NATIONAL COLLEGE OF ART AND DESIGN

LISA CARSON

DEPT. OF PRINTED TEXTILES

" Social and Ecological Issues Relating to the Printed Textile Industry"

by Lisa Carson

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B: Des PRINTED TEXTILES

1997

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INTRODUCTION

In this thesis I want to look at the social and ecological issues relating to the printed textile industry. These issues, as well as design techniques and processes are relevant to my future career as a Printed Textile Designer. The increased interest in the environment over recent years fascinates me greatly and I plan to see how the textile industry and governments throughout the world, have dealt with the public opinion that green is best.

I plan to delve into another side of the textile industry, that is often ignored. A lot of people are unaware that exploitation and other social problems exist in the textile industry all around the world. I was interested to find out more about such issues.

Chapter 1 looks at the printed textile industry in the ninetieth century. It focuses on William Morris and the influence of the Industrial Revolution in all areas of textiles.

Chapter 2 focuses on social issues that directly relate to and influence the printed textile industry. Also looking at how women and children have been treated throughout history up until the present day regarding issues of work, health, safety and exploitation.

Chapter 3 discusses the textile industry's effect on the environment. For this chapter I visited a working dye and finishing factory, to see how they deal with legislation and public opinion regarding protection of the environment. This chapter also looks at the emergence of ' green ' thinking in the 1960's and 70's.

Chapter 4 looks at the progress the textile industry has made in recent years regarding, industry, technology and processes. This chapter also looks at the role of the printed textile designer and how it has changed. It also discusses those who have influenced the progression of the industry, looking at the innovators, their ideas and designs.

i.e. Junichi Arai, Issey Miyake and Nigel Atkinson.

CHAPTER 1.

Food , shelter and clothing are essential components of daily life . In a sense therefore the history of fabric and dyeing for both clothing and shelter began almost simultaneously with the history of mankind. The earliest examples of dyed and patterned fabrics come from the oldest civilisations . A lot of the early dyed fabrics were a single colour or left plain , only the more expensive cloths were decorated with simple printing methods .

The years from 1780 to 1880 were crucial for the shaping of the textile industries of the modern world . A century of technical innovation and intensive and extensive production of printed and woven cloth would play a dynamic role in the industrial revolution . Up until this point the process of printing was pretty safe and ecologically sound , as it involved only natural resources like wood and plants for printing blocks and dye production , both self renewing resources . As print production progressed from the home, through the workshop to the factory, communications improved and manufacturers responded to demands from abroad . Processes and dyes changed and taste crossed both geographical and class boundaries .

During this century of discovery , Industrialism took over, leaving design , quality and taste somewhat neglected and secondary . Machinery and modern processes replaced what had previously been done by hand , and a decline in taste was noticed on both an industrial and domestic level . New time saving and money saving machines and processes did not achieve the quality that hand-crafted fabrics and prints were famous for. . Gaudy interiors and fast dating designs crowded houses and revealed nothing about the person , other than how much cotton , wallpaper and other fabrics they could afford.

Designers at this time began to rebel , and there was a shift away from the mass produced , over-the-top styling that was now apparent in homes and dress .

William Morris is credited with initiating the Arts and Crafts Movement that looked less at technical improvement and quantity production , and more at design quality . Producing wallpapers , printed and woven fabrics throughout the late 19th and early 20th century he gained a remarkable reputation for his naturalistic and medieval themes .Morris promoted hand crafting and techniques as far superior to manmade objects ,because of Morris, textiles became more than an industrial concern , it also became a social one .

Mike Dibb, Crafts Magazine 1994 , made a film about William Morris ,who came to realise just how important space for subjective expression in work was . On visiting Sandersons mass production factory where textiles and wallpapers including several Morris designs , roll out in apparently seamless expanses from vast machines , none of men spoken to admitted to deriving any pleasure from the work they did . Several of them said that the only interest for them was when something went wrong with the mechanical process , and they had to rush in and use their intelligence and put it right , so that production could continue smoothly again .

The absence of judgement and joy in their labour is manifest in the materials , whose production they oversee . Although they preserve some qualities of William Morris's original designs, they are otherwise bland and repetitive, at least when compared with hand-crafted textiles and papers .

In another area of the Sanderson factory the workers who still produce wallpaper and fabric using the wooden block print method, expressed a very different attitude towards what they did .All of them found the production processes satisfying, in sharp contrast to the machine operatives. The block printers viewed a fault in their equipment as simply an interruption of the creative process, a single false lay could ruin a whole roll. Their pleasure in work came from the positive contribution they made to the manufacture of a beautiful end product. It could also be related to the space the hand processes allowed for individualised gesture.

The manager of Sandersons hand print shop was able to tell which one of his workers had produced a given piece of printed wallpaper, simply by looking at it he could differentiate between each printers style. This individual character forms a material basis for the heightened pleasure which users derive from hand printed rather than mass produced designs.

Many of the men in the hand blocking shop had been there for decades, unlike the men in the machine shop. They were aware of working in a continuing, if threatened, tradition of craftsmanship; their work was much more to them than a means of making a wage.

On visiting the hand printing shops, it was discovered that the men working there feared for their jobs. Materials necessary for production i.e. special woollen blankets which hold the dye, were becoming increasingly hard to obtain. Where once thirty block cutters worked preparing blocks for printing, there is now only one man, and noone is currently being trained to ensure continuity of this highly skilled and specialised craft. Unless the handprint shop is taken into public ownership, the future of this method is unsecured, and it is easy to see why, as the demand for this luxurious product is almost non-existent.

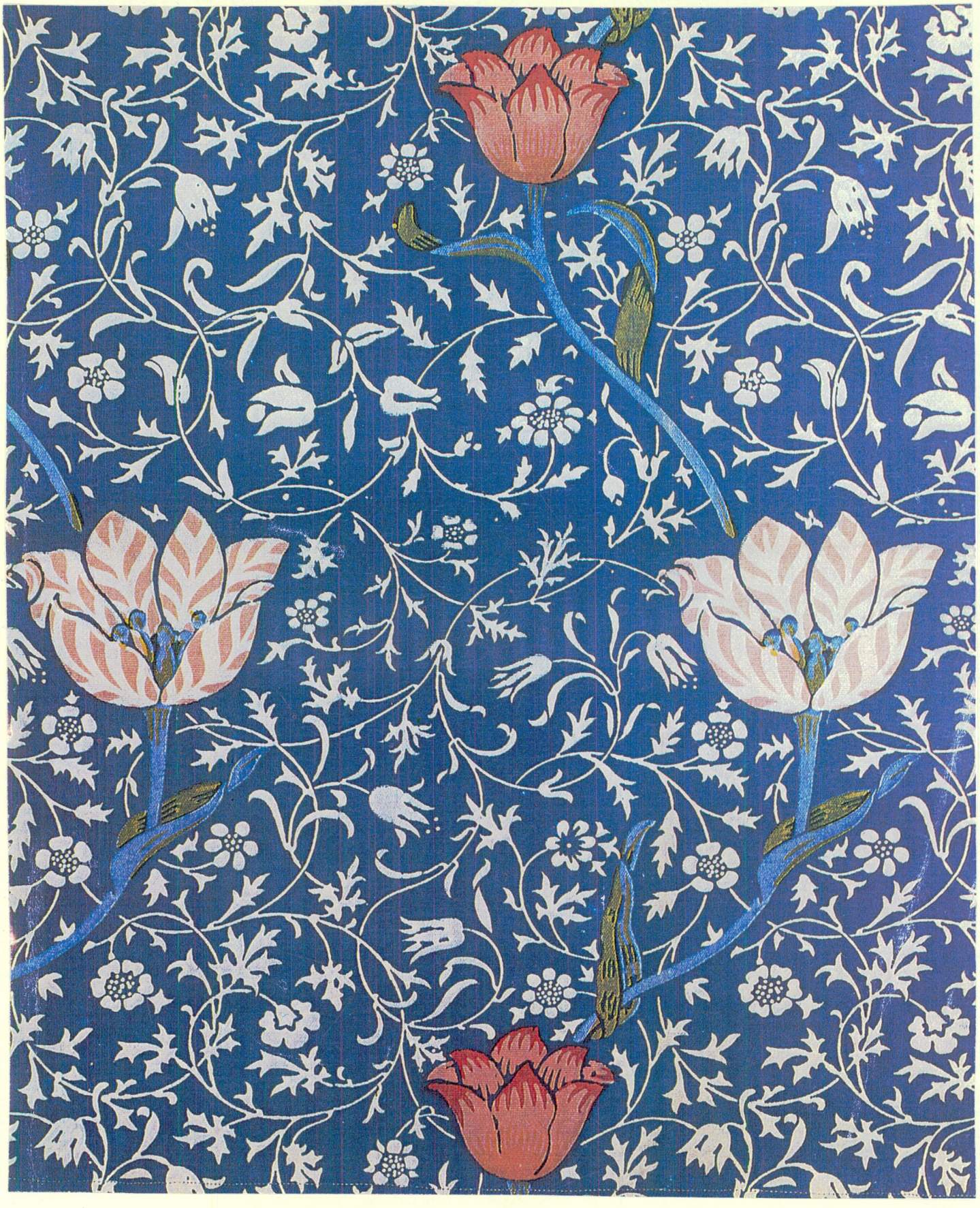
This dwindling interest is exactly what Morris feared machinery and industrialism would lead to. After all his excitement and lay in the actual time consuming hand printing, and use of natural dyes which ensured prints were vibrant and full of life. Morris's ideas and work ethic is a large part of this thesis. In looking at social and ecological issues relating to the textile industry, printing in particular, William Morris's work processes and techniques were both socially and ecologically responsible in a time when industry had no limits on pollution and when working conditions for women and children were of no concern.

Morris's main concern was always the design and achieving the right colour and definition in each. This design, **Flower Pot** is typical of Morris's style. A naturalistic floral repeat design with softer more realistic colours on an indigo background. This is a block printed design from 1883 , printed with vegetable dyes which produce warmer colours which compliment the design subject much more than unnatural, synthetic dyes of the time.

FLOWER POT
1883.
(WILLIAM MORRIS)

NOTE DIFFERENCE IN SHAPE & COLOUR OF FLOWER POTS.

Fig. 1



MEDWAY.
1885
(WILLIAM MORRIS)

Fig. 2.1

MILLEFLEURS
1912.

VIOLET & COLUMBINE
1883.

Fig-2.2

Looking closely, there are noticeable, yet very slight differences in some areas; where the block has contacted the fabric under different pressure or with less dye. There are also areas of overlapping colour which happened often as registration by eye is much more difficult, but it does add to the character of the design as do the slight variations of colour. The mirror image repeat in this design is also a trait of a Morris design, as what was fashionable and popular at the time. Morris continued to use the same colour scheme throughout his career on the same fabrics. Other examples would be **Medway** Fig. 2.1) ,1885, **Violet and Columbine ,** 1883 and **Millefleurs** 1912. Fig. (2.2)

In the late 19th century Morris was more interested in psychological and aesthetic issues such as the well-being of the maker and user. Even though child labour was an issue at this time, it wasn't central to Morris's concerns. Now in the late 20th century labour abuse and ecological issues are strongly political and the media has made the issue of child labour easily communicable throughout the world, as it is both topical and emotive.

Nearing the end of his career, Morris turned more towards socialism. He realised that making and designing for the rich was no good, and his ideas changed from the aesthetic to the moral issues, concerning the individual as well as the quality of his designs.

CHAPTER 2.

The use of child labour in third world countries has become of increasing concern in the west. Concerns were recently fuelled by the case of Iqbal Masih, a 12yr old Pakistani boy and former bonded labourer in the carpet industry. Iqbal became an internationally known figure, in the campaign against child labour, and for the rights of children in Pakistan, receiving the Reebok human rights, Youth in Action Award in the USA in December 1994. He was found murdered in his home town in Pakistan last Easter as a result of speaking out about and against the carpet manufacturers and the treatment of their workers, especially the women and children. Perhaps, not surprisingly, Pakistani carpet exports to the USA among others, are reported to have suffered a catastrophic decline.

This is a side to the textile industry that is often not discussed. The textile industry in the west is seen as prestigious and largely as a quality craft or industry. But, at the lower end of the scale, which is usually based in the Far East and the underdeveloped countries of the world, textile printing and production usually involves mistreatment of workers. Most often these are women and children with low wages and life and health threatening work conditions.

Up until the Industrial Revolution textiles were a hand-crafted art but along with machinery came tedious jobs that required little brain power, thought or skill. Industrialisation began to replace people with machines and textile printing changed dramatically.

During the mid 19th century large factories were erected on a scale never seen in the textile industry before. Large printing presses, dye baths and roller printing tables all now needed to be supervised, so women and children were recruited to watch over production. These machines were new and extremely dangerous, and accidents involving loss of limbs were remarkably common.

Mills and print works set up all over the north of England and in both the north and south of Ireland. Hundreds of small two up, two down terrace houses were built by mill and factory owners right on the doorstep of the work places. The quality of life experienced by the workers was extremely grim, as their whole life revolved around working in the factory because their bosses at work were also their landlords. Factory whistles woke the workers in the early hours of the morning and signalled that it was time to go to work for the day, a day lasting around fifteen or sixteen hours. The image of heavy labour in sweatshop conditions is often considered an historical one, but there are many areas and countries where exploitation is all too common.

Now in the nineties as students of textile design in the west, we are assured of fairly comfortable lives and satisfaction in our careers. We are trained primarily as designers but we are also skilled in mixing dyes, producing screens and a number of other technical processes, just as workers in the factories of the Far East are. Unlike these women and children working in these underdeveloped countries we are rewarded highly.

There has been a problem with the exploitation of children and women in the textile industry since before the Industrial Revolution. One man made it his personal objective

to expose and eliminate child labour in the textile mills of the southern USA. Lewis Hines used photography to document the lives of children working in the cotton fields of Texas and the cotton mills that flourished in Alabama, Mississippi and the Carolinas. Hines understood that photographs could be a valuable tool for social reform. By 1907 Hines had gained a solid reputation among reformers for his dramatic photographs of immigrants, which featured in CHARITIES & COMMONS a New York weekly dedicated to social reform. His work came to the attention of the National Child Labour Committee which hired Hines to work part time photographing the daily lives of the mill workers at the time. This took place at the turn of the century. The fact , that there even existed a Child Labour Committee emphasis that there were major problems. (Fig. 3 & 4)

The number of cotton mills alone had increased as did the number of children on the workforces. This called for new legislation which actually failed to make any impact on the situation. the south at this time was especially resistant to the reforms of the progressive era. Most southerners believed that the south could rise from the ruins of reconstruction, only by pursuing industrialisation which in turn meant that twenty five percent of all mill workers were children between the ages of ten and sixteen. These children were forced to work long hours in conditions that were cramped and extremely dangerous to their health and safety.

Inhalation of chemicals and injuries caused by machinery were resulting in the deaths of many women and children. Children were often employed below large looms and other pieces of machinery to ensure threads were not out of place or that the general running

LEWIS HINE
1910.

Fig. 3.

of the machine was in order. These women and children were unskilled, so operating these new machines without instruction or know - how obviously resulted in accidents.

As for education, this was generally ignored in favour of hard labour. Families could not afford to put a child through school as well as not having their extra wage. This led to little progress being made on the training and industrialisation side of things, yet the owners and employers got richer quicker. Wages were ridiculously low and the child workers had little means of fending for themselves so the were often unpaid or mistreated by factory owners.

It is now almost a century later and there has been little change in such abuse, except that it now occurs further afield. Children as young as four and five years of age are still working in sweatshop factories in India and the Far East, printing, dyeing, weaving and sewing.

" I believe we should claim certain rights for the children and labour for their universal recognition " (Eglantine Jebb ,)

Save The Children is just one of the many charities and organisations set up, which recognises the plight of children trapped in the dyeing plants and sewing factories throughout Pakistan, India and else where. The industry is so huge and competitive that most manufacturers and print shops try their best to cut corners, resulting in bad quality and injuries to workers. Save The Children has played a huge role in trying to conquer these horrific problems. At the U.N. Convention on the rights of the child, 1989, the

LEWIS HINE
TENNESSEE
1910.

Fig. 4.

charter below, still in its original form, was taken onboard by one hundred and seventy-three countries, to date.

> THE CHILD MUST BE PROTECTED ABOVE ALL CONSIDERATIONS OF RACE, NATIONALITY OR CREED.
>
> THE CHILD MUST BE CARED FOR WITH DUE RESPECT FOR THE FAMILY AS AN ENTITY.
>
> THE CHILD THAT IS HUNGRY MUST BE FED, THAT WHO IS SICK NURSED AND THE MALADJUSTED CHILD MUST BE RE-EDUCATED.

The most important of these guide lines and most applicable is

> THE CHILD MUST RECEIVE TRAINING WHICH WILL ENABLE IT TO EARN A LIVELIHOOD, BUT AT THE RIGHT TIME AND PLACE, AND MUST BE PROTECTED AGAINST EVERY FORM OF EXPLOITATION.
>
> (EGLANTYNE JEBB, FOUNDER, 1923.)

It would appear that not only is Asia at fault but Eastern European countries and Portugal are still experiencing problems with exploitation of women and children, and issues to do with race and religion. The common denominator is that the textile industry is the worst hit area of all, with thousands of very young children being exploited every day all around the globe.

In Portugal forced labour is prohibited and the minimum age for employment is fifteen, and has been since 1992. According to the Government General Labour Commission, which is responsible for enforcement of child labour laws. Between thirty and thirty-five

thousand children from ages 12 to 15yrs old are working in Portugal mostly in textile and shoe companies.

It is primarily economics and financial gain which led to these situations. A lot of the developing countries with their massive populations and little resources are able to exploit workers by paying low wages and hiring unskilled women and children as a means of undercutting western countries, which have laws to prevent this type of exploitation.

As the new Middle East economy begins to take shape, the textile industry in the Arab sector of Israel, has entered an economic crisis. Large Jewish-owned textile manufacturers have re-assembled their workforces in accordance with the world capitalist trend towards finding the cheapest labour. The Arab population in N. Israel whose economy depends almost solely on this industry, may be pushed out. There are three factors resulting in this upheaval. The first is the afore mentioned world trend to migrate capital to countries with cheaper labour. The second would be the influx of cheap imports into Israel since the tariffs were eased in 1991.

A document written in 1995 by banker Yoram Gabai ,explains the new trends in textiles.

> THE CANCELLATION OF ALL ADMINISTRATION RESTRICTIONS ON IMPORTS AND REDUCTIONS OF TARIFFS UNTIL THE YEAR 2000, TOGETHER WITH THE INTERNATIONAL DROP IN PRICES OF TEXTILES HAS PLACED THE INDUSTRY UNDER HARSH COMPETITION AND UNDERMINED ITS PROFITS.

An example of this is the fact that shirts made in Turkey are imported and can be sold at cheaper prices than the Israeli produced garments. The third factor influencing the problem is the political situation. The peace process is fragile and this ultimately influences who works with whom, the trust isn't there between the Jews and Arabs.
What exactly do these three factors mean to the textile employees in Israel ?
Over the past three years 31 Israeli textile factories have closed entirely and eight more have cut their workforce in half. In 1996 two thousand workers were laid off in addition to the five hundred the year before. The Histadrut (National Workers Union) estimates that at the imminent peak of this crisis 50,000 workers, the majority of them women, will be left jobless.

Textiles have been the only industrial source of livelihood allowed in the Arab Sector and the only source of work for most women. Arab women constitute one third of the entire workforce in Israeli textiles. Over the last two decades, small sweatshops have mushroomed throughout the Arab villages. The male managers of these small enterprises usually act as sub-contractors to the big factories. They employ thousands of young Arab women who are confined to their villages either by their traditional families or by lack of other job openings. Since there is no union supervision in the villages, work conditions are often sub-standard and workers receive much less than they would in the factories.

In February 1996 twenty female workers from the small village of Biralmaksur, Galilee, approached the W.A.C. (Workers Advice Centre.), having already appealed to and been ignored by the National Workers Union. In January 96 their employer sent all his workers home claiming he had no work for them. He owed them salaries for November,

December and half of January. Upon checking their cases the W.A.C. discovered that these workers had been employed for many years below the minimum wage. They had no social security benefits and were grossly humiliated at work. Their employer exploited the fact that these women, most of whom were unmarried, had no alternative to working inside the village.. Gadir, their employer, claimed that the company had gone bankrupt and that as he was only an employee himself, there was nothing he could do. The W.A.C. thought differently proving that Gadir had actually committed fraud.

The moral and legal support from the W.A.C. gave ten of the women the courage to leave their village and get better jobs, under better working conditions. This is quite an achievement considering that Arab 'middlemen' have built their small fortunes on the backs of local female workers for the last two decades, violating labour laws and taking advantage of women's fragile position in the society.

Most developing countries have strong religious views which influence laws and the treatment of the people greatly.. India is one of the leading producers of silks and printed fabrics in the world, but it is also renowned for it's poverty and strict religious beliefs. Hindu and Muslim laws as well as the Caste system, still very much a part of the society, puts a lot of pressure on certain areas of the population. The level of poverty in India is so great that the textile industry can treat and pay their workers however they want. Human rights groups are campaigning to try to change this situation. In India it is again women and young girls who are forced to work in the harshest conditions, as they are looked upon as second class citizens, in a country where men hold the positions of power in the churches, industry and politics. When a woman marries in India, she becomes her

husbands possession and has no say as to how their home or their lives in general are run. Women are so undervalued in Indian society, so much so that even the birth of baby girls is looked upon as failure and a burden on already poor families, who will require a dowry when she is old enough to marry. This is of course only if the child is not murdered at birth or left to starve to death; both horrific facts which are all too common in today's India and other countries in the East.

Most young girls are sent out to work as soon as possible, where as boys are more likely to be sent to school and educated. These girls, like the children Lewis Hines photographed at the turn of the century, are left to operate equipment which by today's standards is old, faulty and definitely not in any way safe to be operated by unskilled children. The number of industrial accidents has risen during the nineties, but most go unreported.. Amputation, toxic poisoning and malnutrition still kill and maim many children..

One girl Saniwah Ishani died from infection of a wound received working in a dye works in Pakistan. Saniwah was only just 13yrs old and her family hadn't the money or resources to enable her to receive the medical attention she needed.

There are a number of training programmes based in Karchi, Pakistan, specialising in areas such as textile dyeing, printing and finishing. These training programmes are semi-governmental and were established in the Textile Research and Development Centre in 1973. The purpose of these courses is to achieve of manufacturing through optimum use of resources such as machinery, labour, materials, finance and improved quality

control. Improved training of technical workers is also carried out. Development of specialist expertise in various fields of textile technology in regard to replacing conventional machinery with new safer machines are all concerns that fuel the development of these courses.

This sounds promising in that some of the problems affecting the workers in the textile industry might be overcome and needless accidents may not occur. The actual number of people the course is open to, is limited as the courses are being taught in English, which further limits the uneducated, unskilled people at the bottom of the pile; the people who need to be trained.

CHAPTER 3.

The last chapter dealt with the issues arising from the abuse of people in the textile industry. This chapter focuses on the abuses of natural resources in textile production. It has been apparent since the 1960's and 70's that we as inhabitants of this planet are going to have to wake up to the fact that there are major ecological problems occurring everyday. We need to become more caring and aware about the environment.

The Hippie, love-everything ideal of the 60's saw a huge number of people become concerned about all aspects of the environment; the air, seas, rivers, trees and plantlife, and our effect on the planet in general. Hundreds of years of industrialism and mans quest for technology have left a lasting effect on the environment. The youth of the 60's and 70's realised this and set about changing their own and other peoples ways and ideas, as far as recycling and waste disposal were concerned. People and industry had to change their bad habits, as a means of protecting life.

The CND ' Ban The Bomb ' Campaign and the setting up of GREENPEACE both occurred in the 60's. This new concern about ecology and the environment arose as a reaction to mechanisation, unnatural chemicals replacing real food and people beginning to realise just how far technology had gone. The printed textile industry made so much headway in the 19th and early 20th century, in terms of machinery, chemicals and dye evolution, that it was now time to step back and see if the mess it had created could be cleaned up.

This chapter looks at the environmental issues relating to the textile industry and how technology plays a large part in both causing and dealing with ecological problems. Both chapters one and two discussed the effect of the Industrial Revolution on all areas of industry, especially textiles. At this time industrialists were concerned only with invention, new technology and new machinery etc. none thought further ahead than the next technological invention. Being first and making a profit were the driving forces at this time and laws regarding limits on industry were almost non- existent.

Machinery in the Industrial Revolution used solid fuel as its primary energy source. Tons of coal were burned , releasing toxins into the air that formed smog and infected the lungs of factory workers, as well as attributing to the now recognised hole in the ozone layer. The printing industry was also developing new dye stuffs. Chemically based synthetic dyes started to replace natural dyes that were extracted from plants and vegetables. The synthetic dyes were harder to clean up and often polluted waterways killing fish and wildlife, as the waste they left made its way to the sea.

It wasn't until the 70's that governments started to take notice of the advice that environmental groups were giving and slowly began to introduce restrictions and legislation on pollution to try and ensure that other problems would be addressed. Some had already caused lasting damage to rivers and wildlife.

Companies have come a great distance in dealing with pollution now that we are approaching the year 2000. The latest laws written concerning the discharge of effluent into waterways and the atmosphere were in 1972. The Department of Environment

Department of the Environment for Northern Ireland

Stormont Belfast BT4 3SS
Telephone Belfast 63210 ext ~~2325~~ 2295

Pollution Control
Water ~~Resources~~ Branch

Ballievey Bleaching Co Ltd
245 Castlewellan Road
BANBRIDGE
Co Down

Your reference

Our reference EC 15/72

Date 15 July 1977

Dear Sir

WATER ACT (NORTHERN IRELAND) 1972

In accordance with Section 7 of the above Act I enclose a copy of the Consent which the Department has granted in respect of the discharge of effluent from your premises at the above address into a waterway.

I am to remind you that within a period of 28 days from the date of this letter you may appeal against the Department's decision to the Water Appeals Commission, Carlton House, 1 Shaftesbury Square, Belfast BT2 7LB.

I must also draw your attention to Section 9 of the Act which sets out the penalties for contravening the conditions of this Consent.

This Consent may be reviewed by the Department at intervals of not less than three years or at any time at your own request. In order to ensure that the effluent discharged to the waterway complies with the conditions in the Consent samples may be taken for examination from time to time by the Department's Inspectors.

Yours faithfully

R. McMinnis

R McMINNIS

ENC

APPENDIX 1.

CONSENT No. 356/77

File No. EC 15/72

DEPARTMENT OF THE ENVIRONMENT

Water Act (Northern Ireland) 1972

Consent to Discharge of Effluent

To Ballievey Bleaching Co Ltd

245 Castlewellan Road

BANBRIDGE

Co Down

The Department of the Environment in pursuance of the powers conferred on it by the Water Act (Northern Ireland) 1972 HEREBY CONSENTS to your making a discharge into a(n) waterway/~~underground stratum~~ in accordance with your applications dated 17/11/72 in respect of your premises at the above address.

SUBJECT TO the following conditions:

1. The effluent discharged to the waterway shall not:-

   * (a) have a biochemical oxygen demand in excess of 20 mgs per litre;
   * (b) contain suspended solids in excess of 30 mgs per litre;
   (c) exceed 6250 cubic metres per day;
   (d) have a maximum rate of discharge in excess of 80 litres per second;
   (e) have a temperature in excess of 24°C;
   * (f) have a pH value less than 5 nor greater than 9;
   (g) contain any visible oil or grease;
   * (h) contain free chlorine in excess of 0.5 mgs per litre;
   (i) contain any substance (other than as defined in (b and h) above) which will cause the waterway to be toxic or injurious to fish or other aquatic organisms.

2. All surface water shall be excluded from the treatment system.

3. Facilities shall be available for measuring and recording the flow through the treatment plant and for sampling the final effluent.

4. The sampling point shall be at the V-notch, after the Clarifier, on the final effluent pipe.

5. The Company shall carry out (or cause to be carried out) tests of the effluent at intervals not less frequent than once per month to check whether conditions 1(a), 1(b), 1(f) and 1(h) are being complied with; shall record the results of these tests and shall submit them at quarterly intervals to the Department, together with a note of the highest recorded total daily discharge, and maximum rate of discharge for each month of the quarter.

6. This consent to have effect from 1 November 1977.

Dated this 15 JUL 1977 day of ..... 197.....

Department of the Environment
Water Pollution Control Branch
Stormont
BELFAST BT4 3SS
R Bt 42396 2(m) 11/74 TP

.....
Authorised Officer

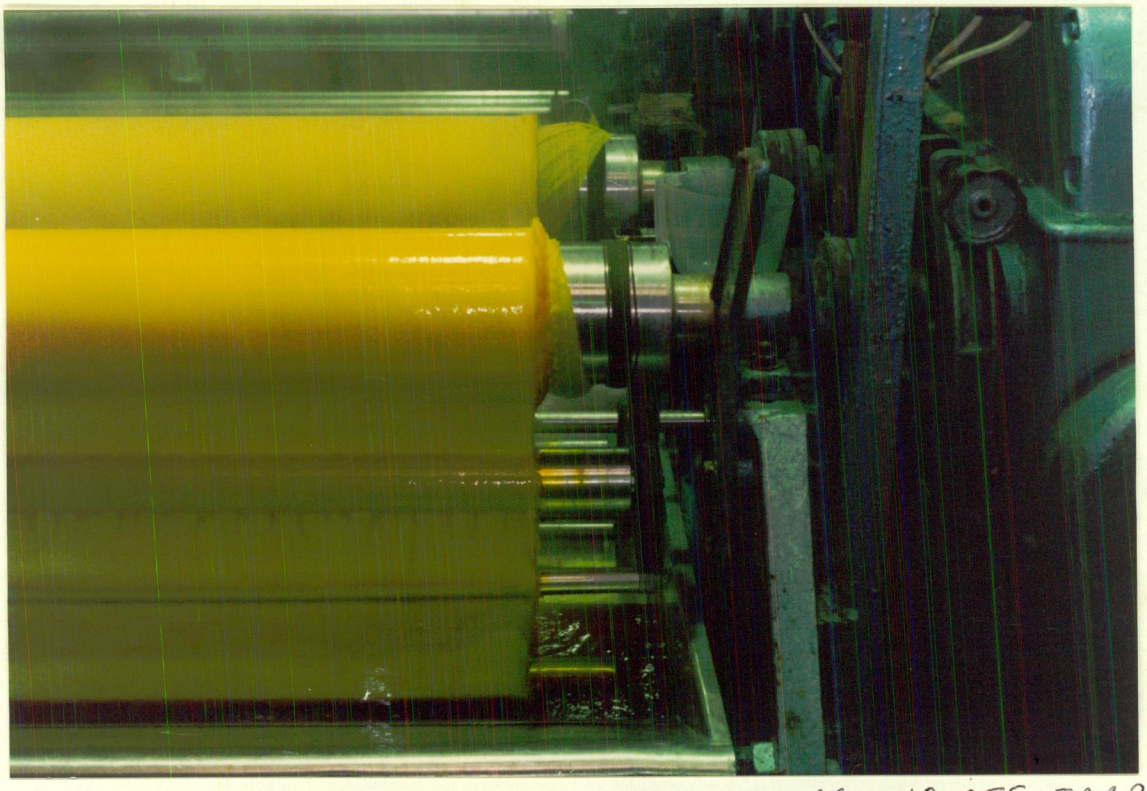
J. MAGEEAN

THE EFFLUENT POND AT BALLIEVEY WITH FILTERS TO CLEAN UP AFTER DYEING.

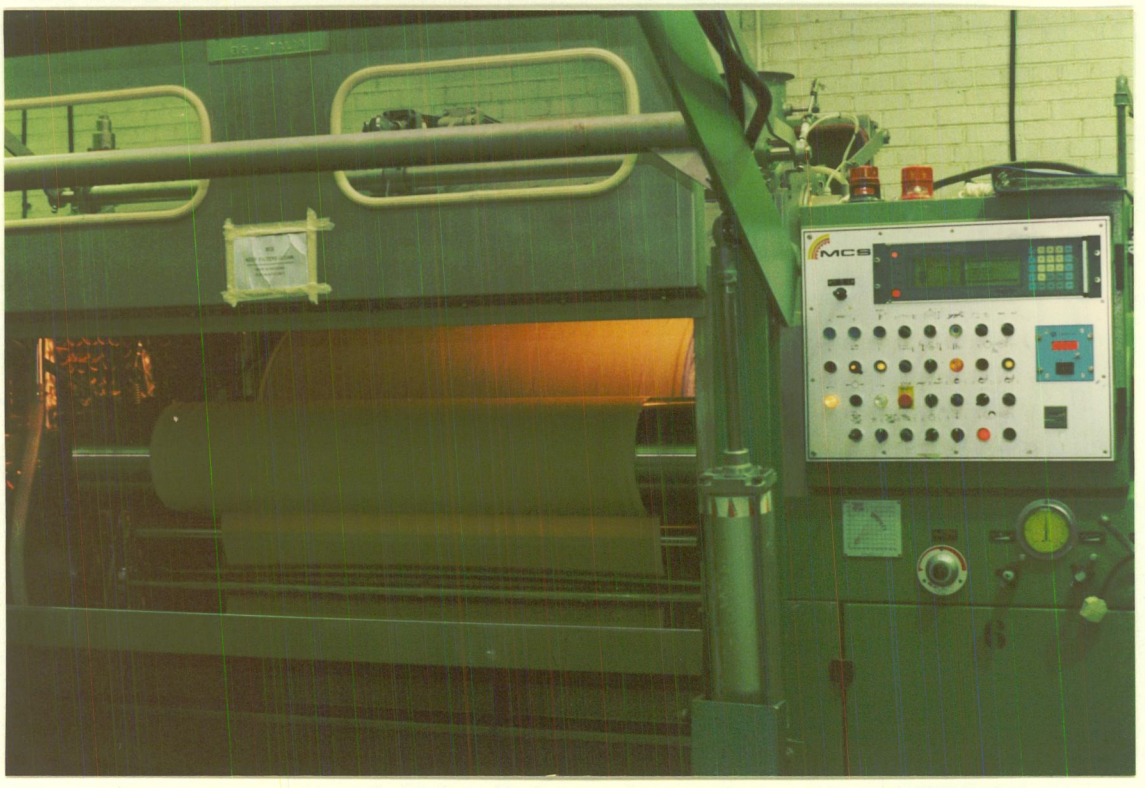
Fig 5.

DYEING IN PROGRESS, BALLIEVEY

Fig. 6.



WASHING OFF FABRIC
FOR LOOSE DYE REMOVEL



PUTTING A
FINISH ON THE
FABRIC
BALLIGUEY

Fig. 7.

started to produce rules and regulations, along with guidelines, to printing and dyeing factories. The appendix included here is a copy of the guidelines that Ballievey Bleaching and Dyeing Company still follows. The Ballievey plant is connected to the Moygashel textile producers and carries out all the dyeing, printing, bleaching and manipulation of fabrics. It is based in Banbridge, Co. Down, N. Ireland and uses the River Bann as its main source of water. What is concerning is, that the laws they are following are now 25 years old, so how can they be sure that the River Bann and surrounding environment is not suffering as a result.

I arranged a visit to the factory, to see the layout and operation firsthand. The reason I contacted this place was, firstly, because it is the only plant in Ireland that solely carries out dyeing and other processes, such as bleaching and treating fabric in it's raw state. Secondly, in the last few years, the plant has gained a good reputation as far as the environment is concerned. The company now proclaims that the water they take from the Bann, for use in the factory, is cleaner when they return it. The reason for this is that the company built a man made pond beside the factory, into which all the used, (Fig. 5 – 7) discoloured water is deposited to be filtered before it is returned to the River Bann. This is both an ecologically and financially sound idea.

The companies major environmental and social concerns were, the discharge of effluent, as the area is very picturesque, with a large array of wildlife. The company is extremely concerned with cleaning up after it has used dyes and is making steps towards prevention rather than cure.

The health of the employees is a major factor, that the company has had to work at improving. Men working in the dye rooms are rotated every six months to other areas of the factory, so that they are not affected by the dye powders and polluted air.

The image Ballievey wants to portray is one of a dream environment. Their future plans are to use less chlorine and bleach, as both have stigmas attached, i.e. that they are heavy pollutants.

Recycling and the image of a cleaner environment has luckily become fashionable in interiors and fashion.

'Natural Earth' are a company based in Bray. They concentrate on recycling old Denim, Damasks and other natural fabrics. They dye the fabrics in vibrant colours and produce garments from what were previously waste items. Their garments are sold in 'Damascus' and other fashionable stores in Dublin and are extremely popular and fashionable at this time.

The recycling label is a large part of why the clothes are so acceptable in the 90's. The environment is of increasing concern to young women and to 'Natural Earth' customers. Nowadays people feel more responsibility towards their surroundings but generally they have no idea the production of fabric has a detrimental effect on the environment in the western world.

CHAPTER 4.

The design and manufacture of textiles is one of our oldest industries. It caters for the fundamental human need for clothing and for protection and fulfils a basic demand for decoration. The very centrality of fabric in human culture has ensured that it is at the forefront of both technological and artistic development. Weaving was the first industry to be fully mechanised, it was the catalyst to the Industrial Revolution.

Today the possibilities that have been created as a consequence of the advances in synthetics engineering, micro electronics and dyes have yielded a new undreamed of area of intelligent fabrics. The industry still remains diverse in production techniques.

The importance of the textile industry has meant that fabric has been taken seriously by the male dominated world of commerce as a major merchandising commodity, but textiles are still very strongly associated with the home, home making and women. Neither textile design nor textile art has enjoyed the interest or acclaim, let alone status, that products within a more masculine sphere,or of course, fine art have been accorded. Thousands of women are still employed in both textile design and manufacture but there are still, as we know, very few women playing an active role in textile management.

In recent years textile design has grown in status. It is simultaneously futuristic and traditional. On one hand it is influenced by major, broad based industrial research

projects into fibre technologies for industrial textiles and also by the development of automation and manufacturing systems. On the other hand, it is influenced by the luxury markets and their revival of elaborate decorative and ancient craft techniques and traditional patterns.

It needs to be understood that since 1960 the textile industry in the West has developed in an unnatural economy.

protectionism has existed foe the past thirty years in the textile trade and the last seventeen of those have been regulated by a system called Multi Fibre Arrangement. This is a system of trade tariffs and export quotas of great complexity which in effect exists to protect the western textile and clothing industries from market disruption, dumping or tactical undercutting from the new wage developing countries.

It has had the effect of blocking a significant number of imports from advanced developing countries with the consequence that western clothing and western textiles are sold at an artifically high price. It is widely believed that without the support of this system the textile industry in the West would be unable to continue at it's current level.

In the 1960's and 1970's textile manufacture was perhaps more affected than other industry in the west by the idea of mass production. Industries, particular in France, America and Britain became a little mesmerised by the idea of mass production, imagining that engorging, vast yardage's of cloth at speed, would provide a lasting solution to the problems of overseas competition. This was a mistake and was

exacerbated by the first oil crisis. The specialised skills and character of a smaller family run business were lost.

The recession of the 70's may have put a stop to much of the interesting and experimental design work of the 60's but it did make room for alternative, much more contemporary textile artists to come to the forefront and change the idea that the 70's were just a hangover of the 60's.

Terms such as 'textile culture' and 'textile language' came into being and a fashionable scene of anthropology forged a link with the textile industry. The 70's also saw a revival of interest in ancient textile making techniques. i.e. South East Asian resist dyeing techniques and the development of the fibre arts and craft movement.

The early 1980's saw a rapid rise of new ideology across the field of design under the general umbrella of 'post-modernism'. The idea of individuality and decoration was exploited in everything from architecture to furnishings. In textiles, particular the young, experimental style based design movements, the spirit of innovation, humour and rebellion led in textiles out of ethnic craft focus of the 1970's.

Change in design in the 1980's was not simply a response to a natural demand for new styles. The boom in information technology accelerated the flow of visual information around the world to such an extent that fashion itself became accelerated with it. Suddenly it dawned on designers and theorists that people had their own views and ideas. there was no need for them to foretell what was to happen in the future.

Availability of style choices coincided with a change of attitude by the textile industry. It was realised that specialisation, not just automation was the answer to overseas competition. The potential of craft was recognised and the designer / makers added a new sophistication to their products.

Economics and finance came into the equation in the late 70's and early 80's as Japan, America and Britain were faced with underdeveloped countries producing fabric and designs with less overheads and financial ties.

In 1986 French fashion designer Francois Girbaud produced a jacket with a cartoon that playfully reiterated the concerns expressed by William Morris a century beforehand. (Fig 8)

> " That the Industrialisation of textile production has led to the decline in standards expressed in the lack of authenticity of the product"
>
> William Morris London 1892

These anxieties were shared by many designers in the 80's who believed that the restructuring of the textile industry during the late 70's had by the mid 80's all but obliterated specialist production. The 'Big is Beautiful' approach to industrial production began to worry French conservationists who saw this as a threat on their textile heritage.

The argument between industrialists and the traditional textile designer grows ever stranger. One hundred years after William Morris highlighted his concerns about

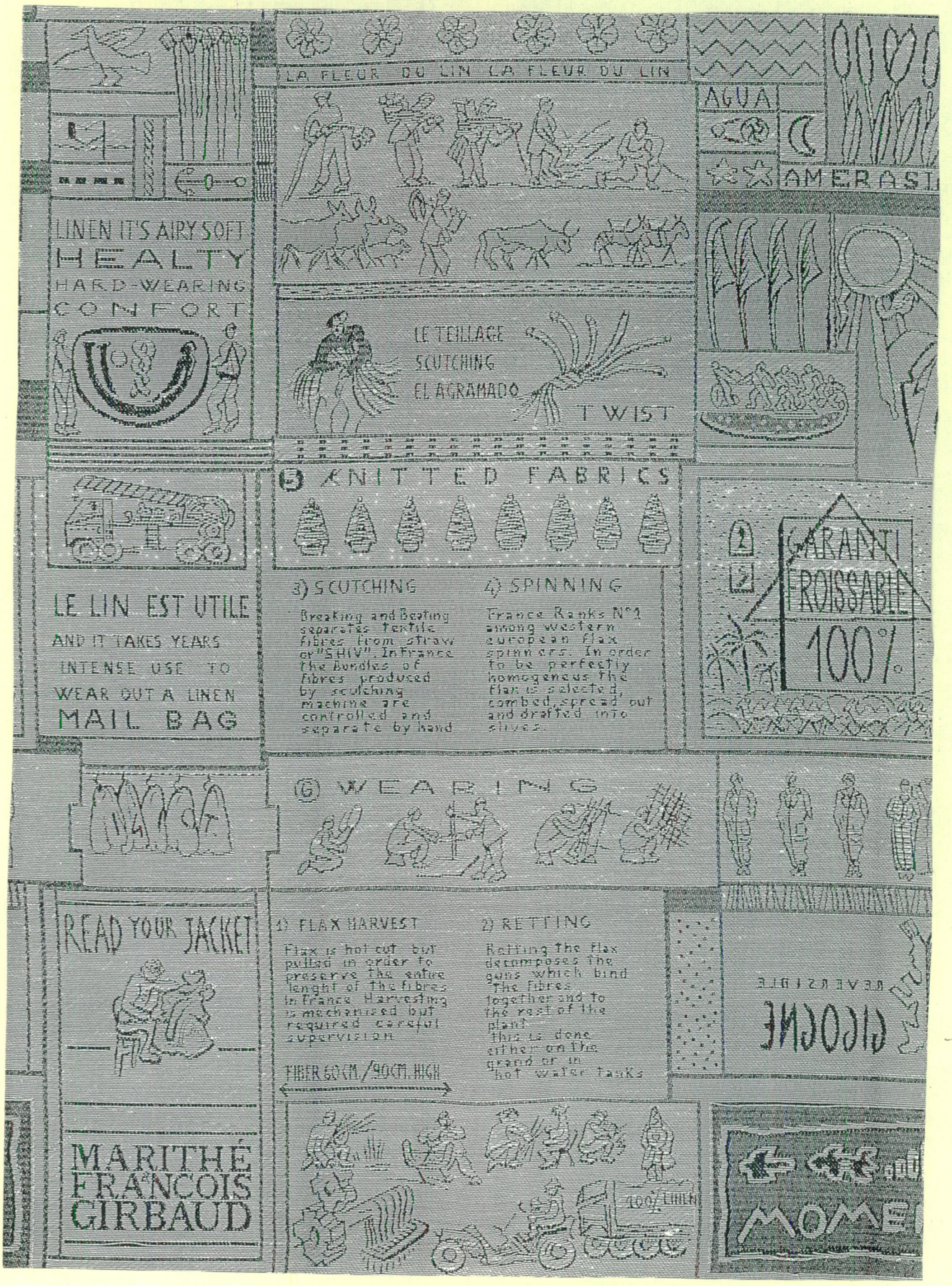

LA FLEUR DU LIN LA FLEUR DU LIN
LINEN IT'S AIRY SOFT
HEALTY
HARD-WEARING
CONFORT
LE TEILLAGE
SCUTCHING
EL AGRAMADO
TWIST
5 KNITTED FABRICS
LE LIN EST UTILE
AND IT TAKES YEARS
INTENSE USE TO
WEAR OUT A LINEN
MAIL BAG
3) SCUTCHING
Breaking and Beating separates textile fibres from straw or "SHIV". In France the Bundles of fibres produced by scutching machine are controlled and separate by hand
4) SPINNING
France Ranks N°1 among western european flax spinners. In order to be perfectly homogeneous the flax is selected, combed, spread out and drafted into slives
6 WEARINGS
READ YOUR JACKET
1) FLAX HARVEST
Flax is not cut but pulled in order to preserve the entire lenght of the fibres in France Harvesting is mechanized but required careful supervision
FIBER 60 CM./90 CM. HIGH
2) RETTING
Retting the flax decomposes the gums which bind the fibres together and to the rest of the plant
This is done either on the ground or in hot water tanks
MARITHÉ
FRANÇOIS
GIRBAUD
100% LINEN

Fig. 8

Industry and technology taking over and producing banal design work the argument rages on, this time, with the inclusion of the computer. How exactly CAD (Computer Aide Design), hand crafting and industrial production can be used in design, in conjunction with each other in a positive way is the basis of a lot of arguments in the 90's.

Today we have entered an age of information. The computer is now a major design force in it's own right. In the same way that The Industrial Revolution affected the role of the designer / makers in the last century, reducing the role of man power and brain power, the computer has further widened the gap between hand crafting and industry. this is not to say that this is a bad thing, but traditionalists see it as such.

This thesis has focused a lot on the harmful effects of industry and mass production, but the technology that has been invented over the last few decades has revolutionised and changed the roles of the designer for the better.

Couture is traditionally an area of fashion design that is famous for it's attention to hand crafting and detail. the argument here is; What exactly Couture can be ?

In the first collection of Christain Lacroix (French fashion designer) in 1987, he used a relatively new printing technique: Heat transfer Printing. This process is a rapid alternative to the time consuming printing of each individual colour. With ordinary screen printing each colour requires its own screen and the colours are built up on top of

each other to produce the design. for designs with 16 colours this can be expensive and as was previously mentioned, extremely time consuming.

On the other hand Heat transfer printing works using transferable dyes as you would paint.

The dyes are all painted on to paper and as many different colours as needed can be used. When the design has dried it can be transferred onto synthetic fabric using the heat transfer press. The design transfers from the paper onto the fabric at a certain temperature. The design is now colour fast and requires no washing or steaming as the original handle of the fabric is unaffected.

With regard to Lacroix's designs the French were upset because, for years Couture was prided for its use of luxurious fabrics and it's resistance to time saving and corner cutting. Lacroix did both, but argued, that the large prints produced for him by textile artist Sylvie Skinazi, were exceptionally good quality in both colour and definition and each design could only be used once, thus keeping the exclusivity associated with Couture.

Figure 9, is one of a range of rubber swimsuits which has at least eight or nine different colours. The design itself is a one-off painterly design that would be extremely difficult to reproduce using the traditional screen method and as Lacroix stressed, we cannot fault the colour intensity which is both vibrant and very well defined. Also this design is on

SYLVIE SKINAZI
FOR C. LACROIX
1988.

Fig. 81.

rubber, which before could not be printed, as dyes, such as Reactives and pigments could not penetrate the surface to enable them to fix.

Lacroix, the newest couture house around at the moment, is extremely innovative, but also responsible, in that, he takes an interest in the social issues and problems of the 90's. Couture has always been associated with the wealthy and only highly skilled seamstresses, printers and weavers got to work in the Parisian couture houses. Lacroix changed this by hiring the services of recovering Drug and Alcohol Addicts to weave cloth and paint up fabric designs for printing in a workshop in the South of France. between 10 and 15 young addicts worked producing fabrics for Lacroix's 1994 Couture collection. this is an extremely positive way of reintroducing recovering addicts back into society and giving them something to work at and be proud of. Drug and alcohol abuse are some of the greatest problems faced by youths today, so Lacroix is doing society some good by taking an interest. It is almost exactly what William Morris said in the 19th century, that people are happier and much more satisfied when they are given work to do that requires time and thought. This scheme also acted as an incentive for these young people to stay clean and sober, and find jobs in the design / hand-crafted field that made them feel valued.

In the early Eighties Britain was also experiencing big social problems. The Thatcher era saw great depression as industries closed down, people lost their jobs and homes due to things like the coal miners strike, which brought about a lot of bitterness among the working classes. At the other end of the scale there was a ' Boom ' , with yuppies living the high life with their capitalist, don't care what it takes attitude.

Print designers used these social issues as themes for designs. Helen Lipman of English Eccentrics, and young design duo Hodge and Sellers made a mockery of the nascent craze for designer clothing, by printing designs made from famous peoples signatures and the reverse side of couturiers labels; a rye parity of the growing trend of sporting a designer label as a means of requiring status.

It was Vivien Westwood who helped these young designers come into their own in Britain in the early 80's. The 70's had just witnessed the invention of punk, a rejection of convention and the conservatism of the time. Westwood set up studios with designers and students straight out of college working side by side producing prints that were often crudely designed and printed but this complimented their aesthetic.

Print designers were taking on a more craft like approach to designing and making. They stepped away from the craze of not caring what the pattern was like or the cut of the garment, but how big and visible the designer label was. Their designs were to be used, not displayed in a gallery and were inspired by urban style. They sought out an alternative to the pristine cleanliness of high tech designs and experimented with recycling and techniques for creating surface pattern and depth.

With so many new techniques in printing processes available print is the ideal medium to allow designers to make a statement about social issues. Katherine Hamnettt is a London based designer who uses print (usually on tee-shirts) to voice her opinion on issues such as AIDS, Abortion, Human rights and the environment. This works in two

ways, it inevitably gives her and her collection a lot of publicity, but it also brings these issues to the attention of the media thereby making people think.

Franco Moschino was another fashion designer with a lot to say and used print as a means of getting his ideas across. His latest add shown in Fig 10 shows the use of script, imagery and slogans. Moschino, himself died in 1995 of AIDS and the disease was a subject of a lot of his previous advertisements. Having this disease made him aware of the more important issues in life, such as, peace, love and both environmental and health issues. He hated the snobbery and exploitation world that the fashion world represented and often chose not to show his collections with the other designers at the seasonal shows. Each of the printed garments (Fig 10) are unconventional but wearable all the same. The tee-shirt and skirt pictured left, have script explaining what is rational and what is irrational and just how much freedom of speech we actually have.

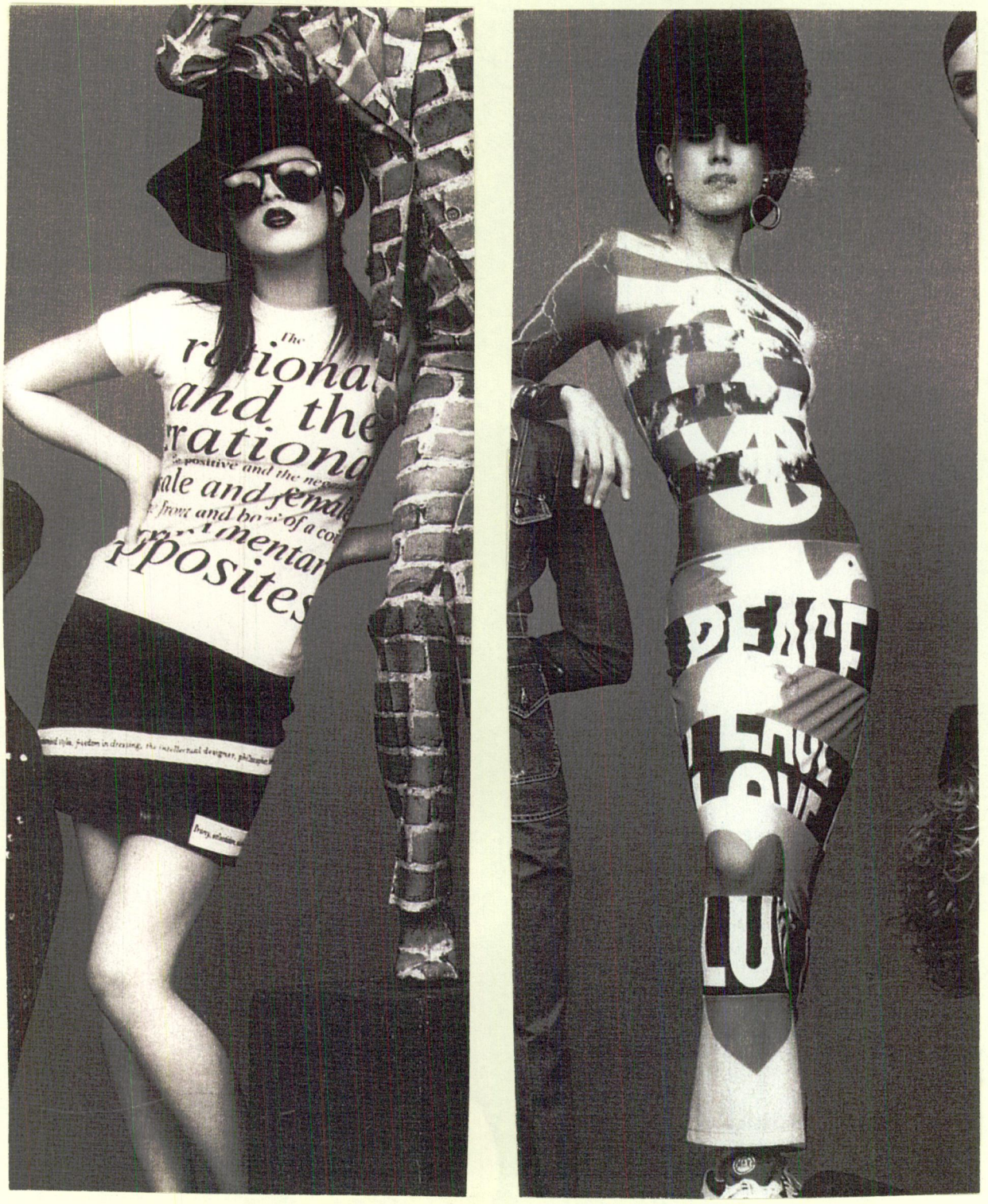
The definition and role of a print designer has changed phenomenally since the late 19th century, when William Morris was a working designer. Along with new technology have come new exciting fabrics, dyes and techniques such as , devore, costic soda shrinking and printing with spandex. A printer or should we say fabric manipulator, has now to consider this range of possibilities which are both fashionable and in much demand in the fashion and interior markets.. However cloth is primarily a product of thought, despite amazing technological advances available today to create fabrics, nothing noteworthy would be produced without the keen aesthetic sense of a talented designer. At the same time having a competitive edge in the market place is essential to both fashion and home

furnishings.The goal of the designer is afterall to sell a product which is both original and aesthetically pleasing, and cost effective also.

Junichi Arai is a designer who successfully combines technology with innovative style, and takes full advantage of the processes mentioned above. Arai describes himself as a textile engineer, but he is also an artist who sees beyond the machinery and standard methods of operation. Arai believes that fabric like water has no form, its form is created by the user. He does however hold enormous respect for textiles and appreciates the extraordinarily versatile quality of cloth. (Fig. 11–13)

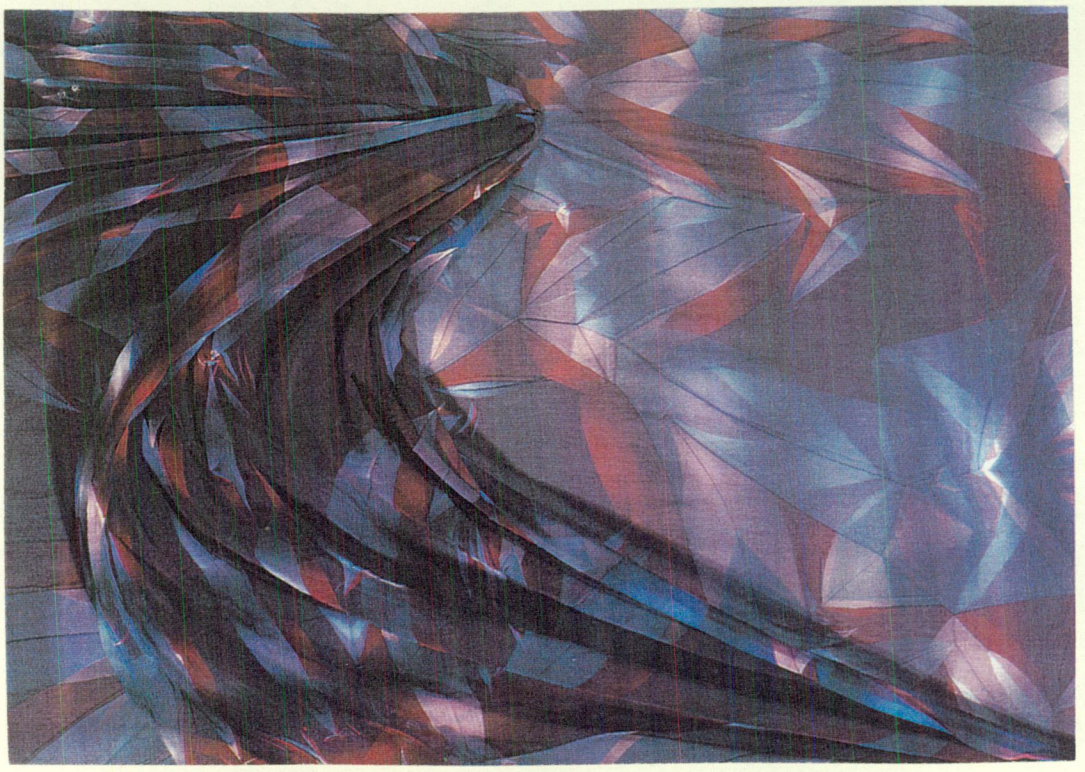
Arai comes from a family of weavers, but was not intellectually stimulated by the daily running of his family owned mill. He entered a period of discontent and thought about quitting textiles until he met up with and sought the advice of Yutaha Matsuda, who was the creative force behind one of Japans leading textile companies. He knew of Arai's work and believed that combining efforts between designers and cloth producers was the wave of the future.

It was Matsuda who introduced Arai to Issey Miyake and Yohji Yamamoto, he produced knits for both designers in the 1960's and 70's. This was the beginning of a revolution in fashion. The originality of Arai's work startled the fashion world at first and his complex , innovative fabrics dominated designs by Miyake, Yamamoto and Rei Kawakubo at the fashion shows in Japan and Paris.



MOSCHINO AD.
SUMMER '97.

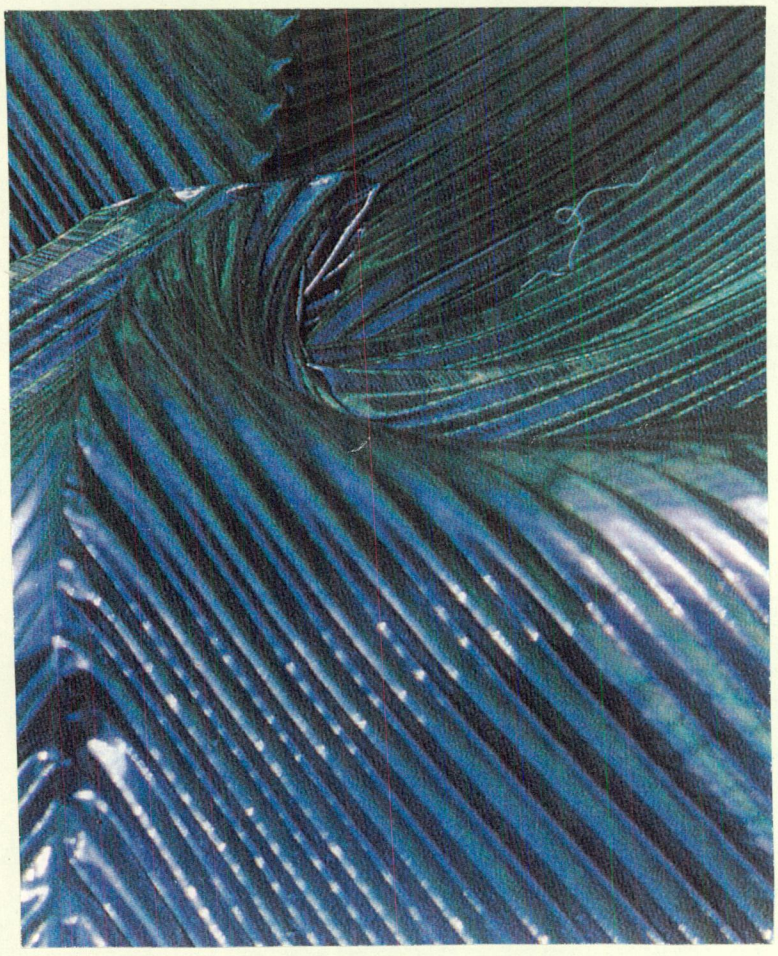
Fig 10.



MICROFIBER;
VACUM EVAPORATION
DYEING.

JUNICHI ARAI

Fig. 11.



ALUMINIUM SLIT YARNS.
HEAT PLEATING
JUNICHI ARAI.
94 - 95

Fig. 12

WOVEN STRIPE
NYLON & POLYESTER
HEAT PLEATING.
JUNICH ARAI, 94-95

Fig. 13.

Print played a large role in Arai's work. He experiments with multiple Xerox collages and computerised scanned images, translating them on to the loom. He produces intricate designs in double and quadruple weaves of layered Jacquards, with completely different patterns on each of the four sides. Prints also appear as heat transfers, arranged and folded on fabric then placed under a heat transfer press. The heat creates both pattern and texture, with synthetic fibres containing thermo plastic properties that allows the fabric to melt and then be moulded. The pleating machine gives yet another dimension to print and texture and highly twisted yarns in nylon are combined with wool and other fabrics to add stretch qualities.

The future of textiles is arguably the crossing over of textile artists, combining weave with print and embroidery, and being multi-talented; knowing how to produce and decorate fabric successfully.

In recent years Japan has proved itself to be the leading country in the textile invention and manufacturing. Consistent investment since the Second World War has given Japan the most sophisticated technological base for manufacture, in the world today. Both traditional and modern craft work has put Japan in a unique position.

It has been the fashion designers that have provided the arena for textile development and innovation. The 1980's saw designers Kawakubo, Yamamoto and Miyake make fashion a cross between craft and technology.

" Design is the link between commerce and innovation "

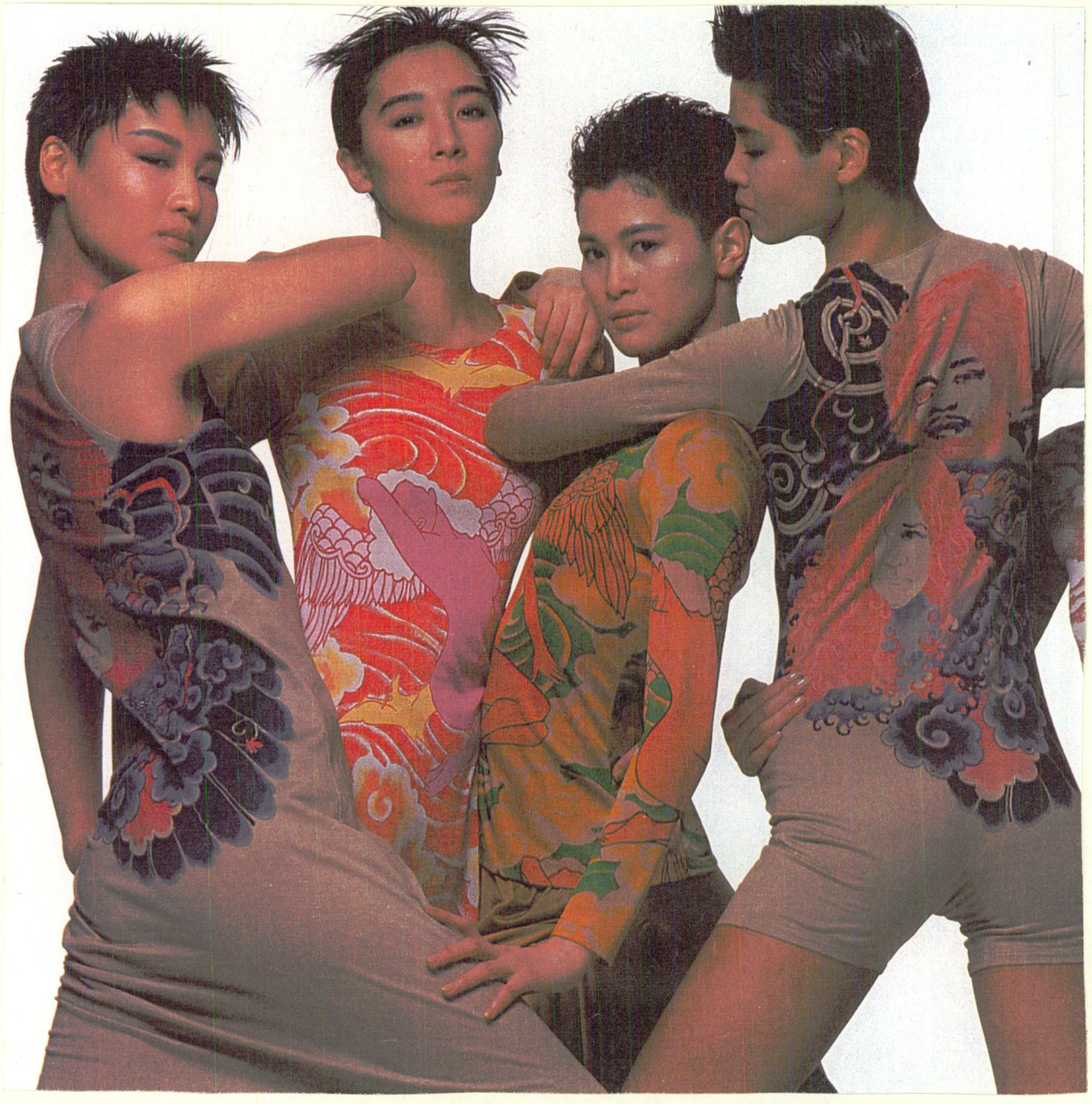
(Issey Miyake, London, 1993)

Since the 1970's Miyakes approach to what fashion can and should be , has had a major influence on the fashion and textile world as a whole. Miyake is a designer and craftsman. He mixes the newest processes with traditional dye methods. Bamboo, rubber, metal, perspex and plastic are a few of the unusual materials Miyake has worked with in the past. He has embraced technology and introduced many new concepts, since he opened his studio in April 1970. He has worked ever since with Makiko Minagawa, textile manipulator and designer.

Miyake introduced the concept of clothing as a 'second skin ' seen in his tattoo tops of the early seventies (Fig 14) (Fig 15) shows clearly where he collected the images. He returned from Europe with a keen interest in the Rock Stars of the 70's and found that this phenomenon was becoming as popular in Japan.

Miyake has gradually moved on to use pleating, mud and indigo dyeing Fig 16 , and sophisticated printing and discharge techniques Fig 17 to create timeless designs. He even went as far as to leave machine knitted fabric in the sun all Summer long to be bleached, very ecologically sound.

British designers began to pick up on the Japanese techniques in the late 80's. By the early 90's British born designer Nigel Atkinson had gone a step further, using industrial printing processes of his own devising to create form. A series of corrugated lines printed in rubber paste along a stretch of fabric creates pleats, Fig 18 and rubber



ISSEY MIYAKE
1970

Fig. 14.

YAZUKA
GANGSTERS
1970 TOKYO

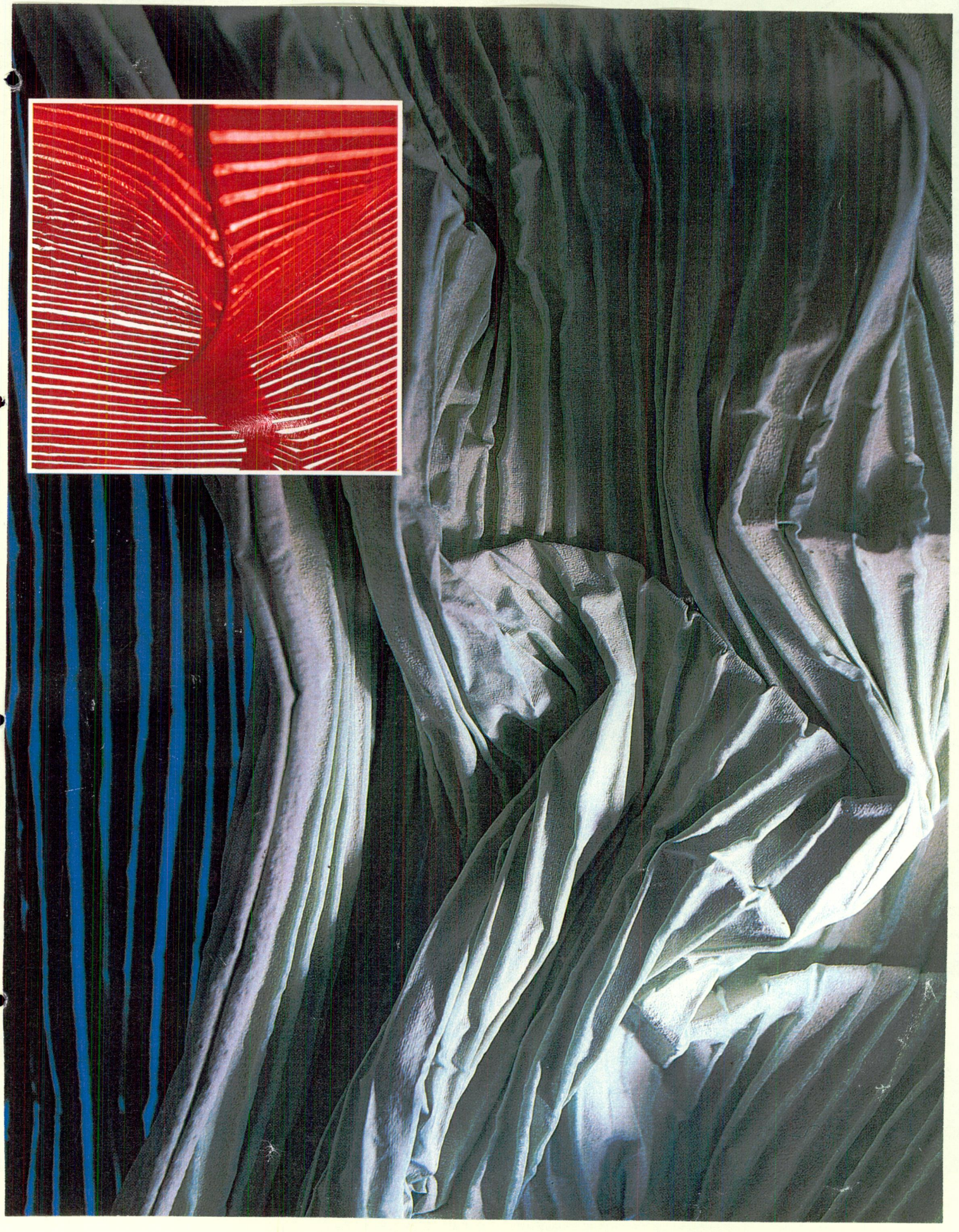
Fig. 15

PLEATS & TWIST
ISSEY MIYAKE
1993.
'MUD DYED'

Fig. 16.

ISSEY MIYAKE

Fig. 17.



NIGEL ATKINSON
RUBBER PRINT
BAKED ON TO SILK
UK 1989.

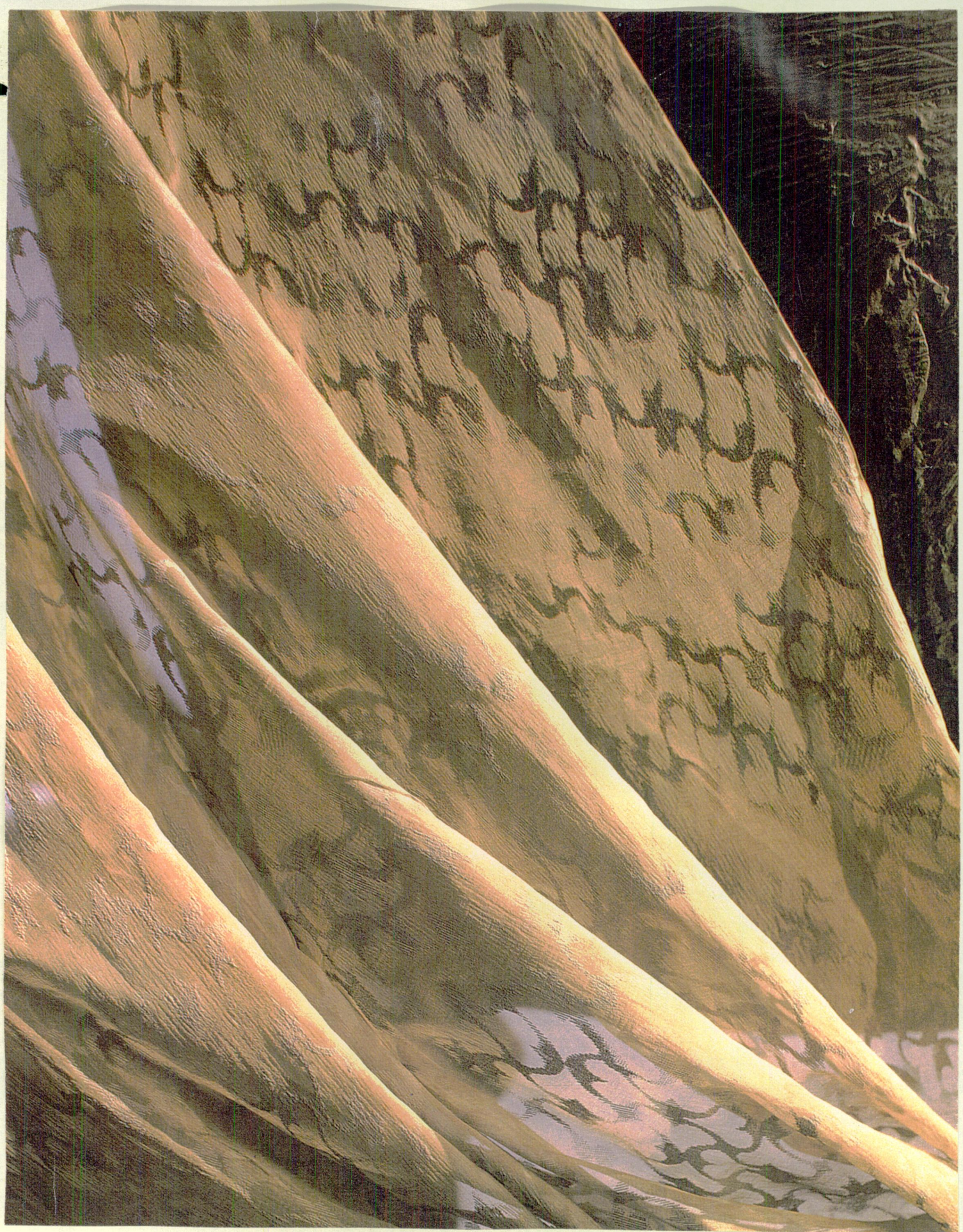
Fig 18.

prints that give fabric a stiffer texture, like creased paper. In each case the fabrics behaviour is altered by the pattern he prints. Atkinson now supplies to Issey Miyake and other fashion designers such as Romeo Gigli and Martine Sitbone. He developed a technique for baking fabrics at a high temperature which moulds the cloth into a permanent shape. This is an industrial process which rapidly achieves effects that would have taken hours to create by hand; another endorsement for industry and technological advances.

The future of Textile Printing and Manipulation seems to lie in the fusion between history, craft and new technology, keeping in mind a sympathetic approach to the environment and social issues.

ISSEY MIYAKE
1994.
(PRINT ON
PLEATED
FABRIC)

Fig 19.



'SMOKEY LACE' - HODGE & SELLERS
RUBBER PRINT ON
CHIFFON
FOR ALAÏA 1989.

Fig. 20

CONCLUSION

The printed textile industry has encountered many problems and changes over the last few centuries. The printing industry started off as a home based craft , but it has now progressed into a multi-million dollar business.

Through out all the changes the industry has remained strong, and I feel that this thesis proves that the most important factor as to why this is, is the combination of technology and, more importantly, good design. This was the primary concern hundreds of years ago when printing was first used as a means of decorating cloth, it remains the number one issue as we near the 21st century.

Socially, there have been problems throughout history, but I feel that the industrial revolution was the main contributor and creator, of issues such as the exploitation of women and children in the workplace, as this was the first time both groups were needed in the world of employment. Issues concerning the status of women and children in the workplace are still the reason for many arguments in the 90's. In the West women are generally treated more fairly than their Eastern counterparts Geographically the problems encountered in the Industrial Revolution have changed but as I mentioned earlier in the thesis women and children in the Far East still work in conditions that endanger their health and safety.

Ecology and the environment came into the equation quite late on. The introduction of machinery into the printed textile industry brought about many environmentally damaging factors, some irreversible. Luckily governments and industry have taken steps in prevention but financial gain still outweighs environmental protection in most cases.

Technology has however brought about amazing aesthetic properties to fabric and as a future textile designer I cannot ignore the new techniques and processes but can be more sympathetic with environmental groups and their objectives.

APPENDICES

Appendix 1.

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