

Studies in German Literature, Linguistics, and Culture

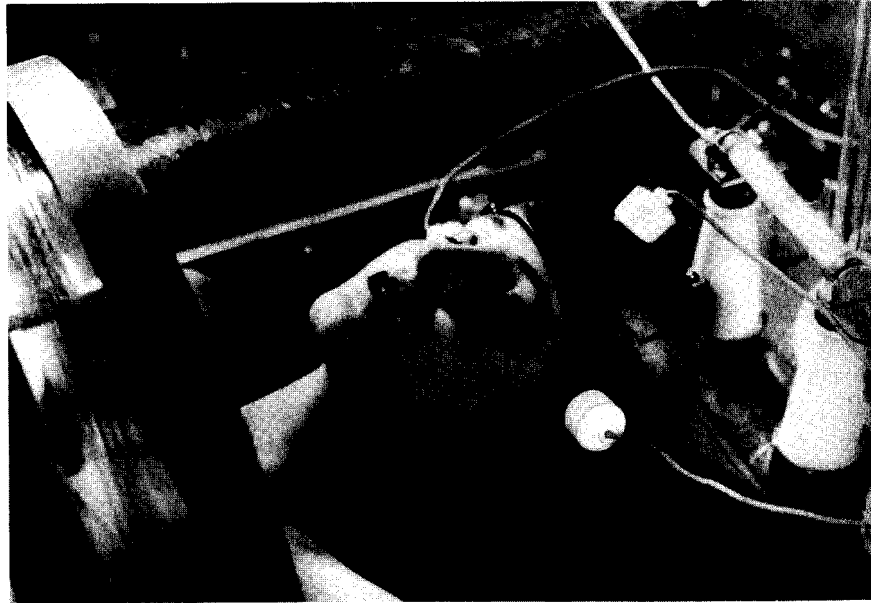
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Fritz Lang's *Metropolis*

Cinematic Visions of
Technology and Fear

Edited by
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and
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CAMDEN HOUSE



17. Helm between virgin and robot: the transformation scene. [Deutsches Institut für Filmkunde, Frankfurt]

Science, Machines, and Gender

Ludmilla Jordanova*

THERE HAVE BEEN CERTAIN MOMENTS that stand out in retrospect because they gave rise to statements about the nature of rational or scientific power that were so compelling, forceful or frightening that they gripped the imagination of generations and provided a general reference point for subsequent debate. Easily the best-known example of such a work is Mary Shelley's *Frankenstein* (1818), subsequently immortalized in virtually every literary and artistic genre.¹ In American culture the short stories of Edgar Allan Poe and Nathaniel Hawthorne have had a similar if less dramatic impact. The famous German silent film *Metropolis* (1926) should be seen in this context. It mobilized a number of familiar themes — tradition versus modernity, labour versus capital, men versus machines — around a sentimental story line, and equally important, it produced visual images of unusually compelling intensity. The scene where the inventor makes a robot in the likeness of a woman is certainly one of the most memorable moments in the history of film. In this essay I want to show how Lang's film deployed ideas about the relationships between science and gender. In order to appreciate how *Metropolis* is related to the themes and traditions related to these issues, we shall have to examine its mode of production and its content in some detail.

When *Metropolis* received its much publicized Berlin première early in 1927, the critics and public alike were hostile to it. Many commentators found the ending of the film banal and unsatisfying, although they generally praised the modern images of machines and buildings that

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¹ The literature on *Frankenstein* is extremely extensive. Items relevant to the themes of this essay include M. Hindle's "Introduction" to Mary Shelley, *Frankenstein* (Harmondsworth: Penguin Books, 1986); P. Brooks, "Godlike Science/Unhallowed Arts; Language and Monstrosity in *Frankenstein*," *New Literary History* 9 (1978), 591–605; M. Poovey, "My Hideous Progeny: Mary Shelley and the Feminization of Romanticism," *Proceedings of the Modern Language Association* 95 (1980), 332–47; P. O'Flinn, "Production and Reproduction: The Case of *Frankenstein*," *Literature and History* 9 (1983), 194–213; A. K. Mellor, "Frankenstein: A Feminist Critique of Science," in G. Levine, ed., *One Culture: Essays in Science and Literature* (Madison: U of Wisconsin P, 1987) 287–312; A. K. Mellor, "Possessing Nature," in A. K. Mellor, ed., *Romanticism and Feminism* (Bloomington: Indiana UP, 1988); 220–32; and D. Muselwhite, *Partings Welded Together: Politics and Desire in the Nineteenth Century Novel*. (London: Methuen, 1987), Chapter Three.

continue to be a source of admiration. *Metropolis* is a complicated and confused film. It drew, however, on some important themes relating to work, industrial organization and the nature of science that were particularly characteristic of European thought in the 1920s. Furthermore, it put these themes into play through a plot which hinges on the nature of femininity — especially its twin aspects, virginity and overt sexuality — and on the role of woman as the social and political bedrock of stable societies. This association of gender with analyses of science was far from novel; it mobilized traditions which linked women with passion and superstition, and men with reason and knowledge, women with religion and sorcery, men with science and management, women with humanity, men with destruction, women with sexuality, men with the lust for power.

The story of *Metropolis* concerns a city-cum-industry run by Joh Fredersen in which the workers are reduced to a faceless mass of exploited bodies. A young woman, Maria, comforts them with reassurances that a saviour and mediator will come to deliver them from their anguish. Freder, the boss's son, sees Maria, falls in love with her and casts himself in the role of the people's deliverer and critic of his father. His father, however, learns that discontent is spreading among the workers and decides to enlist the help of Rotwang, the inventor, who has been working on a robot "in the image of man, that never tires or makes a mistake."² Fredersen discovers that the workers are meeting secretly in the old catacombs to hear Maria talk to them about prayer and patience. After taking Fredersen to the catacombs to see Maria in action for himself, Rotwang captures Maria, imprisons her in his house and makes, at the boss's request, a robot in her exact likeness. The robot is then programmed to incite the workers to revolt because Fredersen is looking for an excuse to use violence against them. Their uprising wreaks havoc and has the inadvertent effect of flooding the underground city where the workers live, thus putting in jeopardy the lives of their children. When they finally realize this, the workers, thinking she has destroyed their children, pursue Maria. In fact, they capture the robot, and burn it as a witch, thereby revealing its true nature — a machine not a person. Rotwang chases the real Maria onto the roof of the cathedral, from where he falls to his death after Freder goes to her rescue and fights him off. Maria, father and son are reconciled, and a workers' leader comes forward in the same spirit. It was, after all,

² This intertitle is to be found in Fritz Lang, *Metropolis* (1973, Reprint, London: Faber and Faber, 1989), 47.

Fredersen's son, aided by Maria, who had saved their children. The boss is symbolically united to the workers by a handshake at the end of the film.

To understand the film we need to know something of its conditions of production. Fritz Lang (1890–1976) was born in Austria and had trained as an architect and artist before turning to the film industry, in which he worked as an actor and scriptwriter, coming to prominence as a director in the 1920s. Lang thought of setting a film in a futuristic city during a visit to New York in 1924. His wife and close collaborator, Thea von Harbou (1888–1954) then wrote a novel upon which the film in turn was based.³ The original film shown in Germany was much longer than the version currently available and apparently contained characters and events from the novel which are now missing. The version we know as made for the United States and was considerably altered. No copies of the original are known to exist. To speak of the film as "Lang's" therefore constitutes a simplification; it was the work of many hands, but it is impossible to know exactly what the terms of the collaboration were or what the effect of the cuts was. In his later years as an exile in the United States, Lang was quick to criticize *Metropolis* and its romantic, simplistic ending.⁴ Although all these points lead to interpretative problems, they do not undermine the possibility of an historical analysis of *Metropolis*, which need not depend on Lang's special status as the main creator of the film. When I mention Lang in this chapter I do so partly as a matter of linguistic convenience to avoid the necessity of saying "the team that made *Metropolis*" and partly as a reflection of the critical literature most of which focuses on Lang.

It may be useful at this point to note the main respects in which the novel and the film (as it is known) diverge. In the novel, Fredersen and Rotwang are locked in mutual hatred over their love for Hel, Freder's mother, who had died when her son was born. Fredersen "stole" Hel from Rotwang. Von Harbou situated Rotwang in an ancient magical tradition by explaining the uniqueness of his house — a medieval island in a sea of skyscrapers — in terms of an earlier occupant who had possessed awesome occult powers. Similarly, she accounts for the anomalous survival of a Gothic cathedral in a hyper-modern city

³ Von Harbou, *Metropolis*, first published in 1927. She had already been a stage actress and was an established author by the time *Metropolis* was written. [Editors' Note: Holger Bachmann's account of the genesis of the film in the introduction takes account of evidence not available at the time that Jordanova's essay was written.]

⁴ Lang's opinion on film endings was expressed in "Happily Ever After," *Penguin Film Review* 5 (1948), 22–29, an interview where Lang criticized *Metropolis*. See G. D. Phillips, "Fritz Lang on *Metropolis*," in T. R. Atkins, ed., *Science Fiction Films* (New York, 1976), 19–27.

through the power of the group of monks who still run it. Furthermore, Fredersen has a mother from whom he is estranged because she disapproves of his general conduct. His reconciliation with her concludes the book and carries with it a pledge that he will reform, rebuild and redeem Metropolis. In the novel, Rotwang's death results from his belief that Maria, whom he sees in the cathedral, is his beloved Hel; he cannot understand why she flees from him — a mistake which is comprehensible only in the context of a fight he has had earlier with Fredersen. When he regains consciousness following this, he believes himself dead, and so goes in search of his lost love. At the level of the plot, therefore, the novel is fuller and more consistent than the film and contains significantly different emphases. The use of florid religious imagery is much more elaborate, the references to father-son conflict more overt, and the symbolism generally more highly developed. It is possible that the differences stem from a complex combination of the cuts referred to above, the generic differences between novel and film, and the challenge of transforming verbal into visual images.

The difficulties in interpreting the film are of two main kinds. The first stem from the peculiar historical circumstances of pre-Nazi Germany, the use of films as instruments of Nazi propaganda and the attempt to come to terms with fascism following the Second World War. This issue is often reduced to a concern with the question, "Was Lang in general, and his work in *Metropolis* in particular, marked by the same ideological tendencies that led to the rise of fascism?" In other words, is it necessary to find ways of dismissing them as morally and politically tainted? This drive for moral clarity has led, for example, to a debate about whether Rotwang is a precursor of the reviled Jewish figures of later Nazi films — a point to which we shall return. The "problem" of Lang has been solved in a number of ways, one of which is to attribute blame for any apparently unsound ideological tendencies in his films to the contributions of Thea von Harbou, who remained in Germany after Lang left, and was an active film-maker under Hitler.⁵ Yet, to pose the question of Lang's political views in this way is to make assumptions about the second interpretative issue — the relationship between cultural products such as film and the historical setting in

⁵ See, for instance, Kracauer, *From Caligari to Hitler* (Princeton, Princeton UP, 1947), 162.

which they are made. Theoretically this is a particularly hard issue to deal with, and few attempts have been made to do so.⁶

To simplify, the issue is whether Lang was merely reflecting general, even unconscious tendencies in his own culture, the very ones that made Hitler's rise to power possible, or whether he was putting forward the views of a specific group with a coherent ideological perspective. Another possibility, although not one I support, that Lang's is a highly idiosyncratic vision, is little entertained because critics generally wish either to exonerate him from or implicate him in broader movements of the 1920s. I am not, of course, advocating a view of him or of the film as unique, since one of my purposes in analyzing *Metropolis* is to place it in a broad cultural context. But it is, I think, unsatisfactory to see him either as a passive reflector of his environment or as the mouthpiece of a particular group. For the moment a more general difficulty, reflecting the current state of scholarship, should be borne in mind. If we take it for granted that cultural artefacts are in some sense socially produced, then we need to search out and lay bare the various levels of mediation between economy, society and culture. For the case of Weimar Germany I have not been able to discover a literature that carries out such a job.

Of course, the standard cultural histories of the period make many assertions about these relationships, based on various theoretical suppositions and prejudices, but they fail to work out the links in any systematic way. For example, in his highly acclaimed work, *Weimar Culture*, Peter Gay locates *Metropolis* among works which portray "the revenge of the father." He finds it a film "calculated mainly to sow confusion," a "tasteless extravaganza" and "a repulsive film." He concludes his account of *Metropolis*, "The revenge of the father and the omnipotence of the mother were twin aspects of the Weimar scene, both equally destructive to youth."⁷ Such an approach clearly cannot shed light on the highly specific fashion in which the film portrays the workplace and the labour process. We can juxtapose this portrayal with what is known about labour conditions, wage settlements and the intro-

⁶ The only serious attempt I know of to undertake such an analysis of *Metropolis* is J. Tulloch, "Genetic Structuralism And The Cinema: A Look at Fritz Lang's *Metropolis*," *Australian Journal of Screen Theory* 1 (1976), 3–50.

⁷ *Weimar Culture: The Outsider as Insider* (Harmondsworth: Penguin, 1974) 148–9. See also W. Laqueur, *Weimar: A Cultural History 1918–1933* (London: Weidenfeld & Nicolson, 1974); E. Rhode, *Tower of Babel: Speculations on the Cinema* (London: Weidenfeld & Nicolson, 1966), 85–105; P. Monaco, *Cinema and Society: France and Germany during the Twenties* (New York, Oxford and Amsterdam: Elsevier, 1976), 118, 124, 128–9; J. D. Barlow, *German Expressionist Film* (Boston: Twayne, 1982), 118–33; and Kracauer, *From Caligari to Hitler*, 162–4, for other attempts to link the film with the prevailing mood of Weimar Germany.

duction of industrial rationalization in the period. The links between these two levels, the material conditions and the representation, need to be systematically examined. I have, however, been unable to locate any rigorous attempts to look at how labour was represented in a variety of cultural settings (art, film, theatre, fiction, social theory) and to offer an overall interpretation of the way labour-capital relations were treated. What is said about this later on must therefore remain somewhat speculative.

The difficulties of interpreting a film produced in such a fraught context mean that we must be especially careful about attributing a moral position to its director. This is in part because such positions are rarely articulated unambiguously, and also because it is hard to know how the ordinary public understood the film at the time it was produced. The opinions of critics, while illuminating, are not necessarily representative. If we want to make assertions about *Metropolis* as an expression of the conscious and unconscious tendencies of its time, it helps to have some independent means of assessing what these tendencies were. My point is that these are frequently inferred by hindsight, starting from the subsequent ascendancy of fascism. This teleological approach is understandable, since our need to distance and purify ourselves from the Nazis is still very strong, as the persistent popularity of films about the Second World War containing stereotyped Germans testifies; yet it is also unhelpful.

Cultural histories of Weimar that mention *Metropolis* generally present it in terms of crises of belief and identity, highlighting the religious and Oedipal themes. The film certainly explored a number of easily recognizable Christian themes: Maria, the Virgin-Mother; a son striving to save the world; a stern, almighty father; the virtues of patience and prayer; the necessity for suffering in order to overcome evil. These were even more heavily underscored in the novel, in which Fredersen is locked in conflict with the monks of the Gothic cathedral, who believe that doomsday has come when the city is in turmoil. Furthermore, Fredersen himself experiences the cataclysm as an occasion for repentance and he seeks to become the new redeemer of Metropolis. In the film, the use of crosses in the catacombs where Maria gives solace to the workers, of a halo of light around her head, of the Tower of Babel parable and even the frequent use of triangular motifs (the Trinity) further reveal an indebtedness to traditional religious language. Equally evident is the Oedipal theme. Freder rebels against and wishes to destroy his father. Indeed, in her novel Thea von Harbou wrote explicitly of Freder's parricidal drive. Historians have found the conflict between fa-

ther and son revealing of the general cultural crisis of Weimar. Hence the ending of the film — in which father and son are reconciled, yet without any radical change in the power structure being on the cards — appears especially prescient of the rise of totalitarian power.

My concern here is with the deployment of science and technology within the film, and particularly with the ways these are related to magic and tradition on the one hand, and the dual nature of female sexuality on the other. Those who have emphasized science and technology often classify *Metropolis* as "science fiction," a genre defined in the *Oxford Companion to English Literature* as "a class of prose narrative which assumes an imaginary technological or scientific advance, or depends upon an imaginary and spectacular change in the human environment."⁸ At first sight the use of the robot supports the status of *Metropolis* as science fiction. Yet *Metropolis* was conceived as an expression, if a somewhat exaggerated one, of a city life already firmly rooted in American culture. The robot, in the sense of an artificially made human being, relates as much to ancient myth as it does to a projected future, and Lang's film, like von Harbou's novel, is striking for the persistence of historical reference. The clothes are not futuristic but contemporary or traditional, the language and value systems are those of the 1920s and its parent culture, the modes of transport those in common use. Even the machines, which might possibly evoke an idea of "technological or scientific advance," exist as much as primitive deities as modern marvels. In short, to categorize *Metropolis* as science fiction draws our attention away from its use of modern science and technology in dynamic interplay with magic and tradition. The film lays bare the exceedingly fragile boundaries between good and bad science, good and bad beliefs, good and bad machines, and good and bad women.

Four topics of particular importance are raised in the film: industry, science and technology, city life and modernism, and they all contain implications about gender. *Metropolis* is set in a city which is also a single industrial plant with one man in charge of everything. The workers service the machines, which require constant attention; thus, while both human labour and mechanical power are required to keep the Metropolis going, the former are subservient to the latter. The (male) worker must keep up with the machine, and this is unambiguously shown as the source of excessive fatigue over long shifts.

Two themes prominent in early twentieth-century debates about industrial organization are evoked in *Metropolis*: scientific management in its broadest sense and the role of corporations. As a movement, scien-

⁸ See also Atkins, *Science Fiction Films*, and S. Jenkins, ed., *Fritz Lang: The Image and the Look* (London: British Film Institute, 1981), esp. 82.

tific management is commonly linked with the American engineer Frederick Winslow Taylor (1856–1915), whose work became widely known in America in 1910 as a result of a government inquiry, and whose *Principles of Scientific Management* (1911) had been translated into German in 1913. Taylorism built on earlier moves towards “systematic management,” which had stressed the importance of a system of management for directing and controlling production. Such streamlining of administration, through centralizing and standardizing managerial tasks to avoid wasted effort, is forcefully expressed in the depiction of Fredersen’s austere, highly automated and efficient office. As developed by Taylor, the theory of scientific management was strongly committed to rationality and efficiency. It also entailed finding the best person for each task, breaking down jobs into their constituent tasks in order to analyze how each one could be undertaken in the most efficient manner and then training the workmen to use this (and only this) approach. Taylor and his followers maintained that their methods dramatically increased efficiency and so productivity. Something of the flavour of Taylor’s system can be gleaned from his remark that “[the] work [of handling pig iron] is so crude and elementary in its nature that the writer firmly believes that it would be possible to train an intelligent gorilla so as to become a more efficient pig-iron handler than any man can be.”⁹

The implication — occasionally made explicitly by Taylor, that less “human” men make better workers — is clearly taken up and exaggerated in *Metropolis*, where the labourers move in a senseless mass, devoid of individuality. They are shown to be dominated and even enslaved by time, their bodies drawn beyond physiological efficiency — the goal of Taylorism — into stupor. The shifts in *Metropolis* last ten hours, and the clocks appropriately have a ten-hour face. Not only was working to fixed time schedules central to early industrialization, but scientific management extended this through the emphasis on

⁹ F. W. Taylor, *The Principles of Scientific Management* (New York: Harper, 1911), 40. See also J. A. Litterer, “Systematic Management: The Search For Order And Integration,” *Business History Review* 35 (1961), 461–76; D. Nelson, “Scientific Management, Systematic Management, and Labor, 1880–1915,” *Business History Review*, 48: (1974), 479–500; C. S. Maier, “Between Taylorism and Technocracy: European Ideologies and the Vision Of Industrial Productivity in the 1920s,” *Journal of Contemporary History* 5 (1970), 27–61; and H. S. Person, ‘Scientific Management’, *Encyclopedia of the Social Sciences* 13–14 (1930), 603–8.

the timed task, the importance of avoiding wasted effort, the need for production schedules and the setting of wage rates and bonus systems.¹⁰

Metropolis thus captured some aspects of scientific management — the subservience of people to the work process and the tyranny of time — and exaggerated them, as in a caricature, to heighten the viewer’s sense of industrial inhumanity. Other central features of scientific management, however, find no expression in *Metropolis*. Two silences in particular stand out. First, the role of management and of technical expertise was central to Taylorism, which was unthinkable without both the enthusiastic co-operation of the managerial strata and the expertise of engineers. These groups of middle-class professionals are never seen in the film, yet in the social vision of scientific management they played a crucial part, for reasons which will become clear when the second silence has been identified. This concerns rewards for work. Taylor and his followers believed that fair wages were of the utmost importance and that higher productivity was directly in the workers’ interest, because it would lead to higher wages. The reasoning behind this was perfectly plain — higher incomes undermined class solidarity, enhanced social mobility, and through the power to consume that better incomes offered, drew working people into a middle-class life style. In theory at least the lure of moving into the professional and managerial classes would undermine any possible discontents.

Of course, the discourse of scientific management itself was not free from tensions and inconsistencies. The goal of a classless, stable society fitted ill with the emphasis on the intense specialization of work that Taylorism required and with Taylor’s own sense of the animality of manual workers. Significantly, *Metropolis* portrayed work as physically demanding rather than as requiring specialized skills, while the workers are never shown making products or having and spending money. In stark contrast to the rich, the workers are exhausted, walk like zombies, get killed in industrial accidents, work in hot, steamy conditions, and thus lead miserable lives. In these respects they are closer to slaves than to the modern workers scientific management sought to create.

During the 1920s there was intense concern with the growth of large industrial complexes and monopolies as these assumed ever greater political and economic power. *Metropolis* was just such a body — a single giant unit, city-state and factory rolled into one. Corporatism constituted an ideology rooted in the transfer of power away “from elected representatives or a career bureaucracy to the major organized forces of

¹⁰ The classic statement remains: E. P. Thompson “Time, Work Discipline and Industrial Capitalism,” *Past and Present* 38 (1967), 56–97.

European society and economy."¹¹ This shift has been associated with a weakening of parliamentary democracy, the growth of private power and an erosion of the distinction between the public and private sectors, and the development of centralized bargaining procedures in which labour leaders played a significant role. One historian has argued that Germany was moving clearly towards corporatism during the 1920s, a trend he identified with conservatism.¹²

Aspects of these themes are certainly explored by Lang. In *Metropolis* there is no political structure in which people can participate, hence any distinction between public and private — one of the traditional foundation stones of participatory democracy — is totally inapplicable. If we understand private power as suggesting both the ascendancy of particular interests and the dominance of individuals, then Fredersen represents such power. There is no hint of bargaining between major groups in the film, not least because labour has no voice, being reduced, literally, to a collection of faceless bodies. They require the managerial "head" of *Metropolis* to direct them. The city-factory is thus a corporate entity in a particularly direct way, in that the film presents it as a single organism, requiring head, hand and heart to work together for it to survive. The ending may be thought to hold out the promise of a negotiated settlement, but this can be no more than conjecture, since the emphasis is sentimental, not practical. Furthermore, the workers are portrayed in distinctly unflattering terms; they are unable to distinguish the false from the true Maria; they can easily be roused to violence that is potentially injurious to their own families; they lust after revenge against (the robot) Maria; and they become instantly docile once their children are known to be safe. Certainly many of these points contribute towards an important point that the film makes. The work structures of *Metropolis* are shown to be sterile and destructive at all levels of the hierarchy because they lack human sentiment — presented as a distinctively feminine trait in contrast to the masculinized production system.

It could be argued that the portrait of labour and its control in *Metropolis* merely served to highlight the degradation of the whole system, and so sharpen a critique of modern industrialism. It is also likely that Lang took up certain themes that appealed to him dramatically, and developed them in an extreme form, partly for visual effect. There is no

¹¹ C. S. Maier, *Recasting Bourgeois Europe: Stabilization in France, Germany and Italy in the Decade after World War I* (Princeton: Princeton UP, 1975), 9.

¹² Maier, *Recasting Bourgeois Europe*, 13.

reason why he and his co-workers should have felt bound to produce a logically or politically consistent whole. We cannot, indeed should not, look to *Metropolis* for insights about corporatism and scientific management in Weimar Germany. But the film does reveal something of the nexus of tensions and problems that industrial development was seen to be spawning, particularly concerning the relationships between (male) workers and machines and the reduced human potential of industrial workers, seen as a loss of positive feminine attributes. In addition it suggests a number of specific social and cultural themes through which the anxiety over "the modern" was focused.

Clearly, it would have been impossible for themes around modernity to be taken up in *Metropolis* without science and technology occupying a visible position. The film treated three modern themes in a way that owes less to contemporary events than to well-established literary and artistic motifs; fear of machines; the creation of artificial "man," and the "mad" scientist. In order to pursue these more fully we will have to undertake a number of short detours. It will be easier to draw out the distinctiveness of *Metropolis* if we can establish some points of comparison. A variety of candidates invite comparison with *Metropolis*, including Villiers de L'Isle-Adam's novel *L'Eve future* (1886). This concerns the fabrication, by the inventor Thomas Edison, of an android that is an ideal woman. There are some evident similarities with Lang's film here.¹³ No less relevant are Mary Shelley's *Frankenstein* (1818) and Nathaniel Hawthorne's *The Birth-mark* (1843), both of which will be discussed shortly.

These juxtapositions may seem curious and open to two specific objections; that both involve literary productions unsuitable for comparison with a film, and that they were produced in very different socio-cultural settings from *Metropolis*. In answer to the first objection it is appropriate to again point out that the film was itself first conceived as a novel,¹⁴ which we can locate with respect to literary traditions, and also that, as a silent film, its narrative structure, which relies heavily on the text shown on the screen, retains a marked literary character. To the second it may be said that the general influence of *Frankenstein* is so

¹³ On Villiers, see A. Michelson, "On The Eve Of The Future: The Reasonable Facsimile and the Philosophical Toy," *October* 29 (1984), 3–22, and C. Bernheimer, "Huysmans: Writing Against (Female) Nature," in S. R. Suleiman, ed., *The Female Body in Western Culture* (Cambridge, MA: Harvard UP, 1986), 373–86. The latter deals with Villiers *en passant*, but the themes of the article as a whole are nevertheless highly relevant.

¹⁴ [Editors' Note: There is now doubt about this, see Bachmann's introduction in this volume. Jordanova's point about the literariness of the film's sources stands, however.]

extensive that its treatment of similar themes — making people, and power-seeking science — forces the comparison upon us. The same cannot be claimed, however, of Hawthorne's short story, written in the early 1840s. Certainly he was well aware of the Gothic tradition, but my reasons for choosing this work are somewhat different. It contains, in an exceptionally concentrated form, many of the themes I am considering here. It is not necessary to postulate Hawthorne's direct influence upon Lang for his writings to illuminate the general linkages between science, medicine and gender. Indeed, the example of Hawthorne reveals how very widely dispersed the language of power, control, domination, penetration, and masculinity was.

The fear of machines is present in two distinct forms in *Metropolis*. We have already mentioned how the machines the workers service also dominate and control them; this is the first form that a fear of machines takes. Apparently machines keep the city going, although exactly how they do so remains unspecified. Their importance is none the less dramatically demonstrated when the workers wreck them in anger and flooding of their homes results. The film drew on a naive faith in technology and simultaneously expressed a primitive fear of machines when these are transformed into monsters, named after non-Christian deities, who swallow up workers, just as primitive gods demanded the constant sacrifice of human victims.¹⁵ Either way, the machines are rendered omnipotent — either because of modern technology or because of irrational belief — and therefore they are to be feared. It may be helpful to put this in the context of the "cataclysmic" novel tradition, since, according to one commentator:

novelists attributed the upheaval to class struggle, and that in turn was traced to the failure of industrial society to work out institutions that would protect the working man from enslavement to the very technology that, in more utopian visions, was supposed to free man from hunger and drudgery.¹⁶

This suggests the double character of machines in their capacity to both liberate and enslave. There is another kind of duality in relation to machines in the film. On the one hand, they are part of its modern aesthetic, presenting visual challenges and delights to Lang as they did to

¹⁵ Names used in the film include Ganesha, Baal, Moloch, Mahomet, Golgoth, and Juggernaut.

¹⁶ T. Stoehr, *Hawthorne's Mad Scientists: Pseudoscience and Social Science in Nineteenth-century Life and Letters* (Hamden, CN: Archon Books, 1978), 269.

many artists of the period.¹⁷ On the other hand, they presented an ugly side, being demanding and vengeful, the agents of death. Such ambivalence about machines was in no way confined to the 1920s, although it may have been fuelled by contemporary industrial developments and a general concern about "modernity."¹⁸

The second form in which the fear of machines emerges in the film is through the robot, a highly specific mechanical type that is best considered in connection with how the film treats the making of an artificial person. *Metropolis* draws on old traditions concerning the artificial production of human beings. It is true that this is achieved not directly from organic remains, as in *Frankenstein*, nor by means of sculpture, as in the Pygmalion myth, but via a robot and elaborate machinery. From the imagery of the dissecting room and charnel house in Shelley's novel, we have moved to that of the physics and chemistry laboratory. When Rotwang the inventor creates the false Maria, it is flashing lights, flasks and electrical phenomena which we see. Frankenstein also used electricity to animate his creature, but here the similarities end. Whereas his monster bears the visible marks of his unnatural creation, Rotwang achieves a complete human likeness. There are two quite different notions of alien presence here; the first is alien because hideous, the second because evil, insidious and undetectable. Where Frankenstein initially saw himself as a benign father, Rotwang deliberately created an agent of destruction. The larger projects that gave birth to the two creatures were also quite different. Frankenstein was possessed by a desire to fathom the secrets of (female) nature. Rotwang, too, may have had these goals, but the viewer is not informed of them. Rather his boast is that he has made "a machine in the image of man, that never tires or makes a mistake," the prototype for "the workers of the future — the machine men!"¹⁹ His work is thus explicitly linked to the labour process, to automated production. Rotwang set himself up as a godlike figure, as of course Frankenstein also did; both usurped the female procreative role. However, the former parodied God's creation of the human race by making machines in the image of man, whereas the latter did so by making a hideous distortion of man.

The question of the similarities between human beings and machines was not a new concern of the early twentieth century but went

¹⁷ R. Banham, "Machine Aesthetic," *Architectural Review* 117 (1995), 25–8 and the article "Machine Aesthetic," in A. Bullock and O. Stallybrass, eds., *Fontana Dictionary of Modern Thought* (London: Fontana, 1977), 361; this quotes van Doesburg's claim to have coined the phrase "machine aesthetic" in 1921.

¹⁸ See M. Berman, *All That is Solid Melts into Air: The Experience of Modernity* (London: Verso, 1983).

¹⁹ See note 2 above.

back to debates about "man-machine" that became intense in the seventeenth century with Descartes' assertions that animals are automata. During the eighteenth century La Mettrie's *The Man Machine* (1748) caused a veritable sensation. Subsequently, many scientific and medical investigations explored the mechanistic aspects of human anatomy and physiology.²⁰ Yet these debates did not strike at the same deep-seated anxieties as *Metropolis*, in which the fear of automation and hence of total control over and manipulation of daily existence seems to be the animating concern:

The technical superiority of the machine, by transforming mere efficiency into a human ideal, has set in motion a convergence between itself and man which tends, on the one hand to lift the robot to a sort of sub-human role, and on the other to assimilate man to the machine not only in the biological or psycho-physiological sense, but also in relation to his values and conduct. . . . The obsessive *leitmotiv*, . . . of human civilization being threatened by a robot takeover, would seem thus to betray symbolically a widespread fear of the automatization of life.²¹

Metropolis added another dimension to this fear by making the robot a seductive woman. It thereby becomes insidious in a particularly threatening way, by luring men through desire. The machine appears feminine even before the scientist makes it into "Maria," since it has a distinctively womanly overall body shape. The result is two different forms of danger — technological and sexual — riveted together. The whole motif of the robot is portrayed in modern terms, visually speaking, in dramatic contrast to Rotwang himself.

Rotwang looks not like a modern scientist but like a hermit who knows about magic and alchemy; he wears a long gown, has a somewhat demented manner, owns old books, and lives in a medieval house nestled incongruously in the modern city and harbouring mysterious secrets. It is easy to see here how Rotwang recalls literary precedents such as Frankenstein and Faust and also Aylmer in Hawthorne's *The Birth-mark*. It has been suggested that the "mad scientist" is a literary type in Gothic and Utopian novels, and there do indeed appear to be a number of recurrent themes that bear not only on *Metropolis* but also on the relationships between science, medicine, and gender. Five issues

²⁰ A useful survey of these developments is A. Vartanian, "Man-Machine From The Greeks To The Computer," in P. Weiner, ed., *Dictionary of the History of Ideas*, vol. 3 (New York: Scribner, 1973), 131–46.

²¹ Vartanian, "Man-Machine," 146.

in relation to the "mad scientist" are of especial importance here: masculinity; power, control, and over-reaching; secrecy; experimentalism; and science and magic. These issues can be presented exceptionally vividly through a brief discussion of *The Birth-mark*.

The story concerns a passionately enthusiastic natural philosopher, Aylmer, and his beautiful young wife, Georgiana, who has a small mark on one of her cheeks. In her husband's opinion it is an increasingly troubling blemish on her otherwise perfect form. She eventually agrees to let him remove it, which, after much arduous experimental work, he is able to do — at the cost of her life. Here, then, is the classic tale of the over-reacher, and the affinities with *Frankenstein* are obvious. The differences are equally instructive. Although we can understand Shelley's tale in terms of the masculine desire to dominate nature, Frankenstein did not directly work on woman as Aylmer and Rotwang did.²² Hawthorne brings the gender question to the fore by making the experimenter and subject husband and wife, and by explicitly addressing the relationship between love of knowledge and love of a person:

[Aylmer] had devoted himself, however, too unreservedly to scientific studies, ever to be weaned from them by any second passion. His love for his young wife might prove the stronger of the two; but it could only be by intertwining itself with his love of science, and uniting the strength of the latter to its own.²³

The passionate engagement with "deep science" is characteristic of the over-reacher, and as the novel version of *Metropolis* shows, the relationship between Rotwang and Maria had an erotic dimension, even if based on mistaken identity. In the film, the way he stalks her in the catacombs and then abducts her suggests sexually predatory behaviour. The fact that these scientists are men is essential not only to the plot but to the sexual dynamic that is integral to power over nature.

Rotwang, Aylmer, and Frankenstein are all perfectly clear about the power and control they seek. The equation between knowledge, power, and danger is made openly. This theme is brought into particular prominence in *Metropolis* because the link with political authority is so direct — Rotwang is working for Fredersen, and Fredersen has total power in *Metropolis*. However, acquiring power over nature is not represented as a public matter; rather, it is repeatedly associated with secrecy. In *Frankenstein* much is made of his "midnight labours," and the

²² I am, of course, well aware that Frankenstein began work on a female companion for his monster, work that he later destroyed. Nonetheless, the plot hinges on his relationship with the unnamed male being he created initially.

²³ Hawthorne, *Selected Tales and Sketches*, ed. M. J. Colacurcio (Harmondsworth: Penguin Books, 1987), 259.

need for concealment dominated his whole mentality. Aylmer too worked only with a trusted helper and was horrified when his wife ventured into the laboratory. His entire enterprise is shown as a quest for nature's secrets, secrets that he finds it impossible to penetrate: "our great creative Mother, while she amuses us with apparently working in the broadest sunshine, is yet severely careful to keep her own secrets . . . like a jealous patentee."²⁴ It follows that those who wish for her secrets must be both cunning and secretive themselves. Rotwang is no exception to this pattern. He works in seclusion in a house easily turned into a prison for the real Maria, while an air of mystery hangs around him and his abode. The sense of secrecy is fed by the involvement of such over-reachers with difficult, dangerous, even transgressive experiments. The strong emphasis on an experimental approach comes from a number of sources — the perception of alchemy as a paradigm of over-ambitious knowledge, the association with magic, and the vividness with which experiment evokes the idea of prising secrets from nature. It also allows the "mad scientist" to be portrayed as active, interventionist, as visibly moved by his passion for knowledge.

This passion for knowledge is never uncritically depicted. Possibly the association with magic serves to establish that something not quite legitimate is going on, indeed that it has profane qualities. The form of the profanity is, of course, important. The affront to nature and to God is generally clear. Such a search for knowledge is also profane because it is inappropriate to the human condition — a point Hawthorne repeatedly and eloquently made since it is Aylmer's abhorrence of his wife's "fatal flaw of humanity" that drives him beyond the bounds of normal behaviour to a denial of the reality of disease and death.²⁵ "He was confident in his science, and felt that he could draw a magic circle round her," in other words, Aylmer wanted more of natural philosophy than it could reasonably give, he wanted magical control.²⁶ In Rotwang's case, too, we are encouraged to think of a mixture of science and magic — his appearance, his bizarre medieval house which included a modern laboratory, the symbols on the doors.

²⁴ Hawthorne, *Selected Tales*, 265.

²⁵ Hawthorne, *Selected Tales*, 261.

²⁶ Hawthorne, *Selected Tales*, 266.

And yet, Rotwang displays a unique characteristic, certainly not shared by either Frankenstein or Aylmer — he is successful.²⁷ He actually achieved what he claimed he could, the robot did look like Maria, she did do as she was told. His knowledge was made palpably real. The problem, so far as the plot of *Metropolis* is concerned is that he served an evil master, for it was in Fredersen's interests that he made the robot, and it was Fredersen's plan gone awry that caused disaster. Perhaps this is to exaggerate the differences, for it is true that like other "mad scientists" Rotwang is presented as obsessive, as possessed by a passionate love of, or lust for, power and knowledge that led to his downfall. Furthermore, the idea for the robot had clearly come to him long before Fredersen asked for his help. Rotwang is a complex figure who displayed prodigious intellectual powers, which even Fredersen respected and which were of infinite value in the modern Metropolis. Yet he also manifested the archaic powers of a sorcerer. In this respect he resembled the machines, at once suggestive of modern power and of primitive evil.

The exploration of modernity in *Metropolis* was undertaken as much through the idea of the city as through science and technology. If early twentieth-century thinkers wanted to voice reservations about the times in which they lived, the city offered an attractive vehicle for their doubts. The city could stand for a multitude of discontents, including, crime, decadence and immorality, as it had done for centuries. Yet, for equally long, the city had also represented positive values such as learning, civilization and enlightenment. In *Metropolis*, Lang highlighted modern, high-rise architecture, advanced transport systems and vertical structure of the city as a representation of its social hierarchy. He was particularly keen in *Metropolis* to find novel cinematic ways of conveying the immense height of the buildings.²⁸

What contemporary commentators found troublesome about city life, particularly in the United States, was the close proximity between different social, religious and ethnic groups. It was perceived as a location which threatened communities, for these could hardly hold together amidst the insistent mobility of urban life. Some who have written about Lang have pointed to distrust of the city as a characteristic of German conservative thought in the 1920s. Yet contemporaries found other meanings in modern city life apart from the threat of social disintegration, including a kind of exhilaration which went with being

²⁷ Faust too was successful, but only with the help of Mephistopheles. Rotwang is seen to do it all himself, although it would be possible to interpret the film as implying that he had magical assistance.

²⁸ J. Elderfield, "Metropolis," *Studio International*, no. 103 (1972), 196–9.

free from the oppressive intimacy of rural or small town life.²⁹ By contrast, Lang showed the Metropolis not as a place where groups mingle promiscuously but as one where they are rigidly segregated. The public areas are only for an elite whose composition is never specified and whose behaviour vividly evokes the decadent pleasure-seeking with which the Weimar period is so often associated.

However, there can be no doubt that the city stood for modern life, or that modernity was an important feature of the film. The modernity is conveyed in a number of ways, which do not always sit easily together. The self-indulgent merrymaking of the privileged elite was one way of suggesting it; others were the modern architecture, the industrial machinery, the transport systems and Fredersen's bare, functional office. These must be seen, however, in relation to the ancient catacombs, Rotwang's medieval house, the Gothic cathedral and the eighteenth-century costumes in which the gilded youth of Metropolis besport themselves. Thus the film does not present a simple futuristic or modernistic scenario, but sets up a dynamic between old and new. It is worth remembering how very controversial, socially and politically, simple functionalist architecture was at this time, and that the underlying issue was not only stylistic preference but an entire world-view.³⁰

In so far as *Metropolis* rests on a world-view, it is organicism and not the culture of the modern that provides a unifying theme. "Organicism" is not a straightforward concept, and many different claims have been advanced under its name. In relation to *Metropolis*, two strands of organicist thought are relevant, and they are summarized in the following propositions: "the parts cannot be understood if considered in isolation from the whole" and "the parts are dynamically interrelated or interde-

²⁹ See G. Simmel, "The Metropolis And Mental Life," (first published in 1903) in D. Levine, ed., *Georg Simmel on Sociability and Social Forms* (Chicago, 1971), 324-39, esp. 332-3.

³⁰ A convenient way of appreciating the implications of new styles of the period is through the Bauhaus; see the exhibition catalogue *Fifty Years Bauhaus* (London, 1968), especially the section on architecture, 145-210. B. Fletcher's *A History of Architecture* (London: Butterworths, 1975), contains some examples of factory design, 1246, 1264-71 and 1290. Lang's aesthetic can also usefully be placed in the context of precisionist art; see *The Precisionist View in American Art* (Minneapolis Exhibition Catalogue, 1960), esp. 19 (Spencer, "City Walls"), 28-37 (section on "Urban Themes") and 38-41 (pictures under the themes "Reflections of an Industrial Society" and "The Solid Geometry of Industry").

pendent."³¹ Frequent allusions are made in the film to the need for an integrated harmony between different parts of the body: "Between the brain that plans and the hands that build, there must be a mediator," "It is the heart that must bring about an understanding between them." The film ends in fact with the following title: "There can be no understanding between the hands and the brain unless the heart acts as mediator."³² These statements imply that a society must function as a whole system, just as an organism does, and that social unity is a prized value. Yet this is put forward in a context of intense exploitation and extreme division of labour, a fragmentation the organicist formulation does not seek to challenge. The concern with bringing together head and hands (both masculine) indicates a deep fear of splitting in the social order which will be mended not by ending the original divisions but by binding groups together in some unspecified way through the language of emotions and sentiment (both feminine). The organicist discourse in *Metropolis* works, then, at two levels: the first stresses harmonious relations among the elements of a social system, while the second registers divisions and hierarchy. The point about the hierarchy, however, is that each stratum depends on the others and therefore has no autonomous existence.

Visually, the distinction between the different levels is powerfully conveyed. The workers wear sombre clothes and live below ground where it is dark, while the elite live high up, travel in aeroplanes, wear pale clothes and experience the open air. The brain, the organ of calculation and hard thinking, is visually expressed in silent-film style by the exaggerated reactions and facial contortions of Fredersen and Freder. The workers, on the other hand, are purely physical; they are "hands," and hands in another sense when they are shown moving dials on clocklike machines, their arms like the hands of a clock. Not only does the life of the mind not exist for them, but they are barely differentiated from one another. The ballet-like presentation of work, which shows highly abstract movements, heightens this sense that mechanical coordination between identical elements represents the sum total of life for the majority of the inhabitants of Metropolis who trudge to and from work in serried ranks. The congruence between organicism and silent-film technique extends to Maria, who as the "heart" of the system, constantly presses her hands to her breast.

³¹ D. C. Phillips, "Organicism in The Late Nineteenth and Early Twentieth Centuries," *Journal of the History of Ideas* 31 (1970), 413; see also G. Saccaro-Battisti, "Changing Metaphors of Political Structures," *Journal of the History of Ideas* 44 (1983), 31-54.

³² Lang, *Metropolis*, 60 and 130.

All the workers appear to be male, so that for the most part Maria is the only woman we see. The women workers/workers' wives become visible only when the masses rebel and then become alarmed about the fate of their children. The whole plot in fact rests on the potentially disruptive presence of Maria. Indeed, right at the beginning it is clear that, as a fount of feeling, she will not accept a regime based on heartless exploitation. Her good, pure femininity — she is both virgin and mother — is an essential part of the organicist vision, for it enables her to be the "heart" of the city. It is equally important that the robot be her double — outwardly identical but inwardly her opposite. Femininity is thereby split into two; pure, good chastity and sensual, corrupt depravity. Gender comes to play a complex role in the film. The real business of life, whether it is labour or running Metropolis is done by men, yet they lack some essential element to make them whole, and it is this ingredient which good femininity can contribute. So that although reason and sentiment could be seen as opposed to one another, they are also complementary.

But what of the destructive side of femininity? Full sensuality was presented as a form of unreason closely akin to mass fury and mass decadence, which are incompatible with male reason. Its fate was to be identified as witchcraft and suitably annihilated. The robot built by Rotwang, a master of knowledge, is portrayed as the antithesis of that knowledge. It should be pointed out that the paradox is sharpened by the robot looking unmistakably feminine, as we noted earlier, before it became "Maria," suggesting that the destructive machine and the destructive side of female sexuality are identified with one another. Some commentators have dealt with this problem by suggesting that Rotwang is the black magician — as already mentioned, the precursor of the evil Jew of Nazi films. Equally, if not more plausibly, he could be seen in the traditions of hermits, alchemists, philosophers and anatomists, shown in paintings, such as those by Joseph Wright of Derby, as old men wearing robes, whose knowledge isolates them from others. The pentagram, shown on Rotwang's front door and in his laboratory, is, when inverted, a sign of witchcraft and inverted human nature. The term "seal of Solomon" is also used, but this is in fact six-pointed, unlike the shapes shown in the film.³³

³³ On Rotwang as "sub-Aryan," see Rhode, *Tower of Babel*, 97. Tulloch, "Genetic Structuralism," 27 links Rotwang, anti-semitism and Solomon's seal. On Joseph Wright's figures, see B. Nicolson, *Joseph Wright of Derby. Painter of Light* (London: Routledge and Kegan Paul, 1968). The inverted pentagram is explained in J. C. Co-

To identify Rotwang with bad magic is to say that the power he had was wholly illegitimate and came from his attempts to do things that are beyond the proper province of the human being. There is certainly some truth in this, yet his power was genuine in the sense that it really worked. He has a level of understanding which, it is implied, was unique and was highly valued by Frederesen. Rotwang cannot simply be a magician, then; he is also a scientist and inventor who grapples with the real world not the realms of fantasy. Indeed, if he were simply a wizard, the film would be far less interesting, not least because Frederesen's invitation to Rotwang to help him solve his political problems would seem less plausible. The alliance between political power and power over nature was forceful indeed, but legitimate power and knowledge could all too easily enter an unacceptable, illegitimate domain. The boundary between good and bad was perilously fragile.

Metropolis is an exploration of pure power. Frederesen has complete authority and control, just as Rotwang can command nature's forces. Yet both men find their power challenged because, the film implies, it was incomplete psychologically, lacking feminine sympathy. The plot resolved this by eliminating Rotwang and by giving Frederesen the capacity to empathize. His power — social, political, economic and technological — remained intact, but something was added to it to make it whole. This something was unambiguously identified as a feminine virtue, though some men, such as Freder, possessed it. The need for good femininity to fill the lacunae in male power was reinforced by the fact that Freder has no mother to mediate between him and his father, so Maria had to assume this role. She did so not directly but indirectly by creating tenderness in the son who then tried to pass it on to his father in order to bring his father to sympathize with the workers. The film thus works with a number of different kinds of power and the relationships between them; the power of the emotions (Maria and Freder), of the capacity to control nature (Rotwang), of absolute political authority (Frederesen), of wanton destruction (the robot, the masses and the monstrous machines).

Metropolis reveals much about the relationship between science and technology and other forms of power; or rather, science and technology offer Lang a verbal and visual language with which to speak about social relationships and political structures. The relationship between mental and manual labour is identical with that between rulers and

per, *An Illustrated Encyclopaedia of Traditional Symbols* (London: Thames and Hudson, 1978), 128.

ruled; the unifying force is the highly mechanized factory, which is also the state — an organic social system. The visual language is that of vertical hierarchy; the verbal image that of physiological systems. Femininity, triggering sexual attraction, is the dynamic element introducing change into the system through Freder being drawn to Maria, a woman of the people. In the end, only Maria can offer the quality, heart, which will reconcile head and hand and make the state truly organic. If the feminine disrupts, it also heals. Women do not represent a unitary power, but a force easily fragmented into opposites; nurturing chastity and disrupting sensuality.

In a similar fashion, scientific knowledge can split into genuine reason and illegitimate knowledge/magic, and technology potentially contains both the all-powerful, efficient machines and the monsters who claim the lives of men. When concepts split in this way they generate tensions — because the relationship between the two elements may be obscure and troublesome, and because each element can easily be transformed into the other, creating instability. Such unstable splits threaten to destroy the organic state; they require bridging. Likewise, there should be links between labour and capital. The bridges do not undermine the divisions they span but rather provide an illusion of cohesion.

Lang's film is best described as a caricature of modern life which exaggerates certain aspects to bring them to our attention. This method is most successful in relation to the workers. The denial of individuality, the fusion of man and machine, workers going to and from work in mindless synchrony, and the obsession with time and efficiency have been noted in critiques of capitalism since the time of the romantic writer and historian, Thomas Carlyle.³⁴ But it remains an open question what Lang and his co-workers really believed about these features of modern life. The film seems to have a conservative, palliative ending, in that master and workers are reconciled without anything being said about real material improvement. The conclusion constitutes a romantic promise, while the reality is that the organic system is preserved intact and, of course, remains hierarchical and exploitative. The use of organicist imagery, and the extended religious analogies surrounding Maria in particular, leave all the important political questions not even raised, let alone answered.

It would be wrong, however, to allow the banality of the ending to colour our reactions to the entire film. Commentators are virtually unanimous in finding the striking visual effects Lang deployed a bril-

³⁴ See, for instance, *Past and Present*, first published 1843.

liant success. This is not, I think, to "reduce" discussion of the film to purely aesthetic terms but to acknowledge the source of its impact. Visual images play a crucial role in exploring and working with the themes discussed in this chapter. They express, often in historically specific ways, something of the power, authority and control that knowledge of nature offers. These complex visual languages speak to our imagination and are all the more important because they do so, since they readily combine with taken-for-granted assumptions about such issues as gender, just as *Metropolis* does. It is the very fact that the intertwining of science and gender was so generally accessible to cinema audiences that makes the film worthy of historical attention.