SUMMARY

In *The Genie of the Lamp: Ethnological Perspectives on Light and Darkness*, I start from the assumption that the light of day and the darkness of night, as well as the technical forms of man-made lighting, have an influence on social relations and human interaction. A tallow candle gives different illumination and has other qualities than a modern halogen lamp. But the question is: has man as a cultural being changed as a result of switching from tallow candles to paraffin (kerosene) lamps and then to electric light? If so, is it possible to describe how man has changed culturally and socially?

When I started work on this dissertation, I assumed that the answer to both these questions was yes, and I found it a challenge to try to trace and describe the link between, on the one hand, lighting as a context, that is, as a physical framework with important meanings for cultural processes, and on the other hand, human attitudes and conceptual worlds, lifestyles and habits, in particular the way people in different times, in different kinds of society, and in different social groups have related to and organized time and space.

Several different considerations influenced my choice of topic for a doctoral dissertation. On the basis of previous research – by others and by myself – I knew that lighting has been and still is of decisive significance for our way of life. Moreover, I see it as both theoretically and methodologically interesting that a scholar trained in the humanities should devote himself to the history of technology and *the interplay between technical and cultural change*, or at least that he should relate his research to the context which technical systems constitute in every society. Since I had planned from the beginning to write both with a historical perspective and about our own times, I also saw my research task as a chance to continue the established ethnological interest in the study of artefacts, whether in agrarian society or industrial society.

It should be emphasized that this is a dissertation about the *cultural history* of lighting in the sense that it is about cultural processes in historical perspective, more exactly, about various aspects of *man's relationship to light, darkness, and different kinds of lighting*. It should also perhaps be emphasized that the themes I have chosen to write about are such as appear to me to demonstrate explicit attitudes to light and darkness, preferably of a kind that contrast sharply with present-day attitudes. Finally, this is a dissertation about the relation between technology and people, where *I take the lighting techniques of different epochs as more or less given*; I therefore do not intend to discuss the motive forces behind the introduction of new technology, although all technology can of course be discussed and studied as culture-bound.

I chose the title *The Genie of the Lamp* because I am interested in what lighting techniques mean for cultural processes. My question is: what is the "genie" – the spirit or character – of lighting? The study concerns Sweden, from the eighteenth century until the middle of the twentieth century, and it consists of seven chapters.

1. The Underlying Ideas

In the first chapter I describe the theoretical and methodological perspectives that have been significant for the dissertation. A central feature of this chapter is the

discussion of the history of relevant research, particularly the connection between *The Genie of the Lamp* and other ethnological studies of technology and social and cultural change. I also discuss the use of contemporary pictorial representations, such as paintings, drawings, and photographs, as source material.

Until roughly 1970, ethnological studies of technology and social change normally focused on the material conditions and social organization of the immediate environment, whereas the people who acted in this framework were rarely given more than an implicit role. Technical descriptions and the formal details of work organization were allowed to fill the pages, and much of this research concerned the study of artefacts, with the aim being, for example, to chart the historical development and diffusion of different types of plough. Another characteristic of earlier ethnology was that it worked historically, usually with empirical material taken from peasant society, from fishing, craft work, or ironworking communities, in other words, from pre-industrial work and technology. This research was positivist in the sense that the researchers set themselves the task of finding as detailed evidence as possible for the occurrence of various phenomena and their local variations.

In the 1970s ethnology underwent a radical change towards socially oriented studies with the perspectives inspired above all by social anthropology. In the 1980s, the ethnological interest in research connected with technology has been almost totally shifted to the study of *people* – in their immediate environment. Ethnologists studying the history of technology today mainly work with the antithesis man–technology. Where in the man–technology relationship the emphasis is then placed varies from study to study. It can best be described as a sliding scale, with one pole consisting of studies where technical systems play a subordinate role in the analysis, serving as just one of many variables in a broader context. At the other end of the scale we find studies where the emphasis is on the description and analysis of a technical system and its consequences for cultural and social processes in society.

My discussion of new technology and the way it can help to change habits, lifestyles, and conceptual worlds has been inspired by scholars such as Stephen Kern and his *The Culture of Time and Space 1880–1920* (1983). Kern writes that perceptions of time and space are always culture-bound and that they can change as a result of the introduction of new technical systems. How we perceive the past, the present, and the future, and the meaning these temporal concepts have for our lives, is thus a socio-cultural question, according to Kern, who argues that new technology can also have far-reaching consequences for our perception of space. He says that from the 1880s until the First World War, a number of "technical innovations including the telephone, wireless telegraph, . . . cinema, bicycle, automobile, and airplane established the material foundation for . . . distinctive new modes of thinking about and experiencing time and space." Kern writes about electric light that "one of the many consequences of this versatile, cheap, and reliable form of illumination was a blurring of the division of day and night. Of course candles and gas lamps could light the darkness, but they had not been able to achieve the enormous power of the incandescent light bulb and suggest that the routine alternation of day and night was subject to modification."

After reading Kern, I was bold enough to attempt, somewhat in his spirit, to combine heterogeneous source material (interviews, artefacts, memoirs, diaries, questionnaire responses, fiction, paintings, photographs, and my own observations of lighting arrangements in homes, factories, offices, and urban settings) into the most consistently possible deliberation about technology and culture. What distinguishes

me from Kern is that he, as a historian of ideas, discusses ideas in their temporal context, whereas I am more concerned with the way everyday habits and routines change in relation to the lighting of different periods.

One of my methodological problems was how to find qualitatively rich source material which could be regarded as *contemporary* documents. The people who lived in the age of tallow candles are gone, and the same is normally true of the settings where they lived. The artefacts may survive, but is it possible in the 1990s even to try to ask as penetrating questions as ethnologists are able to do when they study their own times and have fieldwork as their method? I found a methodologically interesting source in contemporary portrayals such as paintings, drawings, and, from the mid-nineteenth century, also photographs, with which I was able to go back visually to a particular depicted place and time and there examine things associated with the cultural history of lighting. Pictures became my fieldwork. It was there I spent my time, observing and trying to discover the everyday habits and routines which must once have felt so trivial and self-evident that their existence may never have been verbalized, but which were also habits that can be perceived today as bearing cultural meaning, just as structuring as the warp in a woven fabric. The pictures allowed me to make a journey of discovery through time.

From the point of view of source criticism, it is an important point that the motifs that provide pictorial evidence for the history of lighting did not come about as responses to questions posed in a questionnaire or an interview. I also see it as an advantage that the pictures I use were often painted, drawn, or photographed for quite different reasons than to document people's relationship to light, the aspect that I want to describe and analyse. This applies in particular to works of art where the illumination or the daylight appears to have had as little importance for the artist's composition as the rendering of such details as tables, chairs, walls, and floors.

With this approach to works of art and photographs, it follows that the pictures I discuss in the dissertation should not be seen as illustrations to the text but as parallels to it, of the same dignity and with just as much meaning as the written word, although they speak to us in pictorial language. It should perhaps also be said that the arguments in the separate chapters of the book have arisen either from the study of texts or through the analysis of pictures. A completely different type of picture can be seen in the advertisements and similar mass-produced pictures that I use later in the book. These pictures are *normative* in the sense that they are intended to convey a particular view of how electric light can and should be used.

2. When Light Came from Flames

Chapter 2 provides a survey of the various kinds of lighting used until the start of the twentieth century, in other words, for as long as lighting was synonymous with fire. The main types of illumination considered here are train-oil lamps, tallow candles, wax candles, the open hearth, paraffin lamps (from the 1860s), and gaslight (in some towns after the mid-nineteenth century).

3. The Culture of the Flames

In Chapter 3 I discuss various cultural and social aspects of the use of the lights described in Chapter 2. Of central importance here is the discussion of the virtues of caution and thrift, of the perception of time and space, of the symbolic language of light and darkness, and the relation of lighting to power.

When light consisted of living flames, there was the ever-present risk of fire if the flames got out of hand. Fire was man's constant companion, both as a servant and as "the red cock", a destroyer. The risk of fire was a good reason for not lighting a lamp or candle unless it was absolutely necessary. For children alone at home, this attitude to fire and lighting probably meant that, through the centuries, they have had to sit waiting in gloom or pitch darkness for an adult to come back. In towns it was like cocking a deadly weapon when thousands of flames were lit in the evenings.

As a consequence both of the fire hazard and of the need for thrift, there was a rule that a lighted lamp or candle should not be left unattended. Empty rooms were thus dark rooms. Thrift also required that everyone gathered around the light, since there was often only one source of light, whether it was a lamp, a tallow candle, a lighted twig, or the fire in the hearth. The fact that only one light was lit also meant that the rooms where people lived were perceived differently in the daytime and in the evening. The space that people clearly saw would shrink at twilight to become the little circle illuminated by the glow of the flames. *People moved in a daytime world and a night-time world, where light and darkness set boundaries* for the things they could do. A cultural historian could call this *the mutability of space*.

The significance of paraffin was that, for the first time in history, there was cheap and relatively good lighting. For a cultural historian, however, what is interesting is that the *use* of paraffin lamps was similar to the use of earlier lighting. The most striking feature is that the habit of gathering around the open fire, the taper, the candle, or the oil lamp was simply replaced by the obligation to sit together in the glow of the paraffin lamp. In many homes, only one lamp was lit. The light provided by paraffin still illuminated only a circle around the lamp. Yet the significance of the paraffin lamp meant a change in the mutability of space. It was only with the coming of paraffin that it became so bright that perhaps *everyone* in the family was able to sit around one and the same light. This was an important change, but it should not be overemphasized. Otherwise, the paraffin lamp was subject to the same simple rules as all other fire: only one lamp should be lit, empty rooms had to be dark rooms, and no lamp should be lit unnecessarily.

To arrive at a better description of the cultural difference between our electrically lit times and the significance of lighting for people in bygone days, we can also speak of *the mutability of time*. By this I mean that the time available to people – the hours when darkness did not make it impossible to do most activities – could vary from season to season. The northerly position of Sweden and Scandinavia brings light conditions that would be unfamiliar to the majority of people in the world, with bright summer nights and long, dark winter nights meaning that the length of the day varies more than in most places on earth. As a consequence of this, people's daily rhythm often varied greatly from winter to summer. Our day has twenty-four hours, but people without good lighting can only use the daylight hours. Time was perceived and experienced as changing from month to month, and this daily and yearly rhythm depended both on the course of nature and on lighting techniques.

Perhaps one of the best measures of the significance that lighting once had for people's way of life is the fact that we have lost a large number of rules, sayings, and festivals which symbolically marked the transition from periods when lights were lit to periods when they were put out. The *light celebrations* of autumn, for example, marked the end of a particular order, which led through a liminal phase into a new normality, when people started lighting lamps again. The habit of the *twilight rest* also came at a transition, on the border between day and night, when it was starting to get too dark to work outside or to see clearly without a light indoors. The twilight rest was over when it had grown completely dark and impossible to see without a light. It was only then that a flame was lit. The twilight rest appears to have occurred in all social classes, chiefly in home settings, mostly in the autumn, the winter, and the early spring.

Another question discussed in this chapter is perceptions of time. If these constitute social and cultural categorization, this should reasonably mean that all the socially and culturally formed habits of a society could differ from each other depending on whether the lamps are few in number and put out early in the evening, or there is unlimited light at any time of day or night. For example, even such a matter as the time of year when most children are born appears to have as much to do with biology as with culture. There is a noticeable difference between today's Sweden and pre-industrial Sweden in this regard. The statistics suggest a connection between the time of intercourse and lighting habits, that is, a link between sexuality and the history of technology.

I also discuss in this chapter the world of similes and metaphors associated with light and dark. In the past they were legion, but now they have lost much of their force in our electrified society. I also consider the view of light as something good and darkness as something menacing. This view of the meaning of darkness leads us to the question of darkness, night, and twilight as a context of significance for bygone folk belief and tales of supernatural experiences. In terms of the history of lighting, many of the traditional beings of folklore could only exist in a world full of shadows, dark corners in houses, and murky farmyards.

I conclude Chapter 3 by discussing the fact that lighting, until the coming of electric light, was a class issue. People in well-off settings used illumination as an effective way to show off their social status. The association of lighting with power and authority is also an interesting question, since public lighting has often been made to serve or been perceived as a tool that willingly let itself be used for power and control. The extent to which the light reached was coterminous with the area where an authority could maintain its power.

4. The Encounter with Electricity

One thesis in this study is that, for an ethnologist, the only truly significant long-term change in the history of lighting came with electricity at the end of the nineteenth century. This is my argument in Chapter 4, where I describe where, when, and for what purposes electric light was used from 1876 in Sweden.

Electric light became an important element in the transformation of society around the turn of the century, portending our own times when people can easily disregard the natural variations of light between night and day. In the first years of electricity – the last two decades of the nineteenth century and the turn of the century – *classical*

symbolic imagery was associated with electric light. The reason appears to have been that those who lived in the midst of the time when electric light was reshaping human environments must have seen it as a significant social change. They reacted to this hitherto unknown light – enclosed in a glass ball, and with no flames – as if it were a gift from God. Of course, no trade mark or advertisement went as far as to claim that electric light was *identical* with divine light, but it was all right to make the comparison in allegorical form. The *goddess of light* thus appears to be a logical representation of this turning-point in human history when God encountered competition from a form of illumination which human genius had enlisted in its service. The ideas underlying the goddess and her links with the picture of Truth are discussed in this chapter.

5. Electric Light, 1900–1950

Chapter 5 should be seen as a parallel to Chapter 2. It deals with the introduction of incandescent light bulbs around 1910, about the electrification of the countryside, and about the use of electric light from the years around the turn of the century until the mid-twentieth century. Some of the subheads in this chapter are "Electric Light around 1900", "In the Countryside", "World War and Paraffin", "Out of the Darkness", and "The Lighted Town".

6. Electric Light Culture

Chapter 6 can in turn be seen as a parallel to Chapter 3. The subheads include "The Electrical Poetry of the Town", "Light in the Home", "Ideal and Reality", "Folk Belief in Electric Light", "From Solar Time to Standard Time", "Light as a Physiological Phenomenon", and "The Profanation of the Goddess of Light".

One of the topics considered in Chapter 6 is the exhibition "Light in the Service of Mankind", held in 1928, and the Stockholm Exhibition of 1930. These can be seen as two carefully planned and stage-managed events, intended to gain support for new ideas and outlooks. They can, in other words, be described as *display events*, in which a symbolic or ritual form conjures up the aura of an exceptional occasion. The fact that they took place around 1930 makes the turn of this decade into something of a turning-point in the history of lighting in Sweden.

Electric light, which had been relatively exclusive in the period 1876–1910, was installed almost everywhere from 1910 until the end of the 1920s. Around 1930, however, electric light was still being used sparingly, especially in the home. The light fittings often had more in common with old-fashioned lighting technology than with the new possibilities that could be realized with electric light. It was these old habits and mentalities that were now to be abandoned for modernity. When the concept of electric light culture is manifested in the years around 1930, we already see clearly the process that will only be completed much later. It was already at this time that electric light shaped the space of city streets, of homes in the towns and most homes in the countryside, of offices, factories, and shops. And even though the number of lights could still be small, an electrically lit milieu meant that the age of point lighting was over.

One section in this chapter examines, on the basis of propaganda for modern lighting in the home, the ideal versus the reality in the everyday use of electric light, as reflected in responses to questionnaires and interviews. I also return to the question of the perception of time, discussing the fact that up until 1879 there was no standard time in Sweden; instead, each place had its own time, with people following *solar time*. I also consider here to what extent the daily rhythm was changed with electric light, returning to the question of the connection between natural light, man-made lighting, and sexual habits. There is also a lengthy discussion of light as a physiological phenomenon; what did electric light mean for winter fatigue, and how did it affect the onset of puberty?

7. Technical Change and Cultural Processes

In the final chapter I observe that existence in an elementary sense has never been as light as it is now in the 1990s. The artificial milieu of electrical light, which is predicated on technology, is one of the premises for the concrete form we give to our habits and way of life. Illumination is a context in which we shape our lighting habits and forms of social intercourse, change our daily rhythm and work in shifts, set off on car trips among the nocturnal convoys of lorries, create new festive traditions, and enjoy the range of modern entertainment. Electric light guides us on our evening walks, brings us home in the small hours, illuminates emergency wards, airports, and shops that are open round the clock. Without electric light, time and space would have seemed very different to us.

But it is not the illumination in itself which is the core of electric lighting for a cultural researcher, but the fact that time and space have changed their meanings. Illumination is not just light but just as much a dynamic force which initiates cultural and social processes. Chapter 7 does not really attempt to sum up the findings of the dissertation. Instead I have chosen to conclude by broadening the discussion, going beyond the empirical material used in the study to consider yet another aspect of the history of technology, one which I would call *the paradox of technical innovations*.

In Sweden in the 1990s we are ourselves (by and large) masters of light and darkness. But although technology makes it easy and simple to do what was once difficult and troublesome, we can ask whether it is beneficial, in the sense that new technology promotes our well-being. Is a brighter life the same as a better life? Have we become happier? Is the light *good*, as we read in the book of Genesis? Was it a divine electric light which the goddess of light brought in the 1890s?

No, neither happiness, the good life, nor even well-being ultimately have anything to do with technology. It is the way people organize their mutual relations – everything from roles and attitudes between men and women or parents and children, to societies, nations, and political systems – which determines whether it is easy to live or not. New technology can theoretically improve our everyday life (and our festive occasions), but it can only be practically beneficial if society's social, cultural, and other conditions make it possible to be so.

New technology can never in itself be social progress. The crucial point instead seems to be who decides how technology is to be used. As I have shown, lighting has been used as an instrument of power, whereas darkness has been a haven for people seeking to flee from the searchlights of power. Electric lighting techniques are an *instrument* with which we can achieve fantastic things that were never witnessed

before; we can turn night into day. But technology in itself is a soulless servant, who does not care whom he serves. If the owner of the lamp is benevolent, the light can do good, but the genie of the lamp can just as easily serve evil intents. As in the tale of Aladdin and the lamp, where the hero gains a slave who obeys his slightest wish, and who can move him hundreds of miles in a flash, or build magnificent palaces in a few minutes. With such a genie to serve him, Aladdin could suspend the traditional view of time and space. In the wrong hands, the genie of the lamp was like a demon.

This contradictory meaning, this paradox, can be read in the title of Arthur Koestler's novel *Darkness at Noon* (1940). The work is an exposure of the Soviet system's promise of a bright future which is quickly turned into terror. How could this happen in a society that was supposed to be a paradise on earth, where the unfree were to become the foremost members of society, and where Lenin proclaimed that the way to achieve this was "Soviet power plus the electrification of the whole country"? No heaven on earth ever came about, just electric light. *Darkness at Noon* is an ingenious title, a metaphor for depraved freedom in a society where freedom becomes slavery, where good is turned into evil, where what appeared bright is turned into its dark opposite. The system that was to give light and freedom brought darkness at noon instead. Lenin was far from being alone in putting his faith in technology as a social force. In the 1920s, people in the west also saw the electric networks as a promise of a better future. Electric power and electric light *are* technical innovations which can radically change societies and ways of life. But predicting how a particular technique will function is easy compared to predicting how people will actually use it.

Having reasoned thus, we should understand that the paradox of technical innovations means that new technology can make a technical process easier or simpler, or it can solve a technical problem. New technology gives new chances and possibilities, but *it is societal power, social structures, and culture which determine how people use technology*. This means that new technology is always both a promise and a threat, never a priori social progress, never anything good in itself. The decisive thing is not the technology, but how and for what purposes it is used.

Translated by Alan Crozier