local authorities to institute quarantines, close down public spaces, prevent large gatherings of people, and myriad other measures.[146] Film reformers hoped for a similar body of law that would regulate the cinema. The doctor Robert Gaupp wrote in 1912:

> And so from a public health perspective there remains nothing left but to demand that the state eliminates a poison that undermines the health of our growing young people. We already have many plague laws [*Seuchengesetze*], why not also for the sake of the state battle a plague that has spread frighteningly to afflict our people [*Volk*], above all our growing youth?[147]

Insofar as cinema threatened a vulnerable population, the discourse of reform saw a role for state intervention.

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143 Hellwig, *Schundfilms*, 67–68.

144 See Andrew Lees, *Cities, Sin, and Social Reform in Imperial Germany* (Ann Arbor: University of Michigan Press, 2002).

145 Gustav Aschaffenburg, *Crime and Its Repression*, trans. Adalbert Albrecht (Boston: Little, Brown, and Co., 1913), 227.

146 "Gesetz, betreffend die Bekämpfung gemeingefährlicher Krankheiten. Vom 30. Juni 1900," in *Die Gesetze betreffend die Bekämpfung übertragbarer Krankheiten* (Berlin: August Hirschwald, 1907), 3–20.

147 Robert Gaupp, "Der Kinematograph vom medizinischen und psychologischen Standpunkt," in *Medientheorie 1888-1933*, ed. Albert Kümmel and Petra Löffler (Frankfurt am Main: Suhrkamp, 2002), 113.

While most film reformers wrote from a position of social conservatism and preached obedience to the state, the discourse found resonance on the socialist left as well. In 1912, the social-democratic feminist journal *Die Gleichheit* (Equality) published an article by the (male) author P. Max Grempe, which decried the cinema for the way it "often ridicules any women who stray from the road of thoughtless tradition in order to explore new ideals," and "characterize[s] the struggling, class-conscious proletariat as the troublemakers." Echoing the conservative reformers, Grempe claimed that "in light of women's greater sensual excitability and the preponderance of emotions in their lives, living pictures must have a more powerful effect on them than on men," making them particularly vulnerable to movie propaganda.[148] He urged the socialist movement to engage in filmmaking for its own cause. A respondent, writing under the pseudonym "Roland," questioned Grempe's image of working-class gullibility; the alternative he proposed, however, was to allow "the proletariat to reach the heights of art" by making the bourgeois temples of art accessible to all, rather than embrace the pseudo-art of film and promote the growth of a specifically socialist culture. As Andreas Killen notes, "discourse about spectatorship was constructed around a specific conception of the audience as a social grouping marked by highly stigmatized characteristics: suggestibility, inability to distinguish between fantasy and reality, and a proneness to imitation."[149] Structured as it was around concern for 'vulnerable' populations, film reform discourse was almost necessarily paternalistic, regardless of political affiliation.

Conservative and socialist film reformers nonetheless shared a resistance to the capitalist principles that dominated cinema culture. As discussed above, along with advertising cinema embodied a visual dynamism and excess that some perceived as another form of industrial pollution, akin factory smoke or chemical runoff. And as with factories, chemicals, and other products of modern science, Dr. Gaupp suggested that "the danger exists that Lumière's wonderful invention, which enabled us truly and objectively to render the movements and actions of a living being and to record them for those who come after, will be exploited by profit-hungry capitalists for purposes that do serious damage to our people."[150] The film reformers feared that the effort to increase profits through various forms of visual address would do so without regard to the basic needs of the human organism (in other words, the customer). This sensitivity to the environmental effects of moving images thus entailed opposing the excesses of the profit motive. Lange put it bluntly, admitting "that the cinematic reform we aspire to would, at first, cause financial harm to some cinematograph owners and film producers."[151]

Measures Taken

What could be done? Around 1910, city and state building codes began to specifically regulate movie house construction, which helped prevent some of the more immediate dangers to life and health associated with the cinema (most prominently, fire). While such measures ensured that films were projected safely and that crowds could move about safely within the exhibition environment, they did not address other sorts of effects on spectators. The question of film

148 P. Max Grempe, "Against a Cinema That Makes Women Stupid," in *The Promise of Cinema*, ed. Anton Kaes et. al., trans. Eric Ames.

149 Killen, "The Scene of the Crime: Psychiatric Discourses on the Film Audience in Early Twentieth Century Germany," 106.

150 Gaupp, "The Dangers of Cinema."

151 Konrad Lange, "The Cinematograph from an Ethical and Aesthetic Viewpoint," in *The Promise of Cinema*, ed. Anton Kaes et. al., trans. Alex H. Bush.

reform could be framed solely as an issue of censorship—what sorts of content did the reformers want to restrict, in terms of what appeared on the screen? This would be too narrow, however. As a hygienic discourse, film reform was ultimately concerned with how cinema affected spectators. Film content was one environmental factor, among others, in the ensemble of organism and environment; censoring film content was therefore just one possibility. Could film be made beneficial, or at least less poisonous? If so, how?

In 1909, Georg Kleibömer described a visit to Leipzig's "Kosmos Theater for Instruction and Amusement," whose design differed from typical movie houses of the time. The theater can be understood as an early attempt to create an environment that balanced learning with visual attraction:

> The walls and windows are not covered with those large and dreadful (dreadful both in the scenes they contain and in their style) posters painted in loud colors, which mock all of our efforts to give our children an aesthetic education. Rather, in display cases in the entrance, one sees tasteful, colorful pictures from other countries together with educational photographs of interesting technological processes.

Kleibömer praised the relative calm of the space, which he found clean of the visual noise that usually characterized movie houses (and urban space generally). While hewing to an aesthetic of attractions, the educational nature of the displays codes the space as one in which visitors could reflect on industrial culture, and their geographic diversity speaks to a desire for young people to expand their frame of reference. In Kleibömer's depiction, the lobby's design functions to shield the viewer from modernity's sensory distractions. Distraction, according to this logic, localizes its victims, restricting their awareness to the present and preventing them from thinking contemplatively. The auditorium cut down on distraction even further:

> Entering the theater, one is pleased, first of all, not to find a bare room with whitewashed walls, but rather a homely space decorated with real taste. In addition, anyone who cares about the morality of our children should be filled with joy to see that this theater contains none of those dozens of machines and automatons which, insistent and numerous as they are, burn a hole underneath the nickels in children's pockets. And everyone who cares about our children's health will be pleased to know that here, spectators' nerves are not systematically ruined by uninterrupted, scandalous music. The only instrument present is a piano which, with the help of a metronomic device, has the same pleasant effect as a phonola.

The design choices Kleibömer describes all work to temper the extremes of industrial modernity. For bourgeois critics, bare walls signaled a brutal functionalism that had no regard for the living, feeling human being; color and decor provide a buffer between the audience and the functionality of architecture. Praise for the absence of coin-operated fairground amusements, moreover, reflects the film reformers' distaste for the profit motive, especially when it preyed on the suggestibility of children. Finally, the music, with its simplicity and metronomically regulated tempo, promises to underscore rather than overwhelm. By avoiding extremes of color and sound, the Kosmos Theater embodied a hygienic sensibility suited to education rather than suggestion. In many ways, the theater anticipates practices that would spread to mainstream movie houses in the 1910s that hoped to attract a more monied clientele.

Reforming the theater space for pedagogical purposes was one option; bringing film into the classroom was another. In 1919, Joseph Frank, a member of the Prussian parliament, expressed excitement in the socialist journal *Die neue Zeit* (The New Age) over a new technology for projecting films in daylight:

> The recently invented daylight-screen and the instructional film viewing box make it possible to show such moving images even in fully illuminated spaces, in the classroom or outdoors, so that the teacher can give his full attention to the students, as well remaining present to the students when lecturing. Moreover, the

> student or listener can make notes or consult reference works during the presentation, to orient himself to what is being shown.[152]

For Frank, the darkness of the movie house was simply irreconcilable with pedagogical aims. No matter how much it reduced the amount of distractions, the cinema could not be a place of learning. Indeed, it seems that the lack of distractions was precisely the problem. By focusing solely on the image, young viewers lost their sense of orientation and forgot the outside world. If anything, more distraction was needed—it just had to be the right kind of distraction. Daylight projection promised to allow teachers and students to assert themselves alongside the moving image, by drawing attention to certain things and taking notes. Moreover, if the lights could stay on, teachers could maintain a supervisory gaze and observe students while they watched. Spectatorship could thus be monitored and managed in a way that was impossible in the movie house.

In any case, making film hygienic such that it could be used pedagogically did not stop with reforming exhibition space. It required thinking about the films themselves. Film reformers, moreover, were not just interested in censorship, but advocated certain types of films they saw as having salubrious effects—most prominent among these were images of nature. Kleibömer described a film screened at the Kosmos Theater that "showed the Lüneburg Heath, with all of its natural charms in the most favorable light." In line with the program's instructional aims, the film was "accompanied by a lecture given in clear, comprehensible language, which provided the necessary explanations for the images."[153] Such films, it was thought, could have special meaning for urban moviegoers: as Konrad Lange wrote, those in the cities might only be able to experience nature "after long and costly journeys. The preeminent value of the nature film is that it familiarizes many people with nature; it makes possible a more complete, more comfortable, and less expensive view of nature than they could have in reality."[154] Lange acknowledged that industrial society made the quiet contemplation of nature a luxury available only to few, and moving images offered a cheap, but still potentially therapeutic substitute. If watching crime films constituted a virtual exposure to the criminal milieu, making it more likely for spectators to commit crimes, then watching a nature film might function similarly, promoting health through visual contact with nature.

The supposed hygienic effects of nature films should be understood in the larger context of urban housing reform and attempts to 'green' the city around 1900. From the perspective of social reform, one of the worst aspects of the modern metropolis was the way it seemed to eradicate any sense of the natural world, covering everything in a monotonous gray. Inspired in many ways by Garden City Movement in Britain, social reformers in Germany sought ways to integrate the built environment and its natural surroundings, by creating spaces like gardens, parks, and playgrounds, or by providing affordable transport beyond the city.[155] In 1910 the writer Heinrich Pudor advocated the creation of people's parks at various points on Berlin's perimeter as well as in the city center, which would function as "mass-production sites for oxygen and woodland ozone," providing badly needed clean air to the city's inhabitants.[156] The

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152 Joseph Frank, "Der Film von heute," *Die neue Zeit* 38, no. 2 (1919): 43.

153 Kleibömer, "Cinema and Schoolchildren."

154 Lange, *Das Kino in Gegenwart und Zukunft*, 74.

155 See Ladd, *Urban Planning and Civic Order in Germany, 1860-1914*, 67–73. British and U.S. urban planners were also inspired by German visiting German cities—see McElligott, *The German Urban Experience*, 40–42.

156 Heinrich Pudor, "The People's Park in Greater Berlin," in *Metropolis Berlin: 1880-1940*, ed. Iain Boyd Whyte and David Frisby, trans. David Frisby (Berkeley: University of California Press, 2012), 256. He suggests Berlin's

central park, he hoped, "will be a people's park that the population will use for recreation on Sundays, that will promote delight and education, and that will provide the surrounding city quarters with fresh air, day after day and night after night. It will weave light, green, and joyful colors into the excessively uniform gray weave of the street network, and bring colorful nature into the culture of the city."[157] Hygienic principles, aesthetic pleasure, and social harmony hung together in the reformist imagination. By bringing nature back into the city, it was hoped that parks and other green spaces would reduce social tensions produced by industrial capitalism. Lange thought that film, too, could contribute to this goal, writing that the nature film "wraps a ribbon around the people . . . by uniting them in the joint contemplation of nature. Its effect is therefore: extending and deepening the contemplation of nature and intensifying the feeling of community, two important psychological and social effects, which from a universal human point of view can only be welcomed."[158] While many in the medical profession saw film as a medium of mass communication, a way to spread knowledge of hygiene to the working class, reformers like Lange explored how film might itself function as a hygienic technology. The nature film was one such use, insofar as it could provide urban viewers a virtual experience of the light and air the city otherwise lacked. This way of thinking about film, as a hygienic technology that could promote life rather than poison it, echoes similar attempts around 1900 to use technology to harmonize modernity and nature. The automobile was also discussed in this way, by those who hoped it would offer people the mobility necessary to venture out of the city and into nature.[159]

While these pedagogical solutions to the problem of cinema were promising, legislative action remained a major goal of the film reform movement. Elaborating a hygienic counter-cinema, through the establishment of movie houses and film programs that emphasized instruction over amusement, would do nothing to stem the tide of 'trash films' purveyed by the industry. Only a legal regime could hope to regulate this ubiquitous visual pollution. In 1912, the indefatigable Albert Hellwig considered how regulation of the film industry might be given a legal basis—a tricky question given the novelty of film. Earlier laws, of course, did not take the specific characteristics of the new medium into account. There had been attempts to regulate cinemas under German trade law, which required for-profit venues to obtain permission to present "musical comedy, sung and spoken presentations, exhibitions of people or theatrical presentations."[160] As Hellwig reported, however, the German Oberverwaltungsgericht (Higher Administrative Court) determined in 1908 that this ordinance did not apply, deciding that the presentation of *mechanical reproductions* of persons was not the same thing as the presentation of persons.[161] Local police could still regulate the "practice of business" (*Ausübung des Gewerbes*), which pertained to issues of public safety and security (discussed in Chapter One) but did not address the films themselves.

Tempelhof field as a possibility—the site of an airport from 1923 until 2008. In 2010, the Tempelhof re-opened as a public park.

157 Ibid., 258.

158 Lange, *Das Kino in Gegenwart und Zukunft*, 74.

159 See Rudy Koshar, "Organic Machines: Cars, Drivers, and Nature from Imperial to Nazi Germany," in *Germany's Nature Cultural Landscapes and Environmental History*, ed. Thomas M. Lekan and Thomas Zeller (New Brunswick, NJ: Rutgers University Press, 2005), 111–39.

160 T. Ph. Berger, ed., *Reichs-Gewerbe-Ordnung, nebst Ausführungsbestimmungen*, 12th ed. (Berlin: J. Guttentag, 1893), 33.

161 Albert Hellwig, "Öffentliches Kinematographenrecht," *Preußisches Verwaltungs-Blatt* 34, no. 12 (December 21, 1912): 200.

When it came to restricting content, Hellwig found that the only pertinent law at the national level that could be called upon in the fight against films was the federal anti-pornography law, which prohibited "obscene writings, images, or presentations."[162] Any further censorship of film content had been undertaken at the state or municipal levels; Hellwig was interested in whether a federal censorship law could be considered legitimate. "The only difficulty is the national press law," he wrote, "and, related to this in certain aspects, the stipulation of Article 27 of the Prussian constitutional charter, the so-called basic right of expression."[163] Hellwig's argument for the legality of censorship depended on a careful parsing of this article, in particular its prohibition against interfering with "reproductions of writings and pictorial representations intended for distribution."[164] Films could not be considered "intended for distribution," Hellwig claimed, insofar as moving images were immaterial—they were projected on a wall, not handed out to each spectator, and therefore were not "distributed." More generally, Hellwig relied on the fact that the right to free speech had been determined to apply only to "the press," and therefore did not protect film per se.[165]

Censorship at the federal level was not achieved until 1920. By that point, however, the legal basis for censorship had already been established by the constitution of the Weimar Republic. In the Wilhelmine period, at least, it was not immediately clear that censorship would have abridged basic rights. Article 118 of the Weimar Republic's constitution, however, declared:

> Every German has the right within the limits of the general laws to express his opinion by word, in writing, printing, by picture, or in any other way. . . .
>
> No censorship exists, though different provisions may be passed by law in the case of moving pictures. Legal measures are also permissible for combating obscene and indecent literature [*Schund- und Schmutzliteratur*], as well as for the protection of youth at public plays and spectacles.[166]

Adopted in July 1919, this article gave the discourse of film reform the power of constitutional law. While the article specifies that "obscene and indecent" print material may also be regulated, it makes no such qualification for moving pictures—films of any kind were potentially outside the right to free expression. Unlike other media, film was not considered to be primarily communicative. It was, rather, closer to matters of "community welfare," "the protection of public order and security," or "population policy, provisions affecting maternity, nurslings, young children and adolescents," over which the state also claimed the right of legislation when necessary.[167] The League of German Film Authors (Verband deutscher Filmautoren) had petitioned the national assembly at the constitutional convention, arguing that cinema should be treated in the same way as the publishing industry, and noting the contradiction of asserting that "no censorship exists" while at the same time allowing for "different provisions"—to no effect.[168] The constitution enshrined into law the notion that cinema was first and foremost a matter of public health and safety. As Wenzel Goldbaum noted shortly before the passage of the

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162 Ibid., 201. The full text of the law can be found in Karl Binding and Joh. Nagler, eds., *Das Strafgesetzbuch für das Deutsche Reich vom 26. Februar 1876* (Leipzig: Wilhelm Engelmann, 1905), 56.

163 Hellwig, "Öffentliches Kinematographenrecht," 202.

164 Friedr. Oskar von Schwarze, ed., *Das Reichs-Preßgesetz vom 7. Mai 1874*, 4th ed. (Erlangen: Palm & Enke, 1903), 7.

165 Hellwig, "Öffentliches Kinematographenrecht," 203.

166 "Full Text of the German Republic's Constitution," *New York Times*, September 14, 1919, 40.

167 Ibid.

168 Wenzel Goldbaum, "Überwachung des Films," in *Handbuch der Politik*, ed. Gerhard Anschütz et. al., 3rd ed., vol. 1, *Die Grundlagen der Politik* (Berlin: Walter Rothschild, 1920), 200.

national censorship law, "censorship remains as a law of exception directed toward film."[169] Eva Sturm notes that the censorship law was first discussed in the Committee for Population Policy (*Bevölkerungspolitik*), rather than the Committee for Culture *(Kultur*), which accords with an understanding of film that privileged communal welfare over communication.[170]

While the constitution created a legal basis for censorship, lawmakers still had to work out the form it would take. Questions addressed by the committee tasked with drafting the law included: who would be the censor? What would be the scope of its authority? What would the standards be, and how would these standards be justified? (Only one committee member declared opposition to any form of censorship.)[171] The committee's discussions were carried out in the spirit of the pre-war film reform movement: they opposed the "poisoning of the people," particularly the young, by capitalist interests;[172] and there was general agreement that censorship should be centralized, with decisions made by a group composed of representatives of different social interests. Concerns arose, however, with regard to the standards for censorship and their justification in the language of the law. It seemed clear that the primary censor would have to be located in Berlin, which had the country's highest concentration of film producers. This fact generated worry among committee members from other states that censorship standards would reflect the mores of the big city. For other parts of Germany, Berlin embodied metropolitan degeneration—how could Berliners regulate the film industry for the whole country? As one parliament member demanded, "censorship may not be practiced according to Berlin standards, rather they must also be practiced according to the needs of Paderborn and Siegen. In any case it is also necessary to strongly protect city dwellers against trash and smut."[173] Beyond concern over centralization in Berlin, there was also some disagreement over what language should be used to frame the standards of censorship. As elsewhere in the discourse of reform, reformers mixed moral and medical terminologies, and sometimes these two perspectives did not fit together comfortably. An early draft of the law declared that a film could be denied a permit if the film could threaten public order, "or when the film strip is liable to cause injury to religious feeling [*religiöses Empfinden*], or to be coarsening or demoralizing through the excitement of base desires."[174] In the course of revising the draft, 'religious feeling' had been struck; one committee member argued the phrase should be restored, and the phrase 'excitement of base desires' excised, because of its relative unclarity.[175] The latter avoided religious connotations by couching the standard in a quasi-medical language of stimulation and drives, and thus attempted to give censorship scientific legitimacy. The objector, however, clearly saw how the discourse of hygiene was encroaching on what had been the domain of religious values.

The first paragraph of the *Lichtspielgesetz* (movie law), passed May 12, 1920 by the German National Assembly, required all films that would be shown publicly to be first approved

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169 Ibid., 201.

170 Eva Sturm, "Von der Zensurfreiheit zum Zensurgesetz: Das erste deutsche Lichtspielgesetz (1920)," in *Geschlecht in Fesseln: Sexualität zwischen Aufklärung und Ausbeutung im Weimarer Kino 1918-1930*, ed. Malte Hagener (Munich: edition text & kritik, 2000), 70.

171 D. Mumm, "Aktenstück Nr. 2317. Bericht des 23. Ausschusses über den Entwurf eines Gesetzes über die Prüfung von Bildstreifen für Lichtspiele," in *Verhandlungen der verfassungsgebenden Deutschen Nationalversammlung*, vol. 341, *Anlagen zu den Stenographischen Berichten* (Berlin: Julius Sittenfeld, 1920), 2485.

172 Ibid., 2495.

173 Ibid., 2487.

174 "Aktenstück Nr. 1907. Entwurf eines Gesetzes über die Prüfung von Bildstreifen für Lichtspiele," in *Verhandlungen der verfassungsgebenden Deutschen Nationalversammlung*, vol. 341, *Anlagen zu den Stenographischen Berichten* (Berlin: Julius Sittenfeld, 1920), 2045.

175 Mumm, "Aktenstück Nr. 2317," 2492.

at government *Prüfungsstellen* (examining agencies). The second paragraph of the first section read:

> A permit for a film must be applied for. It can be denied if, upon examination, the presentation of the film is liable to endanger public order and security, injure religious feeling, to coarsen or demoralize, or to endanger Germany's standing or its relationships to foreign states. The permit may not be denied for purely political, social, religious, ethical, or ideological reasons.[176]

In this case, while the interests of "public order" retained pride of place, religious language won out over the discourse of hygiene. At the same time, the law arguably treated religious values as the hygienists did the eye and the ear, like a sense organ vulnerable to injury by extreme stimulation. Hygienic principles appeared more explicitly with regard to the law's treatment of spectators under eighteen years of age. In addition to the reasons listed above, films could be censored "when they cause concern about a damaging effect to moral, spiritual, or hygienic development, or an overstimulation of the imagination of young people."[177] Here the concern with health, overstimulation, and development bears witness to the impact of hygiene rhetoric on the German censorship law. Moreover, the law prescribed that the censoring committees would be composed of the chairman—a civil servant (*Beamter*) "of pedagogical and artistic education"—and four others, including one representative of the film industry and two "persons with special experience in the areas of welfare, education, or youth welfare."[178] The makeup of the committees thus privileged a class of experts that, while likely also religious, would have been very familiar with the principles and aims of social hygiene.

Ironically, the postwar discussion of censorship in Germany centered on a group of films that themselves professed to be in service of social hygiene—the so-called enlightenment films (*Aufklärungsfilme*, also sometimes referred to in English as social hygiene films). These films dealt with social problems, typically of a sexual nature, and the lack of censorship immediately following WWI opened a brief window for such topics to make it onto the screen. The most controversial was Richard Oswald's *Anders als die Andern* (*Different from the Others*), which premiered at the end of May 1919, just weeks before the new constitution was adopted. Telling the story of a gay man who is blackmailed and imprisoned for his sexuality, the film was developed in collaboration with Magnus Hirschfeld, the well-known sex researcher and advocate for homosexual rights. While the film reform movement accused such films of sensationalism, *Different from the Others* displayed a clear commitment to employing visual media according to Enlightenment principles of communication and instruction—the film even includes a scene of Hirschfeld giving a lecture accompanied by slides. For the film reformers, however, whose suspicion of visual media was deeply ingrained, the very act of thematizing sex on film constituted a hygienic threat. The committee that formulated and debated Germany's film censorship law singled out Oswald's film on several occasions.[179] The enlightenment film (at least the kind represented by *Different from the Others*) and the institution of censorship occupied two positions within a debate on national hygiene—one which believed in the communicative possibilities of film to spread knowledge, and another that feared what else might be spread in the process. The two were thus far closer than it might seem on first glance.

176 "Lichtspielgesetz. Vom 12. Mai 1920," *Reichs-Gesetzblatt*, May 15, 1920, 953.
177 Ibid., 954.
178 Ibid., 955–56.
179 On this film's role in the censorship debate, see James D. Steakley, "Cinema and Censorship in the Weimar Republic: The Case of Anders Als Die Andern," *Film History* 11, no. 2 (1999): 181–203.

Salubrious Visions

The film reform movement worked to domesticate cinema according to a normative model of human health and perception. It considered the moving image an environmental hazard, born out of the spirit of capitalism, which provided stimulation in excess of the human organism's ability to cope. Whether by creating exhibition spaces suited to pedagogy, advocating the gentler aesthetics of the nature film, or by prohibiting sensationalist 'trash films,' its reform strategies were aimed at curbing cinema's technological and capitalist excesses. Within conceptions of proper health and development borrowed from hygienic science, film reform attempted to bring cinema back within the human being's 'natural' range of tolerance. Contemporary to the film reform movement, however, other writers embraced the non-normative modes of vision that cinema made possible. While hygienists feared the extremes of sensation activated by the moving image, this strand of spectatorship discourse relished them as new forms of vitality. In this way, the work of the early film theorists constituted a competing discourse on the biopolitics of movie-going. Film reform and early film theory in Germany both framed spectatorship in terms of its effects on life, but the latter embraced cinema because it seemed to promise freedom from the normalizing prescriptions of hygiene.

In 1920, the architectural critic Heinrich de Fries published an article on a group of German films released that year and characterized by novel set design—*Das Cabinet des Dr. Caligari* (*The Cabinet of Dr. Caligari*, Robert Wiene, 1920), *Von morgens bis mitternachts* (From Morning to Midnight, Karlheinz Martin, 1920), *Algol* (*Power*, Hans Werckmeister, 1920), and *Der Golem, wie er in die Welt kam* (*The Golem*, Paul Wegener, 1920). These films were symptomatic of a larger enthusiasm within mass culture for 'expressionist,' 'cubist,' or 'futurist' design in Germany immediately after WWI, and were later categorized as the first wave of German expressionist cinema. The seriousness with which de Fries discusses the images of these films—the essay is accompanied by over twenty stills—gives it an analytical depth that was truly unique for its time. Unconcerned with whether the films were part of a definable artistic movement, de Fries was interested above all in their treatments of space, which, given the sorry state of the German economy, was far more ambitious than anything that could be attempted in architecture.

As had happened in other arts before the war, film was departing from the mimetic reproduction of nature and exploring the possibilities of subjective space, thereby producing, according to de Fries, a "sense of the indissoluble relationships between people, space, and fate."[180] To frame his discussion, de Fries distinguishes between image (*Bild*) and space (*Raum*). For de Fries, images are static and two-dimensional, whereas spaces are dynamic and three-dimensional. Given these idiosyncratic definitions, there is no such thing as a three-dimensional, much less "moving," image. With regard to film, he admits, "each individual frame on a film reel is thus unquestionably a picture [*Bild*]."[181] Projected in succession, however, these images undergo a qualitative transformation:

> That a sequence of takes capturing action (and even showing a landscape) is space, is likewise unquestionable. Observation: The addition of live action (also of a mental nature) necessarily parallels the addition of the third dimension. A picture becomes space through the third dimension (even if it is only the illusion of the third dimension).[182]

180 Heinrich de Fries, "Spatial Design in Film," in *Film Architecture: Set Designs from Metropolis to Blade Runner*, ed. Dietrich Neumann and Donald Albrecht (New York: Prestel, 1996), 184.
181 Ibid.
182 Ibid.

Of themselves, de Fries considers images without depth because they are without time. Depth, the third dimension, can only emerge in time, indeed, is inseparable from time: two dimensions or four, there is no in-between. By adding a temporal dimension, film simultaneously opens the flat image to a depth "unlimited by comparison, and to an infinitely greater degree than on the stage."[183] For de Fries, film does not represent space, but *becomes* space in a real sense.

De Fries was concerned with these films as examples of "spatial design" (*Raumgestaltung*), a concept he borrowed from the architectural historian and theorist August Schmarsow. Schmarsow considered architectural space to be grounded in bodily movement and perception, which could not be represented quantitatively. Against the image of architecture as static and monumental, Schmarsow proposed that architectural space was rhythmic, unfolding in time according to the sensory capacities of the observing body. Emphasizing the living subject's experience of space, Schmarsow argued that the development of architecture could be understood as the history of how human beings have projected their unique bodily constitution, their ability to see, move, and touch, onto the world around them and shaped it for their own uses. He thereby hoped to counter an increasingly mathematical view of space. The concept of spatial design

> does not solely deal with *space*, which one grasps abstractly and analyzes mathematically, but also with its *design*, and this presupposes a sensuous material belonging to our given world, or is present as already worked over by people, that is, it is design by people for people, a corporeal body infused with the creative will of the subject.[184]

In stressing the projection of the human body onto the material world, Schmarsow was in dialogue with an important strain of German aesthetic thought around 1900—the theory of empathy (*Einfühlungstheorie*). Writers such as Robert Vischer and Theodor Lipps likewise located aesthetic experience in a kind of anthropomorphic drive, whereby the perceiving subject "enlivens" the environment by projecting itself onto it—an activity these writers equated with life as such.[185] According to the theory of empathy, living meant engaging in empathic projection with the world outside, and it was out of this activity that space-time, the rhythm of being, emerged. Returning to de Fries's distinction between space and image, he remarks with regard to film that "a picture [*Bild*] is a state, part of an action, in itself dead. Space is the whole course of the action, a sequence of states, hence a sequence of pictures, utterly alive."[186] Images, in this view, can only be enlivened by way of empathic projection, the animating activity of the observer. The film viewer, on the other hand, sees the images in succession and thus experienced film space as immediately living, "as independently acting, extremely vital and active organism."[187] In de Fries's article this experience seems simultaneously de- and re-familiarizing—able to represent living space, film exploded the spatial stasis of painting and photography, while at the same time reminding the viewer of the intimate relationship between space and the human body.

"The sixth sense of man," wrote Herman G. Scheffauer, "his feeling for space or room—his *Raumgefühl*—has been awakened and given a new incentive" by the cinema.[188] Scheffauer's

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183 Ibid.

184 August Schmarsow, "Raumgestaltung als Wesen der architektonischen Schöpfung," *Zeitschrift für Ästhetik und allgemeine Kunstwissenschaft* 9, no. 1 (1914): 74.

185 For an overview of the theory of empathy with a collection of translated texts, see Harry Francis Mallgrave and Eleftherios Ikonomou, eds., *Empathy, Form, and Space: Problems in German Aesthetics, 1873-1893* (Santa Monica, CA: Getty Center for the History of Art and the Humanities, 1994).

186 de Fries, "Spatial Design in Film," 184.

187 Heinrich de Fries, "Raumgestaltung im Film," *Wasmuths Monatshefte für Baukunst* 5, no. 3/4 (1920): 75.

188 Herman G. Scheffauer, "The Vivifying of Space. I," *The Freeman* 2, no. 37 (November 24, 1920): 248–49.

article "The Vivifying of Space," published in the New York journal *The Freeman* shortly after "Spatial Design in Film," discussed the same body of films and emphasized their immersive qualities, which deny the viewer a sense of separation from filmic space.[189] In *Caligari*, he writes, visual perspective is manipulated so forcefully that it threatens to "overwhelm the spectator," to "transfix him with its linear life, to draw him into the trammels, the vortex of the action."[190] As space, film does not respect the separation between viewer and representation that defines the regime of images, and as such seems to inaugurate a new kind of sense perception—or, rather, film has "awakened" this sense, which had lain dormant and unrealized. Where the film reform movement worked to re-institute the boundary between spectator and moving image, because the latter threatened to stimulate the senses to the point of injury, writers like de Fries and Scheffauer glimpsed new capacities for human sensation. Against the normalizing discourse of social hygiene, which was founded on a static model of natural human tolerances, they hoped cinema could reform perception itself.

Both writers imbued the sense of space with utopian yearning. "The third dimension," de Fries wrote, "that is, the dimension of spatial depth away from the picture surface—is the most decisive factor in the ideal aim for the synthesis of man and nature, of the activity of human existence and the surroundings [*Umwelt*]—up to the stars—in which it takes place."[191] De Fries links the separation between viewer and representation that obtains with the two-dimensional image to a critique of urban estrangement, common in architectural discourse of the period, which lamented "a generalized sense of distantiation, of individual isolation, from the mechanical, mass-oriented, rapidly moving and crowded metropolis."[192] The sense of estrangement was often tied to what critics perceived as the hegemony of vision in modern culture, and the attendant devaluation of the other, 'lower' senses. Schmarsow's corporeal theory of spatial design, in particular its emphasis on movement and touch, was meant to resist the "strange exclusivity that the eye would like to claim as the sole determinant of sculptural creation," which he felt had also dominated histories of art and architecture.[193] De Fries likewise valued film for its more-than-optical effects, for the sense of depth and plasticity introduced by movement.[194] While the sense of space in film may be generated by optical impressions, it assumes a corporeality that was not purely visual, and de Fries was hopeful that the popularity of cinema indicated a salubrious tendency in modern culture: "Awareness of the vitality of space is already growing, and comprehension of the third dimension is progressing."[195]

Scheffauer, meanwhile, pointed to another aspect of estrangement he hoped film could help overcome:

> If alone our feeling for space be developed aesthetically by the possibilities of the film, as physically by the possibilities of the aeroplane, if alone this sixth sense grow subtler and sharper, we shall achieve a finer adjustment of man to his environment, a closer contact with the abstract and concrete worlds, a new

189 Scheffauer was clearly inspired by de Fries's article, to the point of plagiarism. Scheffauer nonetheless makes some original points that are worth discussion here.
190 Scheffauer, "The Vivifying of Space. I," 249.
191 de Fries, "Spatial Design in Film," 184.
192 Anthony Vidler, *Warped Space: Art, Architecture, and Anxiety in Modern Culture* (Cambridge, MA: MIT Press, 2000), 64.
193 Schmarsow, "Raumgestaltung als Wesen der architektonischen Schöpfung," 66.
194 On haptic and sculptural aspects of silent cinema, see Antonia Lant, "Haptical Cinema," *October* 74 (1995): 45–73. and Michael Wedel, "Sculpting with Light: Early Film Style, Stereoscopic Vision and the Idea of a 'Plastic Art in Motion,'" in *Film 1900: Technology, Perception, Culture*, ed. Klaus Kreimeier and Annemone Ligensa (New Burnet, England: John Libbey Publishing, 2009), 201–23.
195 de Fries, "Spatial Design in Film," 185.

> harmony with nature, and the universe. Man shall not only know by hypothesis that the earth is not flat and still, but shall feel by sense and instinct that it is round and in flight. He shall come to know the earth as his own house, though he may never have escaped the narrow confines of his hamlet. The blurred, narrow windows of his imagination may then become doorways—wide and always open.[196]

Scheffauer posits a disjunction between rational knowledge and bodily experience, which cinema, along with other forms of modern technology, holds the promise of reconciling. Borrowing de Fries's opposition between image and space, we might say that science is imagistic—it can freeze the world in order to understand it, but, in the process, the world becomes deadened and separated from the observing subject. The environment is no longer in living dialogue with the whole of the human organism. The wish is that the image of the world produced by science can once again, through technological evolution, become space, accessible to immediate bodily experience. Outstripped by the mind, the body might use cinema to re-appropriate rational abstractions as corporeal knowledge. Such hopes anticipated Walter Benjamin's suggestion in "The Work of Art in the Age of Its Technological Reproducibility" that cinema may be used to adjust perception and assist in re-establishing the balance between the human organism and modern technology.[197]

The Hungarian writer and film critic Béla Balázs attached similar desires to cinematic perception, although he framed them differently. The principle distinction in his 1924 book *Visible Man* is that between word and image. For Balázs, modern culture was not imagistic—on the contrary, since the Enlightenment Western civilization had been dominated by writing, and consequently, it had become estranged from the visible world. It was not pictures that separated human beings from their environment, but words, which, being a solely human tool, left everything else silent. "In the world of the speaking human," he writes, "non-speaking things are much less lively and much less significant than the human. They acquire only a life of the second and third degree, and this only in the rare moments of particularly clairvoyant sensitivity of the people who consider them."[198] Film, by silencing the human being, therefore offered a space in which the vitality of the non-speaking world could be revealed. In film, things "are not as slighted and degraded. *In shared silence, they become nearly homogenous with man and thereby gain in vitality and significance*. Because they do not speak less than people, they therefore say just as much."[199] Film encouraged a mode of perception that did not recognize distinctions between human and non-human, and thus had the potential to liberate the moviegoer from an anthropocentric worldview. Like de Fries and Scheffauer, Balázs saw in film the hope of overcoming modern estrangement and reconciling the human being with its environment.

Like the film reformers, cinema enthusiasts such as de Fries, Scheffauer, and Balázs were critics of modernity, but they came to very different conclusions about film's problems and potentials. The film reform movement understood cinema as part of an urban environment whose stimulations threatened the health of those who lived within it. In this view, cinema was of a piece with the poor working and housing conditions, industrial pollution, and criminal temptations that characterized the modern city. In line with principles of social hygiene, solutions were mostly to be pursued by managing its environmental dangers—by controlling the

196 Herman G. Scheffauer, "The Vivifying of Space. II," *The Freeman* 2, no. 38 (December 1, 1920): 276.
197 Miriam Hansen discusses this in terms of Benjamin's notion of "second technology." See Miriam Bratu Hansen, *Cinema and Experience: Siegfried Kracauer, Walter Benjamin, and Theodor W. Adorno* (Berkeley: University of California Press, 2012), 189–95.
198 Béla Balázs, "From 'The Visible Human,'" in *German Essays on Film*, ed. Richard W. McCormick and Alison Guenther-Pal (New York: Continuum, 2004), 88.
199 Ibid., 88 (emphasis in original).

space of the movie house, on the one hand, and regulating content through censorship on the other. Through environmental hygiene, it was possible to protect the perceptual and moral health of spectators. Only in isolated cases, such as the nature film, did the film reform movement suppose that moving images might have salubrious effects on human perception. Friends of film, meanwhile, similarly decried the estrangements produced by industrial life, but saw in cinema a qualitative leap with the potential to bridge the gap between the human being and an alienated environment. Rather than deadening perception, they hoped film could revitalize it and, in the process, reanimate the world.

In her insightful reading of German film theory in the silent era, Assenka Oksiloff has shown how theorists drew on ethnographic descriptions of "primitive" perception to critique a nineteenth-century ideal of scientific perception, which privileged vision, stable perspective, and a strict separation between subject and object. In studies of narration and representation within non-Western cultures, German ethnography around 1900 attributed to these cultures a fundamentally different regime of perception, which did not separate vision from the other senses and did not distinguish strongly between representation and reality. Oksiloff finds this ethnographic imagination of the non-European Other mapped onto film spectatorship in the writings of Georg Lukács, Hugo von Hoffmannsthal, and Balázs. The almost supernatural power with which these writers imbued the cinematic image invoked ethnographic accounts of animism: "Common to both the cinematic and the primitivist is an emphasis upon a visuality that is highly corporeal in nature, engaging the entire body."[200] In harkening back to a primitive mode of perception, cinematic spectatorship seemed to promise an escape from a rigidly defined and alienated self. One finds this ethnographic gaze in de Fries and Scheffauer as well, for whom, in the cinema, "a new magic ensues, a new mystery possesses us."[201] Indeed, the film reformers too attributed to cinema a suggestive power that bordered on magic—their response, however, was to contain this power and preserve the integrity of vulnerable spectators. They wished to purge the cinema of its primitive elements, re-establish the primacy of distanced contemplation, and neutralize its threat to Enlightenment subjectivity.

Cinematic spectatorship thus became a site of biopolitical debate in early twentieth-century Germany, a debate that framed moviegoing in terms of its injurious or salubrious effects on the moviegoer. The discourse of film reform made the health of the spectator into an object of administration, something to be managed according to hygienic principles for the benefit of the nation. It assumed that human perception functioned best in 'natural' surroundings, applied this normative model to the cinema—and found it wanting. Cinema's modernity threatened national health by overstimulating viewers, exposing them to sexual temptation, and inducting them virtually into spaces of urban poverty and crime. Like the urban slum, the movie screen constituted an environmental hazard, and demanded regulation and reform. Early film theory, meanwhile, discovered in film a mode of perception that transgressed the supposed norms with which the reform movement had justified its interventions. Rather than assume that human perception was a fixed quantity, that could be damaged when its supposedly normal tolerances had been exceeded, they imagined the possibility that perception, in the cinema, would reveal its plasticity. It offered the human organism a novel environment in which to experience a kind of vitality beyond the norms posited by hygienic science.

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200 Assenka Oksiloff, *Picturing the Primitive: Visual Culture, Ethnography, and Early German Cinema* (New York: Palgrave, 2001), 114.

201 Scheffauer, "The Vivifying of Space. I," 249.

II. Cinematic Ecologies

CHAPTER THREE
Glasshouses and Gilded Cages: The Film Studio, *Madame Dubarry*, and the Art of Individuation

If the movie house of the silent era was a controlled environment for spectatorship, the film studio was its uncanny double. In this chapter I examine studio filmmaking as a cultural practice no less predicated on environmental controls than film exhibition; but where exhibition catered to the comfort of the viewer, the studio was tailored to the inhuman eye of the movie camera. The environmental controls instituted in the film studio served the material needs of image production, which were not always comfortable to the people involved in this process. I argue that the studio's managed environment is precisely what allowed filmic individuals (in other words, characters) to emerge. Environmental management in the studio served the aesthetic goal of individuating people and things within the moving image. Ernst Lubitsch's 1919 film *Madame Dubarry*, one of Weimar cinema's first monumental productions as well as one of its most successful, can be read as a visual drama of individuation. This drama, in which the protagonist Jeanne struggles to distinguish herself from environments (and social structures) that work to push her into the background, has political implications. The film, especially its production and reception, offers a case study in the politics of monumental filmmaking and its strange position between aristocratic and democratic visual regimes.

The "Natural Atmosphere" of the Glasshouse

In 1929 the cameraman Guido Seeber reviewed three and a half decades of film production practice. The very first films were made outdoors, and captured scenes of everyday life. People were soon filming staged scenes—still outdoors, however, since filmmaking depended on sunlight. Filmmakers would erect basic outdoor stage sets, often on the roofs of buildings. These sets were sometimes rotatable, so that they could be adjusted to best exploit the light of the sun as it moved through the sky. "But to be more independent from the frequently less-than-advantageous weather," Seeber wrote, "people began covering the old open air stages with glass."[202] At first these constructions were relatively small, resembling a photography studio, with one side sometimes left open for filming exterior scenes. They subsequently expanded to sizes closer to that of a greenhouse, and indeed the German name for these early studios, "glasshouse" (*Glashaus*), was used to designate greenhouses as well. Glasshouse studios operated from the early 1910s to the mid-1920s, because artificial lighting, in Germany at least, only gradually proved more economical than sunlight.

Like tropical flora, the technology of filmmaking had specific environmental requirements. In particular, they shared a need for light (and to a lesser extent temperature), hence the usefulness of the greenhouse as a model for the film studio. Filmmakers quickly realized that insulating the production process would help maintain a suitable temperature for filming, if not the requirements of sunlight. Seeber's account also linked the growing importance of fiction

202 Guido Seeber, "Etappen der Vergangenheit," *Filmtechnik* 5, no. 23 (November 9, 1929): 490.

filmmaking to the environmental infrastructure of the studio. As filmmakers increasingly turned to fictional subjects, and extended these subjects into longer narratives, they depended more and more on environmental controls that protected them from the weather. To put it somewhat reductively, we might say that much of classical filmmaking depended on repressing or regulating the materiality of the surrounding environment—an incredible, often forgotten labor upon which the world of the screen rested. (Genres specializing in exterior locations, such as the American Western or the German mountain film, are exceptions that prove the rule.) Freeing film production from the weather and providing it with environmental conditions in which vision could dominate required mobilizing knowledge from various disciplines, from architecture and industrial hygiene to chemistry and physics.

Urban Gad's 1921 book *Der Film: seine Mittel—seine Ziele* (Film: Its Means—Its Goals) provides a view into the complex problems of environmental control presented by film production. This Danish filmmaker, best known for the films he directed starring Asta Nielsen, offered advice on the best location for a film studio:

> The location of the terrain must have easy access to a city, so that the transportation of people and things can proceed as quickly as possible. And since there is nothing on God's great earth that a film production facility may not need, the studio is best located in proximity to a large city, because it offers the best possibility of providing these things.[203]

Efficient film production depended on the city. The film studio drew upon the city like a natural resource, because it made available the labor, materials, and expertise necessary to make films. At the same time, choosing the location for film production was not as simple as going indoors:

> For photographic reasons, the film studio must have ample sunlight and cannot therefore be located in the middle of a smoky and dusty city. It must be housed in a suburb, where there are no belching factory smokestacks. . . . And it is helpful for the facility if the surroundings offer the possibility for shooting landscape images. The grounds of the film studio must be located such that tall neighboring buildings, especially in the south and southwest, do not detract from the amount of light.

If the city was a resource, it also had drawbacks, insofar as its buildings, smoke, and dust blocked access to sunlight and hindered the filmmaker's ability to control the environment. Film, it turned out, required precisely those natural resources so vociferously advocated by hygienists and social reformers around 1900—light and air. Ironically, film technology seemed temperamentally averse to the urban milieu with which it had become so strongly associated. Like a rich neurasthenic, addicted to the stimulations of the city but in need of country air, moviemaking left its downtown pied-à-terre to make a home just outside the city, far enough away to calm the nerves but still close enough to see the sights. As factories-cum-sanatoria, efficient and successful film studios implemented hygienic techniques that catered to film's environmental needs and provided it with ample material for spectacular images. A location on the periphery of a large city was the best site for this celluloid botany, where it could be properly stored, exposed to light, and bathed in chemicals.

In 1911, Seeber had been tasked by his employer, the Deutsche Bioscop-Gesellschaft, with finding just such a location. Space was tight in Berlin, and its atmospheric conditions were less than ideal. In searching out a new home for the studio Seeber found what would become the most important studio site of the German silent period—Babelsberg. Located southwest of Berlin, Babelsberg offered ample space for expansion, existing industrial infrastructure that could be repurposed, and nearby natural areas that would be suitable as backdrops. Deutsche Bioscop hired a Berlin firm with experience in constructing photography studios to build its first

203 Urban Gad, *Der Film: seine Mittel—seine Ziele* (Berlin: Schuster & Loeffler, 1921), 48.

glasshouse, which was completed in 1912.[204] Attached to an existing factory building, the glasshouse had an iron construction with no interior supports, so as not to interfere with filming inside, and sat at ground level, to allow materials to be brought in without an elevator. It could also be opened to the outside, for filming scenes with exterior backgrounds. Asta Nielsen's *Totentanz* (*The Dance to Death*, 1912), directed by Gad, was the first production filmed there.[205] The company soon bought more land on the site and constructed a second, larger glasshouse, attached to a new copying facility whose facade was itself decorated in different historical styles to serve as a backdrop.[206]

The sun dictated both the orientation and the interior layout of the glasshouse film studio. In order to make best use of northern European daylight, the length of the building had to face south, the direction from which the most sunlight would enter. The camera would then usually face north, in the direction of the light. (Studios also often contained rotatable stages, so that the action could be turned to the best lighting conditions.)[207] The northeast corner could be used for storage and traffic into and out of the studio, because this area received the least amount of light during working hours.[208] Ideally, Gad also advocated placing the studio on the second floor of a building or higher. Shortly after Babelsberg's ground-level glasshouses were built, the Literaria studio at Berlin's Tempelhof field became the first multi-story glasshouse in the region.[209] Materials had to be carried up to the studio by stairs or elevator, while the lower level could be used to conveniently store costumes, props, equipment, and whatever else a film production might need. Moreover, Gad preferred the atmospheric conditions of a multi-story construction:

> First of all, the raised location lets light stream in with better atmospheric dispersion. Second, it is convenient for the shooting space to be located above the dust-filled air at ground level. The raised location also prevents shadows cast from other buildings from interfering with filming. And it has an artistic advantage, preventing external impressions and disturbances from interfering with actors.[210]

The industrial aspects of filmmaking thus tended to recreate the very environmental conditions the studio had fled the city to escape. Its distance from the city meant that things were constantly moving into and out of the studio, which kicked up dust that could interfere with shooting; and the specialized facilities that grew up around the glasshouse could crowd out sunlight as well. By 1924, in addition to the glasshouses, the Babelsberg studio also contained an administrative building; a storage building for lights, equipment, and other supplies; a gas station; editing studios; changing rooms for up to 500 actors; a flower garden; a bike shed; a cafeteria and food storage facility; a doctor's office; and a zoo.[211] (A greenhouse, for palm trees and other non-European plants, was still under construction.) The suburban studio gave rise to its own city-like structures that then had to be avoided, by building upward toward more refined air.

Histories of technology (and of filmmaking as well) tend to differentiate strongly between the supposedly natural light of the sun and artificial light from man-made sources such as fire, gas, or electricity. Accordingly, the glasshouse can appear to represent a primitive stage of

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204 Corinna Müller, "Licht—Spiel—Räume," in *Babelsberg: Ein Filmstudio 1912-1992*, ed. Wolfgang Jacobsen (Berlin: Argon, 1992), 9.
205 Guido Seeber, "Als Babelsberg erstand," *Filmtechnik* 6, no. 3 (February 8, 1930): 3.
206 Ibid., 5.
207 Gad, *Der Film*, 75.
208 Ibid., 72.
209 Michael Thiele, "Ufa: Die Filmfabrik in der Oberlandstraße," in *Von Eisen bis Pralinen: Der Bezirk Tempelhof und seine Industrie*, ed. Michael Thiele and Matthias Heisig (HWN-Werbung / Druckhaus Mitte, 2001), 33.
210 Gad, *Der Film*, 72.
211 Alex Kossowsky, "Das Filmgelände der Decla-Bioscop," in *Babelsberg: Ein Filmstudio 1912-1992*, ed. Wolfgang Jacobsen (Berlin: Argon, 1992), 33–43.

filmmaking: lighting technology was not yet advanced enough to substitute for nature completely, and many filmmakers certainly regarded freedom from the sun as progress. However, such a view obscures the ways in which the glasshouse made even sunlight artificial, as it was subject to technical procedures that manipulated its intensity and quality. First, of course, the glasshouse itself isolated sunlight from the air, temperature, sounds, smells, and other sensory qualities that otherwise accompanied it outside. The glasshouse served as a filter to purify the light and make it available for industrial use. To control what came in and how it lit the shooting space, the entire surface of the interior walls was lined by two layers of curtains, "one white, which dampens and distributes the sunlight, and one blue, which serves to create darkness."[212] (Darkness, as well as light, had to be produced.)[213] "The primary task of curtain lighting," according to Gad, "is to create a natural atmosphere, a uniform saturation of light, that allows each object to come across clearly and without shadow."[214] This "natural atmosphere" was thoroughly constructed. It was the result of architectural and technical operations, and is perhaps better described as neutral (or neutralized) in terms of the demands of the camera. The glasshouse was camera-nature, an artificial environment for the production of artificial life.

Sunlight, moreover, was usually supplemented by artificial light sources (usually arc lighting).[215] For Gad, supplementary lighting was particularly important for crafting images in which the viewer could differentiate between background and foreground elements:

> For distinguishing figures from the background, backlighting provides excellent assistance: one puts a light in the background, out of frame of course, and directs its light obliquely from the shadow side toward the front. This gives figures a bright contour, and makes people appear as round, plastic forms, rather than flat photographs.[216]

The glasshouse and its curtains processed sunlight to create a general illumination, while technical light sources provided accentuation, from which individual bodies and things could emerge. For Gad this was the ultimate aim of filmmaking—visual individuation, especially the individuation of human characters. "The foremost task of film," he writes, "is and remains to illuminate human faces and forms clearly, in a psychological as well as physical sense."[217] The entire glasshouse apparatus, from its geographical location and its construction to its manipulation of light was thus directed toward producing the distinction between human image and environment. This fundamental aesthetic operation of filmmaking in the classical mode—creating an environment in which human characters could emerge out of the chaos of the visible world—depended on the elaborate environmental infrastructure of the film studio.

The glasshouse environment, tailored as it was to the demands of image making, was not always comfortable for the people inside. As Gad points out, "the large glasshouse is used, with respect to light, mainly during the hours of the day, and the days of the year, in which the sun is most powerful," and as a result, the glasshouse was usually very hot. It was a greenhouse after all, and the heat generated by arc lighting and other electrical equipment only made matters worse. Increased ventilation could cause more problems than it solved:

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212 Gad, *Der Film*, 74.

213 On artificial darkness in theater and exhibition spaces, see Schivelbusch, *Disenchanted Night*, 203–21; and Noam M. Elcott, "In Search of Lost Space: Stan Douglas's Archaeology of Cinematic Darkness," *October*, no. 139 (2012): 151–82.

214 Gad, *Der Film*, 80.

215 On the different lighting technologies used in early German studio filmmaking, see Müller, "Licht—Spiel—Räume," 15–21; and Frances Guerin, *A Culture of Light: Cinema and Technology in 1920s Germany* (Minneapolis, MN: University of Minnesota Press, 2005), 9–15.

216 Gad, *Der Film*, 80.

217 Ibid., 83.

> Although the building possesses ample sliding doors, hatches, and ceiling ventilation, these devices are only of limited value, because one needs calm air during shooting—the illusion is in no way heightened when all the curtains and drapes on set start moving. And even during very calm weather one can—for other reasons—be forced to seal the studio hermetically.[218]

Gad goes on to tell the story of a butterfly that once flew into his studio during filming and landed on the set, disturbing the shot. Controlling the visual space of the filmic frame meant sealing the glasshouse in a way that contradicted principles of human hygiene. Moreover, while not bright enough to replace the sun, artificial light sources could injure the eyes of the actors they illuminated—Corinna Müller relates that experienced actors often wore sunglasses whenever the camera was not rolling.[219] In the glasshouse, the demands of human hygiene were subordinated to a practice of cinematic hygiene that prescribed minimal circulation of air and, above all, light, in amounts that could exceed the tolerance of the human body.

Film studios could pose a health risk in other ways as well. In addition to the need for more space and cleaner air, Seeber noteed that Deutsche Bioscop's move from Berlin to Babelsberg was occasioned by "police attention, starting in early 1911, to the potential fire hazard of all businesses dealing with film."[220] Seeber found Babelsberg advantageous because "for a long distance in every direction there were no residential buildings to be found, so that even in the event of fire the surroundings could not be endangered."[221] Cities like Berlin had an interest in maintaining a distance between urban infrastructure and large film studios, which kept massive amounts of flammable material on hand. (Some of which was purposely set ablaze—Gad explains how extra celluloid could be used in fire or explosion scenes.)[222] In 1924, Alex Kossowsky reported on the state-of-the-art storage facility constructed at Babelsberg after the war:

> On the example provided by explosives factories . . . twenty concrete chambers have been built underground with only their roofs and ventilation ducts protruding from the grass above. These chambers have double walls and are constructed in such a way that, in the case of an explosion—even simply spontaneous combustion—only one wall would be crushed, thereby releasing the fumes to the outside through an air duct, without the neighboring chambers being affected in the slightest. To prevent any possible mechanical combustion, exterior windows provide the lighting for chambers used to store raw film or exposed negatives, on wood shelves at a constant temperature. A brilliant facility that can store up to 500,000 meters of film.[223]

Given the amount of celluloid kept on hand for film production, a studio was an order of magnitude more hazardous to human safety than a movie theater. Architecture, ventilation, and climate controls formed an environmental regime that stabilized the material base of film and kept it from endangering those who worked with it. The science of storing explosive materials had gained new urgency during the war, and subsequently found a new application in filmmaking as it became increasingly industrialized. Gad recommended underground storage for gasoline, too, to supply the automobiles in use on the studio grounds.[224]

Illuminating human faces and forms was thus not a simple task. When it came to film, this seemingly straightforward aesthetic goal depended on particular environmental conditions, which were achieved by a combination of geography, architecture, and engineering. Putting something in the foreground implied controlling the background. In turning to Ernst Lubitsch's

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218 Ibid., 73.
219 Müller, "Licht—Spiel—Räume," 19.
220 Seeber, "Als Babelsberg erstand," 1.
221 Ibid., 2.
222 Gad, *Der Film*, 50.
223 Kossowsky, "Das Filmgelände der Decla-Bioscop," 40.
224 Gad, *Der Film*, 59.

Madame Dubarry, I hope to elaborate some of the social and political implications of studio filmmaking's practice of individuation.

Gilded Cages: *Madame Dubarry* (1919)

We first glimpse Jeanne in the back of a busy hat shop in pre-revolutionary France. In a long shot of the shop floor, young female employees bustle in the foreground, while in the background three others sit at a table sewing. We do not yet know that the woman seated in the center, played by the actress Pola Negri, too far away to recognize, is the film's protagonist. The next shot depicts the shopkeeper's wife, Madame Labille, speaking with a customer, before there is a cut to the girls as they sew. We now see Jeanne clearly—and in 1919 viewers certainly knew this face. The girls are chatting, and Jeanne tosses her head back in laughter, prompting a stern look from Madame Labille. We observe Jeanne's face in close-up as she struggles to stifle her next giggle: her involuntary grimace gives way to a laugh, which draws the disapproving gaze once again. To get her out of the store, Madame Labille tells her to deliver a hat to a customer, but before setting off she makes sure to check her makeup in the mirror and is scolded one last time. This scene opens Ernst Lubitsch's *Madame Dubarry*. Made shortly after the end of World War I, it follows the spectacular rise and fall of Jeanne Vaubernier, a shopgirl who, through a combination of chance and ambition, becomes King Louis XV's mistress. The opening scene establishes a visual motif that will replay throughout the film: Jeanne's movement from background to foreground, a trajectory that takes her to unimagined heights while also generating murderous hostility in those around her.

Jeanne is individuated before our eyes. At first, she is present only in the background, virtually indistinguishable from the visual noise of the opening shot. Soon, however, Lubitsch's camera singles her out, very often in close-up, so that for the rest of the film Jeanne is unmistakably Jeanne. At the same time, the film is about this very process of individuation, tracing the various ways Jeanne differentiates herself from the people and things around her, as well as how she is picked out and isolated by those with power over her. If, as Gad would write a couple of years later, the purpose of filmmaking "is and remains to illuminate human faces and forms clearly," then *Madame Dubarry* explores this aesthetic operation as a socially meaningful act. In showing Jeanne freshening her makeup as she leaves the hat shop, the film not only highlights her vanity, but also signals her determination to stand out, a practice of visual self-fashioning that threatens Madame Labille's control over her employees. As Marc Silberman writes, the scene portrays Jeanne "as an energy that must be tamed so that the store's commodity circulation can function. This same energy, however, will enable Jeanne to cross all social thresholds."[225] Throughout the film Jeanne inevitably stands out, and her singularity comes into conflict with both aristocratic and democratic regimes of power, leading to her eventual, untimely demise. Such a narrative took on added meaning in the context of postwar Germany, which had just experienced its own revolutionary transition from monarchy to democracy.

On her way to deliver the hat—after a midday rendezvous with her lover Armand—Jeanne happens upon a royal procession through a public square. The scene actually begins without her. A title announces "the King is coming," and onlookers rush in from outside the frame to line the path of the king's entourage. On horseback they enter the shot in the background, exiting an alley, and proceed along the path toward the camera, while the crowd and others looking out of windows in the surrounding buildings hope to catch a glimpse of the king. Here again the

225 Marc Silberman, *German Cinema: Texts in Context* (Detroit: Wayne State University Press, 1995), 8.

movement from background obscurity to foreground visibility is linked to an assertion of power: the riders' faces can be seen clearly as they pass before the camera, while the audience of subjects remains distant, their faces indistinct. The next shot, however, takes us closer to the crowd. We see Jeanne, who has come late to the spectacle and now faces the parade watchers at eye-level, elbow her way to the front of the crowd to get the best view. Those she pushes out of the way do not appreciate this, and in the confusion Jeanne drops the hatbox, which lands directly in the middle of the path. It is trampled by the horse of Don Diego, the Spanish Ambassador. Diego stops, turning his horse around, to comfort the ostentatiously distraught Jeanne, who has rushed into the path to rescue the hat. At this point she has completely disrupted the royal procession and its organization of visibility, as even the aristocrats on horseback, stopped in their tracks, are demoted to mere spectators of her performance.

This visibility prompts Jeanne's incredible rise. Smitten, Diego intercedes on her behalf with Madame Labille and pays for the damaged hat. Afterward he kisses her hand, remarking, "it's a pity to waste such beautiful hands on this kind of work," and invites her to visit him on Sunday. In her best dress, Jeanne arrives at Diego's residence and is told to wait for him, as she stands in front of a set of curtains that fill the entire frame. The butler pulls back the curtains to reveal a luxuriously appointed room, with a dining table, a folding screen, and a window leading to a balcony. Lubitsch stages Jeanne's entrance into the aristocratic world as a theatrical transgression, in which she moves from the space in front of the curtains, reserved for spectators, to the space behind. Just as she had broken away from the crowd and into the path of the royal procession, here too Jeanne becomes a player. Diego arrives, and she expertly plays hard to get, alternately resisting and indulging his advances. Diego, however, receives an unexpected visitor, the Count Dubarry. Jeanne hides behind the folding screen but she peeks out and proceeds to make faces at Diego, not noticing that Dubarry can see her in a mirror across the room. Realizing this, she startles and knocks over the screen onto Dubarry. Jeanne cannot be 'backgrounded,' whether in the mundane setting of the hat shop, the crowd of onlookers outside, or in the private spaces of aristocratic luxury. And yet, others continually try to remove her from center stage. Eminently visible but lacking the social capital of maleness or royal standing, she sits constantly on the border between background and foreground.

Working in the hat shop, Jeanne served the royal class by helping to fabricate their beautiful world of appearances, and was expected to remain invisible; plucked from this obscurity, she is likewise expected to serve the world of appearances, but now as a visual object herself. At an opera ball, Jeanne's jealous boyfriend Armand confronts Diego in a duel and kills him. In the midst of this violence, Dubarry takes Jeanne back to his residence. In a baroque sitting room, with a marble table, ornately framed portraits and mirrors, and walls that shine like precious metal, Dubarry explains that Armand will be arrested and that she would have been as well, had she remained. Jeanne feels she has been kidnapped, and tries to escape through the door and the balcony window, both of which are locked. Dubarry gives her a choice of prisons: if she leaves she could go to jail, but if she stays she would be "the mistress of my house." He gestures toward the luxurious surroundings and offers her a jeweled necklace, which he places around her neck, and she runs to the mirror in delight. She clearly would prefer to stay, but the implication is clear—she will be expected to function as an ornament, like the rest of the furniture and decor. The aristocracy appreciates her singularity, but refuses to allow her visual presence to translate into agency. The film thus links the social backgrounding intrinsic to an aristocratic, patriarchal order to the beautiful things that constitute this order's segregated visual environment. Just as Jeanne struggled to stand out from the crowd, here she must struggle

against becoming just another ornament—both possibilities threaten to swallow her whole. The scene at Dubarry's ends with a cut to Armand in a dingy prison cell. He sits on a bench, surrounded by decidedly unglamorous stone walls, as rats scurry around his water pitcher and partially eaten loaf of bread. He shivers and looks away in disgust. The contrast to Dubarry's parlor could not be greater. At the same time, the film implies that the two spaces depend on each other. The world of baubles is only maintained by keeping the rats—that is, the revolutionary masses as well as actual rats—at bay. A subsequent scene cuts between a shot of Jeanne's private audience with the King and one of Armand in the prison hallway, where he witnesses an execution in the courtyard below. The character of Armand displays the film's interest in how the separation of worlds is produced. Early in the film, Armand accompanied Jeanne to her visit to Don Diego, but was refused entrance by Diego's servant; here Armand is imprisoned and sentenced to death for killing an aristocrat. The beauty of the aristocratic world is predicated upon repression and violence. Later, Jeanne intervenes with the King to have Armand's sentence lifted, and he is given work as part of the palace guard. Finally he gains access to the spaces of aristocracy, but only insofar as he serves to police the boundary to the outside and prevent its transgression. If Jeanne is wallpaper, Armand becomes a wall.

The walls begin to crumble just as Jeanne reaches the peak of her visibility. Having effectively been sold to the King, Jeanne has become his mistress and will be introduced at court. The scene begins with a royal procession to the palace. Shot with extreme depth of field, the palace sits hazily in the distance, framed by huge columns in the foreground, while a stream of horse-drawn carriages and sedan chairs files past. Guards line the path. Meanwhile, the Duchess of Gramont, jealous of Jeanne's claim on the King's attention, has arranged for a mob to gather outside, whom we see pressed against the palace gates. There is then a cut to the interior, with an overhead shot of what appears to be an ornate rug sitting on a floor, as Jeanne's crouched servant smooths the rug with his hands. The camera slowly pans up, revealing the rug to be in fact the extremely long train of Jeanne's dress. Next we see a large hall, decorated with paintings. Two chairs are positioned prominently in the foreground at the left of the frame, while rows of finely dressed guests await Jeanne's arrival. After the King takes his seat, Jeanne enters through a door in the deep background of the shot, servants carrying her train, and proceeds past the guests to bow for him. The staging recalls the scene that prompted her rise in the first place: the public procession at the beginning of the film, which she disturbed, causing Don Diego to notice her. Now all eyes are on her, and the royal guests occupy the position of sidelined spectators, the role played earlier by the plebeian crowd. Curiously, however, in being raised to so visible a position, Jeanne has also been robbed of her disruptive force. She is never more well-behaved than during her introduction at court, a fact reinforced by her dress, which requires a retinue of servants to move. Jeanne is carted from spot to spot like a piece of furniture. Foregrounded as background, the most powerful woman in France is nonetheless fully integrated into the decorative order of the aristocracy, becoming a piece of finery on the hand of the King.

Disruption comes from elsewhere, arranged by members of the not-quite-inner circle. Just as Jeanne finishes her bow before the King, the Duke of Choiseul (brother of the jealous Duchess) sneaks off to open a window, allowing the mob's chants of "down with Dubarry!" to be heard in the hall. We see the crowd press at the gate, clenched fists in the air, and the consternated aristocrats inside, unsure of how to respond to this unheard of disturbance. The King takes Jeanne to the window, where he orders the palace guard to deal with the crowd, and Jeanne spots Armand approaching the gate. Her delight turns to horror as the gates open and Armand attempts to push back the mob, while the rest of the soldiers open fire. The injured and

the dead lay strewn on the palace grounds just outside the gate. Previously, the separation of social spaces was emphasized by way of editing; here, the separation is staged as direct confrontation and addressed to Jeanne herself, who, watching from the safety of the window, is forced to acknowledge the brutality that maintains her visual environment.

This event catalyzes the dissolution of Jeanne's world. In the aftermath of the massacre she arranges a secret meeting with Armand, who had been unaware that Jeanne was Madame Dubarry, mistress of the King, in whose name the palace guard had killed defenseless subjects. He asks her to choose between him and the King, which she refuses to do. Enraged that the King has "robbed" him of Jeanne, Armand deserts his post and joins others in favor of revolutionary violence. Jeanne's servant informs her that Armand has called a meeting to plan some kind of action against her. Once so eager to enter the gilded cage, Jeanne now ventures out of it: sensing the reversal of her fortunes, she must make a place for herself in the coming order. In order to approach Armand, her only potential ally, she has to renounce the visual presence that enabled her rise. Her visibility has turned toxic, making her the target of misogynist class resentment. To blend in, she disguises herself as a man, and goes to the establishment where a group of men listen to Armand's invective. From the background she enters a shot of Armand and another man in the foreground. Framed by the two men, she listens, horrified, as an iris blocks out the men and isolates her face. Foreshadowing her eventual fate, the film asks its viewer to hold onto Jeanne's face, to uphold her individuation in the midst of a mob that wishes to 'de-individuate' her. Jeanne sits down in a corner while Armand works the men into a rage, revealing herself to Armand after the others leave. Aware of the power of the close-up, Jeanne forces him to look at her and succeeds in winning a promise that he will not hurt her.

The promise is useless, however, because the King is soon stricken by the plague, and the Duke of Choiseul evicts her from the residence immediately after he dies. Jeanne's farewell to courtly life occurs as the King's body is borne from the palace, a scene that also offers the film's final portrayal of the aristocratic world's sumptuous visual environment—at least as it was meant to be seen, unspoiled by the masses. A long shot of a great foyer emphasizes the spaciousness of this environment: a procession, with the casket at its front, carefully descends a stairway. Jeanne, ordered to leave by the Duke, enters the space from a side door, and, witnessing the procession, prostrates herself upon the casket. The men stop briefly while the Duke removes her and sends the body on its way. The scene offers a further iteration of the procession scenario that prompted Jeanne's rise: on the street, she made powerful men notice her and stopped the procession in its tracks; introduced at court, she had her official standing within the aristocracy confirmed by a procession; here, she attempts again to disrupt the procession but cannot—her appeal falls on dead eyes. She has been cut off from the representational codes of royal power, and can no longer insinuate herself into this order by the force of her visual presence.

The film stages the outbreak of revolution as a breakdown of the separation between socially segregated spaces. In a particularly striking shot, an angry crowd is shown from behind, gathered in front of a high wall that occupies nearly the entire frame, while a speaker, elevated on a ladder leaned against the wall, is shown goading them into action. Armand joins them, having vowed to free a friend imprisoned in the Bastille. Lubitsch films the ensuing violence at a distance, often from high angles, as a series of flows and stoppages: men with clubs rush into an alley to halt an aristocrat being carried on a sedan chair; a group fires upon the King's soldiers at a barricaded intersection; a crowd floods a square, and scatters into the surrounding streets after taking fire from soldiers in the buildings above. The orderly movement of groups in public space, which characterized the first half of the film, gives way to visual chaos. When the crowd

reaches the Tuileries Palace, where the new King resides, the collapse of spaces is complete. We see Louis XVI waiting expectantly with his family in the palace, as the mob breaks through the doors, carrying swords and rifles with bayonets. In yet another procession, the family is led down stairs, but every square inch of the space is filled with revolutionaries, which leaves the family barely enough room to pass. Previously, the King's residence was spacious and clear, allowing its inhabitants to be clearly discerned among the decor; now the residence is indistinguishable from its occupants—the very people whose exclusion it required to function. Though more crowded, this procession mirrors the others we have seen, but the power relations have been reversed: we witness the inauguration of a regime of the spectators, who stand in judgment rather than obedience.

As crowds of bodies occupy and obscure the spaces of sovereign vision, dust, smoke, and fog increasingly cloud the space of the image. The revolutionaries kick up copious amounts of dust as they run through the dirt streets; gun and cannon smoke fills the air. During the revolutionaries' approach to the Bastille, red tinting obscures the action even further, and the cannon smoke nearly blots out the entire image, crowd and architecture alike. The rule of the crowd is accompanied by atmospheric obscurity, which the camera cannot penetrate. Lubitsch's use of smoke and dust in this scene emphasizes the de-individuating force of the crowd by undoing the visual clarity upon which sovereign power as well as the power of the camera are predicated. The film stages social uprising as the onset of a fog that makes the clearly illuminated 'human faces and forms' of courtly life formless.

This sense of dissolution is echoed at the revolutionary court, the setting that ends the film. There is no clear order as to who occupies what space within the court: papers lie strewn about on the floor, and the spectators threaten to knock over the meager fence barring them from the proceedings. Jeanne is sentenced to death, despite a final plea to Armand, who occupies a new role as chairman of the court. He attempts to save her one last time, but is discovered in Jeanne's cell and shot. Jeanne is escorted to a scaffold in the square, as crowds, filling every bit of ground, every balcony, and every window, call for her death. A fearsome band of shirtless executioners straps her to the guillotine. From a camera position in the back of the crowd, we see the blade fall, after which an executioner picks up the severed head and tosses it to the cheering masses. Asserting her individuation even as the crowd swallows her, Jeanne is displayed in the final shot as a waxy head, eyes closed, in close-up, framed in an iris.

Masses and Faces

In staging the revolutionary masses as visual impediments, like the dust and smoke that accompany their uprising, *Madame Dubarry* links the environmental logic of studio filmmaking to questions of political subjectivity. If the early twentieth-century film studio was designed to provide environmental conditions in which individuated forms and faces could emerge on celluloid, then, in many respects, it treated the representation of crowds as another environmental problem to be overcome. The gathering of large numbers of people in relatively small areas was another characteristic of the urban environment, like industrial smog, that could interfere with a filmmaker's ability to control the space of the image. At the same time, crowds offered spectacular visual possibilities, as had been demonstrated by such epic historical melodramas as *Quo Vadis* (Enrico Guazzoni, 1912) and *Birth of a Nation* (D. W. Griffith, 1915), whose international successes the postwar German film industry wished to emulate. Like other aspects of industrial culture, crowds were both a hindrance to and a resource for studio filmmaking. This

was another reason why studios wanted to maintain a modest distance to urban areas, being located close enough to cities draw on them for labor and extras, but far enough away to control the form in which urban populations would appear before the camera.

The question of where and when crowds were allowed to appear was eminently political, especially in the aftermath of the war, which had brought about the end of monarchy in Germany. "All Germans have the right to gather in meetings peaceably and unarmed without announcement or particular permission," stated Article 123 of the Weimar Republic's constitution. This declaration of the right to congregate was followed, however, by a significant caveat: "Meetings in the open may be made liable to previous announcement by a national law and, in the presence of immediate danger to the public order, be forbidden."[226] Michel Foucault writes that the circulation of bodies within the bounds of the state has fallen under police regulation since at least the seventeenth century;[227] despite an ostensible break with the past occasioned by World War I, this observation is just as applicable to the new German republic as to the monarchy that preceded it. Indeed, questions about the legitimacy of the new republic made authorities eager to demonstrate their sovereignty over the circulation and congregation of their citizens. Nowhere was this state prerogative more brutally demonstrated than in Berlin immediately after the war.

The year 1919 began with ecstatic celebration. On New Year's Day, the *Berliner Tageblatt* reported "an unprecedented political tension" amidst massive demonstrations:

> Men and women hungry for life dance in the New Year. Music plays in hundreds of bars. Dance upon dance, waltz, foxtrot, one-step, two-step, legs hurtle as if bewitched across the floor, skirts fly. . . . Champagne glasses clang (and what champagne!), arms wave enthusiastically in the air, New Year's toasts resound through the same streets in which demonstrators' footsteps had just been heard.[228]

Soon, however, celebrations and demonstrations in the streets of Berlin were replaced by battles. Discontent over the conditions of postwar Germany and the Social Democratic Party's assumption of power led to massive strikes, as well as the so-called Spartacus Uprisings of early 1919. The latter were suppressed under the direction of SPD politician and Minister of Defense Gustav Noske. In March 1919, Noske declared a state of siege in Berlin, authorizing the use of deadly force on armed protesters: government troops, in collaboration with the right-wing paramilitary Freikorps, enthusiastically put this license to kill into practice.

The right to congregate was repeatedly curtailed in the early years of the republic, especially in Berlin. After a battle between police and demonstrating workers in January 1920, Noske forbade "all gatherings in non-private spaces, as well as processions and gatherings of crowds" in the greater Berlin area, and promised an armed response should protesters attempt to interfere with the functions of government.[229] In August 1921, after the murder of former Finance Minister Matthias Erzberger, President Friedrich Ebert declared a state of exception, invoking the constitution's notorious Article 48. Under this article the state claimed the right to outlaw any "gatherings, congregations, processions, and rallies" on the basis of speech that might question the government's power or encourage disobedience and rebellion.[230] The 1921

226 "Full Text of the German Republic's Constitution."
227 Foucault, *Security, Territory, Population*, 325–27.
228 Quoted in Ruth Glatzer, *Berlin zur Weimarer Zeit: Panorama einer Metropole, 1919-1933* (Berlin: Siedler, 2000), 21.
229 "Verbot von Umzügen und Versammlungen unter freiem Himmel. Vom 14. Januar 1920," *Reichs-Gesetzblatt*, 1920, 47.
230 "Verordnung des Reichspräsidenten auf Grund des Artikels 48 der Reichsverfassung. Vom 29. August 1921," *Reichs-Gesetzblatt*, 1921, 1239–40.

Wehrgesetz (Defense Law), which outlined the duties and limitations of the newly formed Germany army, restricted the political activity of soldiers, explicitly prohibiting "participation in political assemblies."[231] The fragile sovereignty of the early Weimar state made it extremely sensitive to the political potential of public gatherings; authorities chose to enforce "peace and harmony" (*Ruhe und Ordnung*) with brutality in order to establish a monopoly on violence, rather than risk an erosion of sovereignty through political compromise.

A year after the end of World War I and only months after the end of the Spartacus uprisings, Lubitsch re-enacted the French Revolution on Berlin's Tempelhof field. Like Babelsberg, Tempelhof was home to some of Germany's first glasshouse film studios, and its wide-open space could accommodate additional sets and spectacles that would not fit into an enclosed studio. It also had a long history as a site of mass gatherings: in the eighteenth and nineteenth centuries, the field was used as a training and parade ground for the Prussian army, and in the early twentieth century, it served as a gathering place for sport and gymnastics clubs. For *Madame Dubarry*, 3,000 extras performed revolution for the camera. Crowd management was an essential part of filmmaking on this scale. As Erich Palme wrote in 1925, "a generous capability for organization and assembly is necessary to have hundreds, sometimes even thousands of completely different types of people gather or pass before the camera lens in a striking way."[232] Palme cited Lubitsch as a pioneer of cinematic masses. A reporter for the *Film-Kurier* was present for the filming of *Dubarry*'s crowd scenes: "Lubitsch, animator of the masses, mobilized all resources. Every 30–50 extras have their own unit director. Everything functions according to actual maps of the site that have been marked up, resembling battle plans."[233] So soon after the war, the similarities between military mobilization and film production were plain to see. Like an army, *Dubarry*'s extras also required provisions and payment. "Just dressing the three thousand people was a problem," the reporter wrote. "Everything lay around in piles. Any available space had been turned into a dressing area, where caps, uniforms, picks, rifles, clubs, flags, and drums were distributed. Everyone knew what they were supposed to do. Wages could not have been distributed more smoothly."[234] The reporter even noted that on-site clinics (*Ambulanzen*) stood at the ready, should anyone be injured—happily, no one was.

Palme pointed out that organizing masses of performers in such a detailed way in fact gave them an extraordinary power: any single extra had the power to effectively ruin a shot, should he or she get out of line (whether intentionally or not).[235] Much like a factory, monumental filmmaking depended on the coordinated labor of a great many people according to a single plan. Industrial strikes were a regular occurrence immediately after the war, and the film industry was no exception. As was the case with any large industrial operation, labor disputes arose between management and extras—the proletariat of screen performers. The week of *Madame Dubarry*'s premiere, *Der Kinematograph* published an article commenting on a recent court decision that regulated overtime pay for extras (known at the time as *Massendarsteller*, or "mass players"). The author of the article noted that the difference between "small roles" and "extras" had been codified in a wage agreement earlier that year, and complained that certain parties were willfully

231 "Wehrgesetz. Vom 23. März 1921," *Reichs-Gesetzblatt*, March 31, 1921, 337.
232 Erich Palme, "Regie der Massen," in *Medientheorie 1888-1933*, ed. Albert Kümmel and Petra Löffler (Frankfurt am Main: Suhrkamp, 2002), 219.
233 B. G. Lüthge, "Pola Negri auf der Guillotine. Großkampftag in Tempelhof," *Film-Kurier*, August 2, 1919.
234 Ibid.
235 Palme, "Regie der Massen," 220–22.

misreading this decision to their advantage.[236] According to Palme, it was common for extras to stall production in order to get paid overtime.[237] Lubitsch, however, "understood like no other how to fuse together thousands of people, who had been thrown together arbitrarily from the most distant parts of the population, into a whole with just a few fitting words, and make them into the agents of his ideas."[238] An article on the filming of these scenes in the *Film-Kurier* implicitly framed the production as a national achievement: "The production is a triumph of organization. Everything worked with military precision. Working with masses is apparently no longer a privilege of the Americans."[239] As Sabine Hake writes, films like *Madame Dubarry* emerged as part of a symbolic continuation of the war, whereby huge productions functioned as proof of Germany's organizational power.[240] Lubitsch's control over the masses of extras, or rather, the control attributed to him by the press, can be seen as a response to the sense of disorder and social chaos that followed the war.

Konrad Lange, discussed in the previous chapter as part of the film reform movement, hoped that the end of German monarchy would signal a turn away from the decadence he saw as characteristic of Wilhelmine culture: "In spite of all impoverishment, in the future we will still have to offer the people 'bread and circuses.' But from now on, frugality will be the principal demand at these circuses. This will lead to a healthy *reaction against the excesses of decoration*, against the material opulence that has previously dominated this area."[241] If *Madame Dubarry* was any indication, Lange had seriously misjudged German enthusiasm for pomp and circumstance. The film premiered on September 18, 1919. Since it was one of the German film industry's largest productions since the end of World War I and the birth of the Weimar Republic, excitement ran high. The premiere itself was an event. *Dubarry* was the first film screened in the Ufa-Palast am Zoo, a theater the Ufa would use throughout the Weimar Republic and after to present its most valued productions.[242] The Ufa acquired the theater in 1919 and used *Dubarry* as an occasion to stage the building's re-christening as the Ufa-Palast am Zoo: it gave the proceedings a theatrical sheen, appealing to bourgeois audiences by engaging a fifty-piece orchestra and prefacing the film with selected music and a poetic prologue recited live. With 1,740 seats (subsequently increased to 2,165 after another renovation in 1925), the Ufa-Palast was for many years the largest cinema in Berlin, and among the largest in the country. Alongside its pretensions to high culture, the premiere of *Madame Dubarry* was also a mass event, involving the coordination of thousands of individuals—much like the management of extras in Lubitsch's film. It was a full house, and then some: an advertisement for the premiere boasted "2000 seats from 1.75 to 6.75 Marks,"[243] over 250 seats more than the building's capacity in 1919. For a commentator from the *Lichtbild-Bühne*, the Ufa-Palast's choreography of the film's huge audience was as noteworthy as the film itself. Describing the theater on the night of the event, the writer remarked:

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236 "Die Ueberstunden der Massendarsteller," *Kinematograph*, September 24, 1919.
237 Palme, "Regie der Massen," 222.
238 Ibid., 220.
239 Lüthge, "Pola Negri auf der Guillotine. Großkampftag in Tempelhof."
240 See Sabine Hake, *Passions and Deceptions: The Early Films of Ernst Lubitsch* (Princeton, NJ: Princeton University Press, 1992), 119–26.
241 Konrad Lange, "Theater und Kino im neuen Volksstaat," *Deutsche Revue* 44, no. 3 (1919): 269 (emphasis in original).
242 On the history of the Ufa-Palast's previous incarnations, see Boeger, *Architektur der Lichtspieltheater in Berlin*, 39.
243 "Advertisement for the Premiere of Madame Dubarry," *Film-Kurier*, September 19, 1919.

> Inside: an elegant, atmospheric space of huge dimensions that nonetheless was quickly filled, and where, thanks to the exemplary leadership of Director Wilhelm, everything proceeds with the greatest calm and orderliness. Even the additional seats that quickly became necessary, set up 'on the fly' by an attentive and skilled staff, did not lead to any nervous collisions whatsoever, as has been known to happen.[244]

There is no small resemblance here to the codes of courtly representation on display in the film itself. In the midst of postwar uncertainty, the premiere constituted an orderly spectacle, with masses of well-behaved spectators sitting in awe, as a masterfully composed series of images paraded before them.

As other critics have pointed out, the film appealed to nostalgia for the world of yesterday. Even if viewers did not necessarily wish for a return to monarchy (though some did), *Madame Dubarry* rendered this world's undeniable sumptuousness and luxury. In addition to "displac[ing] the country's monarchist heritage into aesthetic categories," Sabine Hake writes, historical films like *Madame Dubarry* "confirmed the value of authoritarianism, as they afforded audiences the opportunity to experience strong leader figures without suffering under their actions; hence the genre's conservative outlook."[245] Hake sees this conservatism in the film's depiction of the revolutionary masses as well: the film denies them a truly political subjectivity, and they "function as a mirror for the elaborate spatial designs and the main characters."[246] Indeed, it could be argued that what appears in this film as nostalgia for the visual world of the court is embedded into the very apparatus of studio filmmaking. Like film studios after them, palaces like those at Versailles, or Sanssouci in Potsdam outside Berlin were located on the margins of large cities; these were places where power was performed visually, and where the gaze of the sovereign could function uninhibited. Film culture tapped into the repertoire of the aristocratic visual regime—not for nothing has Kaiser Wilhelm II been called the first star of German cinema.[247] The language of royalty likewise carried over to the film stars themselves, who constituted a kind of new aristocracy.

At the same time, this transfer of aristocratic codes into a mass cultural entertainment like cinema was its own form of transgression against them. Like the revolutionary invasion of the palace at the end of *Madame Dubarry*, cinema could provide visual access to spaces of power from which most moviegoers had previously been excluded, embodying a kind of visual social mobility. As Richard McCormick points out, while those on the left accused *Madame Dubarry* of "trivializing" the revolution, the film's distribution company "expressed fears about its 'revolutionary' subject matter."[248] However ungenerous a picture Lubitsch painted of the democratic uprising, he certainly did not glorify the patriarchal and decadent pre-revolutionary France. An article that appeared in the conservative *Kreuz-Zeitung* shortly after the film's premiere spoke directly to the film's transgression of socio-spatial boundaries. Lubitsch had filmed scenes in Sanssouci's New Palace, which was turned into a museum after the war, and the writer complained that the film had used "the New Palace, a sacred place for every true German . . . from which Germany's power emanated," to tell the story "of the most evil

244 Hb., "Lubitsch-Negri-Abend. Zur Eröffnung des Ufa-Palastes am Zoo," *Lichtbild-Bühne* 12, no. 38 (September 20, 1919): 13–14.
245 Hake, *Passions and Deceptions*, 119–20.
246 Ibid., 137.
247 On Wilhelm II's stardom, see Lutz Koepnick, *Framing Attention: Windows on Modern German Culture* (Baltimore, MD: Johns Hopkins University Press, 2007), 108–18.
248 Richard W. McCormick, "Sex, History, and Upward Mobility: Ernst Lubitsch's *Madame Dubarry/Passion*, 1919," *German Studies Review* 33, no. 3 (2010): 606.

courtesan of Ludwig XV."[249] Where the Ufa hoped to display Germany's postwar industrial and artistic power, a true nostalgic saw disgrace and violation.

Madame Dubarry—or rather, Jeanne herself—serves as an allegory of German studio cinema's fraught cultural location, especially after World War I. Jeanne's individuation from the crowd elevates her into a different visual world, but her entrance into this world is a transgression that prefigures its eventual collapse. And yet, in standing out, she has no place in the democratic regime that follows. *Madame Dubarry* is the drama of Jeanne's individuation, chronicling the disruptive force of her appearance, a disruption equally threatening to pre- and post-revolutionary structures of power. As studio filmmaking developed in the early twentieth century, it became an art of individuation, an art of making people (and things) stand out. Studio filmmaking was a material practice that created environments in which the power of appearance could be articulated—on a scale previously only available to a sovereign—and made accessible to the masses. The significance of cinema, in this time and place, was perhaps less its ability to show the masses to themselves, as Walter Benjamin argued, than its capacity to elevate individuals and make them singular, to rescue people and things from the threat of being swallowed by what surrounded them.

249 Quoted in "'Das neue Palais im Dirnenfilm,'" *Film-Kurier*, September 24, 1919.

CHAPTER FOUR
Urban Metabolisms: The Weimar Street Film

> Now I wander bewitched on an asphalt flowerbed
> And the Kurfürstendamm is a silver forest.
> —Friedrich Sieburg, "Auge" (1920)

In 1925 the director Karl Grune stressed the primacy of milieu in his artistic vision:

> Plot! It is discussed with far too much pathos, as if it is the be all and end all. Plot can certainly matter when getting started, but it doesn't have to. I take the opposite approach—first I see the milieu and then I get to the dramatic motive. For my last film, *The Street*, I saw—yes, *saw*!—at first only the optical noise of the metropolitan street, its glitter, its glint, its fever. Only then did the idea of a little bank clerk come to me, for whom this street becomes destiny.[250]

In de-emphasizing narrative, Grune echoed numerous filmmakers and critics of the silent period who wished to liberate the new medium from the hegemony of literary and theatrical forms familiar to educated audiences. Theater and literature, they argued, were arts of the word, and it was precisely the silence of the moving image, its lack of discourse, that lent it aesthetic value in a logocentric culture. Grune's comment, moreover, aligns narrative (or plot, *Handlung*) with human characters (in this case "the little bank clerk"), while linking vision—and fate—with milieu (the street). The question of narrative-image relations in film thus also implies the question of the relationship between the individual and his or her surroundings. Grune's advocacy of vision over story signals a shift from a humanist perspective, centered on individual agency, to a cinematic view in which the environment dominates. Furthermore, he figures the street not as a human construction, something that could be reconciled to human needs, but as nature, an embodiment of fate's transcendent power. For Grune, it seems, freeing cinema from the dominance of discourse entailed subjecting his human characters to an all-powerful environment. This subjection, in turn, liberates the perceptual vitality of the city ("its glitter, its glint, its fever"), making it available for cinematic enjoyment.

Grune's 1923 film *Die Strasse* (*The Street*) has been called the first street film, a German genre of the 1920s that dealt with desire, deprivation, and crime in the metropolitan context, often displaying an anti-urban bent. At the time, these films were noteworthy for how they recreated the dynamism and chaos of urban space in the controlled environment of the studio. German trade publications reported the amazing lengths taken to reproduce the city in architecture, light, and motion for the camera in films like *The Street* and Joe May's *Asphalt* (1929).[251] For the set of the latter, the filmmakers went so far as to pour actual asphalt, for a street that extended through three studio buildings and into the open. Despite Grune's awe-struck praise for the sublime city, the Weimar studio set and the street film itself were sites in which human beings could synthesize and reassert control over an urban environment perceived to be

250 Guntram Vogt, *Die Stadt im Film: deutsche Spielfilme 1900-2000* (Marburg: Schüren, 2001), 110.
251 See the reports on *The Street* and *Asphalt* in ibid., 104–5 and 186–88; on the Weimar studio city, see Ward, *Weimar Surfaces*, 155–63.

otherwise overwhelming. Just as Fritz Lang created an indoor forest for *Die Nibelungen*, street-filmmakers like Grune and May (and Lang himself in *M*) staged urban nature for the camera.

The studio practice of simulating and thereby controlling the city can be seen as a part of a larger process by which urban environments came to be known and managed in the nineteenth and early twentieth centuries. Indeed, it was the confrontation with the nineteenth century industrial city that spurred the development of sanitary science, which, in linking human health to material conditions, can be considered an early form of environmental science. As Brian Ladd writes, "urban population growth in early nineteenth-century Germany, though modest by later standards, was substantial compared to that of previous centuries. As sources of water and methods of sewage and garbage disposal and street cleaning remained largely unchanged, the inadequacies of these systems were becoming manifest to the eye."[252] Late nineteenth-century public health discourse in Germany, inspired in part by Edwin Chadwick's housing and infrastructural reforms in England, would become a fundamental basis for urban planning schemes that followed. Municipal authorities worked to provide populations with water from unpolluted (or, at least, less polluted) sources, and built sewage systems to remove waste water. Cities also began to divide industrial and residential areas, although zoning efforts were haphazard and encountered resistance from industrial interests. Bureaucratic institutions, such as the Royal Experimental and Testing Institute for the Provision of Water and Waste Water Removal (Königliche Versuchs- und Prüfungsanstalt für Wasserversorgung und Abwässerbeseitigung), were created to address environmental issues and complaints.[253] Cities also became concerned with developing and maintaining green spaces for public use within city limits.

For natural science to intervene in urban processes, the city had to be understood as natural, or at least akin to nature, exhibiting law-like properties that could be observed and quantified. "The hygienist city promoted by the nineteenth-century public health movement," writes Matthew Gandy, "conceived of urban space as an identifiable assemblage of organs: a functional whole that could be shaped and controlled according to a rationalized conception of human will."[254] The urban ecological imaginary that produced the city as a living system went hand in hand with the project of controlling it, to intervene in and optimize its functioning.[255] Public hygiene was not undertaken simply to benefit the working class—as Ladd notes, "German capitalists saw the danger of relying on a speculative urban property market to supply them with public works, transportation, and a healthy and disciplined work force."[256] Public management of urban nature served capitalist development by building infrastructure and caring for its workers. At the same time, popular urban ethnographies also served to render the city knowable to educated readers for whom its size and complexity seemed overwhelming. The most notable of these were Hans Ostwald's *Großstadtdokumente* (Documents of the Metropolis), whose various authors, as Peter Fritzsche writes, "presented the urban setting as a complex but comprehensible ecology in which separate roles, functions and inter-relations could be uncovered and

252 Ladd, *Urban Planning and Civic Order in Germany, 1860-1914*, 36.
253 This institution was founded in 1901, and was gradually expanded to address ground and air pollution as well.
254 Matthew Gandy, "Rethinking Urban Metabolism: Water, Space and the Modern City," *City* 8, no. 3 (2004): 364.
255 On the urban ecological imaginary, see Matthew Gandy, "Urban Nature and the Ecological Imaginary," in *In the Nature of Cities: Urban Political Ecology and the Politics of Urban Metabolism*, ed. Nik Heynen, Maria Kaika, and Erik Swyngedouw (London: Routledge, 2006), 62–72.
256 Ladd, *Urban Planning and Civic Order in Germany, 1860-1914*, 3.

annotated."[257] While such accounts appealed to bourgeois readers for whom working-class neighborhoods were completely foreign, they also offered a glimpse into parts of social life that modern divisions of labor had otherwise obscured, such as financial institutions and courtrooms.

The street films of the Weimar era echoed powerfully the period's urban ecological imaginary. In depicting the spaces and circulations of the city, the Weimar street film reflected upon the history by which urban space was naturalized and administrated. As technical and aesthetic objects, these films were themselves akin to the utopian visions of urban planning—indeed, their production made use of the most modern urban infrastructural and environmental technologies. As narrative objects, they were closer to Ostwald's Berlin documents, which focused on the city's contingency by highlighting "choreographed urban collisions and urban juxtapositions."[258] All three films treated in this chapter bear an ever present tension, in which a supremely controlled visual experience coincides with a narrative and imagistic emphasis on the contingencies of the urban environment. In giving visual form to contemporary discourses on social hygiene, material circulation, and waste, the films nonetheless represent very different reactions to the urban environment and the practices that aimed to control it.

Asphalt Jungle: *The Street* (1923)

From its first scene *The Street* offers multiple perspectives on the city. We open on a close-up of a man reclining on a sofa. The close-up dissolves to a shot of the living room, the man anchored frame right among the furniture of his modestly appointed apartment. The man's wife, framed (ironically?) in a heart-shaped iris, prepares a meal in the kitchen, entering the living room to ready the table. This petty bourgeois interior (whose inhabitants remain nameless throughout the film) is interrupted, however, by a sudden play of shadows on the living room ceiling. A box of light, projected through the window at left, opens onto the ceiling. The next shot places the reclining man's head at the bottom of the frame, the shadow play in its frame of light seeming to emerge from the man's illuminated face. Two silhouettes, one female and one male, encounter each other on the street in a playful pantomime, offering a contrast to the mutual disregard between man and wife; the shot's wildly canted angle, meanwhile, offsets the staid perpendicularity of the apartment. The shadows spur the man up from the couch, and he walks, nearly stumbling, across the living room to the window. After a close-up of his entranced stare, we cut to a montage (implicitly from the man's point of view) of the city. Lines of traffic within the frame form a diamond, recalling the canted shadow play that brought him to the window. The diamond frames an iris shot of the street, all of which dissolves onto a close-up of a clown, who makes grotesque faces while fireworks spark in the background. The next dissolve reveals a patchwork of amusement park rides in motion—water slide, devil's wheel, roller coaster. A smiling woman's face fades in to dominate the screen, dancing couples and more fireworks populate the background, before a fade to full black. A final, oddly disconnected shot, of an organ grinder with a parakeet on his shoulder, ostensibly motivates the scene's musical accompaniment, before returning to the man staring out the apartment window.

The man's almost despairing expression as he looks away from the window conveys an overwhelming sense of separation from the scene outside. While spatially contiguous, domestic interior and street nonetheless appear to the protagonist irreconcilably distant. The montage, of a

257 Peter Fritzsche, "Vagabond in the Fugitive City: Hans Ostwald, Imperial Berlin and the Grossstadt-Dokumente," *Journal of Contemporary History* 29 (1994): 389.
258 Ibid., 397.

kind that would become typical in city-themed films of the 1920s, presents the street as a space of male fantasy. The alluring otherness of the street is rendered in a visual language that emphasizes the city's spectacular character; filmic technique manages urban space, making it conform to fantasy through composition, editing, and multiple exposure. This image of the city as male fantasy is underscored in the content of the images as well, which links the realm of popular amusements (the clown, the amusement park) with sexual desire (the woman, the dancing couples). The street appears here as a playground of male desire, harmonious and pleasing in its movements, offered up for the pleasure of the man in the apartment. The phantasmatic character of the man's vision of the street is further emphasized by his wife's very different view. Seeing her perturbed husband at the window, the wife takes a look for herself. The film cuts to another subjective view, but this time without cinematic tricks—a single, uninterrupted shot of the street below shows traffic in motion, and nothing else. For the wife, the street is simply another space of everyday life. Without internal frames or montage effects, the street appears plainly, a continuation of everyday routines, and thus not unlike the domestic interior.

Still enthralled by his own vision, the man flees his apartment. Once in the street, however, he finds neither the playground he imagined, nor the banality seen by his wife. A woman walks by, and as she passes, she turns to acknowledge the man's gaze with an alluring smile. Framed in the niche of a stone building, the woman's face fades away, a skull appearing in its place as the man recoils in horror. The shot fades into a close-up of the skeletal face, dressed fashionably in a hat and suit. As the man exits the frame, smiling madly, the woman's face reappears. She returns to life and goes on her way, as if nothing has happened. Critics have linked the image of the skull in this scene to expressionist representations of the city (most notably Karl-Heinz Martin's 1920 film *From Morning to Midnight*, based on the play by Georg Kaiser), which metonymically link the female body with the dangers of urban space. In this brief, visionary scene, the truth of the street is revealed—underneath the trappings of civilization, death rears its bony head. The skull exposes the city's supposed distance from nature as vain and illusory; modernity has not conquered nature, but merely dressed it up. The street appears here neither as a site of play nor everyday life, but as a pseudo-artificial sphere in which nature reigns.

Figure 4. Death, dressed for a night on the town. From *The Street*.

A reviewer in the *Film-Kurier* wrote of the film, "this metropolis is no goddess, but a vampire, who tears apart whoever falls into his clutches."[259] This remark speaks to the dynamics of animal predation that structure *The Street*. As the protagonist ventures into the street, the film stages urban space as a web of predator-prey relationships. The man is only fleetingly disturbed by his vision of the skull; the next time we see him, he has regained his composure. He comes upon a display window containing paintings and sculptures of female figures, which rekindle his sexual desire. He then turns around and leans back against the window ledge, assuming a predatory posture from which to observe the street's pedestrian traffic. Spotting something (or someone) of interest, he steps animatedly out of the frame. He is quickly distracted, however. We see the man next as he wanders aimlessly, and his gaze is suddenly captured by a wavy, illuminated arrow on the ground, which directs him to another shop window. In this moment of distraction, he in turn attracts the attention of a small-time criminal (and possibly a pimp, played by Anton Edthofer) and his girlfriend (Aud Egede Nissen), who are having a drink at a nearby outdoor table. The distracted man becomes their mark. The scene tracks the predatory gazes that crisscross public space, in which momentary distraction turns a predator into prey. The petty bourgeois is out of his element. Unable to maintain vigilance, he soon becomes a target for those at home in the street. The girl approaches him at the shop window, and his (near) downfall begins. The camera, meanwhile, remains at a distance. Unlike the unfortunate protagonist, the viewer is kept behind the screen, allowing us to observe both predator and prey. In this way the film offers us a portrayal of the city's visual ecology. As viewers we remain external to the predator-prey dynamic, analogous to the biologist observing a habitat.

The idea of the city as habitat and the site of a 'struggle for existence' (*Daseinskampf*) between competing organisms was a common topos in urban discourse in the wake of Darwin and evolutionary biology.[260] In "The Metropolis and Mental Life," for instance, Georg Simmel wrote that "in the life of a city, struggle with nature for the means of life is transformed into a conflict with human beings, and the gain which is fought for is granted, not by nature, but by man."[261] Here Simmel de- and re-naturalizes the metropolis, differentiating man from nature while at the same time locating Darwinian struggle within the man-made context of the city. Rather than suspending or alleviating it, capitalism and the city (capitalism's material-spatial expression) reinstate the natural struggle for existence within the human world.

The motif of predation is central to what Astrid Schwarz calls the niche conception of ecology.[262] Influenced by the Darwinian notion of adaptation, niche ecology treats natural habitats as containing multiplicities of organisms that compete for resources—'niche' designates the metaphorical space occupied by a particular organism within this habitat, from which it draws those things necessary to maintain its existence and reproduce. Much of *The Street* is concerned with depicting characters who are ill-adapted to the urban habitat, people who struggle to find a niche within it. Both the protagonist and his rube counterpart, an older man with money to spend who is eventually murdered, fall prey to the criminals more suited to the urban milieu. Even more poorly adapted, however, are the blind man played by Max Schreck and the small boy (father and son, respectively, of Edthofer's street criminal), who nearly meet their deaths

259 "Die Straße," *Film-Kurier*, November 30, 1923.

260 On the intellectual history of struggle in economics and biology, see Peter J. Bowler, "Malthus, Darwin, and the Concept of Struggle," *Journal of the History of Ideas* 37, no. 4 (1976): 631–50.

261 Georg Simmel, "The Metropolis and Mental Life," 17.

262 Astrid Schwarz, "Dynamics in the Formation of Ecological Knowledge," in *Ecology Revisited: Reflecting on Concepts, Advancing Science*, ed. Astrid Schwarz and Kurt Jax (New York: Springer, 2011), 129–30.

early in the film while walking into traffic. In this scene, maladaptation is again figured in terms of vision—the blind man, of course, cannot see the onrushing traffic, and the child is too small to be visible to motorists, or to have any visual mastery of his surroundings. Neither are physically suited to this environment, and they expose themselves to it at their own peril. Indeed, they do not even rate as prey, as resources worth exploiting by the stronger and better adapted. The scene forcefully depicts the city's savagery, which threatens to trample the small and the feeble. Luckily, civilization comes to the rescue, but only partially—a traffic cop halts the cars so the boy can pass, while the blind man is left to grope his way along the sidewalk. The city square, this scene implies, is only navigable for those whose physiology conforms to normative ideals of vision and mobility, necessarily excluding the blind and the young.

Figure 5. Unfit for the urban habitat. From *The Street*.

In figuring the city as predatory habitat, *The Street* resonates with a widespread discourse that located the primitive not just on the colonial periphery of Western civilization, but in the heart of the metropolis. "In urban discourse around 1900," write Kristin Kopp and Klaus Müller-Richter, the metropolis was the site "of a modernity that unleashed the primitive that had supposedly been overcome by the civilized city dweller."[263] Those parts of the city that seemed beyond the control of European municipal and moral authorities—red light districts, working-class and immigrant neighborhoods—were often understood as atavistic, quasi-natural manifestations at the centers of civilization. Such spaces thus posed a particular threat to male bourgeois subjectivity, which was predicated on the repression of desire and a strict boundary between self and other. *The Street*, like subsequent street films and later film noir, stages this threat in almost allegorical clarity. Despite his initial, visionary encounter with death, the protagonist ventures further into the city, where he falls prey to petty criminals and is eventually falsely accused of murder. *Film-Kurier* critic Willy Haas wrote that Grune's filmic rendering of the street aimed

> to create an organic amalgam, to completely merge the scenes of the confusion of the nighttime street and the active, suffering hero . . . to dissolve them into one another, such that the hero completely loses his individuality for one night, and disappears like a mere particle into the synthetic, generalized rhythms of the street.[264]

Having fled the stasis of the domestic interior, the man is swept along as if into the sea (another common topos in descriptions of the city), in a primal communion with sublime city-nature.

In Grune's film, the protagonist's descent into the street is equated with a fall into temptation, into an environment where indulgence and crime are far easier to imagine than they were behind the window pane. While moralistic on the surface, this narrative resonates with a shift within German criminology from moral to environmental explanations of crime. Already in the late nineteenth century the Italian criminologist Cesare Lombroso argued that propensity toward crime was a hereditary trait. Lombroso's widely discussed notion of the 'born criminal' represented a first step away from the moral discourse on crime, insofar as it de-emphasized individual agency, and thus, moral culpability. The idea of hereditary criminality was accompanied by attempts to specify the biological and physiognomic peculiarities of the born criminal. Within a few decades, however, the theory of the born criminal had fallen out of favor, at least in German criminological circles. In his seminal work *Crime and Its Repression* (German 1903, English 1913), Gustav Aschaffenburg outlined the social and individual causes of crime. Under social causes, Aschaffenburg included season, race, religion, location, cultural traditions, and economic conditions; while individual causes encompassed education, age, sex, as well as physical and mental characteristics. Aschaffenburg's approach relied far less on hereditary traits than it may seem at first glance. Indeed, he included race among the social factors to be considered largely in order to debunk Lombroso, cautioning the reader that even if race were a coherent concept (which he doubted), variations in economic conditions between countries made any supposed correlation between race and crime rate specious.[265] More important by far, Ascaffenburg argued, were the external causes, such as alcohol consumption and material deprivation. Even what appeared to be individual causes were not strictly individual. Discussing them "will always lead us . . . back to the soil from which the individual springs, and thus direct us back along the way to the social causes. . . . For we shall see that in most criminals there is no

263 Kristin Leigh Kopp and Klaus Müller-Richter, "Einleitung," in *Die "Grossstadt" und das "Primitive": Text, Politik, Repräsentation*, ed. Kristin Leigh Kopp and Klaus Müller-Richter (Stuttgart: J. B. Metzler, 2004), 13.
264 Willy Haas, "Nächtliche Großstadtstraße im Film," *Film-Kurier*, January 8, 1924.
265 Aschaffenburg, *Crime and Its Repression*, 32.

inner impetus towards crime, but merely the inability to withstand the pressure of external driving forces."[266]

The idea that environmental factors make the criminal, rather than morality or heredity, was attractive not only for its explanatory power, but because it promised courses of action. Customs, living spaces, and even economic conditions could potentially be managed within existing political frameworks, whereas eugenic measures would have entailed a very different relationship between the state and the body of the individual citizen—a relationship that would only be established in Germany the 1930s. Environmental criminology made crime into a matter of public health, analogous to the spread of disease. As Andrew Lees writes, "like cholera, crime was a disease, and public authorities had to fight it with the same attentiveness to the (social) causes that underlay it that had been demonstrated by officials in Hamburg in the aftermath of the great epidemic there in the early 1890s."[267] It is no coincidence then that *The Street*'s protagonist envisions a memento mori in the street below his apartment—the image of the skull is strongly associated with early modern representations of the plague. Crime is contagious, and our hero has been exposed. Environmental explanations, while promising new ways to deal with crime, were also threatening, because they eroded the boundary between criminal and law-abiding citizen. If milieu determined criminality, anyone was potentially a criminal. For Aschaffenburg and like-minded criminologists, the city was particularly conducive to crime, not because city-dwellers were somehow morally bankrupt or biologically predisposed, but because of factors peculiar to the urban environment:

> For good reasons the large city attracts criminals and loafers, who find there a better field for their labors, companionship with congenial spirits, and more opportunity to keep themselves and their booty out of sight. The pleasures of the city are also enticing, and it is just these pleasures that offer themselves daily in all possible forms, chief among which are prostitution and alcohol, that are fraught with danger to the man of weak character. He succumbs much more easily in the complicated life of the city than under simple rural conditions, to the temptation to steal. If, in addition, he becomes intimate with reckless companions, or, worse, falls into the hands of old prison veterans, the first step in a career of crime is soon taken.[268]

The Street's narrative is concerned with precisely this kind of environmental effect. Placed into new surroundings, a milieu rife with criminals and intoxicants, the protagonist is very nearly drawn in beyond the point of return. The plot, however, is perhaps secondary to the film's interest in the dynamics of visibility and invisibility in urban space. From the environmental perspective articulated by Aschaffenburg, visibility is crucial to maintaining social order; the dense accumulation of people, structures, and traffic in the city, however, obstructs the disciplinary gaze.[269]

The Street, with its claustrophobic vision of the city, is often cited as an example of cinematic expressionism, a visual language known for exploring psychic interiority by mapping the Freudian unconscious onto the movie screen's two-dimensional play of light and dark. At the same time, however, the film's stifling darkness and emphasis on the obstruction or interruption of vision resonates with the hygienist's image of the city, especially the slum, as a space of danger and disease. In representing the city, *The Street*'s expressionism can also be seen as translating hygienic discourse into visual terms. The street film genre characteristically mingles the psychic, social, and environmental dynamics of the city, an interplay already present in hygienic discourse itself. More than just mapping the city, the street film chronicles the

266 Ibid., 15.
267 Lees, *Cities, Sin, and Social Reform in Imperial Germany*, 186.
268 Aschaffenburg, *Crime and Its Repression*, 62.
269 On the production of visibility in urban public space, see Otter, "Making Liberalism Durable."

metonymic links between urban space, disease, and class in the bourgeois urban imagination, which was both threatened by and drawn to the contaminations each of these things represented. In 1929, the set designer Leopold Blonder encouraged filmmakers to translate hygienic ideals of "light and air" into moving images: "*Hygiene is expressed photographically as brightness*, as the bright color of walls, as the general brightness of a space in which dirt, dust, and decay are easily controllable."[270] The next film under discussion leaves behind the unhygienic darkness of *The Street* for the allure of clean, artificial illumination, which nonetheless poses its own unexpected dangers.

Overexposure: *Asphalt* (1929)

Joe May's *Asphalt* begins, simply enough, with asphalt. The title sequence opens on a close-up of a row of feet on steaming blacktop, as hammers fall rhythmically, in unison, stamping it down. The next shot contextualizes the scene, revealing a row of laborers smoothing the new asphalt at a construction site. Returning to the close-up, the title of the film is spelled out on the screen, letter by letter, each appearing successively with the fall of the hammers. With an ostentatious fade, the letters dissolve and the halting, labored rhythm of the hammers on blacktop is superseded by a series of traffic shots that alternate between moving and static points of view. We move over wet streets, past streetcars, automobiles, horses, pedestrians; as we get our bearings, we start to notice the signs and advertisements on kiosks, buildings, and buses, for the Hotel Atlas, for leather sportswear, Josetti and Manoli cigarettes, Lux laundry soap. An overhead shot, superimposed with traffic moving over different areas of the image, recalls the fantasy image that opened *The Street*, dynamic yet stable and pleasing. The next series of shots, however, disorients the viewer once again. A speeding car approaches left to right in a canted, extremely low-angle shot, nearly running us down; the same in the next shot, this time right to left, and even closer.

The sequence depicts urban circulation gone haywire. In presenting construction workers stamping asphalt, the film draws attention to the material labor required to produce the built environment, a labor typically forgotten by those who use the city streets. Asphalt is the literal, material foundation of the shots that follow, as the camera is drawn into the urban traffic, gliding along the streets in a frenzy of motion. The briefly glimpsed but pervasive advertising on the city's facades links the mobility facilitated by asphalt to commerce, the circulation of commodities throughout the city (and beyond). From labor and production to movement and circulation—one expects images of commodity consumption to follow, but this is not what happens. The traffic intensifies as the editing accelerates, until the camera then loses its bearings completely, swinging around wildly. Relief arrives with a hard cut to an interior close-up of a caged bird. As if at the end of a roller coaster, we are suddenly dumped into the family apartment where the film's protagonist, the traffic cop Holk, lives with his parents (and the bird). Progressing from underlying labor to shining surface to sensory overload, we ultimately end up trading the street for a birdcage, exterior for interior, exposure for protection.

Although working with similar spatial oppositions, *Asphalt* reverses *The Street*'s initial trajectory from stifling interior to exciting exterior. Beginning with the birdcage, the first shot sets up the Holk household as a peaceful, controlled space. The camera pans around the meticulously ordered room, pausing to note the jars of food arranged on a shelf, the ticking

270 Leopold Blonder, "Zeitgemäße Wohnräume," *Filmtechnik* 5, no. 24 (November 23, 1929): 495 (emphasis in original).

clock, Holk's uniform hung at the ready, and finally, his parents as they discuss the news after breakfast (clearly a routine occurrence). Father sips his coffee, taking care to wipe his mustache afterward, while mother folds up the newspaper, shaking her head: "You know, Father—all that happens in the world in a single day?!" These middle-aged, middle-class parents experience the world at a remove, through the mediation of the newspaper. From the very beginning, then, the film takes flight from the city, the story beginning only with the cut to the Holk apartment, establishing an alignment between narrative and interiority. Outside the eye gets carried away; the protective space of the apartment and the story itself function as coping mechanisms, strategies for managing the overwhelming urban environment.[271]

Indeed, as a police officer directing traffic, it is Holk's job to manage this environment. Holk dons his uniform, wishes his parents a good day, and leaves for work. The camera returns to the birdcage, which can no longer hold back the flow of traffic—superimposed shots of moving vehicles rush in on the cage from all four corners of the frame, eventually wiping it away. More kaleidoscopic traffic, before a gloved hand appears in the center of the frame, replacing the birdcage and re-introducing a moment of stasis. The hand serves as a visual anchor, something to hold onto as traffic flows around it. We then see the hand attached to a stiffly outstretched arm, as cars go by in the background, before the camera pulls out to reveal Holk, standing in the middle of the street on a small raised island, as he directs traffic with precise gestures. A series of higher angled shots from farther away distance us from Holk and place him in the context of the square with its continuous streams of intersecting traffic and pedestrians. The city's energy appears as directed, in layers of orderly lines that crisscross the frame. Then, suddenly, two cars collide—although there is anger and momentary disruption, for this, too, there is a procedure. Holk keeps traffic moving even as he tickets the glamorous woman who caused the accident. A smile flashes on his face, signaling his attraction to her, but only after she has driven away. Things return to normal. The next scene leaves Holk behind to follow the window shoppers strolling on *Asphalt*'s faux Kurfürstendamm. Günther Rittau's camera hovers above the crowds, climbing up a lamppost, pausing as the streetlights switch on ostentatiously, before swinging left to present the street's newly visible architecture of light. (Thank heavens—at night the set's elaborate lighting design can shed the naturalist pretense of day and unfold its artificial glory.)

271 On narrative as a therapeutic strategy for managing sensory overload see Thomas Elsaesser, "Archaeologies of Interactivity: Early Cinema, Narrative and Spectatorship," in *Film 1900: Technology, Perception, Culture*, ed. Klaus Kreimeier and Annemone Ligensa (New Burnet, England: John Libbey Publishing, 2009), 14.

Figure 6. Officer Holk's guiding hand. From *Asphalt*.

Like *The Street*—indeed, like most noir or crime films ever since—*Asphalt* presents urban public space as a predatory niche ecology, whose visual dynamics are exploited for criminal gain. A crowd gathers in front a lingerie store, while a woman inside the display window demonstrates how to put on a stocking. However educational, this public exhibition titillates the crowd to the point of distraction, allowing a group of thieves to rob the purse of an unfortunate onlooker. The robbed woman's fur coat signals her wealth to this pack of urban predators. The camera then drifts across the street to a jewelry store, where the diamond thief Else dazzles an older salesman with her soft-focus features. She nearly gets away with it, but another salesman (the first's less-susceptible son) realizes a diamond is missing and confronts her on the street outside. The crowd, which would normally hide her, encircles her, and Holk is summoned. Holk eventually discovers the diamond (trick umbrella!), but on the way back to the police station Else gives a knockout performance—through copious tears she pleads, the rent was due, she would have been out on the street. She convinces him to let her retrieve her papers from her apartment, where she seduces him and escapes arrest. The rest of the film traces the consequences of this seduction. Holk falls in love, and ends up accidentally killing Else's boyfriend (also a thief) in a fight. Holk confesses to his father, who turns him in to the police, but Else arrives to support Holk's claim of self-defense. Holk is released and Else goes to prison for her earlier crimes. Less willingly but

more completely than *The Street*'s nameless protagonist, Holk's proximity to crime draws him in.

Unlike the earlier film, however, *Asphalt* does not depict the street as a criminal milieu per se, with its associations between poverty, disease, and moral transgression. *Asphalt*'s street is a place of clean surfaces, ample lighting, and easy circulation—every bit the ideal advocated by the social hygienists concerned with reforming urban space. In an analysis of Weimar-era set design practice, Tim Bergfelder contrasts two pre-production images for *Asphalt*, the first by Robert Herlth and the second by Erich Kettelhut. Herlth was originally contracted for *Asphalt*, but left due to creative differences with May, and Kettelhut was brought on. For Bergfelder, Herlth represents a "painterly" tradition in Weimar set design; in his image for *Asphalt*, "passing cars blur into each other . . . isolated figures remain faceless and become chiffres of alienation and loneliness . . . the lighting is diffuse, reflected by wet streets."[272] Kettelhut, on the other hand, known for his work with Otto Hunte and Karl Vollbrecht on Fritz Lang's monumental productions, takes an architectural approach. His image "offers comprehensive visual access to the space depicted. While the Herlth image draws the observer into its space and into a feeling of disorientation, Kettelhut's maintains an omniscient distance."[273] In its visual impenetrability, Herlth's image recalls *The Street*'s aesthetics of poor urban hygiene; as realized, however, *Asphalt*'s Berlin is, if anything, too hygienic—too much light, too much air, and above all, too much circulation. The controlled environmental conditions depicted in *Asphalt*'s urban space, enabled in part by Holk as traffic cop, end up only encouraging more mobility, more traffic. The danger here is not so much stagnation, getting drawn into a dark, dank space from which one cannot escape, but getting caught in the city's flows and being thrown in unexpected directions (as intimated in the opening montage).

Asphalt's investment in circulation anxiously echoes Weimar-era urban modernization. Construction was a common sight in late-1920s Berlin (in the brief period between inflation and depression), most visibly in the renovations of Hermannplatz and Alexanderplatz.[274] Facilitating traffic within the city was a crucial goal of such projects, which re-conceived these important public squares as traffic nodes, points of destination *and* transition. Traffic volume in Berlin, especially automobile traffic, was increasing at a fantastic rate, and the city responded by clearing the way for major throughways and expanding the subway system. Martin Wagner, Berlin's chief architect from 1926 to 1933, hoped such projects would transform the city from a mere(!) metropolis into a "world city" (*Weltstadt*). For Wagner, the ideal "world city square" (*Weltstadtplatz*) "is at one and the same time a stopping place and a sluice gate: a stopping place for consumer wealth, and a sluice gate for flowing traffic."[275] From this perspective, urban modernization meant providing infrastructure for goods to be efficiently distributed, as well as for consumers to be easily captured—in other words, it should grease the gears of capitalist exchange, although this purpose was rarely acknowledged explicitly. Urban planners like Wagner often employed organicist and hygienic metaphors to justify renovation projects, by turns figuring the *Volk* or the city itself as an organic body. Urban planning, wrote Karl Hoepfner in 1921,

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272 Bergfelder, Harris, and Street, *Film Architecture and the Transnational Imagination*, 48.

273 Ibid., 49.

274 On the planned renovation of Alexanderplatz, see Sabine Hake, *Topographies of Class: Modern Architecture and Mass Society in Weimar Berlin* (Ann Arbor: University of Michigan Press, 2008), 212–16.

275 Martin Wagner, "The Design Problem of a City Square for a Metropolis," in *Metropolis Berlin: 1880-1940*, ed. Iain Boyd Whyte and David Frisby (Berkeley: University of California Press, 2012), 351.

> means 'building cities,' creating city-bodies [*Stadtkörper*] and building them out in all directions, such that within them trade, traffic, business, and industry can flourish as much as possible; that its citizens feel as healthy and comfortable as possible; that their vital and productive power is cared for and strengthened; and that an able-bodied people can grow and develop and bring to fruition its powers as well as is possible.[276]

Urban planners in Berlin were enamored of thermodynamic, organic, and hygienic images of the city: the city planner Martin Mächler saw traffic and trade as an expression of the people's "excess energy";[277] Wagner described Berlin's streets as a "circulatory system of major traffic arteries";[278] and Ernst Reuter, a Berlin city councilor who helped unify the city's public transport system, claimed that "clearing the way for large thoroughfares will air out the city center."[279] Like ecologists, these urban planners viewed the city as a living system, a network of materials and energies they were tasked with optimizing and stabilizing. Traffic was a crucial part of this ecological view of the city, serving (true to the spirit of late-1920s new objectivity) as a de-politicized image of the city's dynamism.[280]

As Elizabeth Grosz has argued, the imagination of the city-body "suggests a parallelism or isomorphism between the body and the city, or the body and the state. The two are understood as analogues, congruent counterparts, in which the features, organization and characteristics of one are also reflected in the other."[281] Given this longstanding analogy between body and city, German discourses on urban society around 1900 thus often drew on images from the sciences of life, such as biology and organic chemistry. Metabolism (*Stoffwechsel*), in particular, was a crucial concept in nineteenth-century life science that found its way into sociological thought. In 1840, the chemist Justus von Liebig published the pathbreaking, internationally received *Organic Chemistry in its Applications to Agriculture and Physiology*, in which he argued that

> the continued existence of all living beings is dependent on the reception by them of certain substances, which are applied to the nutrition of their frame. An inquiry, therefore, into the conditions on which the life and growth of living beings depend, involves the study of those substances which serve them as nutriment, as well as the investigation of the sources whence these substances are derived, and the changes which they undergo in the process of assimilation.[282]

Along with the study of thermodynamics, organic chemistry transformed scientific understandings of life and dealt a serious blow to vitalist ideas of 'life energy' (*Lebenskraft*). Thermodynamics and metabolism claimed life as a material-energetic phenomenon, involving scientifically observable transformations of physical and chemical states.

It was not long before nineteenth-century thinkers—most notably Karl Marx—transferred the idea of metabolism from the individual organism to larger social processes. As John Bellamy Foster points out, Marx "utilized the concept of metabolism to describe the human relation to nature through labor."[283] For Marx, labor at its most basic level involved the material transformation and assimilation of external substances: just as the organism draws its nutrients from nature, labor "is the universal condition for the metabolic interaction [*Stoffwechsel*]

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276 K. A. Hoepfner, *Grundbegriffe des Städtebaues*, vol. 1 (Berlin: Julius Springer, 1921), 1–2.

277 Martin Mächler, "Demodynamik," *Deutsche Rundschau* 187 (1921): 283.

278 Wagner, "The Design Problem of a City Square for a Metropolis," 249.

279 Ernst Reuter, "Berliner Verkehr," *Das neue Berlin*, no. 11 (1929): 214.

280 On the "rapture of circulation" in the new objectivity, see Helmut Lethen, *Cool Conduct: The Culture of Distance in Weimar Germany*, trans. Don Reneau (Berkeley: University of California Press, 2001), 21–32.

281 Elizabeth Grosz, "Bodies-Cities," in *Feminist Theory and the Body: A Reader*, ed. Janet Price and Margrit Shildrick (New York: Routledge, 1999), 383.

282 Justus von Liebig, *Organic Chemistry in Its Applications to Agriculture and Physiology*, ed. Lyon Playfair (London: Taylor and Walton, 1840), 1.

283 John Bellamy Foster, *Marx's Ecology: Materialism and Nature* (New York: Monthly Review Press, 2000), 157.

between man and nature, the everlasting nature-imposed condition of human existence."[284] Later works of social science, such as Albert Schäffle's monumental *Bau und Leben des socialen Körpers* (Anatomy and Life of the Social Body, four volumes, 1875-78) and Wilhelm Ostwald's *Energetische Grundlagen der Kulturwissenschaft* (Energetic Foundations of the Science of Culture, 1909) similarly applied thermodynamic and metabolic concepts to large collective processes.[285] And, as in chemistry, the study of metabolism also had normative implications at the social level. If, as for Liebig, "the object of organic chemistry is to discover the chemical conditions which are essential to the life and perfect development of animals and vegetables,"[286] the metabolic conditions of human life could be quantified and aggregated as well, to promote human health and maximize social productivity. Max Rubner's rational nutrition project, for instance, investigated the underlying conditions that resulted in poor calorie and protein consumption, with a special focus on urban populations, and proposed a Central Nutrition Office (Zentralnahrungsamt) that would intervene in nutritional questions at the federal level.[287] For Ostwald, it was the very function of the state to "effectively gather human energy for common purpose."[288]

As a traffic officer, *Asphalt*'s Holk is an agent of metabolic regulation, a soldier on the front lines of the war on entropy. The traffic cop was a well-known figure at the time, so much so that by 1929 R. W. Schulte remarked in the urban planning journal *Das neue Berlin* (The New Berlin),

> Stage and film, radio and school, press and exhibitions have embedded the activity of the traffic police in the new Germany, and especially in the new Berlin, so strongly, that the child's playfight between cops and robbers already has today become our smallest official act: the friendly arm movement of the traffic police.[289]

The figure seemed to embody the technocratic ethos of the period, the new objective belief in "the superiority of the supra-individual system that directs the behavioral forms,"[290] and had the difficult task of mediating between the two. The work of the traffic officer demanded a sustained awareness of his environment, an extreme form of the mild but constant vigilance Simmel suggested was characteristic of city dwellers generally. Schulte, a psychologist (actually a 'psychotechnician'), collaborated with the Berlin police, developing assessment tests for the kinds of activities involved in policing traffic: "Ability to quickly to identify and assess situations, understanding for theoretical and practical traffic issues, multitasking (while carrying out gymnastic movements to regulate traffic), memory for license-plate numbers, decorum, precision in reporting, etc."[291] The tests gauged the prospective officer's adaptability to a perceptually demanding environment, which could also be described as the ability to maintain a

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284 Karl Marx, *Capital: A Critique of Political Economy*, trans. Ben Fowkes, vol. 1 (London: Penguin, 1976), 290. Quoted in Foster, *Marx's Ecology: Materialism and Nature*, 157.

285 Wilhelm Ostwald, *Energetische Grundlagen der Kulturwissenschaft* (Leipzig: Dr. Werner Klinkhardt, 1909). Schäffle's most extensive discussion of the metabolism of social processes can be found in Albert Schäffle, *Bau und Leben des socialen Körpers*, vol. 3.1 (Tübingen: H. Laupp, 1878).

286 Liebig, *Organic Chemistry*, 1.

287 Corinna Treitel writes that Rubner's "rational nutrition represented the breakthrough of a new kind of biopolitics that regarded entire populations and their food needs as thermodynamic systems requiring constant regulation." Treitel, "Max Rubner and the Biopolitics of Rational Nutrition," 9.

288 Ostwald, *Energetische Grundlagen der Kulturwissenschaft*, 160.

289 R. W. Schulte, "Die Psychotechnik im Dienste der Verkehrspolizei," *Das neue Berlin*, no. 11 (1929): 224. Translation quoted from McElligott, *The German Urban Experience*, 176.

290 Lethen, *Cool Conduct*, 29.

291 Schulte, "Die Psychotechnik im Dienste der Verkehrspolizei," 226.

state of divided, yet focused attention amid a constantly changing flow of traffic. He thus functions as a point of orientation for the myriad, potentially conflicting energetic flows of the urban environment, flows he must literally stand within and yet observe and regulate from without. Like an embodied super-ego, the traffic cop stands as a model for all those who use the asphalt—without "self-discipline" on the part of drivers and pedestrians, Schulte emphasized, the roads would never truly be safe.[292] As in other domains of modern life, it fell to the individual to make up the gap between environmental controls and the persistent, though minimized, risk of accident.

The film shows little of the deftness in managing the urban environment displayed by the protagonist Holk. Echoing numerous reviews of the film, Hans Wollenberg wrote in the *Lichtbild-Bühne*:

> The film stops where it should have begun. One thing about this is tragic: the ill fit between the admirable means by which the film strives toward the reality of the external environment—asphalt, world-city rhythm [*Weltstadtrhythmus*]—and the insufficient believability of the interior, human events.[293]

Critics praised May's virtuosic depiction of urban space, but expressed disappointment in its melodramatic story of duty, seduction, and murder. Arguably, however, the film did precisely what it set out to do. Like the traffic cop Holk, the linear narrative functions to ward off the danger of the city's crisscrossing energies and ceaseless metabolism. Structurally analogous to the film's opening scene, with its flight from urban circulation into Holk's family apartment, the film takes refuge by focusing on a few easily recognizable character types and narrative tropes. While invoking the modernist aesthetic of Walter Ruttmann's *Berlin: Symphony of a Great City*, a film I will discuss more in the next chapter, *Asphalt* takes the road more travelled in the face of the city's dizzying possibility.

Waste Management: M (1931)

Fritz Lang's 1931 film *M* begins by juxtaposing linear and cyclical motions. An overhead shot presents a group of children in a bare tenement courtyard, arranged in a circle as they sing a macabre song about a "man in black who will soon be here / With his cleaver's blade so true / He'll make mincemeat out of you!" A little girl stands in the center and counts clockwise around the circle, moving from child to child with each halting syllable until the end of the verse—"you're out!" The unlucky child steps out of the circle but remains in the frame, along with two others, whom the man in black must have come for earlier. The count begins again and the camera drifts away, tilting upward to an overlooking balcony, where a woman carrying laundry yells at the children to stop singing. They wait for the woman to leave and resume their song. Finally, a cut—to an empty staircase, where the woman slowly enters the frame from below, weighed down by her laundry basket and breathing heavily. These first two shots establish a contrast between the circular motion of the child's game below, whose inertia keeps it spinning around and around, even in the face of adult disapproval; and the difficult, linear, upward progress of the laundry woman, who seems like she might not make it up the stairs. The two spaces, however, courtyard and interior, are linked by the thematics of material decay. The children sing of death in startlingly corporeal terms, as the lyrics describe the transformation of the victim into "mincemeat." The interior, meanwhile, as the space of housekeeping, is the site of a daily struggle against entropy, the constant accumulation of dirt and dust that the woman is

292 Ibid.
293 Hans Wollenberg, "Asphalt," *Lichtbild-Bühne*, March 12, 1929.

tasked with resisting. The next shots follow Elsie Beckmann's mother as she laboriously scrubs the laundry and prepares that day's evening meal. The children and the adults embody two distinct attitudes toward the process of material decay. In their play, the children display a grotesque, carnivalesque embrace of transience and death. Their arrangement in a ring speaks to an imagination of life as circular, or cyclical, as reflected in the turning of the seasons, or the birth of new generations as the old pass away. The adults, meanwhile, work to repress all signs of death, whether they arise in a child's game or in the dirt of yesterday's laundry. Theirs is a labor of enlightenment that tries to re-make life's cycle into a line of forward progress.

Figure 7. Dance of death vs. domestic labor. From *M*.

In the late nineteenth century, Albert Schäffle described the process of social metabolism as a succession of first progressive, and then regressive stages. Progressive social metabolism

includes primary appropriation and production, essentially the extraction of raw material from nature; the processing of these materials into some usable (or, in capitalist society, salable) form; intermediary stages of material exchange as goods are traded, whether to other industrial producers for use or further processing, or to those who will sell to consumers; and, in a final stage of progressive metabolism, the readying of these goods for purchase or distribution by individual households.[294] At this point, regressive metabolism takes over, which involves only two stages: 1) household consumption, "*sustenance*, especially *nutrition of the workforce* and renewal of supplies (*consumption* of human and material necessities)"; and 2) expulsion, "*elimination* of the used or discarded human and material goods: burial, discarding, cleaning, laundry, removal of fecal matter, etc."[295] As outlined here, the social metabolic process appears linear, but this linearity only holds when the process is viewed from the perspective of the social body. Ultimately, though, the idea of metabolism de-centers the organism and dissolves it into a single function within the material and energetic circulation of an environment. As Schäffle points out elsewhere, following the teachings of nutritional science, "each organ, through *its* nutrition, functions *to process the waste of other organs*."[296] Metabolism demotes the living body from organism to organ, one agent of material transformation within a web of other living and non-living agents. One organ's waste is the other's nutrient, one's trash the other's treasure. While the science of metabolism promised unprecedented control of natural (or pseudo-natural) processes, from soil enrichment to the optimization of nutrition and traffic, it also threatened to undo dearly held distinctions between organism and environment, living and non-living, resource and waste. Just as thermodynamics haunted progressive ideology with images of entropy, fatigue, and heat death, metabolic science drew attention to that which industrial civilization worked increasingly hard to expel—its material waste.[297] For industrial societies, metabolism implicitly held the lesson that life processes do not end with consumption. Consumption is a link in the metabolic chain, just like production. Consumption, in other words, is just another form of production, and its products persist until taken up again by some other agent of material transformation.

M is replete with images of consumption. Sometimes this consumption is metaphoric, but often not. Throughout the film, people eat, drink, smoke; they also read, watch, buy, and murder, and the film aligns the former with the latter through narrative coincidence or formal juxtaposition. Beckert, for instance, is incited to murder near display windows, and goes shopping with his young victims before he kills them. If some desire is denied, one form of consumption can substitute for another as well: Beckert downs a few shots of cognac when a prospective victim escapes his grasp; for the police and the gangsters, cigarettes seem to serve as a substitute for catching Beckert, while they contemplate how to find him and wait for information. If *M* highlights consumption in various forms (gastronomic, economic, murderous) as the chief activity of the urban metabolic process, however, it is also deeply concerned with the outcomes of that process. As much as the camera puts consumption on display, it just as often lingers on what is left behind by consumption, what is leftover or discarded. *M*'s Berlin is characterized by a turbulent metabolism whose waste products stay stubbornly behind and whose effects ripple throughout the city. What, or whom, the film asks, does the urban ecology discard

294 Schäffle, *Bau und Leben des socialen Körpers*, 3.1:294–95.
295 Ibid., 3.1:295 (emphasis in original).
296 Ibid., 3.1:270.
297 On the intellectual and social effects of the science of thermodynamics, see Rabinbach, *The Human Motor*.

as waste? How is this waste taken up by others, reused, recycled? What does the ecstasy of consumption in the city itself, in turn, produce?

The murder of Elsie Beckmann triggers one of Weimar cinema's most iconic montage sequences—a series of shots that signify Elsie's death indirectly through the depiction of empty spaces, spaces where Elsie should be but is not. We see a stairwell Elsie does not climb, a dinner table she does not join, a rolling ball she does not bounce, a balloon whose string she does not hold. The montage is typically appreciated for the way it signifies, by foregrounding Elsie's absence rather than showing the murder itself. If these shots are about Elsie's death, however, they are equally about the persistence of the world of objects that contained her. The staircase, dinner plate, ball, and balloon continue to exist, but severed from their function as useful objects. Elsie's death cuts these objects loose from the human context that gave them meaning. The balloon, as it floats upward into the power lines, serves as an emblem of this metabolic process that discards formerly useful objects, which, having served their purpose, are set free, ownerless, to drift through the world. In this crucial instance, Lang does not depict Beckert's murderous act of consumption, but rather its waste products.

The police work *M* traces through the rest of the film consists in large part of making sense of these leftovers. The problem is perhaps even more fundamental, as the police do not even know what is leftover from the crime and what is not, that is, what things or traces are meaningful in the first place, regardless of what they might mean. The film soon returns to the scene of the crime in another montage depicting the methods mobilized by police to catch the killer. An overhead shot shows half a dozen officers as they pick through the crime scene for clues. They find one, which Lang displays in close-up—a discarded candy wrapper, containing a small amount of leftover candy and powdered sugar. These objects can be linked with some certainty to the crime, but the rest of the search—fingerprint and handwriting analysis, tips from citizens, eyewitness interviews, tracking dogs, surveillance of homeless shelters and train stations—none of it leads anywhere. "What good is all this?" asks a city official, to whom the chief of police is explaining the search methods in detail over the phone (and to us, in voiceover). Standing in for the viewer, the politician essentially asks: why isn't this montage shorter? Lang draws it out so we experience its laborious duration, its Sisyphean pointlessness. Like Mrs. Beckmann doing the laundry, the police do battle against entropy and decay—fingerprints build up over time, blurring them; scents and memories fade; trash accumulates. The work of the police involves turning waste into traces, reconstituting these objects' existential relation to a person or event—in essence, this work involves assigning an "owner" to a discarded thing, re-situating it in a context of human action and meaning. Trash, as the disavowed object of consumption, is one of the chief products of industrial capitalism, such that attempting to link a piece of trash back to its owner, as the police must do with the discarded candy wrapper, is akin to turning back time. The metabolic process triggered by Elsie's murder takes another twist as Detective Lohmann raids a club frequented by criminals. As the guests wait to present their papers to Lohmann, we see two other detectives collecting items left behind at the tables. A slow tracking shot surveys a table with the trove of disavowed contraband—an assortment of safecracking tools, bullets, pistols, brass knuckles, knives, stolen cigarette cases, watches, jewelry, silverware, wallets, fur scarves, even a pair of opera glasses. Unrelated to the murder, these items will presumably be catalogued and eventually discarded.

Asphalt, as we saw, warded off the threat of circulation by reducing its focus to a limited number of characters, whose narrative plays out according to standard melodramatic tropes. *M*, meanwhile, shuttles back and forth between different efforts throughout the city, on the behalf of

police and criminal gangs, to find the murderer. The film conceives of police and criminals as two halves of a functional system, whose equilibrium has been disturbed by the murders. As Schränker says to his criminal compatriots, "measures taken by the police and the daily raids to catch this child murderer are hampering our activities to an almost unbearable degree. We can no longer tolerate the fact that we're not safe now in any hotel, bar, café or even private home from the clutches of the police. This state of affairs must end. Things must return to normal or we'll go under." Common sense holds that criminals and police are opposed forces, but the appearance of an "outsider" (as Schränker calls him) brings the larger system into focus, in which opposed forces had reached a state of balance. As such, unlike *Asphalt*, *M* does not so much follow a collection of individuals as trace a circulation of energies within a system thrown into disequilibrium. For a large part of its running time, the film becomes effectively centerless—the killer is left behind as narrative momentum is distributed among those that circle around him, some of whom we know by name, but many of whom remain anonymous. While attempting to narrate a city, however, *M* is not a modernist urban montage like Ruttmann's *Berlin*. While Lang does have a fondness for formal symmetries, the film proceeds according to narrative causality. Rather than darting off into tangents, *M*'s city is a like a spinning top jolted off its axis, swinging and jerking before settling back to normal.

The police and criminals pursue two different strategies. Rather than sift through the detritus of urban everyday life, Detective Lohmann prefers the orderliness of the archive. Reasoning that the murderer has probably had contact with authorities in the past, Lohmann procures a list of people released from psychiatric hospitals over the last five years, thus narrowing the focus of his efforts immensely. Schränker and his compatriots, meanwhile, enlist the members of the beggars' union to act as spies. With each beggar assigned a specific set of addresses, they are able to monitor the entire city in real time. Both strategies seem to imply that the past is mostly noise—Lohmann responds by looking to where the past has already been organized, in the form of records and documents; while the criminals, although far less efficient than Lohmann, hope to catch Beckert in the act, which would obviate the need to sift through traces and link past to present.

Schränker's plan is an ingenious and troubling form of recycling. As he explains, the plan requires "people who can go anywhere without causing a stir, follow anyone without attracting attention, follow any child to any house without arousing suspicion. In short, people whom the killer would never suspect." The beggars can see (or hear, in the case of the man who recognizes Beckert's whistle) without being seen because they occupy a social location analogous to waste. Blind, missing limbs, or simply unemployed, the beggars have been discarded by industrial capitalism and are seen as without value. The city's functioning depends on an incredible labor designed to make waste invisible—zoning separates factories from residential areas, sewers direct waste matter out of the city, cleaners collect trash from streets and households—and thus it is no surprise that the beggars remain largely out of sight, even as they populate the city streets. A kind of psychic sewer system within the urban population simply directs attention above and around them, rendering the beggars invisible. Schränker realizes that in this extraordinary situation, because the beggars can see and yet remain mostly unseen, their social location within the urban environment is incredibly valuable. His plan re-inserts these discarded men into the urban metabolic process, men who are themselves the city's inveterate recyclers—the enlistment scene at the beggars' cafeteria opens with a shot of partially smoked cigars and cigarettes laid out on a table, whose collector has carefully arranged them by type and size.

As Peter Stallybrass and Allon White argue in *The Politics and Poetics of Transgression*, "the bourgeois subject continuously defined and re-defined itself through the exclusion of what it marked out as 'low'—as dirty, repulsive, noisy, contaminating."[298] Depicting the city's attempt to rid itself of the murderer, *M* fleshes out the link between environmental and social exclusion, between material and human waste. Characters in the film repeatedly assert Beckert's inhumanity, and even the criminals refuse to accept him as one of their own. Schränker rankles at the thought that respectable society would see him and his colleagues as in any way similar to a serial child murderer. Schränker rages: "we must draw a firm line between ourselves and this man they're looking for! We conduct our business in order to survive, but this monster has no right to survive! He must be killed, eliminated, exterminated! Without mercy or compassion!" Beckert similarly terrifies the general population because he looks 'normal,' close enough to 'us' that he is invisible. The beggars, it seems, are invisible because they have already been excluded—their difference is clear enough that they can be ignored, like the contents of a waste basket. Beckert, meanwhile, must be made different, distinguishable, so that he can be taken out of circulation and flushed away. This process culminates with his being marked with the M (for *Müll*, trash?). He flees into an office building, hiding in the attic storage space, where he hopes his pursuers will overlook him among the clutter of other objects that have fallen into disuse.

Figure 8. Beckert hides among the refuse. From *M*.

298 Peter Stallybrass and Allon White, *The Politics and Poetics of Transgression* (Ithaca, NY: Cornell University Press, 1986), 191.

Beckert's show trial, held by the 'normal' criminals, takes place on the grounds of an old schnapps factory "that went belly up in the Depression." In an early example of industrial ruination, a brief montage introduces the scene with exterior shots of the abandoned factory—broken windows, walls with large holes, sunlight shining into the shabby interior. Once again, Schränker shows his knack for recycling what has been left behind. Since the Depression, "the building's stood empty, and no one gives a damn about it." Much like the beggars, the factory has been judged to be without economic value and has therefore become invisible even to the police. More than simply providing an atmospheric setting for Lorre's famous monologue, the site makes clear the incredible scale of the material waste produced by industrial capitalism. Beginning with a ball, a balloon, and a candy wrapper, we end with entire urban populations and industrial districts.

The Street, *Asphalt*, and *M* all retain a certain reserve with regard to the urban environment. *The Street* depicts the overwhelming force of urban phenomena, which threaten to destroy the old, the young, and the impressionable, while *Asphalt* takes refuge from the street in melodrama. *M*, meanwhile, attends carefully to the material and social exclusions that characterize the urban metabolic process. The street film, then, as much as it delves into the city, is simultaneously characterized by an aversion to the street. The next chapter, by contrast, begins by focusing on Walter Ruttmann's *Berlin: Symphony of a Great City*, a film with no such aversion. Ruttmann's film inserts its viewer directly into the city's profoundly inhuman metabolism.

III. Modernist Media Environments

CHAPTER FIVE
Urban *Umwelten*: Ruttmann's City Symphony and the Berlin Lunapark

The practices of environmental control discussed in previous chapters depended upon a view of life and nature as quantifiable and predictable, and thus manageable. Environmental knowledge employed for purposes of urban administration understood the city and its inhabitants as standing in a mechanical relation—change the environment and life (whether this meant plants, animals, or human populations) will be forced to adapt. As Peder Anker notes, this form of ecological knowledge is often predicated upon a perspective that stands outside the life-environment relation and controls it: "One of the ironies in the history of ecology is that ecologists hardly looked upon themselves as being part of nature's economy. On the contrary; the master perspective from above was the very precondition for describing (human and nonhuman) interrelations within nature and society."[299] This was true of the planners, hygienists, and engineers concerned with managing urban environments as well. They understood the urban environment, in other words, as a *milieu*. The concept of the milieu can be found in the writings of antique philosophers such as Hippocrates and Aristotle, and was discussed in early modern and Enlightenment philosophy as well, by writers such as Jean Bodin, Michel de Montaigne, Montesquieu, and Johann Gottfried Herder. In the nineteenth century the notion of milieu became important within biology and the burgeoning social sciences. Scientists understood the milieu as an organism's material surroundings, which determined its way of life. A milieu was seen as deterministic, shaping the fate of the individual organism with little room for subjectivity or agency.[300] However, the environmental controls deployed in urban contexts relied on a conception of the milieu as a field of intervention: rather than posing a limit to human action, in modernity the milieu became something that could be modified and instrumentalized.

In a series of works beginning with the 1909 book *Umwelt und Innenwelt der Tiere* (Outer and Inner Worlds of Animals), the biologist Jakob von Uexküll elaborated a radically different notion of environment that took an organism's perceptual apparatus as the point of departure for investigation. Rather than understanding an environment as a pre-given world to which an organism must adapt, Uexküll claimed an environment was itself a product of the organism as perceiving subject. An environment in this sense, which Uexküll called an *Umwelt*, cannot be said to pre-exist its inhabitant: "Every subject spins out, like the spider's threads, its relations to certain qualities of things and weaves them into a solid web, which carries its existence."[301] His favorite (and thereafter most-cited) example of a non-human *Umwelt* was that of the tick. A tick waits patiently on a tree until it senses the presence of butyric acid, found in the sweat of mammals—the only thing it can 'smell'—at which point it drops onto the animal below; sensing

299 Anker, *Imperial Ecology: Environmental Order in the British Empire, 1895-1945*, 5.
300 On the intellectual history of "milieu," see Armin Hajman Koller, *The Theory of Environment.* (Menasha, WI: Banta, 1918); and Werner Sombart, *Vom Menschen: Versuch einer geistwissenschaftlichen Anthropologie* (Berlin-Charlottenburg: Buchholz & Weisswange, 1938), 385–96.
301 Jakob von Uexküll, *A Foray into the Worlds of Animals and Humans: With A Theory of Meaning*, trans. Joseph D. O'Neill (Minneapolis: University of Minnesota Press, 2010), 53.

the warmth of the animal's body, it begins to feed. The tick's world is composed entirely of the presence or absence of these perceptual cues, butyric acid and warmth. By sensing these cues, the tick builds its *Umwelt* out of an otherwise formless chaos.

Within biology, Uexküll positioned himself in opposition to Charles Darwin and Ernst Haeckel, whom he saw as advocating a mechanistic or materialist understanding of life. In Uexküll's view, biology had thus far only grasped life atomistically, as a conglomeration of material obeying physical and chemical laws. This was a kind of biology that left no room for subjectivity. If biology was to be a science of life, Uexküll reasoned, it could not be founded on a mechanistic worldview, because such a perspective could only understand life as dead matter without form or plan, thereby excluding from the outset precisely what for Uexküll defined a thing as living.[302] The mechanistic understanding of life that Uexküll opposed had no concept of *Umwelt* in this sense—only surroundings (*Umgebung*) or milieu. It was this mechanistic notion of milieu that Uexküll hoped to supplant with the idea of *Umwelt*, insofar as it took up the organism's surroundings only in their meaningfulness for a perceiving subject.[303] For Uexküll, grasping the vitality of living things entailed leaving the mechanistic conception of life behind, and understanding organism and *Umwelt* as a reciprocal, meaningful whole. Uexküll also repeatedly warned against the anthropomorphic fallacy that non-human life forms experience the same world that we do. "We comfort ourselves all too easily with the illusion that the relations of another kind of subject to the things of its environment play out in the same space and time as the relations that link us to the things of our human environment. This illusion is fed by the belief in the existence of one and only one world, in which all living beings are encased."[304] We can imagine the world of the tick, but this imagination must always remain at a distance; we should not fool ourselves into thinking we 'share' its world. Moreover, the notion of *Umwelt* throws into question the assumption that *any* two beings, whether of the same species or not, can share an environment. If a world is the product of subjective perception, the existence of any other subject within that world would seem impossible.

If modes of urban environmental control treated life instrumentally, to harness it for economic and state interests, *Umwelt* theory understood life aesthetically. Artists found Uexküll's work inspiring because it located *aisthesis*, sense perception, at the core of all living processes. Like an artwork, organism and environment were to be seen as a meaningful whole; moreover, each organism was a kind of artist, insofar as it builds its world through the senses. As specialists in sensory address, artists could claim great power as builders of worlds, able to transcend the deadness of mere material, enlivening it by giving it form. Although Uexküll himself had little tolerance for modern art, in 1915 the critic Adolf Behne saw a strong affinity between Uexküllian biology and the art of cubism and expressionism. For Behne, impressionism in painting reflected a mechanistic worldview, with which the subject has "has surrendered to the churning wave of sensations."[305] Impressionism merely recorded material impressions, giving no sense of an organizing center or subject. On the other hand, Behne called expressionism "that worldview, which perceives from a central point. . . . Where there is a center, there dominates a determining, forming will; and where there is a forming, ordering, evaluating will, there in itself

302 On the concept of form (and particularly *Gestalt*) in German psychology and biology around 1900, see Anne Harrington, *Reenchanted Science: Holism in German Culture from Wilhelm II to Hitler* (Princeton, NJ: Princeton University Press, 1996).

303 Uexküll's emphasis on meaning (*Bedeutung*) has made him an important figure in the history of semiotics. See Thomas A. Sebeok, "Biosemiotics: Its Roots, Proliferation, and Prospects," *Semiotica*, no. 134 (2001): 61–78.

304 Uexküll, *A Foray into the Worlds of Animals and Humans*, 54.

305 Adolf Behne, "Biologie Und Kubismus," *Der Sturm* 6, no. 11/12 (1915): 69.

is the force of expression."[306] Uexküll's biology provided Behne with a framework for thinking about modern art beyond the binary opposition of life as natural and art as artificial. Art, like life itself, was to be a dynamic and ongoing process of construction, grounded not in a material world but in the forming will of the artist. Cubism, Behne wrote, "in sculpture, painting, and architecture, is the *expression of a new modern understanding of life*. I find it nowhere better formulated than by Uexküll."[307] Only an art grounded in the formative, organizing power of the artist could be considered true art—everything else was simply mimesis, a mechanistic reproduction.

This chapter discusses two modernist projects, one avant-garde and one mass cultural, that attempted to mediate between human perception and the metropolis. Rather than see the city as a milieu, both treat the city as a perceptual world that is somehow beyond human, and thus in need of aesthetic translation for the human spectator. Walter Ruttmann's 1927 film *Berlin: Symphony of a Great City*, one of the most famous modernist experiments of the Weimar period, attempts to mediate the urban environment by modifying human perception—the film serves as a prosthetic apparatus that allows us to traverse an uncanny city, an alien world we thought was home. The Berlin Lunapark, meanwhile, an amusement park opened in 1911, re-worked the urban environment itself, constituting a city in miniature at the west end of Berlin's Kurfürstendamm. Involving very different configurations of organism and environment, *Berlin* and the Lunapark bypassed traditional narrative forms and treated the metropolis as an *Umwelt* in need of mediation for human perception. In their own ways, they turned Uexküll's aesthetic view of nature back onto the paradigmatic site of anti-nature—the modern city. Moreover, cinema and the amusement park existed in dialogue, each defamiliarizing the other's respective structuring of perception.

Uncanny *Umwelt*: *Berlin* (1927)

Ruttmann's film opens with images of gently rippling water. Soon, however, the photographed water is displaced by animation—undulating linear, rectangular, and circular forms that mirror the water's motion. These appear and recede in shorter and shorter intervals, a visual accelerando echoed in Edmund Meisel's orchestral score. Stiff lines fall on both sides of the frame like windshield wipers, and are replaced, in another graphic match that returns us to photographed images, by gate arms at a railroad crossing, which likewise fall, in anticipation of the coming train. The next series of shots alternates furiously between static and moving perspectives of the train and surrounding landscape (trees, telephone wires, train tracks), until we are fully 'onboard,' traveling with the train to its destination. Fields of grass gradually give way to summer gardens, suburbs, factories, and tenements. The train slows as we approach the station. A block-lettered sign floats toward the camera, engulfing the frame and announcing our arrival—"Berlin." A series of aerial shots, accompanied by rather menacing horns, depicts the city's built landscape, with buildings extending as far as the eye can see.

The film figures its opening as an arrival. Anton Kaes has linked the film to Berlin's incredible population growth in the late nineteenth century and into the twentieth, as migrants streamed into the city during Germany's rapid industrialization. *Berlin* begins, Kaes writes, by visualizing "the arrival of the migrant to the city; the scene's progression from water and organic nature to the fiery speed of the steam engine suggests both birth and separation and the

306 Ibid.
307 Ibid., 70 (emphasis in original).

undeniable experience of a primary loss."[308] In Kaes's reading, migration stands in for the experience of modernity as such, whose trajectory entails a kind of world-historical exile from the comforts of home, tradition, and community. While I agree that *Berlin* renders the city as fundamentally foreign, I will pursue a different emphasis. The foreignness of Ruttmann's Berlin can also be understood in terms of Uexküll's notion of *Umwelt*, which draws attention to an environment's perceptual strangeness, rather than a historical experience of loss. The city is not just historically novel, something human beings had not experienced before; in *Berlin* the metropolis is also foreign to the human organism as such, lying beyond our very capacity to inhabit it. The project of the film is to mediate the thoroughly non-human *Umwelt* of the city for human perception.

The production of films like *The Street*, *Asphalt*, and *M* resembled urban planning in miniature. The street film, it seems, could only represent the city by recreating it in the controlled space of the studio. By re-constituting the urban environment literally from the ground up, filmmakers shaped cities that purposely presented themselves to the camera. Indeed, the camera can be considered the studio-city's most important 'inhabitant'—just as Martin Wagner advocated metropolitan squares that separated pedestrians and automobiles, so that both could flow freely without collision, the street film set often gave the camera its very own lane of traffic. For *Asphalt*, Günther Rittau attached the camera to a crane that extended from a "camera tower," from which the cameraman could observe the scene from above and move the camera through the set as desired. This specially designed construction was used for a single scene.[309] Ruttmann's *Berlin*, meanwhile, involved a radically different configuration of camera and urban space. Rather than simulating urban space in such a way that it conformed to the technology of studio filming, Ruttmann aimed to capture the 'reality' of the city by taking the camera into the streets. As Guntram Vogt reports, "studio constructions were not necessary for this film. The participating film architects merely built hiding places for the camera, including a 'fake' advertising column."[310] Ruttmann and his colleagues, the cameramen Karl Freund and Reimar Kuntze, employed an especially sensitive film stock that would allow clear images to be shot without the benefit of studio lighting.[311] For *Berlin*, then, Ruttmann worked to adapt camera technology to the urban environment, instead of building a city to fit the camera.

This is not to say that *Berlin* is less 'constructed' than a film like *Asphalt*—indeed, a reviewer complained in *Filmwoche* that Ruttmann's film depicted an abstract any-metropolis, showing nothing specific to the city it purported to represent.[312] Important here is less the relative 'reality' captured by the film than the environmental logic that informed its particular organization of space, camera, and spectator. The street film reconstituted the city from a thoroughly human perspective. While characters in street film narratives might find the city overwhelming, the very act of simulating the ecology of urban space in the studio posited it as already known, already mastered and organized by human agency before the camera started rolling. The exoticism of the city, moreover, as seen in films like *The Street* or *The Joyless Street*, was typically a function of class difference. These films purported to offer views into

308 Anton Kaes, "Leaving Home: Film, Migration, and the Urban Experience," *New German Critique*, no. 74 (1998): 186.
309 Vogt, *Die Stadt im Film*, 187–88.
310 Ibid., 173.
311 Ibid., 172.
312 Ibid., 175.

highly class-specific spaces, which, while unpalatable (and therefore exciting!) to bourgeois viewers, were human spaces nonetheless, defined by human actions and narratives.

In *Berlin* we see no human figures until about eight minutes into the film. Following the bombastic train ride into the city, the first act continues with shots of completely empty streets, a sewer below ground and office building facades above, electrical wires, closed windows of apartments and shops. Indeed the first human forms we see appear in a display window containing a group of mannequins, while the first actual person seems to wander into the frame by accident, as a man walking his dog emerges frame left in a shot of an empty sidewalk. The next series of shots cuts between humans and animals going about their business as the city stirs—a cat, people carrying things, a pair of birds feeding on the street. Even as more people begin to populate the film, Ruttmann markedly avoids showing recognizable faces by shooting them at a distance, from behind, in silhouette, in groups, or by keeping heads out of the frame. Most people filmed are only ever seen in a single shot, which prevents the viewer from turning them into characters. Editing, moreover, frequently associates human and animal behavior, as when the film cuts between people on their way to work with cows being herded on the street.

For Inga Pollmann, the reception of Uexküll's *Umwelt* idea was characterized by two "paths." She locates the first in the German traditions of phenomenology and philosophical anthropology, for which the notion of *Umwelt* "functioned as a means for distinguishing between humans and animals." In sum, this understanding relegated *Umwelt* to the domain of the animal, who was irretrievably stuck in its fixed perceptual bubble, while the human being inhabited a 'world' (*Welt*) which could be modified and expanded. Artists, meanwhile, traveled what Pollmann calls the "path of alienation (or the path of the animal)," using art and new media technologies "to abandon—to varying degrees—the terrain of the human."[313] From this perspective, media could function as a way for human beings to defamiliarize everyday perception and inhabit other *Umwelten*. Uexküll himself made use of such techniques—his popular 1934 book *A Foray into the Worlds of Animals and Humans*, for instance, uses a series of photographs to illustrate how a scene would appear differently to different organisms. An unaltered photograph of a village street demonstrates the human view, while increasingly manipulated versions of the same image represent the relative loss of detail as seen by a fly and a mollusk.[314]

Uexküll saw mechanistic science as itself a product of the experience of the modern city. Echoing Georg Simmel's classic description of urban psychology in "The Metropolis and Mental Life," Uexküll wrote in 1907 that "materialism finds an exceptionally fruitful soil in the monstrously swelling metropolitan public, which has forgotten how to see miracles and thus believes its sees mechanical laws everywhere."[315] Uexküll complained that mechanistic science, while good at explaining causal effects, had no sensitivity to nature's purposiveness—in other words, its form. For Uexküll, organisms did not exist as mere agents within an indifferent background of nature; sense organs, rather, 'build' the world in which the organism exists. Each organism lives within a web of meaningful relationships with its surroundings. Moreover, if one pulls back and looks at multiple organisms in concert, one can observe the give and take between

313 Inga Pollmann, "Invisible Worlds, Visible: Uexküll's Umwelt, Film, and Film Theory," *Critical Inquiry* 39, no. 4 (2013): 781. Pollmann notes that photographic media were crucial to Uexküll's own intellectual development—Uexküll briefly studied chronophotography with Étienne-Jules Marey, using the technique as a way to study the alien *Umwelt* of the starfish. See ibid., 788-93.

314 See Uexküll, *A Foray into the Worlds of Animals and Humans*, 62–65.

315 Jakob von Uexküll, "Die Umrisse einer kommenden Weltanschauung," *Die neue Rundschau* 18, no. 1 (1907): 645.

these organisms and their respective *Umwelten*: "The *Umwelten* intersect in many ways without disturbing each other. They do not interact mechanically but are still connected according to a plan as the notes of an oratorio are harmonically connected. It is thus musical and not mechanical laws that we need to study if we want to find out about the laws of Life."[316]

Ruttmann's symphonic vision of Berlin echoes Uexküll's own rhapsodic descriptions of nature as seen from the perspective of *Umwelt*. The street film presented the city as a space of contingency, with the narrative in most cases triggered by a random encounter or event. The narrative then traced how this event rippled out in its effects and how human characters managed the risks posed by urban contingency. By abandoning a narrative of this kind, *Berlin* produces a harmonic image of the city, in which apparent conflict (men fighting in the street, a woman jumping to her death from a bridge) is resolved into a purposive whole. As Uexküll put it, Darwinian biology resembled "the rumble of a mechanical workshop, with matter and forces that interact randomly, accidentally achieving something more enduring," while with the idea of *Umwelt* "we have now entered the grand theatre of Nature, where she, like an inexpressibly fine lady, enjoys the spectacle that she has written and the actors that she has created."[317] Ruttmann's editing links the city's innumerable human, animal, and mechanical domains not so much to contrast as to harmonize them, thereby allowing a pleasing view of the urban theater of nature.[318] The film's temporal structure works to this effect as well. While narrative traffics in unidirectional, human time, *Berlin* is cyclical, focusing on the period of a single day, which, the film implies, will simply repeat tomorrow.

By turning the *Umwelt*-gaze back onto the city—the place whose nihilistic rationalism this gaze was meant to transcend—Ruttmann produced a deeply uncanny experience for some spectators. Reviewers of *Berlin* complained of the film's indifference to human characters. For Béla Bálazs, Ruttmann's refusal to privilege a human perspective meant that *Berlin* "did not once achieve reality. Because there is no reality without the human being, without his feelings, moods, dreams."[319] While Uexküll took great aesthetic pleasure in observing the purposiveness of nature, it seems that turning this gaze back on the city was profoundly disturbing. The city, after all, was supposed to be the crowning achievement of Western civilization—it was the definition of anti-nature. To view the city as a coherent whole, as a complex of interlocking *Umwelten*, however, entailed reducing the human to a single voice within a chorus of animals, machines, asphalt, and wires. Ruttmann's film implies that the city's coherence can only be glimpsed by adopting a radically inhuman gaze. What had apparently been a world totally created by human action turns out to contain whole strata of existence invisible to normal human perception. The film functions as a kind of spectatorial hazmat suit, which screens out the city's noises and smells and allows us to visually traverse an otherwise alien world, one we thought we had made. While the street film attempted to mediate the city's 'dangerous' spaces foreign to more 'respectable' viewers, Ruttmann's Berlin is super-human, requiring the protective apparatus of cinema to be experienced at all. If anything, the animal whose view we thereby adopt is the camera itself, an artificial organism perfectly tailored to feed on the urban *Umwelt*'s incredible visual excess.

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316 Jakob von Uexküll, "The New Concept of Umwelt: A Link between Science and the Humanities," trans. Gösta Brunow, *Semiotica* 134, no. 1/4 (2001): 117.

317 Ibid., 118.

318 Erica Stein links the film's aesthetic to the notion of microcosm in renaissance theater. See Erica Stein, "Abstract Space, Microcosmic Narrative, and the Disavowal of Modernity in Berlin: Symphony of a Great City," *Journal of Film & Video* 65, no. 4 (2013): 814.

319 Quoted in Vogt, *Die Stadt im Film*, 176.

The film's project of mediating between city and spectator can also be gleaned from the comments of Edmund Meisel, who composed the music for *Berlin*. Meisel included industrial sounds in his score:

> I have employed technical instruments not for mere effect, but to adapt the tonal colors of my composition to reality, but only to the extent that they do not make listening more difficult by introducing drastic changes. My aim is to prepare the musical ground, so that it strikes the ear naturally, without effort. My hope is that the listener will feel it to be familiar, the music of his daily life.[320]

The music, in other words, was meant not to overwhelm the audience but to ease its transition into the urban *Umwelt*. In contrast to the images, which defamiliarized the city as visual experience, the music aimed to ground the viewer in the familiar sounds of everyday life, providing another layer of insulation between the space of the cinema and the alien visual world on screen. Meisel's desire to avoid "drastic changes" and "effort" invokes the hygienic principles that guided movie house design, which functioned to offset and moderate the extremes of movement and feeling produced by moving images. In addition to naturalistic city noise, the filmmakers envisioned another orchestral innovation—surround sound, achieved by positioning some musicians in the audience. Meisel, however, displayed reluctance toward overwhelming the viewer and assured the technique was only employed "for moments in which the impression of totality is absolutely necessary."[321]

The film's inhuman gaze has led many to criticize *Berlin* as apolitical, if not outright ideological. Already in 1928 Siegfried Kracauer accused the film of the very impressionism Ruttmann's symphonic harmonization of visual elements aimed to avoid. The film, Kracauer wrote, is as

> blind to reality as any other feature film, and this is due to its lack of a political stance. Instead of penetrating its enormous object in a way that would betray a true understanding of its social, economic, and political structure, and instead of observing it with human concern or even tackling it from a particular vantage point in order to resolutely take it apart, Ruttmann leaves the thousands of details unconnected, one next to the other, inserting at most some arbitrarily conceived transitions that are meaningless.[322]

More recently, Sabine Hake has echoed Kracauer by remarking that Ruttmann's "emphasis on formal affinities and functional differentiations distracts from the power structures behind the seemingly natural choreography of producers, consumers, and commodities."[323] Similar critiques are often leveled against Uexküll's notion of *Umwelt*.[324] Indeed, the *Umwelt* idea rejects the very concept of social antagonism and the distinction between surface and depth (ideology vs. social reality) on which ideological criticism depends. In an *Umwelt*, there is only surface, only harmony—for Uexküll, struggle and antagonism were illusory phenomenon produced by a mechanistic, Darwinian worldview, which dissipate when one pulls back to view the great symphony of nature. If politics is a domain of human struggle, the Uexküllian perspective excludes politics altogether. The ideological critics of Ruttmann's film could equally be accused of clinging to a parochial, all-too-human world, unable to acknowledge strata of existence beyond social struggle. At stake was ultimately the nature of the city's reality itself, and whether

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320 Meisel, Edmund. "Die Komposition des Films 'Berlin, die Sinfonie der Großstadt,'" *Film-Kurier*, September 20, 1927.

321 Ibid.

322 Siegfried Kracauer, "Film 1928," in *The Mass Ornament: Weimar Essays*, ed. and trans. Thomas Y. Levin (Cambridge, MA: Harvard University Press, 1995), 318.

323 Hake, *Topographies of Class*, 260.

324 The same could be said of Uexküll's *Umwelt*. Even Thomas Mann, no radical himself, noted in his diary after reading Uexküll's *Theoretical Biology* "that interest in biological questions, even of the newer, less mechanistic, anti-Darwinist sort, disposes one to be conservative and rigid in political matters." Thomas Mann, *Diaries 1918-1939*, trans. Richard Winston and Clara Winston (New York: Harry N. Abrams, 1982), 112.

this reality was a human one. Ironically, projects of the sort undertaken by Ruttmann in *Berlin* depended on an increasingly complex set of technologies and technical practices that in turn needed to be hidden from view, so that the ingrained semiotics of everyday life could be defamiliarized. The creation of novel worlds of surface appearance, artists had to understand the inner workings of modern technology and apply this technology invisibly. For the world to appear alien, the spectator could not be allowed to see the man with the movie camera.

Pleasure Factory: The Berlin Lunapark

In *Berlin*'s penultimate act, a series of shots depicts newspapermen handing out the latest edition to eager crowds; a newspaper page fills the screen and the camera scrolls down the page. Single-word headlines detach from the page and fly at the viewer with increasing speed: "crisis," "murder," "stock market," "marriage," and then, six times, "money." The accelerating words give way to a world out of control. Point-of-view shots taken from an amusement park roller coaster and swing carousel are intercut with revolving doors, beggars, trains, and a woman about to commit suicide on a bridge. The final images of the sequence alternate between roller coaster descents and close-ups of the woman's eyes as she looks down into the water. The vertiginous pleasure of the roller coaster is simultaneously contrasted with and equated to the relentless rush of information, things, and people that constitutes urban modernity.

The rides in this scene belonged to the Berlin Lunapark, which opened on the shores of the Halensee lake in 1911, on a piece of land owned by local restaurateur August Aschinger. It encompassed nearly 50,000 square meters, about the size of eight soccer fields. The founding members of the Luna-Park G.m.b.H were primarily British, and included L. A. Thompson Scenic Railways Continental Ltd., the London branch of a major American amusement park company.[325] (LaMarcus Adna Thompson, whose firm had constructed many scenic railways in the United States and Europe, also designed the Berlin park's roller coaster.)[326] In the tradition of the new American amusement parks (the first "Luna Park" was opened on Coney Island in 1903), it catered to middle-class sensibilities by charging entrance fees and emphasizing decorum. To a much greater extent than older European carnival traditions, modern parks incorporated technology and visual design in the form of mechanical rides and fantastic architecture. Between 1911 and its closure during WWI, the park changed operators and financial backers numerous times, although it seems to have been profitable.[327] Nonetheless, the park could not remain open during the war and shut down in 1915. After reopening in 1920 it became a touchstone of Weimar Berlin's leisure culture and generated commentaries by Siegfried Kracauer, Kurt Tucholsky, Joseph Roth, Heinrich Mann, and Gabriele Tergit. By 1929, the park would claim to have entertained fifty million visitors.[328]

While the Lunapark was a widely experienced popular entertainment, and *Berlin* a modernist experiment seen by relatively few, they had much in common. Like the film, the Lunapark re-worked the raw material of urban life into a controlled, pleasurable experience, with an emphasis on the perceptual and physiological stimulations afforded by modern technology; they both embraced non-narrative forms, favoring juxtaposition, multiplicity, and thrill; and,

325 Johanna Niedbalski, "Massenvergnügungen im Lunapark: Der Vergnügungspark in Berlin-Halensee, 1910-1933" (Magisterarbeit, Freie Universität Berlin, 2007), 46.
326 *Der Lunapark im Jubiläumsjahr 1929*, Berlin-Edition 01292 (Berlin: Archiv-Verlag, 2009), 15.
327 Niedbalski, "Massenvergnügungen im Lunapark," 47–48.
328 Ibid., 7.

finally, both worked to smooth over class difference and social conflict to create the impression of a well-functioning symphonic whole. The park was cinematic long before Ruttmann's film, however. The Lunapark was situated at the southwest end of the Kurfürstendamm, Weimar Berlin's premier entertainment district. Joseph Roth's 1923 account of a trip to the park opens with a description of its place in the city's topography of leisure: "Behind the Halensee bridge a fairground rises, placed there calculatedly by some god of sensation, at the end of a boulevard that itself looks like a long promise of pleasures."[329] The electric facades of the Kurfürstendamm's shops, department stores, and movie palaces turned the street itself into a spectacle of light. Discussing the Kurfürstendamm's importance as a site of modern leisure and consumption, Sabine Hake remarks that "artificial light turned the city night into a stage set, complete with floodlights, spot lighting, and chiaroscuro effects and often modeled on the visual regimes of film."[330] Awash in electric light and the glow of fireworks displays, the Lunapark was no exception. It could also be compared to the film studio at Babelsberg, which likewise began operation in the early 1910s on the edges of Berlin. In 1922, there was even talk in the *Film-Kurier* that Hollywood mogul William Fox might be interested in buying the Lunapark to turn it into a studio.[331]

After its closure during WWI, the Lunapark was resurrected in 1920 under the direction of two Berlin entrepreneurs, Alfred Duskes and Siegbert Goldschmidt. Both men had made careers in the film business: Duskes as a film producer, and Goldschmidt as the director of numerous movie theaters. Duskes started out making film projectors, and in 1912 he became head of the French production firm Pathé's branch in Berlin.[332] After the outbreak of war the facility was expropriated from its French owners, and it ended up in Duskes' hands. It was at this time that Duskes founded his own production company, Neutral-Film G.m.b.H, which made around eighty films before it was bought by another firm in 1921. With another company, Trianon Film, Duskes oversaw the construction of a modern film studio near the Grunewald commuter rail station in 1923.[333] Goldschmidt had likewise found success before the war, as a pioneer of luxury cinemas. He opened one of Germany's first movie palaces in 1909, the Union-Theater at Alexanderplatz. His most famous theater was the Marmorhaus on the Kurfürstendamm, which he took over in 1913.[334] After the war, the Marmorhaus and similarly extravagant cinemas on the Kurfürstendamm became emblems of 1920s Berlin nightlife. Duskes and Goldschmidt were impresarios of modern cinematic and architectural environments.

For the Lunapark's reopening they contracted experts from their respective film enterprises, including Josef Fenneker and Bruno Buch. Goldschmidt had first hired Josef Fenneker in 1919 to produce posters for the Marmorhaus and his other theaters. By 1920, Fenneker was on to bigger projects: he did interior design for Goldschmidt's Kant-Lichtspiele,

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329 Joseph Roth, "Stunde Im Rummel," in *Werke*, ed. Klaus Westermann, vol. 1: *Das journalistische Werk, 1915–1923* (Frankfurt am Main: Büchergilde Gutenberg, 1994), 995.

330 Hake, *Topographies of Class*, 142. See also Ward, *Weimar Surfaces*, 181–90.

331 "Filmstadt 'Lunapark'?," *Film-Kurier*, July 14, 1922. Before the park's reopening in May 1920, the *Berliner Tageblatt* reported that "the construction of a 'film city' is also planned." "Der Lunapark in neuer Gestalt," *Berliner Tageblatt und Handels-Zeitung*, May 5, 1920. On the transformation of Carl Hagenbeck's Tierpark into a film studio, see Eric Ames, *Carl Hagenbeck's Empire of Entertainments* (Seattle: University of Washington Press, 2008), 221–29.

332 Herbert Tümmel, "Alfred Duskes, Ein Vergessener Berliner Filmpionier," *Fernseh- und Kino-Technik* 35, no. 12 (1981): 472.

333 "Ein Filmatelier am Bahnhof Grunewald," *Film-Kurier*, January 27, 1923.

334 Holger Kirsch, "Die Filmplakate von Josef Fenneker. Die Arbeiten für das Marmorhaus Berlin, 1919-1924. Ein frühes Beispiel von Corporate Identity?" (Magisterarbeit, Ludwig-Maximilians-Universität, 2002), 67–74.

worked as an artistic advisor for Duskes' Neutral-Film, and led the Lunapark redesign.[335] Fenneker became one of the most sought-after poster artists of the 1920s, producing advertising images for films, theater and dance performances, and other events, while also creating facades and decoration for movie theaters and ball houses.[336] Later in his career, he devoted himself to set design for opera and theater. The anachronistic designation 'graphic artist' does not do justice to Fenneker's broad involvement in advertising, urban amusement facades, and theatrical set design. He is perhaps better described as an atmospheric artist, whose profession entailed creating extraordinary environments through visual design. Bruno Buch, an industrial architect, was the head architect on the Lunapark re-opening. In 1913 Buch had designed the Literaria film studio for Duskes, a glasshouse at Berlin's Tempelhof field.[337] The same year, he built a similar studio for the PAGU production company, also at Tempelhof. (After the war, the Ufa took over these studios, and they became part of an Ufa outpost at Tempelhof, where major productions such as *Madame Dubarry* were filmed.)[338] Later, Buch went on to design many factory spaces in Berlin and elsewhere. Although it is difficult to determine the exact extent of his involvement in the Lunapark project, he is mentioned by name in multiple newspaper accounts in advance of its reopening. The participation of a factory architect who also designed film studios, in any case, points to the affinity between modern spaces of industry and leisure.

Unencumbered by the restrictions of the movie screen, the Lunapark was free to deploy cinematic technologies to far different effect. From 1904 until the Lunapark was constructed in 1911, the site had been home to a pleasure garden called the Terraces at Halensee. While lacking the mechanical rides that would characterize the Lunapark, the Terraces featured a large restaurant and other facilities for food and drink, artful landscapes of trees, plants and flowers, an illuminated fountain, and other atmospheric attractions.[339] The Lunapark was built within the terraces' monumental architecture, which included the large entrance portal that would become the park's emblem. Describing the view of the park and its terraces from the shore of the Halensee lake, an enraptured reporter for the *Grunewald-Echo* wrote:

> The surfaces of the towers, made from multi-colored opalescent glass, are softly illuminated from inside and throw their enchanting light onto the two fairy princesses atop large elk that decorate the base of the entrance portal, onto the masks and friezes, as well as onto the angels at the base of the obelisks, whose trumpets announce everlasting joy. From here one perceives the abundance of faithful reproductions of antique statues that crown the uppermost plateau. From up here one receives the aroma of the thousands of flowers, whose delightful appearance heightens the intimate effect produced by the terraces and their wrought-iron surfaces. . . . Before us the fountain, before us the garden landscape, before us a thousand-headed crowd of revelers.[340]

The panoramic spectacle of the park exceeds the bounds of a framed image, freezing the spectator in the attempt to communicate the view in language. The visual effect of the park is intensified by the smell of flowers, a sensory quality that impinges itself upon the spectator, rendering the scene both visually distant and aromatically immediate. This more-than-visual dimension would continue to be an important element of the park experience.

Like its predecessor, the Lunapark integrated garden landscapes and park architecture—it even employed the same gardener. An anniversary publication from 1929 dedicated an article to the Head Gardener Temme, who had worked at the site since 1904. Temme had a greenhouse for

335 Harald Buhlan, "Notizen zur künstlerischen Biographie Josef Fennekers," *Unser Bocholt* 42, no. 4 (1991): 9.
336 Ibid., 9–14.
337 Thiele, "Ufa: Die Filmfabrik in der Oberlandstraße," 31–33.
338 Ibid., 37.
339 Niedbalski, "Massenvergnügungen im Lunapark," 42–45.
340 Quoted in *Der Lunapark im Jubiläumsjahr 1929*, 5.

keeping tropical plants over the winter, and his garden even provided fresh food for the park's restaurant. "The horticultural areas visible to the park visitor in the middle of the outdoor concert park, and the entire floral decoration in and around the terrace buildings, are planted, tended, and cultivated in accordance with artistic principles by the able administrator [Temme] and his team of gardeners."[341] Gardening was a crucial element of environmental design within the Lunapark, and its greenhouse allowed a far greater range of floral decoration than would otherwise have been possible. The Lunapark specialized in the production of novel environments for their own sake, fabricating habitats like nothing on earth. A main attraction of the amusement park was precisely this modulation of atmosphere.

When the Lunapark reopened in May 1920, it made a splash. Fenneker redesigned the park in bold lines and colors, a modernist vernacular for the masses. Most striking was the Lunapark's signature roller coaster. The late nineteenth-century scenic railways of LaMarcus A. Thompson featured painted landscapes, and these early coasters were more about virtual travel than visceral stimulation. (The Lunapark's coaster—originally designed by Thompson—was known successively as "die Scenic-Railway," "die Gebirgsbahn," and finally "die Berg- und Talbahn.") Fenneker's innovation was to bring aesthetic modernism to the realm of amusement park thrills, transforming the coaster into what critics and commentators variously described as a "cubist," "expressionist" or "futurist" landscape.[342] An image of the park from this time shows the park's "Iron Sea" attraction against the backdrop of the cubist coaster; the park is framed by a tapestry of crystalline surfaces, like a mad mountain range composed only of jutting peaks, each struggling to break free. What the image does not capture is Fenneker's use of color, in which, according to one report, "garish yellows and greens merged with harsh reds."[343] Scenic railways typically offered monumental but static landscapes, which were only put into motion once one got on the ride. Fenneker's coaster, however, dynamized the entire surrounding space. Literary critic Kurt Tucholsky joked "that the contorted cubist-expressionist thrill ride already makes the beholder seasick when he's just standing underneath it, and that's really quite something."[344]

341 Ibid., 18.

342 The links between the Lunapark's 1920 design and contemporary aesthetic modernism were more than just citational. Newspaper reports name Max Pechstein, a member of the expressionist group Die Brücke, and Rudolf Belling, a co-founder of the Novembergruppe, as part of Fenneker's design team. One article singled out Pechstein's colorful interior decor in the terraces and ball house for praise ("Bright colors begin to glow, and the green surroundings accentuate their delightful play"). "Coney-Island in Halensee," *8-Uhr-Abendblatt*, May 10, 1920.

343 "Der Lunapark in neuer Gestalt."

344 Kurt Tucholsky, "Berliner Rummelplätze," in *Gesamtausgabe: Texte und Briefe*, ed. Bärbel Boldt, Gisela Enzmann-Kraiker, and Christian Jäger, vol. 4: *Texte 1920* (Reinbek bei Hamburg: Rowohlt, 1996), 579.

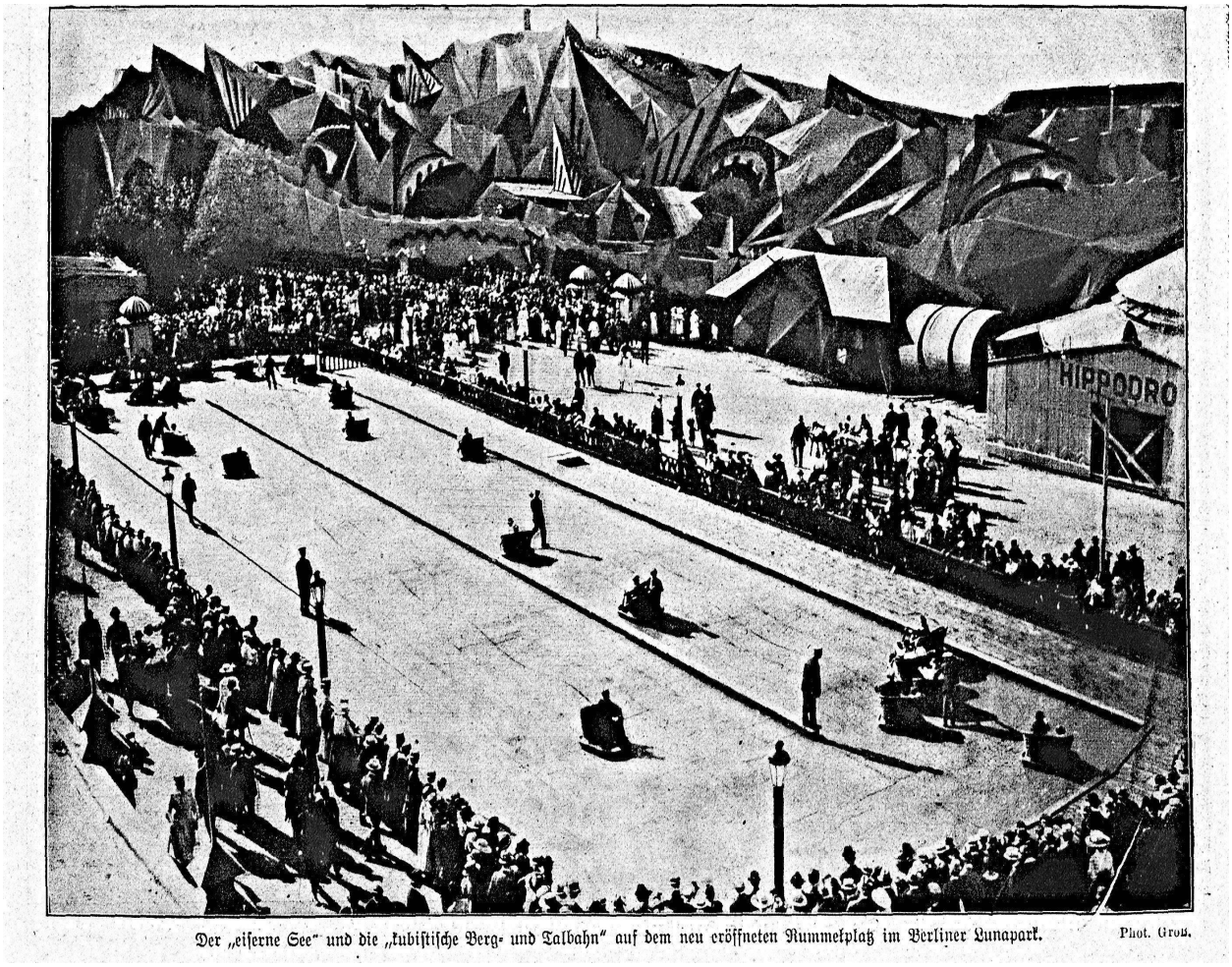

Figure 9: "The 'Iron Sea' and the 'cubist roller coaster' at the newly opened fairground in the Berlin Lunapark." ***Vossische Zeitung*****, May 30, 1920.**

In 1928, the Lunapark made an addition to its swimming facility, already the largest in Germany, by replacing the adjacent hippodrome with a spa (*Kurbad*). The magazine *Tempo* reported on the spa's "high, wide glass windows" that regulated light and air. Similar to the late nineteenth-century winter gardens, the spa aimed to create a hygienic environment conducive to visitors' health. The article mentions the spa's new ozone generator that "provides for the continual renewal of the consumed oxygen."[345] The facility was an atmospheric playground, with "Russian-Roman steam baths with full body massage, every kind of bathing pool with aromatic and medicinal additives, newly completed light and steam boxes, electric light bridges with bathing pool, sun lamps, diathermic treatments, blue and red light therapy."[346] In the case of the Lunapark spa, the technological production and variation of air quality, humidity, temperature, aroma, and light were not simply the background to some other, more spectacular attraction—they were the attraction itself, simultaneously pleasurable and hygienic.

345 "Das neue Kurbad am Lunapark," *Tempo*, October 17, 1928.
346 Ibid.

Berlin: Symphony of a Great City defamiliarized urban space by modifying the spectator's perceptual apparatus. In the controlled environment of the cinema, the film mediated the city through the camera-eye, allowing seated spectators an audiovisual experience of the urban while insulated from its otherwise jarring and uncomfortable environmental qualities. The Lunapark, meanwhile, rather than employ a perceptual prosthesis to explore a defamiliarized *Umwelt*, modified the *Umwelt* itself. More akin to the film-cities of Babelsberg, the Lunapark was a city unto itself (often referred to as "die Lunastadt," the Luna City, in newspaper accounts) where one could eat, drink, and travel, enjoying the pleasures of modern technology while protected from those urban phenomenon unpalatable to middle-class visitors. In 1920, an article from the *8-Uhr-Abendblatt* informed its readers that the newly reopened Lunapark would not resemble the fairgrounds of the past: "It won't become one of those notorious places of popular amusement with the greatest possible accumulation of dust and the charm of abandoned sandwich wrappers, but rather, enclosed within wide borders, a true institute of pleasure."[347] The Lunapark, like other amusement parks of its kind, appealed to a middle-class and white-collar public by distancing itself from fairground. In the middle class imagination, the fairground was associated with crudeness, vulgarity, even criminality—in other words, it resembled those working class districts that fascinated viewers of films like *The Street* or *Die freudlose Gasse* (*The Joyless Street*, 1925), G. W. Pabst's exploration of inflation-era Vienna. The Lunapark enforced crowd behavior first by walling itself off and only allowing paying visitors to enter, while inside the park intoxication and rowdiness were discouraged.[348] Another strategy for minimizing class conflict within the park included varying the price of admission. The park's 1921 opening program advertised Thursday as a weekly "Elitetag" (elite day), while every Tuesday was the "Volkstag" (people's day)—admission would cost more or less on these days, respectively, so that lower-income Berliners could attend the park while allowing bourgeois visitors the choice of avoiding them.[349]

While hewing to hygienic ideals, however, codes of bodily decorum were repeatedly modulated, if not violated, by the attractions and rides in the Lunapark. In 1923, writing for the Frankfurter Zeitung, Joseph Roth recounted his ride on the Lunapark's "Devil's Wheel," a spinning attraction akin to a merry-go-round:

> What had been fixed becomes loosened, what had been steady becomes unsure, the floor rotates, careening more wildly with every revolution, everything, everything seems to turn, the faces of the surrounding gawkers melt into a single whitish mush . . . bodies collide with one another, helplessly outstretched arms swing in vain, searching for something solid."[350]

Roth's account depicts the temporary release amusement park rides allowed from middle-class codes of bodily decorum—a signature trope of histories of the amusement park. Noteworthy here is his description of the ride's temporality and his engagement with it—the way the ride undoes his stable relationship to space, generating the impulse to adapt and look for something to hold on to. The comically bourgeois narrative voice Roth adopts in this piece codes the experience as one of a carnivalesque, topsy-turvy world. Crucial, however, is the way in which this topsy-turvy world is contained within the ride, rather than characterizing the park as a whole. The ride constitutes a micro-environment unto itself, a "little, wild world of frenzied fleeting things."[351]

347 "Coney-Island in Halensee."
348 Niedbalski, "Massenvergnügungen im Lunapark," 113–14.
349 "Luna-Park. Programm," 1921, Stadtmuseum Bocholt.
350 Roth, "Stunde Im Rummel," 996.
351 Ibid.

Carnivalesque disorientation is experienced within an overarching rhythm of environmental variation, structured by the set of microcosmic worlds that compose the park as a whole.[352]

Through mimicry and appropriation, the environmental attractions of the amusement park staged encounters between park-goers and modernity's technological infrastructure. Siegfried Kracauer's 1928 feuilleton "Berg- und Talbahn" ("Rollercoaster Ride") offers a suggestive account of amusement park pleasure. At first, the coaster appears enjoyable by offering its riders an imaginary mastery of oppressive urban space. As the essay goes on, however, the experience of the ride seems less and less assimilable to a notion of pleasure grounded in mastery. Kracauer initially encounters the ride from a distance: "In the Lunapark fairground at Halensee, a painted backdrop of New York rises between the swimming pool and the racecourse. The lurid skyscraper facades jut vertiginously into the night sky."[353] Repainted as a city skyline in 1928, the coaster doubles, in monumental miniature, the urban space outside the park.[354] With the riders strapped into the "long and narrow" cars of the coaster, "each row of seating . . . just big enough for a couple," Kracauer remarks that the

> gradual ascent to the level of the upper-floor windows is not, in itself, an unfamiliar sensation. After all, metro trains also emerge from the underground, and, as they climb upward, the many shorthand typists can glimpse into the offices in which they normally write. Yet here, amazingly, the car presses on higher than any elevated train—up to the height of, say, the thirteenth floor. The workers, the ordinary folks, the employees, oppressed on weekdays by the city, now conquer New York in the air above Berlin. They are victors, with the magically painted palaces at their feet.[355]

The ride invokes the role of mass transportation in the urban metabolic process, whereby the train delivers white-collar labor from home to office. Instead of one space leading smoothly to the other, however, the roller coaster splits the two domains radically. The mundane subway ride to work takes a miraculous wrong turn, soaring into the space above the city. By interrupting the efficient coupling of one metabolic stage to the next—that is, by rendering the ride "pointless"—submission to the regime of the train car is converted into a mastery of the urban space.

Kracauer points to a critical potential within the encounter produced by the coaster between the riders and the urban facades. By taking them into the illusion, which from below appeared so monumental, the coaster allows the riders to examine its construction. "Only a moment ago, the city flaunted its wonders, and now it bares its skeletal bones. So that's New York—a painted board with nothing behind it? The little couples are mesmerized and disillusioned at the same time."[356] Having entered the scene—indeed, having traveled backstage—the riders are confronted with the contingency of city space, experiencing its constructedness and ephemerality. As Miriam Hansen writes, Kracauer "evokes a vision of modernity whose spell as progress is broken, whose disintegrating elements become available in a form of collective reception in which self-abandonment and jouissance provide the impulse for critical reflection."[357]

Kracauer's interpretation of mass leisure as providing compensatory satisfaction for what is denied in everyday life—or a sense of control over that to which one is subjected—

352 On theme park microcosms, see Brenda J. Brown, "Landscapes of Theme Park Rides: Media, Modes, Messages," in *Theme Park Landscapes: Antecedents and Variations*, ed. Terence Young and Robert Riley (Washington, DC: Dumbarton Oaks, 2002), 235–68.

353 Siegfried Kracauer, "Rollercoaster Ride," in *Metropolis Berlin, 1880-1940*, ed. Iain Boyd Whyte and David Frisby, trans. Ishbel Flett (Berkeley: University of California Press, 2012), 520.

354 On "amusement park sublime" see Ames, *Carl Hagenbeck's Empire of Entertainments*, 179–88.

355 Kracauer, "Rollercoaster Ride," 520.

356 Ibid.

357 Hansen, *Cinema and Experience*, 71.

exemplifies an explanatory model deeply ingrained within critical discourse, from Marx's critique of ideology to Freud's theory of the repressed and beyond. While this reflective potential is crucial, it is only the beginning of Kracauer's journey at the Lunapark. Strikingly, after becoming aware of the artifice of the ride environment, Kracauer remarks that the riders' "conquest of the facades no longer means a great deal to them." In the final section of the article, he struggles to articulate something beyond a merely compensatory pleasure fueled by an illusion of mastery. Having reached its peak, "the passengers scream as one" and the coaster car plunges downward:

> Primitive instincts force the scream out. Those routinely suffocated by the rigid structure of things are set free by the outward confusion, by the jumble of facades and wooden frames. Galvanized by the crazy speed, they lapse into uproar. The passengers yell in fear of being dashed to pieces, trembling at the edge of the world, terrified by the vision of danger. Their screaming is elemental.
>
> It is also something else besides. It is also the scream of bliss at racing through a New York whose very substance is sublated and no longer poses a threat. It is almost as though they were all screaming because they feel they are free at last. A cry of triumph: here we are, immersed in happiness, hurtling ever onward. Hurtling at a breakneck speed that might mean death; at the same time, it also means fulfillment.[358]

The scream lodges itself in Kracauer's text. He cannot seem to identify it as either an expression of total subjection to the environment or of ecstatic release from it. Kracauer's description of the scream as "elemental" is an attempt to posit some point beyond this either/or, an originary location in the psyche where dissolution and satisfaction are one and the same. Beyond this psychological speculation, Kracauer's text points to the way in which the ride as technological apparatus becomes the scene of a performance, rather than simply an agent of pacification. Submission to the apparatus produces an experience of motion that is at the same time an experience of the body's powers of sensation. The ride environment sets the stage for a new quality or intensity of the voice, a vocal performance beyond the either/or of terror and triumph. The ride as environment simultaneously constrains and empowers. Submission to the ride apparatus, to the perceptual world it creates, liquidates not only the "rigid structures" of urban life (the factory, the office, the train) but the subjectivities produced by these structures as well. The roller coaster makes the constraining environments of modern technology and architecture available for a masochistic appropriation.[359] Insertion into the ride's *Umwelt*, its technical organization of bodies and their powers of sensation, conjures a new subjectivity able to draw pleasure from and in the ride's sensory and corporeal excess.

Screen Play

While the cinema and the amusement park were both sites of environmental attractions, the latter offered unique possibilities for reconfiguring the spectatorial limitations of the former. In June 1929, a "Filmfest" (film festival) offered visitors various ways to express their fandom and enter the world of the movies. The magazine *Filmwelt* sponsored an amateur photography and film contest; the best photos and films taken in the Lunapark that day would be given prizes. To be eligible, entries had to contain one of the many "Filmfest Lunapark 1929" posters spread

358 Kracauer, "Rollercoaster Ride," 521.

359 In his investigation of Leopold Sacher-Masoch and the discourse of masochism around 1900, John K. Noyes writes that "the masochistic move is to seize upon the machinery of domination and pervert its usage, attempting to derive nothing but sexual pleasure from machines that were designed to effect the smooth running of social structures." John K. Noyes, *The Mastery of Submission: Inventions of Masochism* (Ithaca, NY: Cornell University Press, 1997), 12.

throughout the park, proving they were made at the park on the day of the contest.[360] In the late afternoon, several movie stars were on hand to sign autographs, including the stars of *Asphalt*, Gustav Fröhlich and Betty Ammann. For the final event, director Max Mack filmed crowd scenes for his next production (likely 1929's *Autobus Nr. 2*, starring Lee Parry, also present at the Filmfest), and attendees could serve as extras. As if getting to appear on screen were not enough, every participant was promised a free copy of the film strip on which they appeared.[361] This event added Kurfürstendamm glamour to the tradition of fairground photography. Two months later, an event called the "Filmzauber im Lunapark" (Movie Magic at the Lunapark) presented a revue featuring over a hundred actors and industry figures, including Lil Dagover, Marlene Dietrich, Gustav Fröhlich, Lillian Harvey, Anna-May Wong, Asta Nielsen, and Ossi Oswalda.[362] At the end of the day, there was a cash-prize contest to see who could put names to the famous faces.[363] Events such as these made the Lunapark a place where film spectators could interact with the worlds they saw on the screen by meeting stars, appearing on film, or even becoming filmmakers themselves.

Gabriele Tergit and Heinrich Mann, in their feuilletons on the Lunapark, focus on the opportunities for performative display on the part of visitors. Mann's article recounts one of the Lunapark's annual beauty pageants. While his description betrays a distaste toward the event's commodification of its participants (and the women themselves for participating), he also seems to enjoy the way it allows the girls to resist possession by their male companions ("Not every gentleman sees an advantage in his lady participating. Why should he go out of his way to expose her to desirous eyes?").[364] Tergit's piece reminds us that amusement park games also gave young men ample opportunity to put themselves on display: "Nothing sets the heart beating like seeing your object of affection show off his strength. Girls stand around, young men show what they can do."[365] Indeed, Tergit understands even the mechanical rides as pretenses, stages for desiring couples to escape codes of decorum and to play at romance: "Shoot the Chutes, and the roller coaster—marvelous. Both maximally suited for the release of tension in relationships. A broad chest for the lady to nestle up against still wins every time. Trembling girls, cold-blooded men, the great game of male versus female. Here putting two lovers into dangerous situations becomes an industry."[366] She writes of the male 'performers': "Every man his own Douglas Fairbanks."[367] Performance in the amusement park is coded as cinematic, either in the mode of slapstick—the inadvertent comedy of the discombobulated bodies on the park's rides—or of stardom. In addition to the urban environment, the *Umwelt* of cinema thus also became an object of defamiliarization within the Lunapark. Cinema solicits intense imaginary investment through an apparatus that normalizes spectatorship as well as places the image beyond the reach of the viewer. Founded on the constitutive exclusion of the spectator, the pleasurable subjection of the cinema was itself taken up and re-worked within the playful environments of the

360 "500 M. für die beste Amateuraufnahmen!," *Kinematograph*, May 19, 1929.
361 "Filmfest im Berliner Lunapark," *Film-Kurier*, May 28, 1929.
362 *Filmzauber Lunapark*, Poster, 1929, Deutsche Kinemathek.
363 "Filmzauber im Lunapark," *Film-Kurier*, August 24, 1929.
364 Heinrich Mann, "Feuerwerk-Schönheitskonkurrenz. Erlebnisse eines Juli-Abends," in *Glänzender Asphalt: Berlin im Feuilleton der Weimarer Republik*, ed. Christian Jäger and Erhard H. Schütz (Berlin: Fannei & Walz, 1994), 201.
365 Gabriele Tergit, "Lunapark," in *Glänzender Asphalt: Berlin im Feuilleton der Weimarer Republik*, ed. Christian Jäger and Erhard H. Schütz (Berlin: Fannei & Walz, 1994), 197–99.
366 Ibid., 197.
367 Ibid.

amusement park. In Uexküll's terms, the Lunapark offered visitors a different relation between "perceptual world" (*Merkwelt)* and "effect world" (*Wirkraum*), a different configuration of perception and action than that offered in the cinema.

Cinema, moreover, turned its own defamiliarizing gaze back onto the amusement park. The Berlin Lunapark appeared in numerous films during the 1920s, providing a set for everything from romantic melodramas such as *Die Puppe vom Lunapark* (The Lunapark Doll, 1925) to Ruttmann's city symphony. As Lauren Rabinovitz details in *Electric Dreamlands*, amusement parks were especially attractive as settings for slapstick comedy. In the first decades of cinema, filmmakers returned to Coney Island again and again for its comedic possibilities.[368] Not to be outdone, the Berlin Lunapark was also the subject of cinematic slapstick in a 1923 short titled *Boytler im Lunapark* (Boytler at the Lunapark), directed by Otto Rippert. This belated example of amusement park slapstick demonstrates one mode by which cinema took up the park's environments and explored their limits. The film starred the Russian comic actor Arcady Boytler.[369] In a standard slapstick chase narrative, Boytler plays a layabout and gambler who has lost his last remaining money to a man named Herr Willibald. Apparently unsatisfied with mere financial superiority, Herr Willibald now pursues Boytler's sweetheart by inviting her and her mother to a visit to the Lunapark. In order to enter the park, Boytler must steal a ticket from another patron, which, of course, draws the attention of the authorities. A policeman runs after Boytler, and the ensuing chase provides narrative motivation for the film's virtual tour through the park. Boytler successfully eludes capture, somehow ending up in the Halensee lake with the mother of the girlfriend. The film concludes with Boytler dunking the woman in the water until she agrees to let her daughter marry him.

Boytler im Lunapark borrowed blatantly from earlier amusement park comedies, especially Roscoe "Fatty" Arbuckle's *Coney Island*, in which Buster Keaton sneaks into the park to avoid paying the entrance fee. *Boytler im Lunapark*, however, goes beyond the other films in creating a highly dynamic mise-en-scène. While the earlier films also exploit the amusement park in order to put movement on screen, they do not put the camera itself in motion. Shots remain largely static, putting bodies in motion (both human and mechanical) on display from a stable viewpoint. *Boytler im Lunapark* appropriates the kinesthetic dimension of the park by putting the camera on rides during the chase's climax. The chase having led from the entrance portal to the water slide to the Shimmy Stairs, Boytler and his pursuer take their frantic tête-à-tête aboard a roller coaster car, as they fly through the coaster's painted landscape. The camera joins them, juxtaposing the corporeal thrill of the coaster's speed and motion with the comic obliviousness of Boytler and the cop, who remain wholly concerned with one another. Next, they face off on the Devil's Wheel. This scene alternates between static long shots, in which Boytler remains relatively stable

368 Titles included *Rube and Mandy at Coney Island* (1903); *The Boarding School Girls* (1905); *Jack Fat and Jim Slim at Coney Island* (1910); and Roscoe 'Fatty' Arbuckle's *Coney Island* (1917), which co-starred Arbuckle and Buster Keaton.

369 Titles from his Russian period include *Arkasha zhenitsya* (Arcady Gets Married, 1917), and *Komnata No. 13: Ili arkashe ne vezet* (Room No. 13: Or, Arcady's Bad Luck, 1917). Boytler seems to have emigrated to Europe sometime after the October Revolution. Between 1921 and 1923, Boytler made four short films in Berlin: *Boytler tötet Langeweile* (Boytler Kills Boredom, 1921); *Boytler contra Chaplin* (Boytler versus Chaplin, 1921); *Boytler sucht Stellung* (Boytler Looks for a Job, 1922); and *Boytler im Lunapark*, the only extant film of the group. Despite his formidable talent as a comic actor, Boytler is most recognized today for his work behind the camera. In the 1930s, Boytler established himself as a major director in Mexico, known throughout Latin America for melodramas such as *La mujer del puerto* (The Woman of the Port, 1934), and his films with the Mexican comedian Cantinflas, *¡Así es mi tierra!* (Such is My Country, 1937) and *Águila o sol* (1938).

within the frame—a feat he accomplishes by running desperately against the direction of motion of the large spinning wheel—and point-of-view shots from the ride itself, the camera placed alongside the other seated riders. We see the face of another rider against the world outside, which spins out of all recognition. More than the Coney Island comedies of the 1900s and 1910s, *Boytler im Lunapark* borrows the kinetic energy of the amusement park, combining a slapstick chase with the dizzying corporeality of the rides themselves. The vertiginous quality of *Boytler im Lunapark* anticipates the use of disorienting camera movement in Weimar-era classics such as F. W. Murnau's *Der letzte Mann* (*The Last Laugh*, 1924) and E. A. Dupont's *Varieté* (1925).[370]

More than simply transmitting a cinematic approximation of the amusement park experience, *Boytler im Lunapark* stages unruly bodies that resist integration into this experience. Boytler plays precisely the sort of figure that the modern amusement park worked to exclude from its grounds—a gambler and petty criminal whose excessive libidinal drive causes him to run roughshod over the Lunapark's well-behaved patrons. After thieving his way into the park, Boytler repeatedly transgresses its regime of decorum. In a particularly brazen example of bad behavior, the always-hungry Boytler sits down next to a man eating on a bench, taking bite after bite of his food, daring the man to lose his temper. Boytler makes chaos out of the amusement park's peaceful rituals of leisure—the scene ends in a brawl. Nor does Boytler submit to the discipline of the park's rides. He goes down a slide facing the wrong way; he clambers over the rotating house; he neglects to sit down during the roller coaster ride; and he runs on the Devil's Wheel as if it were a treadmill. The film's comedy—and this it shares with the other examples of amusement park slapstick—consists largely in Boytler's misuse of the park's attractions. These films stage a carnivalesque misappropriation of the amusement park's behavioral norms, marking out the limits of its pleasure and allowing spectators to imaginatively transgress them. It must be remembered, of course, that the condition of this imaginary transgression was the normalized environment of the cinema itself.

The Lunapark was subjected to criticisms similar to those leveled at Ruttmann's *Berlin*. In 1930, two years after his ride on the roller coaster, Kracauer remarked on the occasion of the park's opening for the summer:

> For us, even pleasure is organized. The Saturday evening crowd, which streams through the freshly painted entrance portal . . . is immediately captivated on the great fairground of the Lunapark by searchlights and a loudspeaker. The searchlights illuminate the grounds and the entire sky; happily they are not directed at enemy airplanes, but only toward their respective attractions. Meanwhile, the voice that reverberates out of the box erected in the middle of the grounds keeps giving useful directives. You can hardly go wrong, you barely need to go at all. The invisible organization ensures that pleasures force themselves on the masses in the prescribed order.

A sinister image of modern crowd control. The crowd's fluidity is immediately dammed upon entering, transformed into a rigidly prescribed movement—made, effectively, static. This transformation is achieved by technological means. Spotlights direct the gaze and loudspeakers overpower the voices of the crowd, imposing an audiovisual regime that Kracauer links to the technology of warfare. Kracauer describes the amusement park as a disciplinary apparatus which organizes bodies and senses, but itself escapes the gaze of the park visitors. "Perhaps that is how they want it," he speculated, "just as they are guided the rest of the day by traffic signals, party programs, and collectives." As a contrast to the well-tempered amusement park, Kracauer offers the Parisian Théâtre de la foire, where "the delirium is in any case more unruly. There everyone

370 *Boytler im Lunapark*'s director Otto Rippert had early success as the director of the *Homunculus* films (1916), an important forerunner of Weimar horror. In 1919 Rippert directed two films scripted by Fritz Lang, *Totentanz* and *Pest in Florenz*.

becomes an adventurer, enjoying not only the wild dance of the fairground [*Jahrmarktstanz*], but also the pleasure of discovering show booth after show booth on one's own."[371] The fairground functions in Kracauer's text as a nostalgic counter-site, whose participants in their wildness embody the spirit of a premodern carnivalesque. In this light, the modern amusement park appears to pervert carnival into spectacle, disciplining what were actors in a generalized, ecstatic festival of release into obedient spectators. The amusement park pretends to the throne of carnival, invoking its upside-down world, while in fact carefully ensuring that everything remains right side up. In leisure spaces, urban planning, and party politics, Kracauer saw a creeping authoritarianism that turned anarchic crowds into controlled masses.

For the National Socialists, the Lunapark was not controlled enough. It remained too American, too frivolous, to be reconciled with the Nazis' own hygienic ideals. In July 1933, a Nazi functionary named Werner Schwartz presented a group of local officials with a plan to remake the Lunapark into a "Nationalpark" for the new Germany. By this time the park had closed due to financial difficulties, and Schwartz saw an opportunity "to buy back the Lunapark" from its foreign majority shareholders and put it on a "national-socialist track." Schwartz wanted his *Volkspark* to emphasize health and community, and to use its spaces for "public events of every kind . . . artistic events, open-air shows, celebrations of traditional dress [*Trachtenfeste*], singing festivals, children's festivals, charity events, athletic and even political events."[372] Despite Kracauer's image of the park in 1930 as almost totalitarian in its control of the masses, from the perspective of National Socialism there was clearly still something quite threatening about it. Tellingly, Schwartz prescribes that the popular amusement section of the park be kept completely sealed off from the rest of it (much as the midways were separated from the official exhibits at nineteenth-century world's fairs). Furthermore, attractions such as

> dice, games of chance, lotteries, and the like, which are suited to emptying the pockets of the *Volk* without offering something of equivalent value, are no longer to be permitted. Also, the attractions are to be designed such that alongside amusement, a deeper aim will always be pursued through simultaneous training in courage, agility, determination, dexterity, and bodily movement, such as with horse riding in the Tattersall, with shooting at the shooting gallery, with swimming in the wave pool, attention and dexterity in steering electrical boats and cars and the like, as well as with gymnastics and competitive games for young children on the exemplary playground that is planned.[373]

Schwartz's plan would have continued the repression of the fairground and excluded its last remnants as socially undesirable, a hazard to the health of the national body. Moreover, it would also have denied the pleasure of the amusement park masochists, ending their play with modern built environments in its desire to make this play socially productive.

None of it survived. Schwartz's plan was scrapped and the entire Lunapark was bulldozed. A major throughway was built over the site in preparation for one of the twentieth century's most notoriously stage-managed spectacles—the 1936 Olympic Games.

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371 Siegfried Kracauer, "Organisiertes Glück: Zur Wiedereröffnung des Lunaparks," in *Werke*, ed. Inka Mülder-Bach, vol. 5.3: *Essays, Feuilletons, Rezensionen 1928–1931* (Frankfurt am Main: Suhrkamp Verlag, 2011), 229.

372 Werner Schwartz, "Expose über den Erwerb und die Neugestaltung des 'Luna-Parks' in Berlin-Halensee," 1933, 2, A Rep 225 Nr. 454, Landesarchiv Berlin.

373 Ibid., 2–3.

CHAPTER SIX
Environmental Avant-Garde: Bauhaus and the Total Theater

László Moholy-Nagy's Hygienic Modernism

> "The hygiene of the optical, the health of the visible is slowly filtering through."
> —László Moholy-Nagy, *Painting Photography Film* (1927)

The classical avant-garde has been defined by its desire to reconcile art and life. Equally important for László Moholy-Nagy, the Hungarian-born multimedia artist who worked at the Bauhaus from 1923 to 1928, was a reconciliation between technology and nature. His work was driven in large part by the central question of hygienic science—how the human organism could exist in a healthy relationship with the built environments of industrial modernity. In particular, Moholy-Nagy was interested in the role aesthetic practice might play in restoring balance between the human being and its external world. He undertook a range of experiments that attempted to think through the environmental dimension of media, and the moving image occupied a central place in this project.

Along with the work of other Bauhaus émigrés, Moholy-Nagy's 1929 book *von material zu architektur* (translated into English as *The New Vision*) inspired a generation of media artists and architects. Despite its English title, the book privileges the body over the eye. Based on lectures from his time at the Bauhaus, it begins with the epigraph: "One can never experience art through descriptions. Explanations and analyses are at best an intellectual preparation. They may, however, encourage one to take hold of such experience, in its temporal and biological validity, by direct contact with works of art."[374] The book, in other words, could be no substitute for the corporeal experience of the design materials it discussed. Much of the book, in fact, recounts the various ways in which Bauhaus students would engage with the materiality of design elements, testing the effects on their own bodies. In this regard, Moholy-Nagy's approach is a practical answer to August Schmarsow's theory of spatial design (*Raumgestaltung*) discussed briefly in Chapter Two. Schmarsow, a theorist and art historian, proposed that architectural forms could be understood as projections of the human body's extension and movement in space. Moholy-Nagy echoes this idea in his introduction to *The New Vision*: "Every act and expression of the human being is composed of elements that have their roots in biological structure."[375] Schmarsow, moreover, hoped to restore balance to architectural history by resisting the tendency to privilege

374 László Moholy-Nagy, *The New Vision: Fundamentals of Design*, trans. Daphne M. Hoffmann, revised and enlarged edition (New York: W. W. Norton & Company, 1938), 9. This translation has been modified to reflect the German edition, László Moholy-Nagy, *Von material zu architektur*, facsimile of the 1929 first edition (Mainz: Kupferberg, 1968), 7. In the following I make use of the 1938 translation only where it accords with the original 1929 edition. Where the German edition is cited the translation is my own.
375 Moholy-Nagy, *Von material zu architektur*, 8.

vision over other senses, which he believed had been ignored. In the same spirit, Moholy-Nagy encouraged students to exercise all their senses, especially the sense of touch.[376]

This pedagogical practice implied that human sense perception had become unbalanced, with vision overdeveloped in relation to the other senses. Moholy-Nagy blamed this state of affairs on the increasingly specialized division of labor in modernity, which, while allowing the individual to be an expert in a single domain, placed the rest of human knowledge out of reach—a critique of modernity that stretched as far back as Friedrich Schiller's *Letters on the Aesthetic Education of Man*. Unlike "primitive man," whom circumstance forced to be "in one person, hunter, craftsman, builder, physician, etc.," modern man learned a single trade, and given his lack of experience in other regards, existed in thrall to the expertise of others. Even vision had become the specialized domain of science, and to a certain extent art: the common person "no longer dares to be his own physician, not even his own eye."[377] The modern individual was overdeveloped in a single vocation while otherwise blind and insecure with regard to the whole. Overcoming this state of imbalance would mean training all the senses and thereby returning the body to its rightful place as the center and measure of all things.

Moholy-Nagy's program in *The New Vision* owes a significant debt to the logic of hygiene. If the body was to provide the foundation of a new culture, then it had to be scientifically known. Only a clear knowledge of the material conditions of human life could guide how new technologies could serve humanity instead of enslaving it:

> We are faced today with nothing less than the reconquest of the biological bases of human life. Only when we go back to these can we reach the maximum utilization of technical progress in the fields of physical culture, nutrition, housing and industry—a thoroughgoing rearrangement of our whole scheme of life. . . . Technical progress should never be the goal, only the means.[378]

This was precisely the goal of the social hygiene movement, which aimed to quantify biological needs and the effects of the environment on the organism, and thus provide concrete norms that could justify intervention. Like the hygienists that preceded him, Moholy-Nagy also opposed the capitalist rationality that subordinated human needs to the profit motive and acted with little regard for its effects on life. In the future, he wrote, "not the occupation, not the object to be manufactured, should be put in the foreground, but rather the recognition of man's organic functions."[379] Biological norms, and not the bottom line, were to guide the development of culture.

At the same time, Moholy-Nagy did not see biology, or at least sense perception, as a fixed quantity. As with much of the avant-garde, Moholy-Nagy's aesthetic project assumed that the senses were to some extent malleable. In restoring balance between the human being and its environment, art could play a pedagogical role: "art [should function] as an indirect means of education, which preventively sharpens the senses and protects against jolts with intuitive certainty, for conditions that have not yet arrived but are sure to occur."[380] Hygienic discourse typically supposed that norms of human perception were fixed by nature, and therefore that 'natural' surroundings provided the healthiest habitat; built environments such as the city, by contrast, were thought to damage and weaken perception. Hygienic reformers proposed to ameliorate these damaging effects, by re-introducing green spaces into the city, for instance, or, in the realm of cinema, promoting nature films as a counterweight to overstimulating crime

376 For his account of the "tactile exercises," see Moholy-Nagy, *The New Vision*, 24–26.
377 Ibid., 10.
378 Ibid., 13.
379 Ibid., 14.
380 Moholy-Nagy, *Von material zu architektur*, 15.

dramas. *The New Vision*, however, implies that changes in perceptual norms do not necessarily entail injury—indeed, their adaptation to the demands of a changing environment is a signal of healthy development. In this Moholy-Nagy was closer to critics such as de Fries, Scheffauer, and Balázs, who saw in film spectatorship the potential to transcend earlier norms of visual experience.

For all the supposed radicalism of the 1920s avant-garde, then, Moholy-Nagy's *New Vision* charts a moderate course between a reconfiguration of the senses in modernity and the normative claims of hygienic science. The capacities of the body must be studied and known, in order to guide design and tailor the environment to the necessities of life; at the same time, however, the environment does have some capacity to change norms of perception, and exposure to art can help guide this process. Hygiene alone, in other words, as another branch of specialized knowledge, could not truly reform society, because it would remain the prerogative of a few experts. The art of healthy, life-promoting engagement with one's environment had to be appropriated by the individual as well—like Moholy-Nagy's book, hygienic knowledge could serve as a guide, but ultimately it had to be integrated into corporeal experience. The goal, he writes, is to re-establish "man as a whole," who

> can, if he but works from his biological center, again take his position with instinctive sureness. Then he is not in danger of being intimidated by industry, lightning speed, and external evidence of an often misunderstood "machine culture," just as the man of antiquity had the certainty to assert himself in the face of natural forces.[381]

In addition to upholding the aesthetic tradition of German idealism, Moholy-Nagy historicizes the relation between human being and environment that thinkers like Uexküll and Schmarsow had posited as an ontological fact. The concepts of *Umwelt* and *Gestaltung* that they proposed were both characterized by the centrality of the biological organism, in terms of which the external world becomes meaningful. They argued that modern science had lost sight of this fundamental fact of existence, which had always and would always characterize the organism's experience of the world. In Moholy-Nagy's narrative of modernity, the human organism had not merely lost sight of its centrality, but had in fact been 'de-centered' by specialized labor, and it was the job of the avant-garde to guide the body back to its proper place. Only then could the harmony between individual and world be re-established.

In suggesting that art can direct perception toward a harmonious relation with the modern environment, Moholy-Nagy provides the following example: "the way that, for instance, film—the principle of montage generally—creates an exercise in lightning fast observation of simultaneous elements in all areas of design."[382] Moholy-Nagy refers to film in this way a number of times throughout his 1920s writings—it serves as the paradigmatic example of a pedagogical medium. Film's pedagogical value seems to lie in the gap between contemporary perceptual norms and the medium's technical possibilities. It offered the most space for instruction because the aesthetics of film could so easily exceed the typical viewer's ability to 'keep up,' especially with regard to visual juxtaposition (which Moholy-Nagy calls simultaneity) and the depiction of movement. These were qualities of experience that increasingly characterized modern life, but to which the human organism had only begun to adapt: "Our eyes are not yet experienced in the perception of multiple, simultaneous phases or processes of movement. In most cases they will perceive the multiple phases of a play of movement not as an organic whole but as chaos."[383] Human beings could not yet perceive simultaneous movement as

381 Moholy-Nagy, *The New Vision*, 18. Modified to reflect Moholy-Nagy, *Von material zu architektur*, 18.
382 Moholy-Nagy, *Von material zu architektur*, 15–16.
383 László Moholy-Nagy, "Noch einmal die Elemente," *Filmtechnik* 5, no. 11 (May 25, 1929): 217.

form, and thus existed out of harmony with their *Umwelt*. Indeed, disharmony implied that the dynamic environment of modernity could not yet be called an *Umwelt* at all, because the human organism did not yet live in a meaningful relation with this dynamism.

Film's capacity to display simultaneous forms and movements inspired a number of Moholy-Nagy's projects in the 1920s. An early example is the idea for a film he called *Dynamic of the Metropolis* (*Dynamik der Gross-Stadt*), conceived in 1921-22, and which appears in his 1927 book *Painting Photography Film* with the subtitle "Sketch for a film. Also typophoto." Much like Ruttmann's *Berlin: Symphony of a Great City*, the film was to consist of images of urban modernity linked according to visual relationships rather than narrative causality: "instead of literary, theatrical action: dynamic of the optical."[384] The sketch is itself interesting as an aesthetic object—rather than straightforwardly describing the film, he employs what he later called the genre of the "typophoto," which re-conceived the written page as a field of dynamic visual forces created by combining and varying typographic and photographic elements. In a section on the typophoto in *Painting Photography Film* he describes it as a typography appropriate to the new "optical focus" of the age: "that of the film; the electric sign, simultaneity of sensorily perceptible events."[385] *Dynamic of the Metropolis* is laid out across fourteen pages. Black lines, of varying thickness, divide each page into sectors of all different sizes, sometimes in the form of closed boxes, but often open on one or two sides. The sectors contain some combination of photographic, textual, and graphic elements (arrows, geometric shapes). The text varies in size, thickness, density, capitalization, and direction, running sometimes vertically or diagonally, and serves different functions: as captions to the photographs; as standalone descriptions of shots or sequences; and as visual elements that perform what they describe ("diagonal" set diagonally, "pianissimo" in successively smaller letters). In some cases, it seems possible that textual elements are meant to be included directly in the film, as one imagines the photographs to function—although the latter, too, are stand-ins for what would be moving images.

The layout confronts the reader with a perceptual task analogous to that posed by film. While the sketch proceeds linearly from page to page, each individual page presents a challenging simultaneity of words, lines, and photographs, without a clear indication of the order in which they are to be read. The division into sectors suggests a certain orderliness to how the reader should proceed, but troubles the habit of moving from left to right and top to bottom—no page establishes a standard procedure for arranging the different elements into a linear movement. By resisting the inherited norms of reading, Moholy-Nagy's sketch generates a textual dynamism across the surface of the page that attempts to perform the simultaneity and movement of film. Opening a gap between habit and presentation, *Dynamic of the Metropolis* translates the pedagogical value of film onto the printed page. At the same time, in this early experiment, Moholy-Nagy takes an almost sadistic enjoyment in overwhelming the prospective viewer's faculties. In his preface to the sketch, he remarks that the film would have movement "heightened to the point of brutality,"[386] recalling the way in which earlier avant-garde movements, such as Dada and Futurism, reveled in shocking their audiences. At what point does pedagogy become punishment? Art as sensory pedagogy assumes a gap between old and new

384 László Moholy-Nagy, *Painting Photography Film*, trans. Janet Seligman (Cambridge, MA: MIT Press, 1969), 123.
385 Ibid., 39.
386 Ibid., 123.

perceptual habits, and the line between aiding or overwhelming the viewer can be difficult to discern in such experiments.

In *Painting Photography Film* Moholy-Nagy also proposed building a special movie theater "equipped for different experimental purposes in regard to apparatus and projection screen." He imagined various possibilities for such a laboratory. First, he suggests a screen that would divide "the normal projection plane . . . by a simple adapter into different obliquely positioned planes and cambers, like a landscape of mountains and valleys; it would be based upon the simplest possible division so that the distorted effect of the projection could be controlled." Rather than a passive recipient of the image, Moholy-Nagy re-conceives the screen as a participant in the creation of film's dynamism. New possibilities arise from understanding the moving image as a product of interaction between projection apparatus and exhibition environment, instead of the mere action of one upon the other. The next idea involves replacing the standard, rectangular screen with a much larger projection surface "in the shape of a segment of a sphere" that would meet the viewer at a 45-degree angle: "More than one film (perhaps two in the first trials) would be played on this projection screen; and they would not, indeed, be projected onto a fixed spot but would range continually from left to right or from right to left, up and down, down and up, etc."[387] Where the first experiment would dynamize the screen, the second would mobilize the projector, adding another dimension of movement to what was already a moving image. Taken together, these suggestions reveal the extent to which the dominant mode of film exhibition relied on a stable environment that framed the moving image; in true avant-garde spirit, Moholy-Nagy proposed turning the dynamism of film back on itself to free it from its already institutionalized exhibition practices.

As with *Dynamic of the Metropolis*, the context for these proposals was the increasing "simultaneity" of impressions within urban environments. And, again, the experiments Moholy-Nagy suggests seem overwhelming, as likely to repel as to develop the viewer's sensory capacities. More than with the earlier film sketch, however, here he gives a sense of how his viewers-cum-test-subjects might be more gradually acclimated to the kinds of filmic dynamism he hoped to create. He generously allows, for instance, that the first experiments with multiple projectors might begin with "perhaps two," indicating that complexity would increase over time, rather than coming on all at once. Later he suggests how simultaneous projection could ease, rather than challenge, the viewer's perception:

> The large projection screen enables us also to repeat a sequence of pictures simultaneously by starting again from the beginning and projecting extra prints of the running film-strip on to the screen through projectors standing next to one another. In this way the beginning of a movement can be shown over and over again as it continues—and is gradually overtaken—and novel effects are thereby achieved.[388]

Multiple projection could thus also allow the viewer to simultaneously observe different moments of the same movement, an aesthetic technique in accordance with the goal of aiding the eye in synthesizing form out of visual chaos. More so than *Dynamic of the Metropolis* the proposal for "simultaneous or poly-cinema" displays a sense that adaptation to a new visual environment must proceed by steps rather than leaps; here, at least, Moholy-Nagy moved closer to principles of hygiene, which aimed to 'soften' the stimuli offered by technological media in order to preserve perceptual health.

The experimental ambitions of Moholy-Nagy and other avant-garde artists working with film demanded a different kind of production environment than the typical film studio of the

387 Ibid., 41.
388 Ibid., 43.

time. In an article in the Werkbund journal *Die Form*, Moholy-Nagy made an optimistic prediction:

> It is obvious that the light studio of the future will not be oriented toward reproduction and imitation as it is today, where the greatest achievement is to conjure trees from wood and sun from spotlights. In the studio of the future one will proceed fundamentally from the unique properties of the elements, the given material.[389]

The filmmaker Hans Richter stated the issue more practically, calling for a state-supported "film experimentation studio" in which artists could be supplied the tools necessary to create while being protected from the profit-oriented demands of industry.[390] As is clear from Moholy-Nagy's proposal for the poly-cinema, a studio for experimentation would take a completely different form than a site like Babelsberg. To put it in terms of Chapter Three's discussion of mainstream studio practice, an experimental studio would break with the industrial studio's practice of cinematic hygiene, which aimed at maintaining a stable environment in which clean images with illuminated forms could be produced efficiently. The environment of the mainstream studio was determined by the relatively well-defined aesthetic task its inhabitants were to carry out. Artists like Moholy-Nagy, on the other hand, did not presuppose any fixed aesthetic goal—one needed a studio before any goals could even be pursued: "Only in a non-mimetic studio can one create forms of light whose energies are as yet unknown to us."[391] The hygienic norms of the mainstream studio only applied to the particular ends of the film industry, and would only inhibit exploration. Studios like Babelsberg treated celluloid with great care, storing it in stable underground chambers, exposing it to the right amount of light, and developing it under particular conditions. For Moholy-Nagy, however, celluloid was a test subject, a material whose possibilities and limits had to be probed before any norms could be established. This is not to say that the experimental studio environment would not be controlled—on the contrary, as the poly-cinema indicates, control was paramount—just that it would not necessarily treat celluloid gently.

Moholy-Nagy's "photograms" involved a practice that broke radically with the industrial standards of celluloid hygiene—exposing film directly to light, without the mediation of a camera. Inspired in part by the work of Man Ray, Moholy-Nagy found that by modulating a light source through reflection or diffusion, or simply by placing opaque objects in front of it, he could control the film's exposure to create strangely immaterial images. This was a kind of painting with light, whereby the "indirect" method of reflecting light by way of colored pigment was substituted for directly registering traces of light on the chemical surface of film. Moholy-Nagy called it an example of "light-composition [*Lichtgestaltung*], in which light must be sovereignly handled *as a new creative means*, like colour in painting and sound in music. … It offers scope for composing *in a newly mastered material*."[392] According to Anne Hoormann, despite the photogram's lack of successive images the technique was also filmic, insofar as it recorded the movement of light.[393] Ultimately he hoped to transfer the practice to moving images—even abstract films such as those of Hans Richter, Viking Eggeling, and Walter Ruttmann were animated by way of photographing individual images. For film to become truly non-

389 László Moholy-Nagy, "Probleme des neuen Films," *Die Form: Zeitschrift für gestaltende Arbeit* 7, no. 5 (1932): 157.

390 Hans Richter, "Aufgaben Eines Filmstudios," *Die Form: Zeitschrift Für Gestaltende Arbeit* 4, no. 3 (1929): 72.

391 Moholy-Nagy, "Probleme des neuen Films," 158.

392 Moholy-Nagy, *Painting Photography Film*, 32 (emphasis in original).

393 Anne Hoormann, *Lichtspiele: zur Medienreflexion der Avantgarde in der Weimarer Republik* (Munich: Fink, 2003), 138.

reproductive, it had to do away with the camera: "The key to light-composition in film is the 'photogram,' photography without a camera."[394] The notion of light-composition reflects a widespread impulse within the avant-garde, chronicled in detail by Hoormann, to harness light as a medium of artistic creation. As she points out, Moholy-Nagy was particularly interested in light's spatial effects—the photograms in particular can be understood as exploring how light itself 'spatializes,' even in the absence of photographically reproduced space.[395] The avant-garde concern for the spatiality of light also echoed the prescriptions of hygiene, which aimed to further social progress by illuminating the dark spaces of urban modernity.

Another experiment that explored the movement of light was Moholy-Nagy's *Light Requisite for an Electric Stage*, which he described as "an apparatus for the demonstration of special light and motion effects."[396] Built for the Paris Werkbund exhibition of 1930, the *Light Requisite* consisted of a large box containing light sources of varying color and placement, as well as a machine with movable parts to reflect and filter light. A circular opening on the front wall provided a view to the light play inside, but the exterior box could also be removed in order to project light into the surrounding space. The *Light Requisite* combined the functions of recording, projection, and exhibition into a single device—or, in cinematic terms, it was at once camera, projector, and theater. As a recording device, however, it functioned mechanically rather than photographically. Offering a repeatable series of variations of light and movement, its recording principle resembled that of a music box or player piano. As a projection device, it was closer to contemporary lighting practices for the stage, making use of a variety of colored lights on the interior of the enclosing box as well as on the device inside. Rather than projecting through film, it illuminated its own dynamic material structure, as the various materials inside interacted with the light. As an exhibition environment, it functioned more like a peep show attraction (*Guckkasten*), placing the viewer outside to observe through a porthole. It could also be described as a kind of inverted camera obscura, with the light source inside the dark room and the observer situated outside. Moreover, Moholy-Nagy emphasized that the *Light Requisite* was not to be considered a finished work, but as a proof-of-concept, meant to inspire further experimentation and development. As a provisional object, it took on the character of a laboratory in miniature, for prospective light-designers to sharpen their eyes' sensitivity to the interactions of artificial light and industrial materials (aluminum, nickel-plated brass, glass) in a tightly controlled space.

The 1930 film *ein lichtspiel schwarz weiss grau* (A Light-Play Black White Gray), a six-minute investigation of the *Light Requisite*, was the closest Moholy-Nagy came to filmic light-composition on the model of the photogram. Although made with a camera, and thus reproductive in this basic sense, the film's images consist entirely of light produced and modulated by the *Light Requisite*. Moreover, Moholy-Nagy employs various techniques that emphasize the play of light over and above the existence of the *Light Requisite* as a pre-existing object in real space. The film begins with a brief title sequence—a spinning, translucent glass ball, possibly a light bulb, displays a printed text: "moholy-nagy presents a light-play."[397] Hands in double shadow briefly play with a strip of film, and then raise three title cards, "black,"

394 Moholy-Nagy, "Probleme des neuen Films," 157.
395 Hoormann, *Lichtspiele*, 148.
396 László Moholy-Nagy, "Light Requisite for an Electric Stage," in *Beyond Art: A Third Culture*, ed. Peter Weibel (New York: Springer, 2005), 81.
397 "moholy-nagy zeigt ein lichtspiel." Here and elsewhere Moholy-Nagy avoids standard capitalization, a practice that reflected his interest in typographical reform.

"white," and "gray." The sequence stages the centrality of the author, with the hands casting the film as a product of craft rather than mass production. The film then cuts to the first image of the *Light Requisite*, which, to an unfamiliar viewer, would be unrecognizable as such. We see just a part of the device, through a hole in a screen that hovers out of focus in the foreground, masking the rest of the frame. The device rotates in the background while the screen in front of us shifts, revealing other, similarly sized perforations. The division into foreground and background creates a layered space, but there is no way to discern the spatial relationship between the two layers, or even whether they exist in the same profilmic space—do we see the device "through" the screen, or do we in fact see two superimposed strips of film? Such questions only proliferate as the film goes on. Layers of vertiginous, shifting light-space are compounded by superimposition, while the moving camera prevents the viewer from perceiving these simultaneous movements from a stable position. One of the few things to hold onto is the visual motif of the circular hole—the form is repeated throughout the film, most often in the perforated disc that is one of the *Light Requisite*'s most recognizable moving parts. We see the disc multiple times as it rotates (or is that its shadow?). The form speaks to the basic operation of light-composition. Inherited from the camera obscura and the photographic apparatus (if not the human eye itself), the hole functions as iris, dictating: 'let there be light—here, but not there.' The first half of the film explores various light-dark contrasts, often focusing on shadows, sometimes displaying them in negative, as pure white forms against black (the photograms were always 'negatives'). The second half becomes more about reflection—light glints, gleams, slides, and shimmers in contact with the rotating device, revealing qualities of light completely absent from the first wave of "absolute" abstract films of the early- and mid-1920s. Overall the effect is that of a kaleidoscope in depth, in which forms rotate obliquely, approaching and receding; but again, the film allows little sense of definite space, giving way instead to a purely relational kineticism without a stable background. In effect, every shot is a close-up, and nothing external to the *Light Requisite* is shown. In *ein lichtspiel*, the device becomes a film studio.

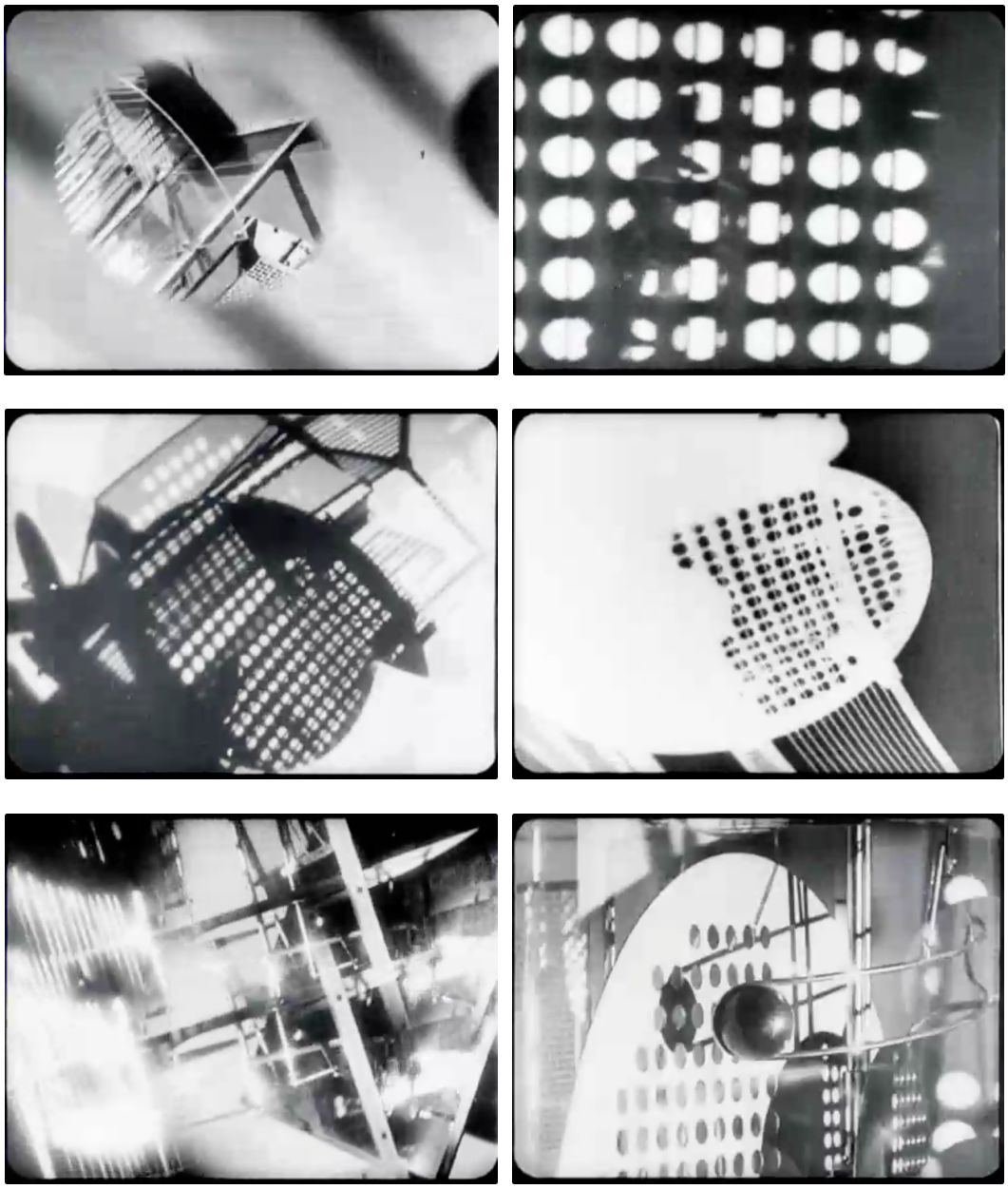

Figure 10. From *ein lichtspiel schwarz weiss grau*.

The filmic space of *ein lichtspiel* accords with Moholy-Nagy's discussions of space in the concluding chapter of *The New Vision*, which deals with architecture. Here Moholy-Nagy is at pains to resist the notion of space as a static volume (whether filled or empty), asserting instead that space is fundamentally relational. Captured in the formula "relation instead of mass,"[398] this conception of space had radical implications for design:

> Formerly the architect made from visible, measurable and well-proportioned volumes building *masses*, calling this "space creation." But real spatial experiences rest in simultaneous interpenetration of inside and

398 Moholy-Nagy, *The New Vision*, 184.

> outside, above and beneath, on the in and out flowing of space relationships, on the often invisible play of forces present in the materials.[399]

This definition again invokes Schmarsow's resistance to the overvaluation of the eye in relation to the other senses. Furthermore, it implies that there can be no strict differentiation between interior and exterior. No space is 'closed'—to paraphrase Moholy-Nagy's contemporary Siegfried Ebeling, architecture functions like a cell membrane, which regulates traffic between different energetic zones.[400] Architecture, consequently, could no longer delude itself with pretensions to permanence and monumentality. In the spirit of *The New Vision*, architecture should instead be oriented to the human being as biological organism. Itself in flux, the organism provided the foundation for a vision of architecture in motion: "architecture will be understood, not as a complex of inner spaces, not merely as a shelter from the cold and from danger, nor as a fixed enclosure, as an unalterable arrangement of rooms, but as an organic component in living as a governable creation for mastery of life."[401] That is to say, architecture is conceived of as environment, "as arrangement of universal space"—an interface between the human organism (itself only a membrane) and what is external to it, rather than the separation between them.

As Hoormann points out, the avant-garde interest in light as immaterial medium and space as relational flux was partly inspired by thermodynamics, which considered solid matter as a transitional phase between energetic states.[402] Moholy-Nagy's concern with biological health and the "intensification of life,"[403] however, speaks to the importance of hygienic science (itself influenced by thermodynamics) in re-conceiving human space. In studying urban architecture and infrastructure, hygiene emphasized the porousness of built spaces, which were characterized by constant flows of air, water, nutrients, and germs. Similar to Moholy-Nagy's invocation of an "invisible play of forces," hygiene advocated for the importance of light and air, while late nineteenth-century bacteriology revealed tiny organisms beyond the reach of the eye that could nonetheless have profound effects on human life. Moreover, protecting health did not mean closing off space from circulation—indeed, the slogan of light and air encapsulated the idea that health depended precisely on movement and flux.[404] Bacteriology and the miasma theory that preceded it both warned against closed spaces in which disease could fester. From a hygienic perspective, architecture had to promote rather than prevent circulation, just as Moholy-Nagy and others in the avant-garde would advocate in the 1920s and after.

Moholy-Nagy translated the logic of hygiene to the realm of *aisthesis*. His work in the late 1920s and after was directed toward the promotion of life by means of technical media, which he felt had the potential to control the immaterial energies that structured the human environment. Film was inspirational in this regard because it seemed to offer the means to control that most immaterial and dynamic of media—light. In the manipulation of light, Moholy-Nagy saw new potentials for intensifying vital experience. Moreover, in exemplifying the perceptual dynamics of modernity, film could mediate between the as-yet poorly adapted human organism and its new environment. As social hygiene hoped to bring light and air to the stagnant spaces of the modern

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399 Ibid.

400 Siegfried Ebeling, *Der Raum als Membran* (Dessau: C. Dünnhaupt, 1926).

401 Moholy-Nagy, *The New Vision*, 180–81.

402 Hoormann, *Lichtspiele*, 123.

403 Moholy-Nagy, *The New Vision*, 11.

404 Radkau notes that the English social reformer Edwin Chadwick "turned circulation into a full-scale philosophy. 'Circulation instead of stagnation' was the answer proposed by his 'Sanitary School'—whether in relation to air, water or foodstuffs." Radkau, *The Age of Ecology*, 33.

city, Moholy-Nagy endorsed film as a way of refreshing human perception through light and movement.

At the same time, the project betrays a certain ambivalence toward hygienic ideals. On the one hand, Moholy-Nagy repeatedly emphasized the importance of the biological organism as the ultimate horizon of design. The rhetoric of science offered the hope that design principles could be grounded on scientific knowledge—the science of life could provide aesthetic practices with the legitimacy necessary to spread into the wider world and remake human culture. Founding design upon scientific principles, however, had the effect of outsourcing legitimacy to another cultural domain, in which artists like Moholy-Nagy had little say. In comparison to avant-garde aesthetic practice, for instance, hygienic science was fundamentally conservative, presupposing the human being to be a fixed biological entity that was exposed to countless dangers by industrial culture. The normativity of hygiene thus had the potential to shut down as many aesthetic possibilities as it might have enabled. Only by positing the senses as malleable could Moholy-Nagy and his contemporaries hope to produce harmony between the human organism and its technological environment.

Walter Gropius and Erwin Piscator's Total Theater

In 1919 the architect Walter Gropius assumed direction the Großherzoglich-Sächsischen Hochschule für Bildende Kunst in Weimar, which he renamed the Staatliches Bauhaus. He remained director of the Bauhaus until 1928, by which time it had moved to Dessau. The Bauhaus was known for its holistic pedagogy, in which students were given basic courses in a range of crafts and disciplines. The 1919 "Program of the Staatliches Bauhaus in Weimar" proclaimed:

> The Bauhaus strives to bring together all creative effort into one whole, to reunify all the disciplines of practical art—sculpture, painting, handicrafts, and the crafts—as inseparable components of a new architecture. The ultimate, if distant, aim of the Bauhaus is the unified work of art [*Einheitskunstwerk*]—the great structure—in which there is no distinction between monumental and decorative art.[405]

Like his colleague Moholy-Nagy, Gropius was greatly concerned with how architecture and design could serve to reconcile nature and culture. As Peder Anker argues, his encounter in the mid-1930s with British ecologists was an important event in the history of environmental design. However, the relationship between the human being and its environment was already an urgent question for Gropius in the 1920s, as his involvement with the problem of mass housing indicates.

In 1927, Gropius was approached by the Berlin theater director Erwin Piscator, who commissioned him to design a "theater of the future." Piscator was Weimar Germany's foremost practitioner of leftist political theater. Born to a petit-bourgeois family, he was converted to communism by the experience of the First World War. His project throughout the 1920s was to create a theater that raised political consciousness and mobilized the proletariat for class struggle. In 1919 Piscator founded the Tribunal Theater in Königsberg, which closed in 1920; that year he returned to Berlin and helped found the Proletarian Theater. His longest engagement was as director of the Volksbühne, beginning in 1924, where he became known for his striking and technically innovative productions. Nonetheless, for financial and political reasons Piscator was removed from his post at the Volksbühne in 1927, and began a search for a new stage to call

405 Walter Gropius, "Program of the Staatliches Bauhaus in Weimar," in *The Weimar Republic Sourcebook*, ed. Anton Kaes, Martin Jay, and Edward Dimendberg (Berkeley: University of California Press, 1994), 435.

home. In September of that year Piscator moved into a theater at Berlin's Nollendorfplatz, the so-called 'first' Piscator stage, which was intended to serve as a temporary site for his productions, while Gropius, with whom he had been working in the meantime, finished plans for the Total Theater. The design serves as a case study of the encounter between environmental design and political art within the classical avant-garde. It was no easy task, as the project's ultimate failure testifies, to combine these two strains within the avant-garde—where the principles of the Bauhaus aimed for reconciliation and harmony, Piscator employed theater in service of agitation and revolution.

True to its name, the Total Theater was to be a total theatrical environment that completely encompassed its spectators. Seen from above, the seating area takes the form of a large ellipse. This ellipse is subdivided into three sections of seats—an outer ring containing two circles, each smaller than and contained within the last. These latter, circular seating areas are not centrally positioned within the larger ellipse; rather they abut the stage. In essence, each of the three areas 'begins' at the front of the theater and swings out away from it, tracing successively larger round forms. This, however, is only the first of three possible arrangements, and the most traditional. In the innermost area of the ellipse, the seats could be lowered and covered with a section of floor, allowing it to be used as a stage. In this way, what had been closer to a box stage could be transformed into an amphitheater. Furthermore, the entire central area—the middle circle of seats and amphitheater stage—could be rotated 180 degrees. The amphitheater stage would thus be transposed into the center of the large ellipse, and would be surrounded on all sides by seats. What was an amphitheater becomes an arena, or circus. In terms of possible spatial relationships between stage and audience, the Totaltheater is (at least) three buildings in one—box stage, amphitheater, and arena. Piscator and Gropius imagined it would be possible to switch between one form and the other even within a single presentation. Moreover, the entire auditorium was encircled by a platform with tracks; performers, musicians, or a chorus could be positioned at any point along this "play-ring" (*Spielring*), to the sides of or behind the audience, and could be transported by stage wagons running along the tracks. Gropius's intent, quite literally, was to mobilize the theater.

The design's other major innovation was its seamless integration of film and projection technology. The surfaces surrounding the edges of the seating area and stage were to be made up not of walls, per se, but twelve large, semi-transparent screens; behind each screen would be a projector. Thus the entire outer edge of the auditorium could be illuminated with still or moving images, offering a completely panoramic mode of scenery. By projecting scenery as image rather than building it, the scene could be changed as quickly as it takes for a frame to move through the projector. A final projector would be located above the auditorium, to be lowered as needed for projecting atmospheric effects onto the egg-shaped interior dome of the ceiling. In addition to the mechanically variable seating arrangements, Gropius and Piscator wanted to harness projection technology in order to make and remake the interior of the theater in the blink of an eye—a structure that would have fulfilled, to a certain extent, Moholy-Nagy's vision of architecture as mobile and variable according to the needs of the moment.

In 1924, the Viennese architect Friedrich Kiesler wrote that "the peep-show stage is a box that has been appended to the auditorium. The form of this box is the result of technical considerations, not purposeful artistic design. The relationship between actor, stage, and

spectator must be newly created for every piece, every scene."[406] Kiesler's comments appeared in the catalog to the International Exhibition of New Theater Technology, which had gathered contributions from an impressive array of European and Russian artists. Much of their collective verve was directed against the box stage (known derogatorily as the "peep-show" or the "picture-frame" stage), which they saw as a vestigial architecture that needlessly constrained performance and banished it into a realm of illusion. To be modern in the theater meant transgressing, even "exploding" this frame (as Kiesler said elsewhere). As Gropius wrote in 1928, "the perspective or picture-frame stage which uses the orchestra pit and curtain to divide the 'world of illusion' on the stage from the real world of the audience and presents the stage set as a two-dimensional projection on the plane revealed by the curtains."[407] Adolphe Appia's theater at Hellerau offers perhaps the most succinct illustration of this principle. Appia's so-called "hall of syntheses," begun in 1910, was simply a large, open box in which there was no architectural demarcation between stage and seating. Gropius's Total Theater design attempted to fulfill Kiesler's radical demand that the new architecture be so pliable as to be able to reconfigure theater's fundamental elements—performance, stage, and spectator—with every change in scene. As such, there was to be no point in the theater that was not 'playable.' The play-ring would allow actors to address the audience from the whole circumference of the theater, while light could be projected onto any part of the encompassing hemisphere. The Total Theater thus took the modernist transgression of the frame to a logical endpoint—the performance space was expanded to swallow nearly the entire architectural space visible to the audience.

Architecturally, the Total Theater borrowed heavily from two genres—the panorama and the planetarium. Invented in the eighteenth century, the panorama was a popular amusement that provided an all-encompassing image, a painted yet naturalistic scene designed to conjure a sense of presence. The planetarium was a more recent form. For the Total Theater's massive dome Gropius adapted a technique from the Zeiss Planetarium in Jena, opened in 1925, whose self-supporting dome caused a sensation among German architects.[408] This technique kept the auditorium space free of supporting columns, allowing an unobstructed view from every seat as well as freeing the ceiling for image projection. The panorama and the planetarium offered models for un-framing the image that were incorporated into the Total Theater's design. The appeal of the panorama was the seamlessness of its image; by extending the image all the way around a 360-degree axis, the panorama, in essence, had no frame—at least, none that was visible to the spectator. The use of film and photographic images, moreover, promised to extend theater space even further by bringing scenes from the outside world into the theater. From the planetarium Gropius also adopted the central projection apparatus: in addition to a film projector, Gropius planned the installation of a "cloud machine" (*Wolkenapparat*), "which, for example, projects clouds, constellations, or abstract light images onto the vaulted ceiling from its central

406 Frederick Kiesler, "Debacle des Theaters: Die Gesetze der G.-K.-Bühne," in *Katalog, Programm, Almanach: Internationale Ausstellung neuer Theatertechnik*, ed. Frederick Kiesler (Wien: Kunsthandlung Würthle & Sohn, 1924), 46.

407 Quoted in Erwin Piscator, *The Political Theatre*, trans. Hugh Rorrison (London: Eyre Methuen, 1980), 181.

408 On the Jena Planetarium, see Alison Griffiths, *Shivers Down Your Spine: Cinema, Museums, and the Immersive View* (New York: Columbia University Press, 2008); on the interest it generated at the Bauhaus, see Joachim Krausse, "Mechanischer Affe und Quantum Machine: Bau- und Bühnenlaboratorium—vom Bauhaus zum Black Mountain College," in *Spuren der Avantgarde: Theatrum machinarum. Frühe Neuzeit und Moderne im Kulturvergleich*, ed. Helmar Schramm, Ludger Schwarte, and Jan Lazardzig (New York: Walter de Gruyter, 2008).

position."[409] Both the panorama and the planetarium were specially constructed, immersive image environments that combined pedagogy and thrills. In the panorama, spectators saw faraway places or observed historical battles, while the planetarium provided views of stars and planets; while orienting themselves through geographical, historical, or astronomical knowledge, visitors could also experience the pleasurable, visceral disorientation of an all-encompassing image. One can easily imagine a similar experience in the Total Theater, with Piscator's use of photography and film as documentary material expanded around the entirety of the auditorium.

The Total Theater clearly invoked Richard Wagner's *Gesamtkunstwerk*, or total work of art, which aimed to unify the traditional arts into a single spectacular performance. Wagner's aesthetic program similarly pushed against the limits of existing theatrical architecture; pursuing his goal meant not only modernizing the opera's traditional technologies of representation, but the performance space as well. Wagner's famous theater at Bayreuth instituted a new set of audience-stage relations that he deemed necessary for the performance to have its intended effect. Like Piscator fifty years later, Wagner was unsatisfied with the division of the audience by social status; his desired audience would be communal and directed toward the performance alone, rather than themselves. As much as possible, the auditorium would be darkened, and each seat would offer an equally clear view of the stage. While these conditions guarded against the audience being distracted by itself, the so-called "mystical abyss"—a special orchestra pit that would keep the musicians entirely out of view—kept them from being distracted by the technology of representation. Wagner's project demanded that he set the conditions of reception as well as representation.[410] However, the totality of the Total Theater lay less in its ability to unify the arts, as in the total artwork—although this, too, was an important impulse taken up by the avant-garde—than in the variability of its environment. Wagner's desire to set the conditions of spectatorship was here raised to the second power; instead of simply creating a new kind of 'channel' as a static background within which various plays would be performed, the channel itself was to become part of the work, and vice versa. The Total Theater was to be a meta-*dispositif*, in which any one set of relationships between spectator and performance was rendered provisional. The project's modernity was not located in a single mode of spectatorial address or performance arrangement, but in the variability of these conditions. The theater space itself would be manipulable according to the contingencies of any particular production. Issues of seating, illumination, staging, and the like, would no longer be either-or propositions—the director could choose arena *and* circus, total darkness *and* total illumination, and so on.

In Piscator's view, such an architecture could serve specific political aims. First, the frame of the traditional box stage was seen as that which separated theatrical performance from the spectator, and consequently, from the real world. If theater were to intervene in the world—as Piscator wanted it to—this architectural separation had to be overcome. Furthermore, the traditional stage was simply too confining for the world-historical subjects the theater needed to be able to represent. Reflecting on Piscator's theatrical innovations, film director Slatan Dudow commented that in the 1920s, "we were fighting a fierce battle on different fronts against the peep-show theater and its stage, which was already too 'small' to portray large historical

409 Walter Gropius, "Vom modernen Theaterbau, unter Berücksichtigung des piscatorischen Theaterneubaus in Berlin," in *Eine Arbeitsbiographie in 2 Bänden*, by Erwin Piscator, ed. Knut Boeser and Renata Vatková, vol. 1: *Berlin 1916-1931* (Berlin: Edition Hentrich, Frölich & Kaufmann, 1986), 149.

410 As Jörg Brauns writes, "Wagner had to create not just a new discourse, but a new *dispositif*." Jörg Brauns, *Schauplätze: zur Architektur Visueller Medien* (Berlin: Kadmos, 2007), 225.

connections. It was after the world war, after the October Revolution."[411] Piscator's production of *Trotz alledem* (In Spite of Everything), for instance, performed at the Großes Schauspielhaus in 1925, strove to institute these principles in practice. The piece dealt with the events of World War I and abortive German revolution that followed; the drama was based on historical documents, including films that were shown between scenes. This "historical revue" was a kind of documentary montage, designed to clearly show audience members where they stood and how they got there. Piscator said of the performance,

> The people who filled the house had for the most part been actively involved in the period, and what we were showing them was in a true sense their own fate, their own tragedy being acted out before their eyes. Theater had become reality, and soon it was not a case of the stage confronting the audience, but one big assembly, one big battlefield, one massive demonstration.[412]

From a political perspective, the extension of performance space served to overcome the separation between spectator and representation, such that the (working class) audience could recognize itself and its own historical significance.

The Total Theater design also evokes a totalizing sense of history. Approaching the history of theater from a historical materialist perspective, Piscator saw the box stage as emerging out of the material and social conditions of feudalism. It is significant, then, that he and Gropius did not simply choose a single architectural arrangement that they imagined would better reflect their own time, as did Wagner. Again, variability seems to be valued above any particular set of spectatorial conditions; in choosing variability, however, the Total Theater incorporated the theatrical arrangements of the past, including the box stage that came under so much criticism by the avant-garde (Piscator and Gropius included). While the design does avoid dividing seats by social class—there is no balcony or box seating—it still reads like a Hegelian progression of forms, from amphitheater to circus to stage, with film as the ultimate horizon of theater history. The spectator was accordingly imagined as unmoored from history, able to occupy a variety of historical subject positions in succession but without a place to call his or her 'own.' Rather than reject the arrangements of earlier historical periods, the Total Theater hoped to integrate them and makes them fungible objects of theatrical design. Although Piscator surely would never have allowed it, it is interesting that the Total Theater, at least theoretically, would be a space in which an acrobatic performance and a Wagner opera would be equally at home. (It is as if one constructed an airplane and made sure to include a stall for a horse—just in case.)

Piscator and Gropius agreed that film would have to be a part of any modernization of the theater. Piscator was the first theater director in Germany to integrate live actors with filmed scenes, valuing film for its documentary potential. Because of its indexical character, film could bring the outside world into the theater with an efficiency and pliability no earlier techniques could match. In his production of *In Spite of Everything*, Piscator integrated actuality footage from the war—shots of mobilization, battle at the front, and the Russian Revolution. Of the technique he wrote, "It is only from the facts themselves that the constraints and the constant mechanisms of life emerge, giving a deeper meaning to our private fates. For this I need some means of showing how human-superhuman factors interact with classes or individuals. One of the means was film."[413] Piscator's emphasis on the factuality of film aligns him with Soviet filmmaking of the 1920s. The films of Sergei Eisenstein, Vsevelod Pudovkin, and Dziga Vertov

411 Quoted in Thomas Tode, "Wir sprengen die Guckkastenbühne! Erwin Piscator und der Film," in *Bertolt Brecht und Erwin Piscator: experimentelles Theater im Berlin der Zwanzigerjahre*, ed. Michael Schwaiger (Wien: Brandstätter, 2004), 17.
412 Piscator, *The Political Theatre*, 96–97.
413 Ibid., 94.

were heavily discussed among German intellectuals in 1926 and 1927. Vertov provided a succinct description of the goals of his film practice in the essay "Kino-Eye" from 1926:

> The establishment of a visual (kino-eye) and auditory (radio-ear) class bond between the proletariats of all nations and lands on a platform of the communist decoding of world relations.
> The decoding of life as it is.
> Influence of facts upon workers' consciousness.
> Influence of facts, not acting, dance, or verse.
> Relegation of so-called art—to the periphery of consciousness.
> Placing of society's economic structure at the center of attention.
> Instead of surrogates for life (theatrical presentations, film-drama, etc.) carefully selected, recorded, and organized facts (major or minor) from the lives of the workers themselves as well as from those of their class enemies.[414]

While Vertov here opposes theatricality as a "surrogate for life," Piscator believed film could be integrated into what he called a "documentary theater." In the documentary theater, film performs the labor of representing "superhuman factors," those larger determining structures (society, history) that shape individual and collective fates.

It is important to note that Piscator's political aim is predicated upon the ability of the audience as a collective to master the representation—to see it, understand it, and integrate it into their view of the world. The Total Theater's play-ring, the platform stage at the foot of the wall-screens that line the periphery of the theater, was perhaps meant to address the specter of sensory overload. By providing a space for performers in front of the screens, the theater offers the possibility of mediating the film image through live action. The placement of the projectors behind the screens reinforces this effect, by preventing the apparatus from obstructing the view of the performers and capturing them in beams of projected light. In the Total Theater moving images are thus incorporated in such a way that live performance can dominate. Film is allowed to frame human action, but not determine it; the technological medium is made to serve theater and not the other way around. Translated into the political terms of Piscator's project, relegating the "super-human forces" represented by the film image to the background is a way of affirming humanity's power to transcend the seemingly all-powerful (social, historical, technological) structures that work to determine and enslave it.

At the same time, however, Gropius's comments on the Total Theater point to a rather different use of moving images. In 1928, Gropius said of the theater's panoramic cinema, "film can be projected onto the back of all of these screens from twelve projection boxes simultaneously, so that the spectator can find himself in the middle of a raging sea or at the center of converging crowds."[415] In various texts, Gropius returned to this image of an audience faced with a churning sea or an onrushing mob. Gropius imagines an audience confronted directly with the film image, without the mediation of live performers. Moreover, by equating the masses with an ocean, he makes them into a pseudo-natural embodiment of the sublime. For Piscator, the masses on screen were to be an object of identification—the audience as collective should recognize themselves in the image. For Gropius, however, the encounter with the screen takes the form of a confrontation—the audience is opposed, even attacked, by the moving image. In 1934, he put it simply: "The goal of this Total Theater is to overwhelm the spectator."[416] The Total Theater's debt to the panorama and the planetarium is not necessarily the illusionism of

414 Dziga Vertov, *Kino-Eye: The Writings of Dziga Vertov*, ed. Annette Michelson, trans. Kevin O'Brien (Berkeley: University of California Press, 1984), 66.
415 Piscator, *The Political Theatre*, 183.
416 Walter Gropius, "Theater Design," in *Apollo in the Democracy: The Cultural Obligation of the Architect* (New York: McGraw-Hill, 1968), 162.

these architectural genres, but their overwhelming perceptual effects. These architectures of the unframed image were beloved not for their illusions as such, but for their vertigo-inducing scale. By maximizing the space of performance the Total Theater would make it virtually impossible that any single spectator could perceive the performance in its entirety. Instead of a collective self-recognition, as in Piscator's political theater, the Total Theater might just as easily have produced a collection of partial views that could not aggregate into a whole. As in Moholy-Nagy's poly-cinema, the Total Theater offers no easy distinction between pedagogy and overwhelming spectacle.

It is easy to see the fantasy of total control inherent in the Total Theater project, as numerous critics certainly have. Ultimately, the design seems to pursue a desire to master, or even escape completely, the materiality of the environment through technology. The use of film, in particular, expresses an ambivalence toward not only the materiality of nature but toward that of the theater itself. The Total Theater's dome does not simply shut out the sky, but replaces it, as a screen for the simulation of clouds and stars; the panoramic projections similarly function to supplant the traditional necessity of constructing sets, as well as having to move them around. In a way, this is an architecture that labors to negate itself. As an all-encompassing screen, the Total Theater attempts to transcend the materiality of its own walls. Ultimately, this total control extends to the audience. In an interview with Piscator, Erich Kästner linked the panoramic spatiality of the Total Theater to the audience's submission to an overwhelming technological spectacle:

> The division between play and public is overcome. Speech, light, film, and music are no longer fixed in place. The spectator's attention is no longer unidirectional, rather, Piscator dictates the direction of interest from moment to moment. He alters the location of the action and artistic genre in unforeseen ways; he even changes the geometric position of the auditorium seating. The public must surrender itself unconditionally to Piscator's dynamic principle.[417]

The audience itself is imagined as a kind of screen, part of the theater environment to be administrated—a material support for the projection of images.

Such a project begs to be read as an anticipation of fascism and the calamities of the twentieth century. In the Total Theater, writes the architectural historian Winfried Nerdinger,

> The problem of total design, the founding idea of the Bauhaus, becomes clear all at once: it is a small step from the total to the totalitarian captivation of the human being! What Piscator envisioned as the overcoming of an absolutist theater architecture by a democratic form of theater becomes, with Gropius . . . its opposite.[418]

The project's Wagnerian inheritance; its technological optimism and anti-humanist machine aesthetic; its seeming valuation of spectacle over discourse, and erasure of the viewer's subjectivity; its integration of the masses as an element subjected to the forming agency of the director: from our historical vantage point, the Total Theater seems to embody the worst impulses of early twentieth-century modernism, soliciting today an almost involuntary aversion to totalizing projects. How could the desire to captivate the masses with modern technologies of spectacle recur so persistently alongside a discourse that at the same time claimed to liberate the audience from passivity, from its subjection to feudal and bourgeois modes of viewing?

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417 Erich Kästner, "Das Theater der Zukunft," in *Werke*, ed. Hans Sarcowicz and Franz Josef Görtz, vol. 6: *Publizistik* (Munich: Carl Hanser, 1998), 101.

418 Winfried Nerdinger and Walter Gropius, *Walter Gropius: der Architekt Walter Gropius, Zeichnungen, Pläne und Fotos aus dem Busch-Reisinger Museum der Harvard University Art Museums, Cambridge/Mass. und dem Bauhaus-Archiv, Berlin: mit einem kritischen Werkverzeichnis* (Berlin: Mann, 1985), 98; see also Emilie Norris, "The Unrealized Dream of a Total Theater," in *Walter Gropius' Total Theater Design of 1927: "A Variable Theater Instrument"* (Cambridge, MA: Busch-Reisinger Museum, Harvard University Art Museums, 1992), n.p.

Nerdinger attempts to excuse Piscator, shifting the accusation of totalitarianism onto the Bauhaus, whose ostensibly apolitical project was rife for appropriation by more nefarious political programs. And yet Piscator's own comments, not just about the Total Theater but his political theater in general, display the same contradiction. Describing the premiere of his production of *In Spite of Everything* at the Großes Schauspielhaus in 1925, Piscator wrote:

> The living masses were filled from the outset with wild excitement at being there to watch, and you could feel an incredible, willing receptivity out in the audience that you get only with the proletariat.
> But this inner willingness quickly turned into active participation: the masses took over the direction.[419]

Piscator delights in the proletariat's impressionable nature, and his claim that "the masses took over the direction" could easily be viewed as ideological, attempting to cover over the contradiction inherent in a group of writers and actors claiming to speak for thousands, with just as many individual experiences of the history on display. Piscator was arguably just as excited as Gropius about the spectacular potential of the Total Theater and the power it would give him to direct the masses.

The unresolved tension between a leftist, liberatory discourse and the fantasy of total control over the audience can, I think, be traced to two parallel critiques of passive spectatorship within aesthetic modernism, which themselves reflect the larger tension in modernity between the political, on the one hand, and the biopolitical, on the other. As Michel Foucault's work on biopolitics makes clear, modern societies have long considered their subjects not only as political beings, but as "populations"—as sets of biological organisms to be cultivated, managed, and made productive at the level of life itself. Although the particulars may differ, this was (and is) just as true of democratic and communist societies as it was of fascist ones. The modernist rejection of passive spectatorship in the early twentieth century articulated itself in both registers, sometimes simultaneously.

Bertolt Brecht's notion of epic theater arguably remains the most influential political critique of spectatorial passivity, even today. In 1930, Brecht wrote that his epic theater was specifically an attempt to dismantle the ideological unity of the operatic total work of art:

> When the epic theatre's methods begin to penetrate the opera the first result is a radical separation of the elements. . . . So long as the expression "Gesamtkunstwerk" (or "integrated work of art") means that the integration is a muddle, so long as the arts are supposed to be "fused" together, the various elements will all be equally degraded, and each will act as a mere "feed" to the rest. The process of fusion extends to the spectator, who gets thrown into the melting pot too and becomes a passive (suffering) part of the total work of art. Witchcraft of this sort must of course be fought against. Whatever is intended to produce hypnosis, is likely to induce sordid intoxication, or creates fog, has got to be given up.[420]

Brecht's project is analytical in that the task of epic theater is to separate the elements of theatrical representation (including the spectator) from each other, sundering the false unity of the total artwork. In a word, the epic theater produces distance. The most important dimension of this distance is that between content and audience, which allows the spectators to exercise rational judgment. An analytical spectator, it is hoped, emerges out of an analytical performance. Brecht's political critique understands phenomena like empathy, identification, and immersion as an abdication of subjectivity, in which the masses are made fungible for state and capitalist exploitation.

From the perspective of the hygienic modernism of Moholy-Nagy and the Bauhaus, however, distance is the target of critique, rather than the desired outcome. Hygienic modernism addresses the spectator primarily as a sensuous being, rather than a rational or ideological one. It

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419 Piscator, *The Political Theatre*, 96.

420 Bertolt Brecht, "The Modern Theatre Is the Epic Theatre," in *Brecht on Theatre: The Development of an Aesthetic*, ed. and trans. John Willett (New York: Hill and Wang, 1964), 37–38.

aims to stimulate and cultivate life by enriching the human environment. According to this logic, the intensity of sensory experience in the opera (for instance) can be interpreted as a sign of vitality, rather than a form of manipulation. Captivation is activation; distance means apathy. It was precisely the intense nature of film spectatorship that drew the avant-garde to it in the first place—as Béla Balázs wrote in 1930, film

> has eliminated the spectator's position of fixed distance: a distance that hitherto has been an essential feature of the visual arts. The spectator no longer stands outside a hermetic world of art which is framed within an image or by the stage. Here the work of art is no insulated space, manifesting itself as a microcosm and metaphor and subsisting in a different space, to which there is no access.[421]

For Gropius, this was exactly the purpose of the Total Theater: "that the viewer is pulled into the middle of the scenic action."[422] Faced with new environmental challenges, the sensorium evolves; it was the task of projects like Moholy-Nagy's poly-cinema and Gropius's Total Theater to aid this evolution.

Just as political and hygienic modernism could lead to radically different aesthetic programs, they also implied different notions of community. Piscator's hope was to use the theater to form a political community of class-conscious workers. In his account of the premiere of *In Spite of Everything*, Piscator wrote that "arena and stage were fused into one. In this there was one decisive factor: Block bookings had been organized for the trade unions that summer. Class-conscious workers were sitting out front, and the storm broke."[423] Tellingly, the formation of community in the political theater required an already-mobilized avant-garde of the working class. Overcoming the separation between performance and spectators, unifying the entire theater as the site of a properly political community, demanded pre-existing, external political formations; it was not something the theater could simply conjure into being on its own.

The hygienic modernism of the Bauhaus, however, instituted something closer to what Erika Fischer-Lichte, in reference to Max Reinhardt's expressionist productions around 1910, has called a "theatrical community." Here, community is produced not by shared ideology but by shared sensuous experience. Writing of Reinhardt's atmospheric aesthetic—the use of light, sound, movement, and even smell to create a particular experience of space—Fischer-Lichte argues that "it is the atmosphere which binds performers and spectators together; atmosphere can be regarded as a kind of environment which results from and, at the same time, surrounds them, into which both are immersed."[424] While leftist directors such as Piscator and Brecht rejected Reinhardt's productions as irredeemably bourgeois, his manipulation of space anticipated many modernist and avant-garde experiments in spatial design. Like Reinhardt, Bauhaus projects like those of Gropius and Moholy-Nagy addressed the spectator primarily as an embodied, vital being.

From a political perspective, the notion of a theatrical community, united only by shared experience, is highly problematic. Not grounded in a particular ideology or shared social interests, nor extending beyond the theatrical environment, it is a very tenuous form of community. Indeed, it seems ideally suited to capitalist society in its relentless inclusion (of anyone who can pay). Moreover, by focusing on bodily address it potentially brackets the social, ignoring the intricate relations between the two. Moholy-Nagy, for instance, argued that

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421 Béla Balázs, *Early Film Theory: Visible Man and the Spirit of Film*, ed. Erica Carter, trans. Rodney Livingstone (New York: Berghahn Books, 2010), 99.

422 Gropius, "Vom modernen Theaterbau," 149.

423 Piscator, *The Political Theatre*, 95–96.

424 Erika Fischer-Lichte, *Theatre, Sacrifice, Ritual: Exploring Forms of Political Theatre* (London: Routledge, 2005), 54.

"contemporary conflicts of social organization" should play a minimal role in the modern theater, as they were more properly the domain of literature, politics, and philosophy.[425] At the same time, however, I would argue against a facile equation between an aesthetic project like the Total Theater and totalitarian politics. Like social hygiene and other biopolitical initiatives that aimed to manage life itself, hygienic modernism cannot be easily aligned with any particular form of political organization. The project of fostering life by aesthetic means must be evaluated within concrete discursive, material, and socio-historical contexts.

425 László Moholy-Nagy, "Theater, Zirkus, Varieté," in *Die Bühne Im Bauhaus*, facsimile reprint of the 1925 edition (Mainz: Kupferberg, 1965), 52.

Conclusion

As the culture of cinema took shape in Germany, it was subjected to various forms of environmental control. The first environmental challenge posed by cinema was how and where it would be exhibited. Film's flammability and the urban crowds it attracted were perceived as a dangerous combination, and municipal authorities stepped in to regulate exhibition spaces and practices. Their overall strategy was to maintain a boundary between film material and the human bodies that wanted to see it projected—to dematerialize the image. Commercial theater operators, moreover, saw potential profits in creating atmospheric spaces distinct from the urban environment outside, inviting and temperate spaces in which crowd traffic flowed with a minimum of friction. For advocates of film reform, however, such controls did not go far enough. They saw the image itself as an environmental hazard that placed excessive demands on the viewer's psyche and exposed audiences virtually to undesirable aspects of modern life, such as crime and prostitution. Part of the goal of the censorship regime after 1920 was to give the state a way to manage these exposures, for the supposed benefit of the populace. Environmental controls were also instituted in film production. In order to control what would appear within the space of the frame, studio filmmaking developed an environment suitable to the demands of the camera and the industrial production of moving images. Production companies established facilities at a remove from urban areas with dense conglomerations of people and architecture, in order to avoid interference from the dust, smoke, and noise of the city. To harness the power of sunlight while filtering out other environmental factors, they filmed in uncomfortably hot greenhouse-like studios, oriented to movements of the sun.

Various forms of scientific, technical, and aesthetic expertise guided and legitimized these practices of environmental control. The discourse of public health drew on biological and medical science to articulate governmental strategies for promoting health, especially when it came to urban environments and novel phenomena of industrial culture. As one such phenomenon, moving images became an object of hygienic concern, and hygienic ideas had a significant impact on the development of German film culture from exhibition to censorship. Criminology, in linking the incidence of crime to environmental factors like social milieu, bolstered demands for censorship. Architects and engineers provided the technical knowledge necessary to implement environmental controls with regard to building materials, fire safety, lighting, heating, cooling, ventilation, crowd management, and more; decorators and designers attended to the atmospheric effects of light, color, and texture in movie houses as well as on screen. Public health, criminology, architecture, engineering, design—in different ways each partook of an ecological rationality that connected life and health to environmental conditions and aimed to manage life by managing these conditions, often in combination with one another.

Environmental practices that impacted the cinema and the knowledge that legitimized them were linked in many ways with the social and political divisions of early twentieth-century Germany and often served to uphold them. By safeguarding the nation's health, public safety and social hygiene helped maintain order and optimize industrial productivity. As a site of mass gathering and dubious pleasure (akin to alcohol in the eyes of many), the cinema presented a threat to social order and the capitalist work ethic. Regulating the exhibition space and its place in the urban environment was a way of defusing film's explosive potentials. In censorship debates, moreover, the environmental logic of hygiene was aligned with religious and patriarchal arguments that aimed to discipline sexuality, especially female sexuality. When applied to

cinema, then, the universalist rhetoric of social hygiene and the environmental norms it advocated often functioned to bolster dominant political, economic, and gender relations.

This should not be overstated, however, as ecological reasoning also offered possibilities for contestation. While ideas of public health were most often put to work in service of a conciliatory rather than revolutionary politics, they nonetheless legitimated demands for improved working and living conditions for large parts of the German population. Social hygiene offered a critique of capitalism insofar as it traced and opposed the negative health effects of industrial modernity on human environments. Today the film reform movement may seem reactionary, but as an outgrowth of social hygiene it saw cinema as a microcosm of industrial capitalism, which was willing to pollute cities and damage the health of those who came into contact with it for short-term profits. At the same time, cinemas themselves profited by offering a hygienic refuge from the urban environment. By controlling light and air through design and engineering, the movie house was a space in which mass audiences could experience environmental comforts that had previously been available only to very few.

The intersection of cinema and ecological rationality was part of an ongoing negotiation of the boundary between the human organism and its environment in the wake of industrialization. On the one hand, modern eco-logics emphasized the intimate interrelations between organism and environment, to an extent that threatened to unravel the integrity of the human subject. Nineteenth-century bacteriology and the germ theory of disease, for instance, revealed a new set of vulnerabilities to the human body, whose openness to the environment kept it alive but also exposed it to unseen threats. Outgrowths of industrialization—smog, crowding, chemicals, technology itself—were treated with particular suspicion for their potentially damaging effects. Human beings seemed to have created an artificial environment that their own bodies were ill-suited to inhabit. On the other hand, a major historical consequence of such ecological knowledge was to provide the basis for defensive strategies by which the integrity of the human organism could be maintained. Public health, urban planning, architecture, design, and other cultural practices mobilized environmental knowledge to bolster the organism's defenses against exposure to the threats of industrial modernity, whether in the form of disease, pollution, or overstimulation.

The moving image was a key site in the struggle for control over the organism-environment relation. Celluloid's explosive materiality, the speed and intensity of the images it produced, and its potential to serve as a vector of social contagion led many to see it as simply another example of modernity's destructive tendencies. In this view, cinema was a symptom and agent of industrial blight. Even within the film reform movement, however, attempts were made to identify and exploit the medium's hygienic possibilities, whether this meant disseminating hygienic knowledge, as in the social hygiene film, or providing exposure to healthy environments, as in the nature film. Mainstream studio filmmaking privileged an aesthetic of individuation, in which objects in the image—particularly human bodies and faces—could be clearly distinguished from their surroundings. Studio filmmaking's emphasis on individuation was a kind of hygienic practice at the level of filmic form, which placed bodies in an environmental context while ensuring their delineation. Street films like *The Street* and *M*, moreover, used the studio and the camera to model urban space and render its ecology visible for consumption by film audiences.

While dominant studio and exhibition practices applied a normative logic to film, attempting to align it with supposed norms of the human organism, others saw transgressive or transformative potentials. For critics like Béla Balázs, rather than maintaining the organism-

environment boundary, the film experience solicited a kind of pleasurable fusion between spectator and image. Inflected by the male bourgeois critic's exoticising desire to transcend his own social location, Balázs nonetheless articulated a radically anti-hygienic viewing practice that valorized exposure, penetration, and contagion. In *Berlin: Symphony of a Great City* Walter Ruttmann explored urban space as the camera-eye's uncanny *Umwelt*, a more-than-human visual ecology accessible only through the perceptual prosthesis of cinema. The Lunapark, meanwhile, provided a more visceral encounter with industrial modernity, and in various ways promised the chance to overcome the all-too-clean separation between urban pleasure seekers and the screen worlds of cinema. The hygienic modernism of artists such as Laszló Moholy-Nagy, Walter Gropius, and Erwin Piscator, finally, amalgamated transformative and normative visions of the organism-environment relationship. In projects like the poly-cinema and the Total Theater, they hoped to harness the moving image to recalibrate the organism in a way that ultimately re-established human mastery over a technologized environment.

In his book *EcoMedia*, Sean Cubitt writes that "at any historical juncture, the meaning of what it is to be human is constructed from the relationship between nature and technology. Likewise, the meaning of nature is constructed out of the relationship between human and technological, and of technology from the relation between human and natural."[426] The period around 1900 was particularly complex in this regard, as cinema emerged alongside and in relation to a range of other new technologies and scientific attempts to understand both nature and human nature. Currently, we seem to be experiencing a similar moment, as digital technologies enable new forms of knowledge production and ways of experiencing the world. To conclude, I would like to reflect briefly on the implications of the media-ecological perspective developed here, first with regard to German historiography and the history of modernity more broadly, and second in relation to current ecocritical perspectives in the humanities.

As discussed in the introduction, historians of Germany in recent years have painted a much richer portrait of the biopolitical dynamics of German modernity. Catastrophic historical narratives, which posited strong continuities between nineteenth- and early twentieth-century biopolitical discourse and the horrors of Nazi genocide, have given way to less teleological perspectives. The work of Edward Ross Dickinson, Dennis Sweeney, and others has fleshed out the accomplishments of social reform movements and the range of competing visions of 'the social' in Wilhelmine and Weimar Germany.[427] For scholars of film, media, and culture, this historiographical shift raises the question of what role different media forms played in the biopolitical laboratory that was pre-Nazi Germany. While mass media such as film and illustrated magazines were important modes of communication by which discourses of health, hygiene, and life reform reached popular audiences, the moving image was more than a messenger. As an industrial technology, film's biopolitical significance extended beyond the issue of film content to its status as a material object and its supposed effects on the body. Film could transmit hygienic knowledge, but was just as often itself an object of this knowledge. Biopolitical practices profoundly shaped the way film was 'cultured'—how it was manipulated, regulated, exhibited, and experienced.

It is reductive to imply, however, that cinema's integration into German culture was a process of increasing social control and regimentation of mass audiences. Such a narrative,

426 Sean Cubitt, *EcoMedia* (Amsterdam: Rodopi, 2005), 133.

427 For summaries of these debates, see Dennis Sweeney, "Reconsidering the Modernity Paradigm: Reform Movements, the Social and the State in Wilhelmine Germany," *Social History* 31, no. 4 (2006): 405–34; and Dickinson, "Not So Scary After All? Reform in Imperial and Weimar Germany."

which would draw a line from Wagner's total artwork to Ufa's monumental films to the Nuremberg rallies, too closely resembles histories that see the beginnings of totalitarianism in the nineteenth-century welfare state. Expanding our view beyond film content allows us to see the various ways film could be used (by producers, exhibitors, pedagogues, politicians, reformers, and viewers) in relation to biopolitical discourse. Cinema could be an escape from the dictates of hygiene—this was certainly true for early bourgeois film enthusiasts, for whom crowded and poorly ventilated working class cinemas possessed their own transgressive allure. But it could also be true even in the cleanest movie palaces, where the darkened auditorium short-circuited the hygienic demand for the illumination of urban space. Films themselves offered vicarious thrills and virtual exposures that contravened hygienic norms of vital experience. At the same time, cinema could offer refuge from the urban environment as well. In contrast to the smoke, dust, noise, crowds, and traffic of the city, the cinema was a controlled space in which mass audiences could experience the environmental comforts provided by ventilation, air conditioning, lighting, and interior design. Cinema filtered the dangers of the city into a form that could be consumed safely. Depending on who was asked (and when), cinema could be pollutant or nutrient, poison or prophylactic. The moving image, finally, was itself a site in which the relationship between organism and environment could be articulated or negotiated anew.

The historiographical revision of German biopolitical modernity also involves the question of Germany's particularity in relation to other modernizing nations in the nineteenth and twentieth centuries. The earlier model emphasized continuities, not just within Germany before and after 1933, but between Germany and other Western nations. This biopolitical narrative understood modernity as characterized by a "dream of perfectibility" (*Machbarkeitswahn*) whose necessary endpoint was mass murder, implying "that a modern world in which mass murder is not happening is just that: a place where something is not—yet—happening."[428] In other words, Germany was seen as unique only insofar as National Socialism had pursued the inner logic of modernity to its ultimate conclusion. In advocating for a revision of this narrative, Dickinson does not dispute the importance of the dream of perfectibility, but notes that

> social engineering, the management of society, can be organized in different ways. Historically, totalitarian biopolitics was a self-destructive failure. Democratic biopolitics has, in contrast, been—not in any moral sense, but politically—a howling success. For the historian interested in modernity, that story is no less interesting or important than the story of the implosion of the Nazi racial state.[429]

Seeing biopolitical discourse in a less sinister light opens up new space for reconsidering the differences and continuities within German history as well as Germany's place within a larger transnational context. Reform movements in Germany emerged within a transnational dialogue, often borrowing ideas from England and the United States. Nonetheless, such efforts were nationally inflected in various ways—by the rapidity of industrialization and urbanization in Germany around 1900, which contributed to the perceived intensity of environmental change; by the centrality of nature to German national identity; by the loss of World War I and the shift from monarchy to democracy (to dictatorship). Under these conditions, reform and welfare projects (including efforts at environmental management discussed in the preceding chapters) had particular appeal, insofar as they promised to protect the German population from the effects of industrial capitalism, heal a national body wounded by war, moderate class antagonisms, and legitimize functions of government in the absence of moral absolutes or authoritarian political

428 Edward Ross Dickinson, "Biopolitics, Fascism, Democracy: Some Reflections on Our Discourse About 'Modernity,'" *Central European History* 37, no. 1 (2004): 25.
429 Ibid., 47–48.

structures. It was these conditions that also made cinema such a fervent site of biopolitical interest and contestation.

The catastrophic narrative of biopolitical modernity took hold among a generation of scholars whose intellectual identity was founded on the opposition to fascism. For this generation, preventing the resurgence of fascism meant examining its most fundamental conditions of possibility and locating these within the dream of the Enlightenment. The current 'ecocritical' turn in the humanities is arguably driven by a similar sense of political responsibility in the face of crisis. As Dickinson notes, genocide, where it had not already happened, became the not-yet of the catastrophic narrative, a future it posited as inevitable and was nonetheless dedicated to preventing. Similarly, ecological catastrophe occupies a strange temporal position in the popular imagination, something that has both already and not yet happened—the dream of instrumental reason once again following its inexorable path. Environmental history and ecocriticism in literary and media studies have turned to the past largely in search of origins, those of the crisis itself as well as the contemporary fight against it. Consequently, much of this work seems to constitute an attempt to construct a genealogy for contemporary environmentalism and mobilize cultural history for environmentalist goals. In his book *Nature, Technology and Cultural Change in Twentieth-Century German Literature*, for instance, Axel Goodbody proposes to "identify the conceptions of science and technology, nature and the wild, which are explicit or implicit in texts, set them in the context of earlier literary and non-literary (philosophical and political) discourse and weigh up their usefulness as responses to environmental crisis in terms of descriptive plausibility and conceptual coherence."[430] Stephen Rust and Salma Monani, in their introduction to the recent collection *Ecocinema: Theory and Practice*, stress the environmentalist ethos as a point of consensus, writing that eco-film critics "tend to agree that the dominant, consumeristic modus operandi often suggests a troubled state of affairs not only in human interactions but also with the nonhuman world, and that cinema provides a window into how we imagine this state of affairs, and how we act with or against it."[431] The looming catastrophe (understandably, when it is framed as such) has been the point around which various ecocritical perspectives in the humanities have been oriented.

The rhetoric of crisis remains a uniquely powerful tool of political mobilization. As Hannes Bergthaller has recently argued, however, "only to the extent that ecocriticism is something other than the academic wing of the environmental movement can it render that movement a service which is perhaps more valuable than general consciousness-raising or the recruitment of new personnel."[432] As the work of Dickinson and others has shown with regard to modern biopolitics, the catastrophic narrative created a range of blind spots in German historiography. Without minimizing the urgency of ecological challenges the world continues to face, I wonder what relinquishing the narrative of ecological crisis might likewise reveal. In this idiosyncratic history of German film culture, I hope to have demonstrated that "environmental awareness" is not the sole property of the post-World War II Green movement, nor is it necessarily aligned with the political orientations we associate with it today. In early twentieth-century Germany, ecological thinking took multiple forms—in biology, urban planning, public health—and was mobilized for

430 Axel Goodbody, *Nature, Technology and Cultural Change in Twentieth-Century German Literature: The Challenge of Ecocriticism* (Basingstoke: Palgrave Macmillan, 2007), 40–41.

431 Stephen Rust and Salma Monani, "Introduction: Cuts to Dissolves—Defining Ecocinema Studies," in *Ecocinema: Theory and Practice*, ed. Stephen Rust, Salma Monani, and Sean Cubitt (New York: Routledge, 2013), 3.

432 Hannes Bergthaller, "Cybernetics and Social Systems Theory," in *Ecocritical Theory: New European Approaches*, ed. Axel Goodbody and Catherine E. Rigby (Charlottesville: University of Virginia Press, 2011), 227.

various projects that intersected with the history of cinema. Ecological management, just as much as ecological destruction, is endemic to modernity. Environmentalism, like the social hygiene projects that preceded it, belongs to the reflexive impulse of the modern, which constantly seeks to identify and manage the crises generated by modernity itself. Scholars in the humanities can and should seek out alliances with other disciplines in confronting ecological problems; at the same time, however, the humanities can also interrogate the premises and contingencies of ecological knowledge, exploring its forms and functions within historically variant configurations of nature, technology, and the human.

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