

MO056362NC THE DEVELOPMENT OF TWENTIETH

CENTURY TASK LIGHTING

DISSERTATION

Produced in part fulfillment of Bachelor of Design in Industrial Design and Submitted to the Faculty of Art and Design and Complimentary Studies

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Copywright @ 1991

Date : March 1991

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PREFACE

Task lighting is a specific branch of the very broad business of lighting. It is concerned with the provision of illumination of a manual or visible task and the immediate background. This background light is usually incidental as the worker is solely concerned with the job at hand. The team applies to adjustable or directionable lamps that may sit on the table or bench but also includes lamps located on walls, floors and ceilings.

This thesis traces chronologically the development of task lighting through the twentieth century. It looks at various aspects which have influenced the design of task lamps. Technology has progressed in 150 years from candles to optical fibre and has greatly affected lamps. The visual aspect has changed as a result from bulky steel fittings to lovely sculpted forms. The functional aspect of each lamp will be assessed to give an idea of how well the lamp would have performed its duties. Each lamp will be examined from an innovative point of view to see whether its design was innovative or derivative. The influence of changing materials and movements within design will also be looked at to gain an understanding of how lighting has changed in the past ninety years.

Lighting along with furniture has always been a yardstick by which the success or failure of either a designer, a movement or a country can be measured. This thesis will show how successful individuals have been at various times and how certain countries seem particularly talented when it comes to design.

INTRODUCTION

- 1 -

This thesis deals with the development of the electric work lamp, otherwise known as a task lamp, through the twentieth century. Lamps of this kind used technology developed in the nineteenth century such as electricity and the light bulb. It is important, however, to look further back through man's history and examine how man illuminated his work place before the advent of electricity.

Light has always fascinated man and throughout his existence he has struggled to understand and control light in order to prolong his day. Natural light has existed since the dawn of time provided by the ever constant sun. Man has had little control over sunlight only been able to block it out or let it into this environment. He cannot switch it off or on at his request or point it onto a specific point. Fire was the first source of artificial light available to man but at first he even had problems controlling this. Eventually he mastered striking flint to create fire. This was still an inflexible light source that was very smokey and difficult to control. Fire was not only used to light up mans evnironment; it was vital to his survival keeping him warm, cooking food and later allowing him to clear land for farming and forge tools for hunting. Fire was first adopted as a light source when man discovered that by dipping a wad of twigs in animal fat he could produce a brighter and more sustainable light. These torches lit the caves where he lived for many centuries. Stone age man developed the first purpose made lamp when he hollowed out rocks and poured animal fat into them. He then rolled up a wick made of moss and lit it to give light, see fig. 1. This was up to a thousand years before the Roman expeditions of the first century.

The Romans in their ingenuity adapted this unchanged lamp and produced baked clay vessels and a cloth wick.

Alter natives existed such as the fishermen in Canada who dried out salmonoid fish, stuck them on a stick with a wick in its mouth and burnt them. In the Shetland Islands as late as the nineteenth century, the storm petrel was used in the same manner,



his legs stuck in clay and a wick threaded fig. 1: Stone Age Oil Lamp. down his beak. In Mexico oily bark from a tree was used as a torch and in the West Indies they traped fireflies in cages for light.

Oil lamps which developed from stone age mans lamp were the most popular source of light throughout mans history. These were used in all sorts of ways up until the invention of the electric light bulb. The Betty lamp brought to America by the pilgrim fathers is one of the most famous, fig. 2. This was one of the first lamps made of formed steel, and differed little from its predecessors. It had a wedge shape and the twisted cloth wick lay in this to

keep it from slipping into the oil. What was the most interesting about this is the hooks and arms that allowed Betty to be hung from various locations within the house. The main problem with oil lamps before the development of parafin and kerosine lamps was that they burned animal or fish fat that filled the house with a horrible odour. Even with the new fuels lamps gave off a poor light until one of the 1755 pioneers of light, Aime Argand (1955 - 1803) designed what has become known as the Argand lamp, Argand wrapped a wick around a central tube which brought more air to the flame which



increased the level of light and reduced fuel comsumption. Such lamps were used right into our century but have been replaced by new technology.

Electricity has changed our lives for ever. We now have greater control over our immediate environment than ever before. We can light any area of our homes we like, heat where we want, cook when we want, wash or dry, read or work and so many other things can be done. The social impact of electricity has been unprecedented in any other recent technological breakthrough. When conditions are compared between the developed world and the underdeveloped world, the impact electricity has made can be seen. Sadly not everyone in the world has benefited from this new technology. As regards electric light, this breakthrough was invaluable to mans development. Initially electricity was used to light streets because its expense prohibited its use in the home. However, manufacturers of consumer goods which relied on electricity quickly convinced utility companies to provide homes with power that would encourage purchase of their products.

Developments in electricity prompted experiments in the late nineteenth century which resulted in the electric light bulb as we know it. In America, Thomas Edison (1847 - 1931) of New Jersey produced light from what was to become the prototype of the light bulb that today hangs in most homes. It was October 1879 and when Edisons achievements were reported in New York newspapers, gas shares plummeted on Wall Street. Curiously, on the other side of the Atlantic, Joseph Swan, an Englishman, was conducting similar experiments with identical results, controlled artificial electric light.

Edison's bulb which he used in his first experiments was a carbon filament bulb where current was passed through a filamenet of carbonised cotton sewing thread inside an evacuated glass bulb. This filament resists the flow of electricity and heats up giving of a white light through incandesence. This first bulb had a short life span and early work concentrated on improving it. This was done through the production of a more uniform filament and a better vacuum. Each subsequent improvement in the quality of the filament increased either life or output of bulbs. In 1907 carbon was replaced by pressed tungsten filaments which could be operated at higher temperature and produce more light. There has never been a suitable substitute for tungsten and the standard bulb used in domestic situations is the tungsten filament or incandescent bulb.

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The principle behind fluorescent light was known even before Edisons pioneering work. However, the light given off by fluorescent bulbs was not considered suitable for interior applications and for years was used in industrial and commercial situations. A fluorescent tube works on electric-discharge with two electrodes seperated by a vapour or gas. When electric current passes through the gases it causes collisions that emmit ultraviolet radiation. The gases used are generally mercury and argon. This ultraviolet radiation is directed out of the tube which is coated internally with phosphor which converts the ultraviolet radiation to visible light. The nature of this light is different to that obtained from incandescence, because it is obtained through fluorescence it is a much whiter light. This has led people to consider it too clinical and cold for domestic use and it has been applied most in working locations. Fluorescent lights are however very common in kitchens and garages in people's homes. It wasn't until the late seventies and early eighties that the tube size was reduced to a more manageable scale. Mini fluorescents have increased the applications and popularity of this light source.

In 1959 another type of filament lamp was developed which would later change the shape of lighting. Halogen filament lamps produced a whiter light than its predecessor and had an even longer life. This bulb has since its inception been the standard bulb for car headlamps. Later on, miniaturised low voltage systems changed the way interiors are lit.

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The problem of lighting work situations has been with us since early man and was not tackled in any novel way until around the time of the industrial revolution. The first task lamps, i.e. lamps specifically designed to illuminate work were made by craftsmen for craftsmen. The seventeenth century lacemakers condensor lamp, fig. 4, is a much more specialised design when compared to its sixteenth century predecessor, fig. 3. The early lamp



fig. 3: Sixteenth Century Lacemakers candle holder.



fig. 4: Seventeenth Century lacemakers condensor lamp.

was a simple oil lamp on a stand with no real direction to the light. The latter version condensed the light by surrounding it with four glass globes filled with water. This brought most of the light to bear on the work and little of the light was wasted on the surrounding area. Copper plate engravers of the same period placed several candles behind an oiled paper screen, fig. 5.



fig. 5: Seventeenth Century copper plate engravers lamp. The screen acted as a filter and reduced the glare that would be produced as the light reflects off the plate. This lamp had an arm that enabled its user to attach it to a wall and adjust it as need be.

Electric light did away with these lamps as it was considerably more effective and convenient than gas or oil lamps. It also prompted designers, engineers, innovators and manufacturing companies to produce improved fittings to house electric light. The race was on to design a better lamp and this increased competition, though slow to start and sometimes unimpressive led to a proliferation of classic designs. This was particularly evident in the area of task lighting as wall and ceiling lamps were generally static objects. Task or work lamps were adjustable, portable pieces of furniture that were to be used by people in many different situations. This posed a greater challenge to people and hence the more inspiring results. It is interesting to note that many of the design classics of lighting were designed by people with no formal training. These were designed by people of varying backgrounds and quiet often out of necessity more than desire, as was the case with George Carwadine (1987 - 1948) the dentist who designed the most famous lamp of our time in 1934, the Anglepoise, fig. 6. This was produced as a result of Carwadine's frustration with existing surgery lamps. Up until the 1980's designers were more interested in producing famous furniture and left lighting to engineers. There were some exceptions of course.

The popularity of light design among professional designers today has a number of reasons. Firstly, the success of designers such as Richard Sapper (b. 1932) and the Castiglioni brothers through their lights has made them realise the potential platform they have. By producing a classic lamp, previously unknown designers have the opportunity of elevating themselves to international recognition. Lighting has always been considered a design yard stick by which movements or individuals can be easily assessed. Therefore the aim is to produce a lamp which may be visually striking with



fig. 6: Carwadines Anglepoise.

produce a lamp which may be visually striking with a very sculptural form that creates an instant and lasting impression. The emphasis on form leads to poor illumination in many cases as designers consider this to be of secondary task importance. This has resulted in many beautiful structures that are bad lamps. There are however, many lamps that address all the problems associated with task lights such as adjustability, illumination, weight and form. Secondly the new technology which has appeared within the past ten years or so has given the designer much more freedom. Previously the incandescent bulb was the standard source of light in task lamps. Today he can choose from low voltage miniature halogen or fluorescent sources as well as conventional bulbs. Optical fibres, which use standard light sources but direct the resulting light differently are also increasingly available.

Materials used in manufacturing have affected the design of lamps greatly in the past and will continue to do so in the future. Miniaturised bulbs have allowed smaller shades and fittings and similarly plastics and light alloys have allowed increased flexibility. Early lamps such as Frank Lloyd Wrights (1869 - 1959) adjustable desk lamp/fig. 8, in the heavy rectilinear Art Nouveau style where extensive use is made of glass, lead and cast iron with poor illumination are in stark contrast to the anorexic Bernice by Alberto Meda (dates unknown) fig. 29. The materials and processes used dictated the resulting form . Cast iron supports, spun steel shades, glass domed diffusers WWTT ? and tubular steel arms are all characteristics of early lamps. The post-war period benefited greatly from new materials developed to help the war effort. Plastics was probably the best example of this. This material would become one of the commonest used by designers who were quick to capitalise on anything that gave them increased freedom. Plastics allowed the mass production of products with complicated forms previously unobtainable from metals or wood.

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The actual design of these lamps changed as styles changed. They were dictated to a certain extent by trends within interior design and architecture as well as by movements within art. These movements have been for convenience given labels or titles such as Art Nouveau, Post Modernism, Memphis etc. These labels are often loosely given and are not always accurate, some styles are a mix of two or more movements. The movement or design philosophy that was best applied to lighting was that of the German school known as the Bauhaus. Its functional aesthetic based on the use of modern materials and processes was best suited to functional lamps. Style throughout the century was dictated very much by existing technology. It is interesting that the recognisable forms of lighting were produced very early on. Designs by people like Marianne Brandt's(1893 - 1981) table lamp, fig. 12 and Edward Buquet (1895 - 1949) adjustable lamp fig. 11 have been repeated in different forms throughout the years. These people set the style for contemporary lamp design.

CHAPTER 1 : DESIGNING ARCHETYPES

At the beginning of this century, lighting was still in its infancy. Technology had not changed much and the only light source available was the tungsten filament bulb. There were now many people producing Edisons invention and there were in fact at least ten different fittings used by 1900. This lack of standardisation resulted in different designs.

Art Nouveau was the artistic movement of the late 1800's and early twentieth century. It had superceded the Arts and Crafts movement with a decorative mass produced aesthetic. Originating in France, it reached its climax in the products and architecture shown at the Paris Exhibition of 1900. The favoured materials of this movement was wrought iron in architecture, steel and glass in products. This led to many interesting lamps, most of which were table or bedside lamps not suited to working situations. The shades always had stained glass details with heavy steel posts usually in the shape of a human seen to hold up the light source.

The Osiris pewter table lamp, fig. 7, from the early twentieth century, though not adjustable is worthy of mention for its apparent adjustability. The lamp is in typical Art Nouveau style, the supporting arm swinging up in a gentle arc and supporting the flower like shade. All the images are from nature this one suggesting the radiance that comes from a flower. The upright member looks like a spade stuck in the ground.



fig 7: Osiris Pewter Table Lamp, Circa 1900

This does two functions, firstly it supports the arced arm and secondly the handle at the top can be used for carrying the lamp as was the norm with candlesticks. The construction is typical of this period, solid castings on all components. Though not functionally useful as a task lamp, the pewter table lamp does the job for which it was designed very well.

Frank Llyod Wright, (1869 - 1959) the American architect produced the earliest recorded task lamp of this century. It is apt that a man of Wrights stature should lead the way. His architecture influenced the world and his lamp shown in fig. 8 was to influence later designs.

The leaded glass table lamp was typical of Wrights style. The glass was stained in the Art Nouveau style and the formal straight lines of it are similar to the style of Charles Rennie Mackintosh (1868 - 1928) with whom Wright shares many stylistic characteristics. The heavy metal stand and arm with its screw adjustment shows the use of existing materials and processes.



fig. 8: Adjustable Table Lamp by Frank Llyod Wright, 1904.



The lamp looks very industrial apart from the decorative shade. Functionally it can only be moved up and down but at this early stage thats all that was expected from a lamp. Technically, Wright somehow manages to balance what appears to be a heavy shade on quiet a small base. The tungsten bulb would have its efficiency greatly reduced by the lead strips which hold semi opaque glass in place. No doubt the light from this lamp wasn't very good, but as said earlier, this did not really concern the designer.

While he was working outside the influence of mainstream European design, Otto Wagner (1841 - 1918) the Austrian functionalist was working as an architect and town planner. Wagner was one of the most important figures in Viennese culture at the turn of the century. His most important work was that he did for the Vienna Post Office, his functionalist approach to this building was very new and different to the Art Nouveau style.

While working for the Post Office, Wagner designed a desk lamp in 1906 for use throughout the organisation, fig 9. This was a very functional lamp which owes much to Frank Llyod Wright. It employs the same upright with adjustable

arm and heavy adjustable shade. At the joints he put butterfly nuts to make adjustment easier. The support and arm are much more delicate and cleaner than Wrights heavy square sections. His use of chromed steel and opaled glass was typical of this period, glass was very popular among Art Nouveau designers and craftsmen. This shade and especially its bracket at the top appears heavy and this is in fact, like Wrights, the main failing of the lamp. The base is small and provides adequate support but the shade dwarfs it.



fig. 9: Otto Wagners Table Lamp, 1906.

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The gentle curve on the support gives a feeling of strength at the base and lightness at the top. Wagner achieves an interesting result through his use of form. The lamp looks like a cross between a ceiling lamp and a table lamp. The frosted glass shade looks very like those seen hanging in dining rooms of the time. Wagner combines the two well, though the shade could possibly have been made a little smaller.

As the Art Nouveau style began to loose support to the functionalist ideals of people like Wagner, the German art school called Bauhaus, founded by Walter Gropius, (1883 - 1969) was gaining in influence. This school is now considered to embody all that was the modern movement in art. Its policies on art education have been copied by most art colleges even up to this day. The movement embraced the machine as an instrument of design. Gropius' approach to design was to stress aesthetic fundamentals and strive for geometrically pure forms.

1

The earliest task lamp from the Bauhaus came from Karl Jucker (1901 - 1959) in 1920, Fig. 10. This is also probably the most elaborate solution to task lighting seen. The extendable wall mounted task lamp was a very industrial product. Constructed from steel plates, no effort was made to disguise the construction with screws and joints exposed on the structure. Jucker was particularly interested in the honesty of design through exposure of components, nothing is hidden.

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This design was considered a prototype at the time mainly because Jucker was still an apprentice when he produced it. The lamp doesn't work as well as others because it needs to be attached to a wall, however, for someone with a

bench or desk by a wall this design would be just right. The bulb and shade are mounted on a telescopic arm which allows it to be brought out over the working plane and angled as needed.



The shade is the first steel one that we come across. It is most likely made from a flat piece of steel spun into shape. This was the preferred process of the time as the bell shaped shade acted as a good reflector and also protected the bulb.

In 1925 Edouard Buquet (1895 - 1949) the French designer produced the forebearer to the more famous designs of the later twentieth century, fig. 11. This was to set the standard which would be used by Richard Sapper on the Tizio, Fig. 21, in 1972. It also influenced the Anglepoise, fig. 6, as Buquets was the first lamp to use two equally adjustable arms for its movement.

Critics of twentieth century lamp design base all their comments on the Anglepoise, all others are compared to this, even Tizio. However this is in fact an incorrect analogy as they do not look back far enough. It is very obvious that both these famous designs have been heavily influenced by Buquet, most of all Sappers.

- 5 -

This lamp was very similar to its contemporaries in respect of material choice and light source. A chromed spun shade is attached to two tubular steel

arms. These two arms have counter balances at the ends to support the lamp shade and to make adjustment easy. The base which is also spun gives adequate support through all the positions. This was the first lamp to allow for adjustment in all directions rather than just up and down,/this made it the most functional lamp available.



fig. 11: Edouard Buquets Counterbalanced Lamp 1925

Buquets design is one that has yet to receive the type of credit which is due to it. It is a landmark in design and as this thesis progresses it will be even easier to see how many designers have been influenced by Buquet.

Marianne Brandt (1893 - 1981) produced a lamp in 1928, Fig. 12, which was also to a style that would be copied for years to come. The Kandem light established the standard size and form of bedside reading lamps right up to today.

Again, Brandt uses the popular materials of the time, she worked in the metal workshop of the Bauhaus under Lazlo Moholy-Nagy (1895 - 1946). The nickel plated metal shade and base show her mastering of her trade. When compared to the shade on Buquets lamp, Brandts is a much more refined bell shape. This lamp was also more user friendly as Brandt put a switch on the base so that it could be easily located in emergencies or at night in the dark.



fig. 12: Kandem by Brandt.

Kandem is formally neater than any of its contemporaries. The level of adjustment is suitable for reading with. What is most interesting about it is that within two years Brandt had an updated version in which she made the neck higher and put a more interesting base on it.

These last two designs are interesting because they both established a lamp type that would be copied for many years. It is interesting that so early > into the century archetypes of lamp design should occur.

The Bestlite, Fig. 13, was a British design from 1930 whose functionalism owed much to work conducted at the Bauhaus. Designed by R.D. Best (1887 -1951) for his company Best and Llyod, it was a table standard lamp very similar

to that of Otto Wagner's lamp from 1906. It was however, more refined and easier to use because of Bests use of modern materials. Where Wagner had used heavy cast steel, Best made use of a chromed tubular steel rod which had become very popular because Bauhaus designers had been using it on their furniture. At the end of the arm was a hinge plate fixing which allowed it to be rotated through 360° and raised up and down along the support. The fig. 13: Bestlite by familiar spun shade was connected to the arm by a universal joint which allowed the light to be directed wherever necessary. As with Brandts Kandem lamp an updated version appeared later on. The updated version had a longer support for better flexibility.



R.D. Best, 1930.

Bestlite was one of the best task lamps of the time and proved that the functional aesthetic was acceptable in the home. It was only rivaled by Buquets design and later by Carwadines Anglepoise.

The same year as the Bestlite was produced, Christian Dell (1893 - 1974) introduced his concertina wall lamp, fig. 14. This was a more refined version of what Jucker was trying to produce while at the Bauhaus, fig. 10. Dell used a concertina extension system which had a greater level of adjustment than Juckers. The shade, spun as usual, was rotatable and the arm could be swung into the wall out of the way.

This was one of the first lamps to be mass produced as its flexibility was in much demand. The only real disadvantage was that it had to be wall mounted and not every work area was by a wall. However for anyone with a desk near a wall or partition it was the ideal office lamp, because it left your desk or work surface free of large heavy bases which accompnay most other designs.



fig. 14: Christian Dells Concertina Lamp, 1930.

Its construction owes much to the Bauhaus with its by now standard shade and its resolution of function. Unlike many of its comtemporaries, its pure functionalism prohibits its acceptability within the home unless used in places such as the kitchen. It is purely a task lamp and not as much a design icon. However in many of todays hightech interiors this could find a home but not in interiors of its time.

In 1934 the most influential design of the century appeared. It set standards of function that have been difficult for anyone else to achieve. It established itself as the archetypal task lamp of our time, a design icon that became a standard piece of furniture in twentieth century interiors. George Carwadines (1887 - 1948) famous Anglepoise lamp was the most advanced and revolutionary design of the early century, fig. 15.

This lamp combined many features previously seen on other earlier lamps such as Buquets counterbalance lamp, fig. 1. However, Carwadine resolved the adjustable motion of this design in a novel yet simple way. The light has changed little since 1934 and has been in production ever since. The origins of its creator are unclear, some say Carwadine was a designer, others an engineer but it seems most likely that he was a doctor. He had become frustrated with the awkward lamp in his consulting room, with its poor and difficult adjustment. Carwadine proved that "the mother of invention is necessity". He based his unique design on the human arm, the elbow muscles push and pull bones back and forward by acting in tension against each other. He created a jointed lamp with opposing springs connected to the two arms and base. This gave the Anglepoise an unrivaled fluid movement. As with Buquets he used double arms mounted on a heavy base with a spun bell shaped shade.

tel.

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This shade was a little different because of its size being bigger than the

others. It also incorporated an interesting detail. The top of the shade becomes very hot when the bulb is on so Carwadine incorporated wents to overcome this problem. These vents were not an afterthought they were very subtley included in the overall design. This resolution of detail is interesting when one considers that Carwadine had no formal design training and yet he succeeded in designing a



fig. 15: George Carwadine's Anglepoise from 1934

functionally and aesthetically effective lamp.

The Anglepoise has been the source of inspiration to designers for 60 years. It has been reproduced in many different styles all over the world and its influence can be seen in many contemporary designs. However, it must be kept in mind that despite its unique use of springs, this lamp was in turn influenced by its contemporaries and that it is Carwadines handling of the problem of adjustment that makes it so good. This design is destined to remain with us for many years both in its original and adapted forms.

- 10 -



One person who saw the potential of the Anglepoise was Jac Jacobsen (1902 - 1971), a Norwegian who bought the patent and named his updated version Luxo fig. 16. This was launched in 1937 with changes to the shape of the reflector, grilles instead of vent holes and more springs on the top arm to improve adjustability. His monopoly of the desk lamp market allowed him to launch Luxo in America in 1951. By now it is estimated that 25 million Luxos have been sold and the company has become the worlds largest producer of task lamps.

Many people confuse Luxo with the Anglepoise which is understandable as the former is based on the latter. It was easy for Jacobsen to take a design such as the Anglepoise, improve it slightly and make a success of the new design. Carwadine had already done the hard job of being innovative. For this reason the Anglepoise was the most outstanding design and Luxo just an improvement of it.



Looking back over the early years no attempt was made to tackle the problem of the light source. The same bulb was used in all lamps and was covered by the standard spun metal shade in every case. The Bauhaus was the most influential movement resulting in many purely functional lamps using materials such as tubular steel made popular at the school. Other than chromed tubular steel there was no material innovations during this period. The only real problem tackled was that of adjustment which developed from Frank Llyod Wrights cumbersome lamp, fig. 8, to the fluid movements of Carwadines Anglepoise. This early period is most interesting because it was the time when the classic forms and techniques of task lighting were developed. Lamps such as "Kandem", fig. 12 and Buquets, fig. 11 established how lamps would look over the next 60 years.

CHAPTER 2 : POST WAR FERVOUR

The period 1940 to the mid 1950's was a period of inactivity in lighting. The world was at war and even when it ended in 1945 it took many years for those involved to recover. Those worst affected were the European allies, Germany and Italy. The American design profession avoided the damages of war but concentrated on designing streamlined objects such as cars and trains. Of all the countries involved in the war, Italy and Germany, the enemies, emerged the strongest in terms of industry. Both countries, with the help of aid from the allies, rebuilt there shattered economy in what was termed "post war reconstruction".

Japan

In Italy industry was seen as the route to prosperity and to help its produces stand up at home and abroad designers were employed. The policy of employing designers and architects to create new and interesting products paid off and as a result manufacturers became accustomed to employing individuals or contracting consultants. Art and industry in Italy became intertwined and the result is an endless list of classic products designed by some of the worlds most respected designers. Lighting as with furniture, benefited greatly from this renewed emphasis. Italy is the home of most of the worlds famous lighting companies and designers. During the war, industries primary task was in supplying the war effort and maintaining adequate supplies at home. There was little time for companies to develop new products. However, development of new materials and manufacturing processes became a lucrative business. The government rewarded those whose ideas or work helped their cause. One of the most important developments of this time was plastics. Though around for many years in the form of Bakelite, post war Italy began to develop all sorts of new applications. As John Heskitt says "plastics have become one of the most powerful instruments of change in the visual environment". (Heskitt 1984 P.145)

The first lamp of the century to use plastics emerged in 1940 and became one of the most sought after streamlined artefacts. The Jumo lamp, fig. 17, designed by Pierre Jumo (1907 - 1981) of France marked a major departure from the recognised form of contemporary lamps. Jumo is a wonderfully clever design which folds into itself to conceal its identity. When needed the bakelite shade can be extended upward from its base on its double arm structure making it a very useful lamp. If you don't want light you can just leave the shell like



fig. 17: Pierre Jumo's Jumo Lamp of 1940

form sitting on your desk. This was the first time a lamp could be concealed and its versatility owed much to the fact that it had been constructed from plastic with chromed steel and brass arms.



The advent of plastics not only allowed designers produce intricate shapes but also gave them the ability to offer a range of colours for each design. Jumo uses a standard bulb concealed in its shell like shade, streamlined in the style of a Raymond Loewy (1893 - 1986) train. The overall effect is of a playful product yet the lamp is deceptively functional. With its high searching arms and rotating shade Jumo is a classic lamp comparable to Carwadine's Anglepoise. However despite the novelety of Jumo, its principal was never adopted by any other designers.

In 1949 two of Italy's most innovative designers produced what was the newest and most adventurous design of the time. It was the first lamp to examine all aspects of task lighting and produce a lamp that addressed the problem.

The Castiglioni brothers, Achille (b. 1918) and Piergiacomo (1913 - 1968) produced many of Italys classic post war designs. They were both trained as architects and worked together until Piergiacomo's untimely death in 1968. Achille has continued his pioneering work alone and is one of the designers given credit for developing the high-tech style of the 70°s and early 80°s. His standard lamp Toio, fig. 27, was made from ready made objects, the post is a fishing rod, the bulb is a car headlamp and the base is from a bandsaw arm. The transformer, usually concealed was exposed for all its industrial aesthetic. This lamp was accepted in modern luxury interiors as a fashionable design. It was the source of influence for designers such as Ron Arad whose trans high-tech work will be discussed later.



fig. 18: Tubino by Achille and piergiacomo Castiglioni, 1952

Tubino, fig. 18, was a revolutionary design, being the first task lamp to break away from the traditional use of light bulbs. The Castiglioni's used a small fluorescent tube which as mentioned earlier provided a type of illumination best suited to work situations. This fresh approach is typical of the brothers willingness and ability to tackle the challenge of new technology.

In terms of scale Tubino is anorexic, with a thin tubular body that bends from the base through the arm and into the shade like a stretched paper clip. This clean form belies its functionality, the tube emitting a wide beam of white diffused light. The form is inavoidably dictated by the light source and this unification of source and fitting is excellently achieved in this design.



In 1951 Jean Louis Domecq (1923 - 1971) designed the "Jielde table lamp", (JTL), fig 19 as it was called. This was loosely based on Buquets lamp of 1925 with its use of a double armed adjustable structure. Instead of weights Domecq uses hinges at the joints. Which allow easy adjustment and adequate support. In these hinges he incorporates metal discs through which the current flows from wire to wire and up the lamp. This means you can adjust the arms without snagging the wires. This preoccupation with wires has seen many novel ways of disguising them. This is the most innovative so far however the best is yet to come.

Visually the lamp is more interesting than the square awkward construction of the Anglepoise. The soft rounded form highlighted by the bulbous joints at the end of each tabular arm and the helmet shaped shade give it a uniform appearance. The base reflects the form used throughout. The use of lacquered metal gives the solid functional lamp a cool and subtle aesthetic. All this is complemented by the best integration of a highly functional feature yet seen. The circular bar which runs from behind and around the shade acts as a handle. Light shades tend to get very hot during use and this handle averts this danger allowing users to adjust



fig. 19: JTL by Domecq, 1951

the light direction without fear. What could have been an unsightly functional feature has been well integrated and in fact adds aesthetic embellishment to the design.

Joe Colombo (1930 - 1971) was one of the most creative and influential Italian designers of the time. His true importance and talent have yet to be fully realised. His short career was one of great productivity and creativity terminated by his untimely death in 1971. This meant that his output was nothing like his contempories such as the Castiglionis or Mario Bellini (b. 1935). Colombo became a cult figure within the Italian radical movement through his architecture interiors and products. He was one of the first designers to embrace the challenges of plastics in furniture.

In 1965 Joe Colombo designed Spider, fig. 20,

a small desk lamp for O Luce, the light manufacturer. Spider was heavily influenced by such designs as Wagner's lamp from 1906, see fig. 3. It employs the same upright onto which the shade and fitting are fixed. Spider is much more refined in all respects. The rectangular shade in white laquered steel covers the fitting and shrouds the light source, reducing glare. Colombo removed a section of the shade above the light source and by using a bulb with a silver reflector



fig. 20: Spider by Joe Colombo

on one side, diffused a certain amount of light upwards. This lights up the surrounding area while concentrating most of the light on the working plane. This gives the lamp a strange appearance when lit. The shade can be rotated to direct the light where necessary.

The old format used by people like Wagner works well for Colombo because of his careful attention to detail such as the small scale of the shade, a problem with many of the earlier lamps. This shade is a departure as well in that no one had used a rectangular one before. This added mystery to the lamp as it wasn't recognisable as a light at first glance. Later square or rectangular shades would become very popular. In the early 1970's a lamp appeared that became another classic on the level of the Anglepoise. It owed much of its form to earlier designs such as Buquets but stood alone in its novel use of technology, materials and in its resolution of function.

In 1972 Richard Sapper (b. 1932) from Germany designed the now famous Tizio task lamp for Artemide in Milan. Before moving to Italy, Sapper worked as an engineer with Mercedez Benz and this background helped him develop some of Tizios revolutionary features. These features made this lamp Artemides most successful and earned it a place in the Museum of Modern art in New York.

Tizio, fig. 21, while being one of the most famous task lamps produced, perhaps the most famous after the Anglepoise, is also one of the most misinterpreted lamps of our time. Many design critics and historians refer to the Tizio as a reworking of the Anglepoise. For example Deyan Sudjic in his book "Cult Objects", 1985, (Page 103) calls it "... a kind of high tech anglepoise ..." This is an inacurate assessment as Tizio's counterbalanced system owes more to Buquets lamp from 1925, fig. 11 than to Carwadines. Also Tizio is by no means the final word in task lighting as from a functional point of view its lamp shade isn't as adjustable as other designs. This shade made of steel heats up considerably more than others because of its small size and Sappers use of a tungsten halogen bulb.

However, despite these minor flaws, Tizio was technologically the finest design of the time and has few rivals to the present day. Sapper used a low voltage tungsten halogen light source which gave pin point lighting where needed. The transformer needed for this system was cleverly incorporated into the base design, serving two functions.

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It firstly hid what is normally an unsightly feature and secondly it gave weight to the base and helped support the lamp when outstretched. Sapper tackled the problem of unsightly wires in the most novel way yet, because the low voltage needed was only 12V, he ran the current through the flat steel arms of the lamp, from base to bulb. This, frightening and all as it may seem is as safe as a childs railway set, and gave the bulb an appearance



fig. 21: Tizio, Richard Sapper, 1972.

of isolation at the end of the arms with no visible connection to the base. These technical features made it the most advanced lamp of our day apart from later applications of optical fibres.

Visually Tizio is a classic, its arced counter balances were incorporated into the form unlike Buquets which were just put there. These arcs seem to suggest the curves through which they will travel during adjustment. The Spider like shade is neat and compact rather than large and bell shaped. It resembles a small cap concealing a bulb, reaching out to probe new areas. This shade is like the head of an acrobat standing on to arms and outstretched ready to leap forward, or a cross country skier crouched forward for extra speed. Then again its cold black appearance and weights resemble an oil well. No one lamp conjures up so many images all of which add to its mystique. This strange high-tech appearance has given Tizio several stand up roles in movies and has made it the lamp to be seen over the shoulder of design conouseurs posing for photographs. Tizio is now possibly more of a design icon than the Anglepoise ever was.

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In 1959 Ernesto Gismondi (b. 1931) founded Artemide the most famous of the Italian lighting manufacturers thanks to such designers as Sapper, Sottsass, de Lucchi etc. His own training was as an aeronautic engineer and for years he designed missiles. His interest in lighting led him to set up the company initially to produce other peoples work, the company policy was to creat "simple forms in clean modern materials in which the mechanical structure is both clearly articulated and kept sperate from the electrics". (Carl Gardiner, P.24, Interior Design Nov/Dec 1989). By 1968 Gismondi himself was designing lamps, his reason was that by doing so he could better understand the design process and communicate with his employees.

In 1976 he designed Sintesi, fig. 22, a task lamp primarily for desks but

since adapted to wall or floor use. Sintesi was technologically nothing new or exciting but was functionally and visually impressive. Its resolution of function is typical of someone with an engineering background, like Sapper's Tizio it works really well. As had become the norm Sintesi's arms were adjustable in all directions, but what was unusual about this design was the way the shade was adjustable. Instead of the usual bend and twist of the shade the reflector on Sintesi could be raised up from



fig. 22: Sintesi, Ernesto Gismondi.

around the lamp so as to diffuse the light in various different ways. If one wanted concentrated direct light the shade was kept down over the bulb, / if it was required to illuminate much of the surrounding area as well the shade was raised up. As with Domecqs lamp, fig. 19, Gismondi tackled the problem of overheating shades. Around the reflector is a grill made of bent steel rods which keep ones hand clear of the hot area. This is very well integrated into the overall form and gives the lamp an industrial aesthetic which in no way detracts from the overall appearance. The shade section resembles the lamps used by mechanics working under cars, this could have been the source of his inspiration. What is very interesting about this lamp is the number of variations Gismondi made to this one design. It is available in twelve different forms from floor to wall to ceiling and many more.

The success of this design is interesting when Gismondi's background is considered and when one realises he learn't his design abilities through observation and management of other peoples work. With task lamps which by definition must be highly functional, it appears best results have always come from people with no design training or who have designed from necessity. The designers approach seems to be to create a classic sculptured design which acts as a luminary only because it has to. In contrast lights like Tizio and the Anglepoise tackled the problems of illumination and adjustability first and incorporated the highly functional solution into a stylish object in each case.

The most successful lighting partnership of the present day is that of Perry King (b. 1938) and Santiago Miranda (b. 1945). They have designed some of the most interesting lamps which play on form and colour in a highly successful style. In 1979 they teamed up with Gianluigi Arnaldi (dates unknown) to produce a lamp typical of their style, a playful task lamp which though functional was toy like. To add to its image they called the lamp Donald, fig. 23, after a famous cartoon character and gave it a yellow beak like visor.

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Its odd name and appearance didn't however hamper its functionality. As a task lamp, Donald works very well while being far from a Tizio it does serve its purpose. The lamp is very easily adjustable and with its detachable beak or visor the light can be adjusted whatever the requirements.



fig. 23: Donald by King, Miranda and Arnaldi

Donald is a revolutionary design for several

reasons, though not as functional as some of its predecessors, it is the first lamp to make use of plastics since Jumo, fig. 17, back in the 40°s. The reflector or shade on Donald is made from injection moulded acrylonitrile butadiene styrene, commonly known as ABS, a plastic which was becoming very popular for its strength and moulding characteristics. The plastic shade made the lamp lighter at its highest point and reduced the dangers associated with over heating of steel shades. Plastic is also used on the ratchet adjustment mechanism at the base.

Donald is new also insofar as it is the first playful lamp we have come across. In a way it contradicts its definition as a task lamp in that it is not purely functional, its appearance suggests something else. Donald was one of the first lights to protray the wit and whimsy which was to become more characteristic of Italian design as the 80°s progressed. Anti-design was developing among the avant garde and this lamp exhibited a restrained antirationalist style later proffessed by movements such as Memphis and Alchimia. It is possible that the trio were trying to create a task lamp which moved away from lamps designed for desks or work places. This was aimed more at people who wanted light in their bedrooms or garages while playing or working on a hobby of some sort, hence Donalds playful style. The post war years saw a shift in design emphasis where function remained foremost yet it was complemented more and more by subtle aesthetic embelishments. This was characterised best by Sappers Tizio fig. 21, which though technologically and functionally the best lamp of the period it didn't subordinate appearance. In fact through its use of technology, its wireless body and counterbalanced arms, it was able to retain a clean elegant form which will remain a classic forever. New materials and manufacturing techniques gave designers greater freedom than ever before. However the technological breakthroughs such as tungsten halogen and flourescent bulbs were only seen in Tizio, fig. 21, and Tubino fig. 18, respectively. From this point of view the period could be considered a little disappointing. Once again designers avoided the challenges on offer and though we have many wonderful creations, the potential for greater things were immense.

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CHAPTER 3 : MINIATURISED REVOLUTION

The 1980's will go down in lighting history as the period of greatest creativity. Light sources became smaller and easier to manage thus encouraging more and more designers to work in this area. Lights better suited to the needs of working situations were developed further such as low voltage halogens and fluorescents. These were now easily fitted into small shades as their size was greatly reduced. The energy crisis of the seventies is held partly responsible for such developments as more people became aware of the need to conserve energy and to make the most efficient use of it. With the environment crisis highlighted by depletion of the ozone layer and huge tracts of rain forest destroyed we are again faced with the responsibility of making better use of our resources.

Achille Castiglioni started the decade off with a design which was far from miniaturised but was completely radical in its approach to task lighting.

Gibigiana, fig. 24, designed in 1981 looked more like a rubbish bin or electric heater than a light yet it is a very effective one. The idea is that a standard light source is concealed within the body and reflected up by a mirror to a reflector at the top. This can be adjusted to redirect the light in any desired way. The bulb can be raised or lowered from outside the body giving the lamp a zoom like ability. This was the first time that light could be adjusted in this way.



fig. 24: Gibigana by Achille Castiglioni

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This is one of the most radically different forms of the century, typical of the way Castiglioni worked. As everyone else was reworking archetypes creating their own interpretation of work already done by Buquet, Carwadine or Sapper, this diverse Italian took a completely fresh look at task lighting. He successfully created a functional lamp which was completely out of the ordinary. Its funnel shaped body made from enameled steel channels light to the reflector at the top. The reflector is made from plastic, silver plated underneath for reflection. The lamp uses a standard tungsten filament bulb but in a unique indirect manner which is typical of Castiglioni. He was one of the few designers who was willing to tackle the complete lighting project from improving illumination to employing new materials to achieve this. His Tubino lamp from 1952, fig. 18, was an earlier example of this.

Ron Arad, (b. 1951) a designer much influenced by Castigionis use of ready made objects, produced a lamp which was not really intended for production. It

was more of a play on the high tech style which had taken over design. Arad was the leader of the London avant garde movement known as One Off who in some ways were trying out the same anti-design tactics of Memphis in Italy. The Aerial light fig. 25, was a remote controlled hybrid, made from an electronic car aerial and using for the first time a minature quartz halogen bulb called a dichoric. This was in the same style as Castiglionis Toio lamp, fig. 26, of 1965 which used a fishing rod, car headlamp and a bandsaw arm for its construction. This lamp was



fig. 25: Aerial by Ron Arad.

accepted into all fashionable interiors and has been credited with starting the high-tech style. Arad goes further by parding the increased use of such devices as remote controls he creates a lamp which is itself credited with the

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establishment of the Trans high tech style which is characterised by its more environmentaly friendly use of waste industrial components.

Arads adaptation of the aerial into a functional and attractive lamp is very interesting. By trying to mock the computer age in which we live Arads lamp makes a lot of sense. With so much automation, why isn't there mass produced remote controlled lamps? Possibly because a lamp is best adjusted by hand and since most work is done directly under the lamp then this is easier than picking up a control to adjust.

The aerial lamp is very interesting from a technological point of view. Though Arad made use of existing parts, a special printed circuit board had to

be produced to control movement. This is the first time such technology, now widely available off the shelf, was used. Also Arad uses a small dichoric low voltage light source like Sapper used in Tizio. These had by now become popular in display illumination for their pin point accuracy. His exposure of all components such as wires and terminals goes against what every one else was trying to achieve by concealing wires in the body. Arads "Aerial" is less



significant as a task lamp than for fig. 26: Toio by Achille Castiglioni. its shock effect it has on one. From a technological point of view it is on a par with Tizio but when it comes down to functionality it falls far short. It must be remembered that Arad in typical designer fashion was more concerned with making a statement than in improving the illumination of any work place. Another engineer turned designer is Alberto Meda (dates unknown) who for years worked as technical manager with plastics giant Kartell in Italy. He left this job to work as a light designer and apply his knowledge to this area. Meda is presently Proffessor of Industrial Technology at the influential Domus Acadamey outside Milan.

Medas anorexic Benice lamp, fig. 27, is in sharp contrast to Arads Aerial or Castiglionis Toio. Its delicate and slender construction is made possible through its use of plastics throughout. Its amazing stretch capabilities are as a result of this with less weight up top than if steel shades and arms were used. Attaching these featherlite arms to a steel base means greater support for the stretching arms.

This lamp is revolutionary for this use of plastics and the result achieved. Medas experience at Kartell stood to him yet he didn't produce an

engineered form. Once again and formal frammy of (.D. non designers produce quality goods that are functionally and visually well designed. Bernice has one of the furthest reaches of any previo



fig. 27: Bernice by Alberto Meda.

furthest reaches of any previous lamp, it is totally adjustable in all directions.

The shade is very interesting, it is made of coloured glass reminiscent of table lamps from the 40's with the long green shades. When switched on it glows in a really attractive manner with most light directed down onto the work surface. Around this is a plastic support ring which allows adjustment without burning.

As mentioned earlier, the 1980's saw an Italian anti-design movement come to prominence. Memphis was the most famous, founded by Ettore Sottsass (b. 1917) and funded by Ernesto Gismondi of Artemide. Memephis was a reaction to years of functionalist designs, its protagonists regarding form follows function as uneccessary, ergonomic needs were also disguarded. They considered function whould be represented through symbolic association and historical reference. This movement marked a departure from what had been the accepted style since the Bauhaus. For this reason it is worth looking at at least one task lamp from this movement.



fig. 28: Oceanic by Michele de Lucchi.



The most successful lamp from the Memphis collection came from Michele de Lucchi, (dates unknown) a prominent Italian designer. Oceanic, fig. 28, is a highly colourful reading lamp which provides adequate light despite its lack of adjustment. This is the main failing of the lamp, afterall task lamps are supposed to be adjustable. However, De Lucchi produced a symbolic task lamp, everything points or leads to the light source. The arm stretches up at 45° to the bulb housing. This is a simple metal shade which conceals a by now popular halogen bulb and reflector. The black and white metal candy canes, sitting angularly on the contrasting pink base, house the switch on one and the flex on the other. This highlights the functional aspects of the lamp by elevating these functional features on a type of pedestal. This lamp is important more because it came from Memphis than for its success as a task lamp. As with earlier movements, such as Art Nouveau, whose fascination was more with decoration than function, Memphis subortinated any efforts at creating products or furniture with mass appeal. As with Ron Arads Aerial lamp, Oceanic and other such designs, are intended to shock one into observation. What is most interesting in this case is that later on will be discussed a reworking of the Anglepoise theme by Michele de Luchi that shows how flexible he is as a designer. It also shows how designers can participate in radical avant garde movements without affecting their work within the mainstream market.

In the colourful and playful mood of such designs as Donald, fig 23, and Oceanic, fig. 28, comes a design from Alberto Frazer for Stilnovo. Nastro, fig. 29, from 1985 uses a high tech approach in a similar vein as Arad used a trans-high tech style for Aerial. Nastro has none of the raw style of Aerial but is interesting for its simple and effective design.

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Nastro has a completely flexible neck that houses both structural and

electrical elements. Fraser uses the imagery of ribbon cable from a computer for this section in a play with the whole computer age syndrome. This lamp would in many cases end up on a desk near a computer using such cable. As a task lamp, Nastro is quiet adjustable but can be faulted for Frasers failure to integrate the transformer needed for the halogen.



fig. 29: Alberto Frasers Nastro

Here he tries, as Sapper did, but unsuccessfully to incorporate the transformer into the base. The result is an unsightly heavy base which attempts to resemble the shade in some way, this lets the lamp down very badly.

In 1987 Michele de Lucchi teamed up with Giancarlo Fassina (date unknown) to produce the nicest interpretation of the Anglepoise since Carwadine finished his design. It appears that every ten years or so a designer produces a version of this popular desk lamp. As said earlier, de Lucchi was a member of the Memphis group and this was an example of his talent as a mainstream designer. Tolomeo, fig. 30, is made of aluminium, a material renowned for its light weight and strength. This is left in its natural finish to give away the manufacturing process. Aluminium had not previously been used to any great extent in this situation even though like plastic it gives easier stretch or extension. The team used wires for support which confuse the observer in that they look like the electric wires going to the bulb. They



fig. 30: Tolomeo by de Lucchi and Fassina.

are in constant tension, keeping the shade and arms supported in their stretched position. This lamp is a type of retrospective design in that the shade is similar to the traditional spun shade but the materials used and the detailing are very much present day.

As usual, this lamp though very tastefully designed and functionally capable uses no new technology. At this stage many designers had begun to probe the possibility of alternative light sources. In this case de Lucchi and Fassina probably refrained because of the retro look they were trying to achieve. They did tackle one recurring problem, by incorporating a little inobtrusive handle under the lamp shade, they reduced the possibility of burning ones hand. This was done in the same tasteful style as Domecq did on his JTL lamps, fig. 19. In the same year as Tolomeo was produced there appeared the most developed. Franco Bergs (dates unknown) design for the West German company Berg Licht and Objekt was the first commercially available optical fibre task lamp. Optical fibres have been used in microsurgery and telecommunications for over twenty years the principle behind them is that strands or fibres of glass are coated with reflective surfaces usually a glass with different reflective properties. When light is shone into an optical fibre it is reflected at each wall continuously along the length of the line. This can be bent so that light can be sent around corners or into dark areas such as someones heart.

Berg concealed a conventional light source in the aluminium base and used a converging lens to bring the light to focus in front of the fibre optic. This was then reflected up along the neck and dispersed through a lens at the

top, fig. 31. The head of Cool, as it was called because the head didn't heat up, was adjustable so that it could be pointed to bring light where needed without damaging the fibre. Cool has more anorexic properties than Meda's Bernice, fig. 28, but unfortunately the large base used to house the light source





and lens detract from the overall effect of this lamp. At first glance, Cool doesn't look like a light, no recognisable features are evident such as a shade or bulb. This effect could have been exploited further by disguising the base, reducing its size or concealing it elsewhere. Apart from its formal simplicity, this lamp is exciting because its the first of its kind. It points the way forward for future designers, by highlighting the advantages of optical fibres it sets a standard. Optical fibres are ideal in a task lamp situation because they are light, inobtrusive, flexible and provide no heat transfer. However, fibre optics are in their infancy and are still misunderstood as well as relatively expensive. There is no doubt that in the coming years this will change and that as we come to understand them, they will become cheaper, more flexible and widely available. It is conceivable ossible that one day a single bulb will be used to light a house with controlable optic fibres running from it to points all along the house. This new technology offers new challenges to designers and will breed new life into the lighting industry. Bergs design is courageous in that its the first to take up this challenge, however in years to come further developments will overshadow his achievement and Cool will be remembered as a pioneer and not so much a classic.

Cool is a fitting way to end the eighties, its minimalist design and novel use of the newest technology symbolise what was good in this period. The decade was memorable for two reasons both of which are linked, the miniaturisation of sources such as fluorescents and halogens and the resultant interest shown by designers in lighting. The effects of this are a huge catalogue of new designs, many memorable, some forgetable. There are so many that it would be possible to trace the development of task lamps in this period only if one wished.

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CHAPTER 4 : A BRIGHT FUTURE AHEAD

Only a year into the decade it is possible to choose some notable designs from a long list. Already there appears an optical fibre lamp competing with Cool and highlighting the possibilities and direction of the future. No distinct style has yet emerged but it is possible that the minimalist approach of the late eighties could spill over into this decade. This will be reinforced by designers and engineers working on reducing bulb size and transformer size. The increased environmental awareness of people may lead to better use of natural sunlight a source that no bulb can compete against by day.

David Morgan is one of Britain's most famous contemporary light designers with much work done for people

like Thorn and Philips. In 1990 he produced the Wave HQI fibre optic task lamp, fig. 32. This was an improvement on Franco Bergs Cool as Morgan concealed his light source away from the fibre optic structure giving it a much cleaner and simpler form. The result is a serpant like body which curves up from the small base like the Lough Ness monster crossing the lake.

Wave HQI will possibly be remembered more than Cool because of its better resolution. Morgan fig. 32: Wave HQI by David Morgan. will also be remembered for his



pioneering work in the early years of this very new and exciting technology.

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Domus magazine in September 1990 published the first photographs of Denis Santachiaras Creonte (dates unknown) lamp, fig. 33. It had just been unveiled at the Milan Euroluce 1990, the Italian lighting fair, the month before.

Santachiara was attempting to move away from the coldness inherent in lamps such as Tizio coming from their formal structure, use of metals and sombre colours. The flexible steel stem of Creonte was covered by a soft polyurethane sheath to give it a warm feel that would encourage use through touch. The light source used is a low voltage halogen shrouded in a mystical perforated parabolic reflector. This reflects most light while diffusing a certain amount into the surrounding area in sun like manner.

The flexible arm is highly adjustable with its concealed mechanism. The rubber shroud makes the lamp look as if it is fixed in that position permanently. This organic shape is beautifully resolved and yet the lamp is extremely functional.



fig. 33: Creonte by Denis Santachiara.

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The self skinning rubber is a new departure in this field of design though it has been used else where for years. It makes the stem look like a bent golf club handle. The microperforated and micro moulded parabolic reflector symbolises Santachiaras readiness to adopt new techniques such as lazer cutting. The result, a beautifully mysterious design resembling a strange shrouded stick figure.

Tango, fig. 35, by Stephen Copeland (b. 1960) is the most interesting design of the century and a fitting way to end this thesis. It will without doubt become the Tizio of the nineties and remain as much a classic as the Anglepoise. It is only every so often that a classic design of this type appears.

Tango is more than a lamp, it is an animated creation that perches stork like on a desk and moves willingly at your touch. Technologically there is no real innovation as Copeland uses a by now standard halogen light with a choice of fluorescent if one wishes. Unlike Tizio, Copeland puts Tangos transformer at the wall socket making no attempt to conceal it within the design. This is a totally personal choice and in this case frees the designer of potentially unsightly bulk.

Tangos friendly animated appearance is similar to that of the previous design, Creonte by Santachiara. This is probably linked to both using flexible arms covered in ribbed rubber. This always seems to give the feeling of human joints or limbs. Copelands beak like shade with tactle ribbing adds to this feeling. Tango has a fluidity rarely seen before and achieved through its use of a double linear composition with articulated joints.

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The gooseneck structure combined with its two arms means it can be manipulated into any position, the arms can bend together or independently or even twist around each other. Tizio uses a double bar structure to accommodate current and strength reducing its chances of flexibility.

The detailing of this design is impressive, every aspect coming together to produce a coherent form. The rotatable shade is in ABS plastic with an aluminium reflector and comes in a range of five colours. The lamp is provided with either a heavy base or a clamp and in the near future may be adapted to floor or wall mounting.

Tango was awarded best of category in the furniture section of the International Design Review 1990. Much more will be said about this lamp in the future as more people realise its importance. It will soon be seen over more shoulders than Tizio. Another interesting point is that Copeland had no formal design training.



fig. 35: Tango by Stephen Copeland.

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CONCLUSION

Comment has been made already as to what the future of lighting will be. This is important to know now that more designers have taken up the challenge. In the years to come even more designers will design lights, some improving illumination and user comfort, others just creating a sculptural statement. This increased interest will result in some of the centuries most memorable designs that could overshadow the likes of Tizio or Tango.

Technologically we will see a move towards more environmentally sound materials and techniques. Increased use of sunlight, even more efficient flourescents and incandescent sources. Optical fibres may be one way of achieving this as no light is lost between source and output. Regardless, we shall see more fibre optic lamps. Minaturisation will increase with the emphasis switching to transformers to reduce their visual effect on the overall form. These will be incorporated into base, stem or shade. Wires may either disappear as current is run through the body of lamps or they may become a more integral part of the design as in Ron Arads Aerial lamp. They may actual become the whole structure upon which the source is supported and adjusted.

Functionally lamps will improve copying the lead of Tango towards total adjustment. Someday we may be able to support a light source on a jet of air above the work space. Higher wattage bulbs than the popular 50W dichoric will be developed to throw more light where its needed. The perfect lamp has not yet been designed but it may not be far off. Visually we will see more friendly and animated designs such as Creonte and Tango that have a more welcome feel than cold high tech ones like Aerial. As well as that we will see more minimalist designs influenced by the french designer Phillipe Starda. There will however always be people who will rework the Anglepoise.

So the future holds many more exciting designs and technological breakthroughs that will possibly change the way we see things. In concluding, firstly, it is interesting to look back to early man sticking a dead bird into mud and putting a wick down its throat and compare this method to David Morgan's optical fibre lamp. Man has certainly progressed a long way since those primitive days and thank God for it.

Looking back over the more recent period of electric lighting covered by this thesis, it can still be said that there has been great technological progress. Artificial light comes to use in so many different forms from the common tungsten filament bulbs used throughout the 130 year history of electric light to the neon and fluorescent tubes common in advertising and industry respectively. Even those sources have been changed in recent years as they have shrunk into more manageable sizes. The advent of mew miniature low voltage halogen bulbs has also changed light as we have known it for years. More accurate pin point lighting is now easily available and widely used especially in retailing. As a consequence of this form and scale within lighting has also changed from the large and heavy looking spun metal shades used on lamps into the '80°s we now see smaller and less obstrusive fittings. The microperforated parabolic reflector used by Santachiara on Creonte is evidence of this reduction of scale. The use of smaller lighter fittings i.e. bulbs and shade means that other areas can be altered. A heavy head on a lamp means that a heavy base must be used and that the arms need to be well supported and use a strong material, lamps such as Alberta Meda's Bernice which use small halogen bulbs, a small glass shade with aluminium reflector and plastic arms needs less support at the base than an Anglepoise with a heavy bulb and spun metal shade. In light design material and process innovation gives formal and functional freedom allowing a designer freedom to create a highly adjustable attractive lamp.

Through the past 100 years or so light design has not been as subjected to the same influences as chair design. Movements such as De Stijl, Bauhaus, Memphis etc. produced many pieces of classic furniture which epitomise their philosophy. However, the same movements, with the exception of the Bauhaus, produced few memorable task lamps. This is possibly because the very nature of a task lamp is that it is functionable and this immediately restricts the freedom to express the beliefs of ones chosen movement. Furniture, especially chairs, only needs to be sat on and gave much more freedom of expression to people like Sotsass and Mendini within the Memphis group. Lighting had too many parameters and also too much technology. The light sources were also not flexible enough with a limited variety available up until recently. Lighting will without doubt remain one of the most important design yardsticks for many years as it has always been a good reflection of current style and technological developments and will continue to be right into the coming century.

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