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The Influences of Traditional Culture on the Design and Manufacture of Products in Japan since 1950.

by

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Submitted to the Faculty of History of Art & Design and Complementary Studies
in Candidacy for the Degree of Bachelor of Design
1998

Acknowledgements

I would like to thank my tutor Dr Paul Caffrey for his guidance and advice during the research of this thesis.

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Introduction

Japan has risen from the ashes of World War II to become one of the world's most powerful economic nations. The key to this remarkable achievement is the success of Japanese products on the world market. This thesis sets out to show how the ability to design and manufacture high quality products, which have a universal appeal, owes much to the Japanese way of thinking, which has evolved over centuries, and to the philosophies and values of traditional Japan.

While every nation retains some of its tradition, Japan has managed to keep its heritage virtually intact for a number of reasons. Firstly, Japan is an island nation, which has never been invaded, and therefore its cultural traditions have not been diluted by other cultures. Furthermore it consists of a homogenous society, without ethnic minorities. In such conditions a strong cultural heritage can develop and flourish without interruption.

Secondly, Japan's introduction to Western civilisation in 1853, came after 250 years of isolation, a time period during which no outsider was allowed into the country and no native allowed out. During this period of seclusion art and culture flourished, resulting in the introduction of new art forms and in the strong reinforcement of existing values and beliefs. When introduced, Western technical superiority greatly interested the Japanese, but the adoption of these foreign ways was not to compromise their culture in any way due to its recent reinforcement. It

was the Japanese inherent willingness to accept dualism, the co-existence of contradicting ideas and values which is evident in everyday Japanese life, which facilitated the co-existence of both contrasting influences. Finally, the fact that the Japanese industrial revolution passed in a few short years meant that the risk of severing any ties with the past was minimised.

The Japanese acceptance of the importance of traditional values as well as the importance of technological progress, has led to the evolution of an approach to design which embraces the utilisation of state of the art technology, while having no reservations about borrowing from the past. This drawing from the past can be a conscious process, whereby a direct reference is made in a design, to styles and ideas of the past, or a subconscious process whereby the traditional influence comes from every day exposure to traditional objects and ritual, or from an intuitive continuation of a traditional design approach, which has been passed down through the centuries.

This thesis investigates the impact of traditional philosophies and values on post-war products by examining the influence of these values on traditional artefacts, and by comparing such artefacts with modern products, drawing conclusions from similarities between the two. In some cases, it also investigates the direct impact of Japanese culture on modern products and on design processes and manufacture. While it focuses mainly on the traditional influences and the aspects of the Japanese culture, which have contributed positively to the design and

manufacture of objects and in turn to the nations economic success in the wake of the devastation of World War II, it also deals with some of the negative effects of these influences on Japanese product design.

While many books have been written on the vast subject of Japanese design, surprisingly few authors have dealt with the topic of traditional influence on Japanese products in much depth, and it has not been investigated alone and in detail in any one volume. The book which deals with the subject matter most comprehensively is *Contemporary Japanese Design* (Evans, 1991). The author attributes the country's economic success to the quality of Japanese design, and also looks at the Japanese ability to learn from others while maintaining a respect for their own culture. By dealing with designed objects from the past and the present, Evans traces current characteristics of Japanese design culture back to their roots. In general the book illustrates the fact, that "contemporary Japanese design is a fascinating amalgam of a deeply felt tradition and a conscious attempt to build for the future" (Evans, 1991, p. 9). However, since her book does not exclusively deal with traditional influences, some of these influences are looked at in less detail than others. For example, the *mono no aware* concept is mentioned as being the key to understanding Japan's success worldwide, however, it is not identified in any traditional craft object, nor is it related to a contemporary product.

Penny Sparke also deals with the topic of traditional influence on Japanese products in her book *Japanese Design* (Sparke, 1987), and

highlights the Japanese approach to design, which has led to high-quality, technically sophisticated and visually appealing products. Like Evans, Sparke links this approach to design to the past by investigating traditional values and concepts, which the Japanese have held on to for centuries. Sparke also focuses on the conscious efforts that have been made since 1945 to evolve a national design movement, which takes into account Japan's rich cultural heritage. However, similarly to Evans, traditional influences are not the sole concern of this text, only a limited number of these influences are taken into account and they are not dealt with in great detail.

Japanese Design – A Survey Since 1950 (Hiesinger & Fischer, 1994) is a study of Japanese design since the World War II and demonstrates the unmistakable characteristics of Japanese design through 250 images of products from 1950 to 1994. These products have been chosen for being distinctly Japanese, therefore making the identification of their traditional origins easier, which was very valuable to the research of this thesis. The book also contains nineteen essays dealing with various aspects of Japanese design, such as government involvement, marketing and Japanese design history. While traditional influences are not focused on in particular in any of these essays, the Japanese post-war policy of imitation and the traditional tendency of the Japanese to borrow from other cultures, are examined in detail.

Buddhist philosophies are the foundation of the Japanese culture, and an understanding of these philosophies is necessary to investigate

the impact of tradition on post-war consumer product design. *The Unknown Craftsman* (Yanagi, 1989) is a detailed discussion of the traditional principles and philosophies, mainly Buddhist, in Japanese crafts. These philosophies apply to the design and creation of objects, and are therefore relevant also to product design today.

Finally, *Japan Design* (Dietz & Mönninger, 1992) takes a look at contemporary Japanese product design and begins with a lengthy introduction by Mönninger, in which he raises some interesting points. In particular he suggests, that traditional elements are often retained in products in a very transformed way. Mönninger also takes an interesting view on the Japanese way of thinking with regard to multifunctionality, and on the fundamental differences between Eastern and Western minds with regard to the perception of form and space. Finally he considers, how these factors may lead to a very different design approach.

As can be seen, each book only partially investigates this topic, while none gives a consistent and fully comprehensive examination of the traditional influences on Japanese products.

Chapter 1 – Adoption, Adaptation and Imitation

Throughout their history, the Japanese have displayed a great talent for learning and adapting from outside sources without sacrificing their own traditions and beliefs. Buddhism, which was introduced into Japan from China in the sixth century, was merely grafted onto the indigenous Japanese religion, Shinto, rather than totally replacing it. To this day most Japanese people consider themselves to be both Buddhist and Shintoist. This encounter with what was perceived as a superior civilisation, led the Japanese to add not only Buddhism, but also Chinese dress, city planning and the Chinese system of writing, into their existing culture (Fischer, 1994, p. 8).

As well as having a talent for learning and adapting from outside sources, the Japanese also have an ability to adapt themselves to any given situation. In 1853, Commodore Perry forced open Japan's trade barriers with the United States and Europe, after 250 years of isolation under the military leaders, the Shoguns (Evans, 1991, p. 22). The Japanese strongly resisted this change until 1867 when the last Shogun was overthrown. It was at this point that the Japanese recognised the fact, that they were facing overwhelming odds and would have to accept, that their only alternative was to open the country for trade. The ascension to the throne of Prince Meiji in 1868 marked the beginning of the period of "civilisation and enlightenment" (Katzumie, 1980, p. 7).

In a situation such as this, where the Japanese find themselves facing a situation which is out of their control, they use a phrase, *Shigata ga nai*, which can be translated in two ways: 'It cannot be helped' or: 'An act of God' (Evans, 1991, p. 24). This sort of pragmatic approach to situations allows the Japanese to completely change direction and redesign themselves. In this case Japan fell back on the lessons of their own history and began to "emulate what was perceived as superior models to become equals, without discarding existing strengths" (Fischer, 1995, p. 8). As had happened with the Chinese, Western civilisation became the blueprint for Japan. The Japanese talent for learning from the experience of others and of absorbing knowledge from foreign cultures became more pronounced at this time than ever before. The Charter Oath of 1868 was implemented, which stated, that "knowledge shall be sought throughout the world, so as to strengthen the foundation of imperial rule." (Fischer, 1995, p. 8).

Japan's industrial revolution had begun, fuelled by the knowledge, skills, technologies and equipment of the West. The *Kobusho,* the Japanese Ministry of Works, was empowered by the government to buy such equipment and technologies and to hire Western advisors for their expertise in certain areas. It also funded numerous expeditions abroad in search of knowledge. The most famous Japanese delegation of the time to be sent abroad was the Iwakura mission of 1871, consisting of one hundred officials, translators, technical experts and students. The delegation visited both Europe, including England's linen industries and

Glasgow's ship building yards, and America returning in 1873 with a comprehensive report on foreign industry which was to become the model for the new Japan (Fischer, 1994 p. 8).

Japan as an industrial nation expanded rapidly. The Japanese ability to imitate products of Western manufacturers and undercut their prices, meant that by the turn of the century exports to the West had increased dramatically as had their home market and the South-East-Asian market. Inevitably Japan became a threat to the US and European manufacturers. Complaints and protests increased against Japanese imitation and even impersonation of Western goods. Protectionist quotas and tariffs were placed on Japan's exports, and as the world-wide recession of the 1920s worsened, Japan was effectively barred from competing in certain markets (Evans, 1991, p. 68). The resulting disillusionment of the Japanese with the West, and the feeling that their ambition of becoming a new world power was being undermined by Western nations, combined with a sense of nationalism and pride in the country's technically advanced military, led eventually to the invasion of Pearl Harbour in 1941, which brought World War II to the Pacific.

On 15 August 1945, Japan under Emperor Hirohito surrendered to the United States. The country was in ruins, two million Japanese soldiers and 600,000 civilians, including 160,000 in two atomic bomb attacks, had lost their lives (Evans, 1991 p. 34). Factories and cities had been destroyed and the population was starving and demoralised. The country was occupied for the first time in their history by a foreign power,

and as had happened one hundred years before, the Japanese showed resistance to change until they eventually recognised the overwhelming odds against them. Immediately with this realisation the *Shigata ga nai*, or Act-of-God mentality was adopted, and Japan prepared for the future by deciding to learn as much as possible as quickly as possible from their occupants. The "Export-or-Die Campaign" (Evans, 1991, p. 37), was orchestrated to rebuild Japan's industries using Western technology to create products for Western markets.

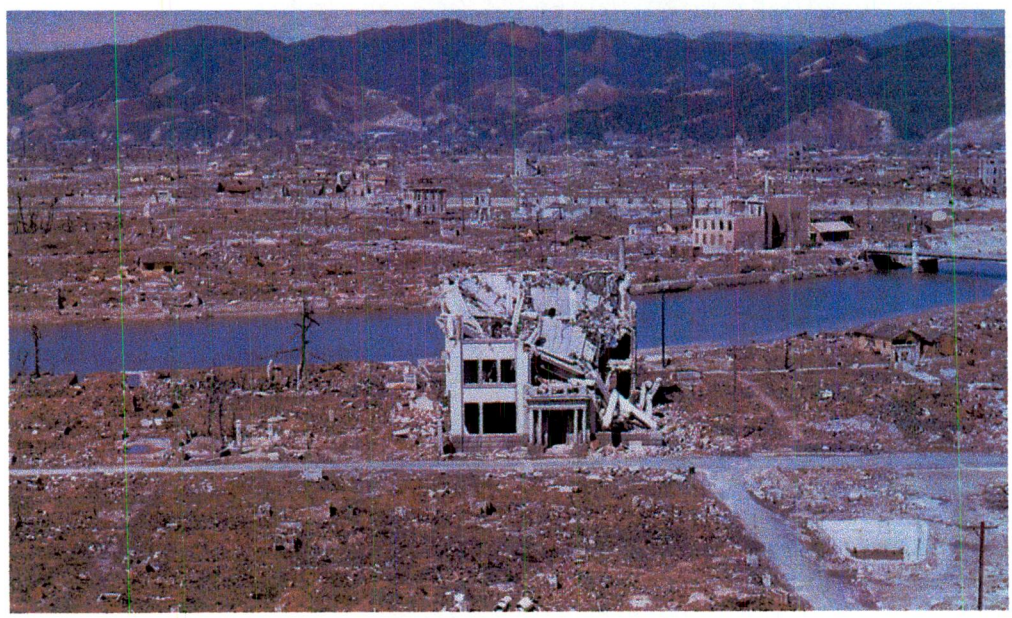

Fig. 1. A view of the devastated Hiroshima in 1946.

During their occupation of Japan, which lasted up until 1952, the United States granted two billion dollars of relief money, and also offered guidance and expertise with the aim to rebuild Japan's industrial base. They provided new technology, machinery and manufacturing technology developed in the West, they trained managers and engineers and suggested more productive methods of personnel management and

quality control (Sparke, 1987, pp 34-36). The Japanese were desperate to succeed and took all the Americans offered. In line with Shintoist tradition the Japanese looked on the victors as role models and everything associated with America was revered and considered worth following. This, combined with the fact that the Western market was now more accessible were fundamental factors in the countries rapid recovery.

Japanese products of the pre-war era, which imitated Western models, were usually of low standard. By 1945, when Japan was attempting to recover from the World War II, the label 'Made in Japan' was still associated with cheap and poorly manufactured goods. This prompted Japanese manufacturers to aim for the production quality of goods manufactured in the US and Europe, and by the late 1940s they were beginning to succeed in their aim. By drawing on their experience and skill in producing precision instruments, which they had obtained during the World War II, and on the technology and manufacturing methods adopted from the US, Japanese industry now had the capability to successfully mimic the design and match the quality of foreign products.

In 1949 the government set up the Ministry of International Trade and Industry, or MITI, to guide Japanese business and industry with the aim of promoting exports and building a home market. The foreign branch of MITI, the Japan Export Trade Research Organisation, or JETRO, established in 1951, supported in particular the area of high

value specialist goods for export, including mainly automobiles, motorbikes, cameras, household electrical and electronic products (Hiesinger, 1994, p14).

The area of camera development in particular, is a typical example of the Japanese tendency towards imitating foreign manufacturers. Their success in the area was mainly due to the expertise in precision instruments, which they had acquired during the war, and which allowed them to successfully imitate the top camera manufacturers in the world, the Germans. While Nikon cameras were based on Contax cameras (fig. 2), Canon imitated Leica (fig. 3), and Zenza-Bronika copied Hasselblad (Habara, 1995, p. 30). The Japanese imitated every detail right down to the position and style of the manufacturers nameplate.

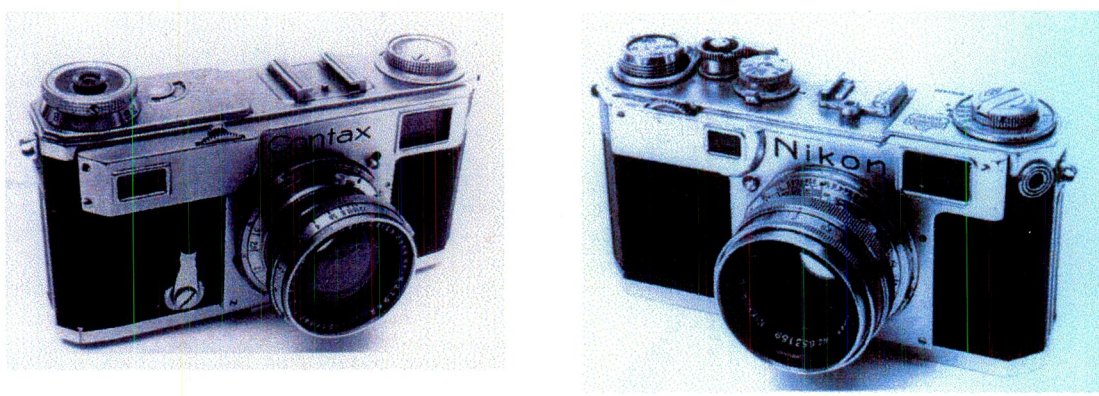

Fig. 2. Contax camera on *left*, with its Japanese copy by Nikon from 1954 on *right*.

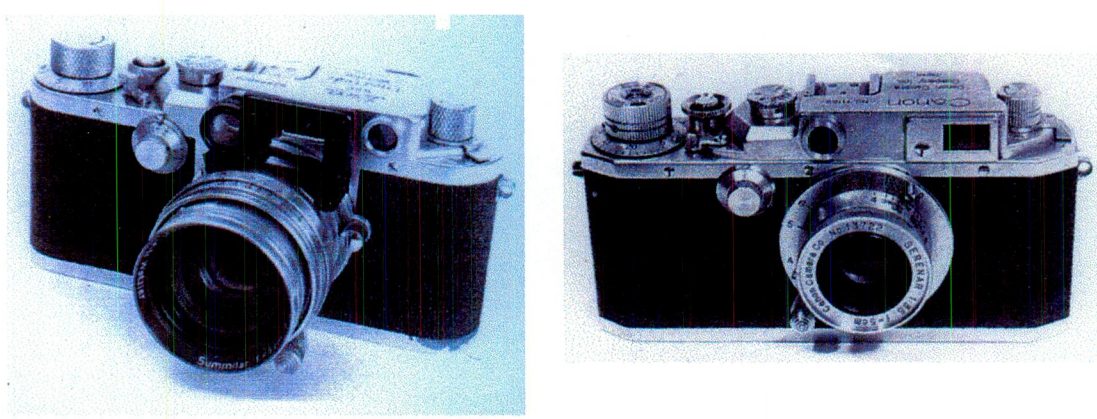

Fig. 3. Leica camera on *left* with its Japanese copy by Canon from 1952 on *right*.

Between 1947 and 1954 camera exports had increased by an amazing 650 fold (Hiesinger, 1994, p. 14). By 1957, cameras were earning Japanese designers new respect from abroad as the quality of some products surpassed the models they were based on. This also built up world-wide consumer confidence in Japanese products during these uncertain times. This period between 1945 and the mid-1950s remains unforgotten as a time when Japan was the world's greatest copy-cat of not only European products, such as cameras, but also of a wide range of American products.

Although the result of this plagiarism had very positive effects on the countries economy, the absence of any need for original thinking and the resulting emphasis on production quality over the quality of the product's design may have had negative effects on Japanese product design in general and could be a factor in the flood of highly functional but uninspired, banal products which are being produced in Japan to this day. For every fresh and exiting Japanese product available there is a huge amount of unexciting indistinguishable products. The Japanese could be described as victims of their own success, developing far too many products far too quickly, however in recent years many Japanese companies have identified the need to develop fewer, better, more enduring products to satisfy consumers for which high functional quality is no longer enough.

The increased volume of Japanese exports became a matter of concern to both Europe and the US. The fact that Japan was beginning to threaten the US market is ironic, as it was the Americans who supplied the technology, manufacturing skills, guidance and funding, mentioned previously, which sowed the seeds of this threat. The situation was similar to what had happened after the industrial revolution, whereby Japan based itself on the American model and became a threat to the Western nations, which led to their ban from international trade in the 1920s. In fact the situation was so similar that it begs the question, why did the US assist Japan to such a degree, when its past record is taken into account? It is very probable, that the US were eager to rebuild Japan in its image because they considered it important to have a democratic ally in that part of the world. Another possible reason is, that the US probably could not imagine the world power they were unleashing by offering extensive assistance to a country, which was as devastated by war as Japan. It also should be considered, if perhaps the US government felt responsible for the terrible destruction the dropping of the two atomic bombs had caused, and felt obliged to atone for their actions under diplomatic pressure from abroad.

As was to be expected, the Japanese yet again came under attack from Western commentators as having a complete lack of self-confidence and a dependence on imitation of foreign products in this initial post-war period. However, we must keep in mind the Japanese culture and the prevalent economic circumstances.

In the years immediately after the war, the Japanese temporarily cut ties with the past, in particular with the nationalistic pride, which had led to their militant aggression. The disassociation from the past was felt to be necessary so that they could focus on the future, and this combined with the advancement of technology world-wide, meant that they would have had to design objects through a new visual and technological language, which had no aesthetic precedent in Japan. Since the design profession had not yet developed in Japan yet at this point, nobody was qualified enough to take on such a big task, and imitation was the easiest way out. In addition, economic conditions made export a priority, and using the existing stylistic solutions of a given country in order to export products successfully to that country was a very practical step. While these reasons may explain the Japanese perspective, they do little to change the Western attitude to the practice of piracy.

The dependence on Western styling of Japanese products decreased in the late 1950s, as the government was forced to change its policy on imitating competitors in the face of complaint from the West, mainly stemming from the United States. However, the Europeans were also beginning to feel increasingly irritated, such as a Swedish company, which refused a Japanese designer a visit to their factory in 1958. When he asked to know the reason for the refusal, he was shown, to his embarrassment, thirty Swedish products alongside their nearly identical Japanese copies (Hiesinger, 1994, p. 14).

In 1957 the Ministry of International Trade and Industry, commonly known as MITI, introduced the Good Design Selection System or G-Mark in an attempt to counter Japans piracy problems and to encourage originality and innovation. In 1958 MITI set up the design section in the international trade bureau and made amendment to the design law of 1921, resulting in the requirement of a statement of originality in copyright applications (Hiesinger, 1994, p. 14). These developments coincided with the strengthening of Japan's economy, which meant that with a more confident approach and new restrictions, Japan's dependence on imitation began to vanish. The first awareness of the need to echo the industrial revolution with a respective development in design arose in the 1950s and first expressed itself in the setting up of Japan's main design schools between 1950-55. Consequently designers, consultant or in-house, were not employed by Japanese manufacturers until the mid to late 1950s, with Sony being the first to employ a full-time designer in 1954 (Sparke, 1987, p. 44)

The fact, that imitation was at its peak prior to the employment of these designers, was no coincidence. Japanese manufacturers up until this had used Western designers through the imitation of their products. The resurgence of a traditional aesthetic based on attention to detail, miniaturisation and portability was principally due to the employment of Japanese designers, and this can be seen in companies such as Sony, the first Japanese employer of designers, where the earliest development

away from Western models can be detected. In a search for answers to new problems, the designers looked towards time-honoured solutions.

To the relief of Western manufacturers the Japanese practice of piracy decreased. However, from the Japanese perspective there was never any question about the practise of imitation being in any way immoral or unethical. Traditionally, the Japanese do not feel the same pride in the creation of original work as is the case in the West, nor do they experience the same degree of satisfaction from such work as a Western designer would. In addition the Japanese do not bestow the same acclaim on their designers. There is no 'Philippe Starck' in Japan, a country where excessive individualism is frowned upon. The Japanese value learning above creativity. This is not to say that they don't have an appreciation for creativity, but rather that throughout history they have continuously borrowed and learnt from others and therefore place more importance on gathering existing knowledge than on originality.

The Japanese display an instinctive ability to identify and exploit potential. This may be viewed as a more subtle form of imitation. In 1952 Masaru Ibuka of Sony visited the Bell laboratories in the United States, and immediately recognised the commercial potential of transistor technology, a technology which the American company had been using only in hearing aids. The following year MITI granted Sony permission to spend part of Japan's limited foreign exchange, to be exact $25,000, on acquiring the rights to develop transistor technology (Evans, 1991, p. 40). Transistors were then used by Sony in such innovative products as the

transistorised portable television of 1959 (fig. 4), and in transistorised radios which are dealt with in detail in the next chapter.

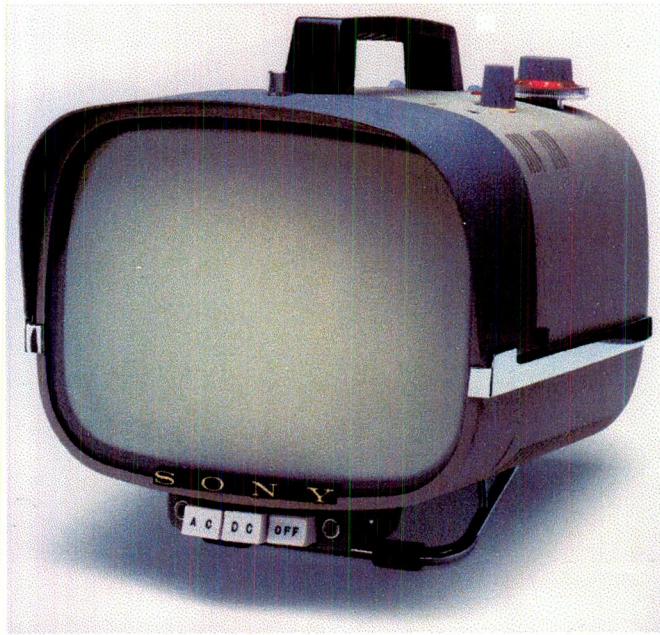

Fig. 4. Sony transistorised television, 1959.

Similarly, in the early 1950s, Hitachi's chairman Taizo Ishigaki returned from a visit to General Electric with an early silicone chip, a piece of technology, which was to revolutionise product design as it was the building block on which electronic products are based. On arrival back to Hitachi headquarters, Ishigaki is quoted saying: "This little thing is going to revolutionise our company and all of Japanese business" (Sparke, 1987, p. 117). It was of course many years until this prediction was realised in product form, but Ishigaki's foresight clearly illustrates the Japanese ability to recognise and exploit potential.

From the 1950s onwards Japan's need to copy others faded. However, their pragmatism and ability to adapt to situations, which is still

integral to their success, became apparent during difficult times. Although by 1967 Japan's economy had overtaken those of Britain and of West Germany, their economy was still quite vulnerable due to their lack of raw materials and fuels (Evans, 1991, p. 40). The oil crisis of the early 1970s, therefore came as a severe shock. The swift reaction of the government in rationing oil supplies to protect vital industries, in sourcing new suppliers and in the exploration of alternative energy sources, relieved the situation considerably. The emphasis on producing smaller products was increased to reduce transport costs, which was to have long term benefits, as did their development of fuel efficient cars which was eventually to kill off the American ' Gas Guzzler '.

The way in which the oil crisis was dealt with, is a good example of the Japanese ability to respond to an unfavourable situation and to capitalise on it. This adaptability combined with a talent to adopt ideas and knowledge, without sacrificing existing strengths, are qualities which are central to Japan's success, which was so immense that Western manufacturers now tend to imitate the forms and functions of Japanese goods.

Chapter 2 – Miniaturisation

Miniaturisation is one of the main reasons for the success of Japanese electrical and electronic products on the world market. Japan has become synonymous with miniaturisation and since the 1950s we have witnessed the constant reduction in scale of products such as televisions, radios, calculators, video cameras and computers, which are just a few in a vast range of Japanese products, which have swept the board due to the world-wide appeal of and fascination with miniaturisation.

There are a number of practical reasons why the Japanese lead the world in product miniaturisation, one of which is the fact that its development was accelerated by a post war government policy. This policy was introduced to support the production of small-scale high-value goods, because the manufacture of such products would require less raw materials, Japan having very few natural resources, and it would also reduce shipping costs (Evans, 1991, p. 162). The emphasis on the high value of these products resulted in more revenue for a lower volume of products sold.

Another reason was, that as the Japanese economy strengthened, a consumer society began to develop, which increased the need for more compact and space efficient products, as Japanese homes were too small to accommodate the huge influx of consumer products.

While these practical reasons are very relevant, we must also consider the fundamental effect Japanese traditional and cultural fascination with miniaturisation has had on the design of small-scale products.

As previously mentioned the Japanese organisation MITI discouraged imitation and introduced the G-Mark, as product designers and manufacturers gained confidence in their abilities and pride in their rich cultural heritage, their products borrowed more and more from tradition. Small-scale goods were now being designed and manufactured as a result of traditional influence rather than being modelled on small foreign products for purely practical reasons. As discussed in the previous chapter, their products moved away from Western models and the designers fell back on time-honoured solutions to problems. The new Japanese products soon became superior in quality and innovation to Western products, and miniaturisation was central to this move away from imitating the West.

As already stated, Sony bought the rights of transistor technology in 1953 from the Bell laboratories in the USA, with the help of MITI (Evans, 1991, p. 40). They saw the potential in this technology for decreasing the size of their products, a potential no other nation had been interested in. A major part of the realisation of the role this technology could play in product development is largely due to the traditional Japanese awareness and appreciation of things miniature.

Using this technology Sony produced the world's first transistor radio, Sony TR 55 in 1955 (fig. 5). The styling, which still owed a lot to the contemporary American style, in its grille adopted from the automotive industry, was the first product exported by the company and the first appearance of the name Sony. The name choice itself is significant, as it is a combination of the Latin word *Sonus*, which means sound, and the American-English word Sonny, which suggests the image of a lively young boy, as well as the image of an energetic new company (Hiesinger, 1994, p. 58). The use of the 'Sonny'-image, which has connotations of being cute and of reduced scale, displays the Japanese appreciation of such qualities from a spiritual point of view, which is central to the traditional Japanese fascination with miniaturisation, rather than from a practical view point.

Fig. 5. Sony's TR 55 transistor radio, 1955.

The quest for excellence through miniaturisation was only beginning at this point for Sony. By 1958, a pocket-sized transistor radio, again a world-first, the TR 610 (fig. 6), was introduced. Its space-efficient design and ease of use and portability made it an instant success both in Japan and overseas.

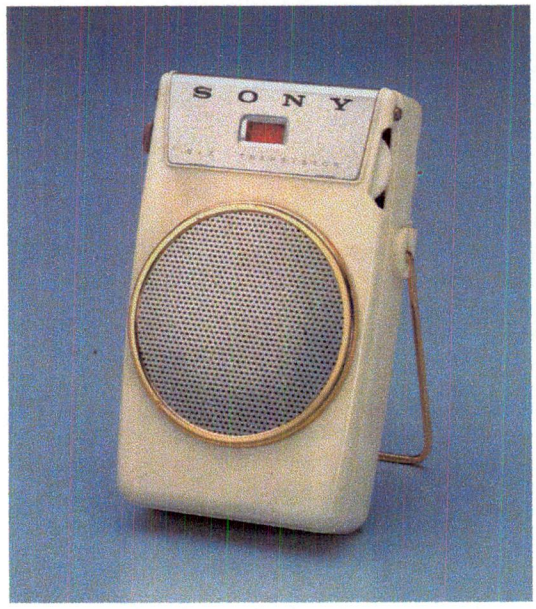

Fig. 6. Sony TR 6100 pocket transistor radio, 1958.

Sony were not the first to pursue excellence and express beauty through scale reduction. The Japanese have always been closely associated with miniaturisation. The Zen-Buddhist philosophy maintains a belief in the principle of 'small but powerful' and it is no coincidence that many of the Japanese art forms are small in scale and intricately detailed. The most famous of these traditional art forms is *Bonsai* (fig. 7). *Bonsai* and *Bonzeki* landscapes are the creation of nature in miniature by the careful pruning of trees, which requires a great attention to detail and is

an example of the Japanese devotion to the achievement of beauty and excellence in small scale objects.

Fig. 7. Bonsai tree.

Functional examples of the creation of small-scale forms of great intricacy are *Inro* and *Netsuke*. The *Inro* (fig. 8), is a small wooden purse made up of three, four or five horizontally divided compartments with interlocking basis. *Inro,* used for carrying money, tobacco or medicine, are highly decorative personal objects.

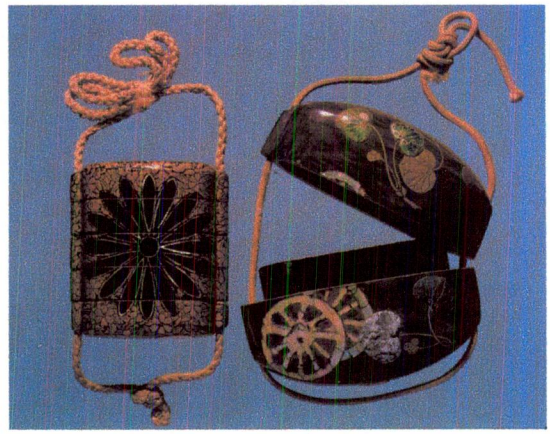

Fig. 8. *Inro*: Wooden Purses, eighteenth century.

Inro are held together by two cords, running up either side, which were tightened by the *Netsuke*. These are carved toggles (fig. 9), which usually represent human, animal or plant form in magnificent detail. To the craftsman the creation of a small yet beautifully detailed object, which exhibited the skill of his workmanship was a high achievement and an example of the Japanese craftsman's pursuit of excellence through miniaturisation seen again in the Sony's products of the 1950s.

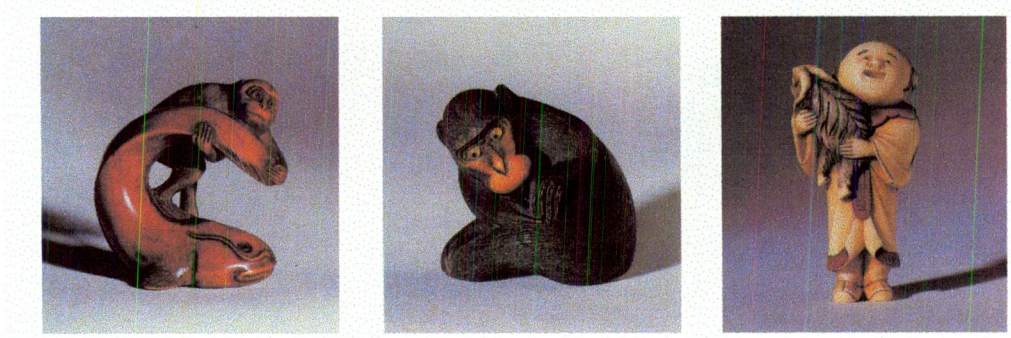

Fig. 9. Delicately carved *Netsuke* toggles, nineteenth century.

The desire of the modern Japanese designer to reduce the scale of electronic products, while increasing their function, is a direct legacy of these traditional art forms. Advances in technology have allowed

designers to fulfil their desire to create these products. The Japanese inclination has its origins in traditional practicality, as opposed to modern practical requirements. The Japanese have a tradition of creating portable, space-efficient artefacts. This was traditionally achieved, by creating small lightweight objects, or by making the objects stackable or foldable.

One reason for the emphasis on small craft-based artefacts was so that the Japanese merchants, which during the *Edo* period were the only free travellers, could carry large quantities of merchandise from place to place. This practical solution was also adopted in the post-war years and again during the oil crisis, to keep shipment costs to a minimum.

The lack of raw materials in Japan's period of isolation, the *Edo* period, also meant that the artefact scale was kept to a minimum. This pragmatic approach came to light again, in the post-war years for the same reason.

Appreciation of space-saving design in Japan stems from a traditional way of life, which is highly regulated. The Japanese tea ceremony is an example of a Japanese tradition, which is governed by time-honoured protocol. It takes three years to master the movements of *Chanoyo*, or tea ceremony. It has evolved into a ritual art, where attention to detail is of the utmost importance. The fact, that this ritual takes place on a regulated area (fig. 10), the *Tatami* mat, and that there

are a set amount of utensils, means that the efficient use of the space available is imperative. When we consider that the *Chanoyo* is enacted for the simple act of tea drinking, one can imagine the effort required for a formal meal accompanied by *Sake*. In this ritual, which is also still performed in Japan, the presentation of food is very important, and when one considers that each individual has his or her own set of condiments, where even communal sauces would breach protocol, one realises the attention to space and efficiency, which is required.

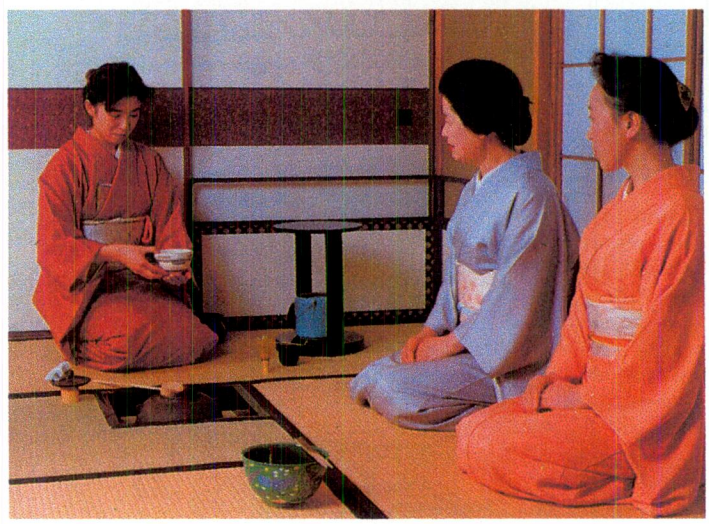

Fig. 10. Tea ceremony being performed on *Tatami* mats.

Perhaps the best example of portability and space efficiency in the Japanese cuisine are the traditional picnic boxes (fig. 11). These layered picnic boxes were an immensely practical solution to the problem of storing and carrying food. They used a stacking system to reduce the area occupied by the food and to allow for portability. Stacked food boxes also acted as insulators for each other, resulting in an attractive, simple and very functional package. The units themselves were held

together in a frame called a *Sageju*, which also acted as a handle (Evans, 1991, p. 151).

Fig. 11. Traditional Japanese picnic box, nineteenth century.

This stacking system can be seen coming through in modern Japanese products. The development of the tower format for the hi-fi system was a Japanese response to the modern need for space conservation today which was influenced by a tradition of vertical stacking. An example of this can be seen in the hi-fi system, designed by Onkyo in 1983, (fig. 12). This hi-fi comprises of front loaded units, which are stackable in modular strata. A number of Japanese companies have taken this concept even further, integrating functions such as sound systems, televisions, video recorders, personal computers, word-processors, fax machines and telephones all in one technically advanced tower unit.

Fig. 12. Hi-fi system by Onkyo, 1983.

Products such as the lap top computer and the personal organiser reduce their dimension by folding. The practice of folding to save space dates back to Japanese tradition and is seen today in *Byobu*, the multi-panel Japanese screen. The folding Japanese fan (fig. 13), is an early example of a folding design for portability. Many pocket sized Japanese electronic products of today, utilise the folding solution, for example Sharp's pocket personal organiser (fig. 14). It may seem like a bold step to directly relate this personal organiser to the traditional fan, or to the art of paper-folding, but one should consider, that the Japanese mind is much more alert to these possibilities, due to a long tradition of folding as a space-saving measure, than the Western mind.

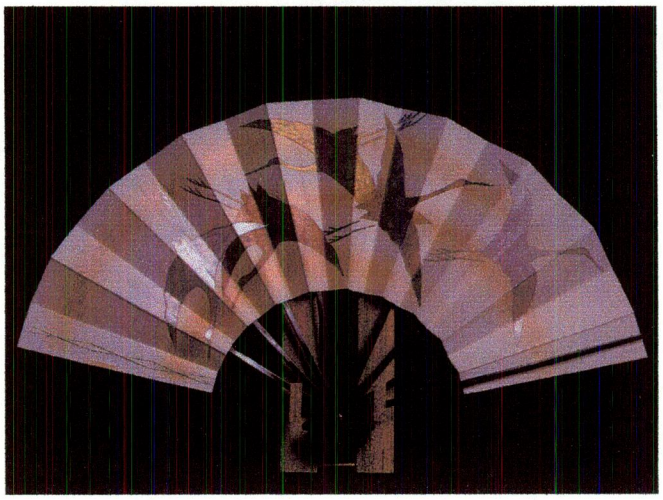

Fig. 13. Traditional Japanese folding fan.

Fig. 14. Sharp personal organiser, 1992.

Japanese views on personal space and privacy have also contributed to the development of small scale products. In the urban home, territoriality along Western lines does not exist. The internal space is considered both neutral and communal. The desire for privacy is considered unhealthy, and those who wish to be alone, considered *Wagamama*, or self-centred. This communality, forced on the individual both by traditional values and believes and the lack of privacy and

personal space in the hustle and bustle of everyday life in a crowded environment, has opened the door of opportunity to designers. The desire for privacy and self-determination is no less present in the Japanese mind, than in the Western mind. Therefore personal belongings become a means of fulfilling these desires. These practical and social limitations to defining individuality and private space have led to a huge increase in the range of personalised goods.

This view of products as a means to escape the communal and crowded nature of Japanese society was no doubt evident in the development of the Sony pocket transistor, (fig. 6), and in the Sony Walkman. The ability to listen to a pre-selected piece of music while going about one's everyday activities creates a sense of privacy and space, and also introduces the element of choice and personal preference, which is absent in communal life. The Sony Walkman is also a distinctly Japanese design, because it does not impose the user's identity on others. In the West the introduction of the ghetto-blaster shows a sharp contrast in this area, where the sound machine subjects all within earshot to the user's personal preference. Only in Japan could a product of such technical advancement, which is sensitive to both the needs of the user and to the needs of the public, have been conceived.

These qualities of fascination with scale reduction and sensitivity towards personal space, opened the gates for a flood of products based on this concept. Products such as the Watchman, a television version of

the Walkman, the Discman, a Compact Disc version of the Walkman and in the Nintendo Game Boy (fig. 15).

Fig. 15. Nintendo Game Boy, 1989.

In the 1960s and early 1970s, the US dominated the development of computer electronics, but American companies, such as IBM concentrated efforts on the production of specialised sophisticated models aimed at the prestigious corporate customers. In 1976, MITI encouraged the top Japanese companies to develop high quality electronic goods, for the household and individual customers (Evans, 1991, p. 162). While the products developed were by no means as powerful or sophisticated as the products of US giants, the approach of targeting the ordinary consumer market was a huge success. This success was made possible by the development of the microchip and began with products such as the pocket calculator, which became a

world-wide symbol of the Japanese miniaturisation of personal electronic products.

The Sharp calculator of 1979 (fig. 16) was the smallest of its day, using Liquid Crystal Display screens, which were smaller than the previously used Light Emitting Diode screens, and is testimony to the technological refinement of such products throughout the 1970s. This model was only one sixteenth of an inch thick, and was replaced in the early 1980s by a model only half as thick.

Fig. 16. Sharp electronic calculator, 1979.

The trend of bringing hi-tech products to the individual continued in the form of personal organisers, pocket computers and was typified in such products as the Nintendo Game Boy, which brought arcade games to the ordinary user and in traditionally business-associated machines as photocopiers. The Plus Corporation's most successful product, the

CopyJack 1986 (Fig. 17), is a thermal press photocopier, which is pocket-sized. Intended for domestic and student use, it is an example of the Japanese adaptation of an existing technology through miniaturisation and sensitivity to the individual, to create a fresh new product.

Fig. 17. CopyJack hand-held photocopier, 1986.

Chapter 3 – Aesthetic Principles

Japan's cultural history is a rich source of aesthetic inspiration for its designers, both directly, by borrowing from the past, and instinctively through an aesthetic consciousness, which has evolved for centuries. Buddhist beauty ideals, traditional philosophies concerning objects, a unique perception of form and space, and a tradition of rich diversity are influences, which have permeated down through the centuries in Japanese culture, and are evident in designed objects, to this day. It is these influences which have kept the national taste more sensitive and more potent than perhaps the national taste of any other country. With regards to electronic consumer products, these traditional values play a big part in the emergence of a distinct Japanese style in product design.

The appealing characteristics of Japanese post-war products, owe a lot to time honoured values associated with the creation of objects. Many of the forms and functions of contemporary electronic products that we accept as standard, have derived from Japan's cultural development.

> Technological and electronic design world wide is Japanese, just as film design world wide derives from Hollywood or luxury goods from French couturiers and jewellers (Dietz & Mönninger, 1992, p. 15).

By examining the traditional concepts pertaining to objects, we can achieve a greater understanding of the countless Japanese objects, which surround us every day.

Buddhist philosophy influences every aspect of Japanese life, and its aesthetic ideals are no exception. Buddhism makes a link between aesthetics and morality, a life of poverty, simplicity and frugality is seen as a means to achieve oneness with nature, spirituality and as an aid to contemplation. Therefore there are rules governing the design of objects used in such a life.

The main aesthetic concepts within Buddhism are *Wabi* and *Sabi* (Yanagi, 1989, p. 123). While these concepts both point in the same direction, they are subtly different. *Wabi* has an emphasis on life and spirituality in relation to nature. It suggests that the irregularity of an object is a means of reflecting the beauty and power of nature, and also states that an object's form should emphasise the properties of the material. *Sabi* is more concerned with the timeless appeal of simple and pure objects and it expresses the view, that an object that functions well, must look good, ideas which are still very relevant in contemporary design.

The traditional tea bowl (fig. 15), is the embodiment of these aesthetic values. Its form is very simple and inconspicuous, yet it is the perfect solution for the function required of it. Its beauty is by virtue of its simplicity. The imperfect form and asymmetry represents the irregularity of nature, while the use natural materials in a pure and unadorned form emphasises the importance of truth to materials. Its decoration, an image of Mount Fuji, is achieved simply, by manipulating the natural behaviour of the glaze during the firing process.

The main legacies of the Buddhist concept *Sabi* for the twentieth century are the Japanese traditional emphasis on austerity and simplicity and on the symbiosis between function and decoration. The latter, led to the Japanese seeing no distinction between the functional and the decorative, or between the artist and the designer. The visual appearance of the object is therefore central to the creative process rather than it being an afterthought. The influence of the *Wabi* concept will be dealt with later in the chapter. The emphasis on visual simplicity can be seen throughout history in numerous disciplines, e.g. architecture graphic design, furniture design and in product design. In the immediate post war years the Japanese struggled to find an appropriate aesthetic for the electrical products which they were producing, and their failure to come to terms with this problem led to the imitation of Western manufacturers, as discussed in the first chapter. Later on, in an effort to make distinctly Japanese products, designers looked to the past for inspiration and concluded that the simple, understated aesthetic was most apt.

The National Radio (fig. 18), designed in 1953 by Zenichi Mano is the first such example (Hiesinger, 1994, p. 54). Its design is based on a palace in Kyoto; the black plastic grid of the left half of the radio echoes the palace's *shitomi,* or wooden shuttering, while the metallic right side is reminiscent of its *shoji,* or sliding door panels.

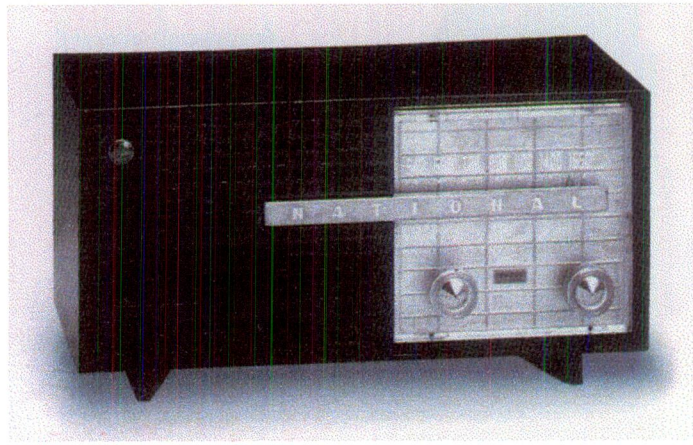

Fig. 18. National Radio, 1953.

This minimal visual appearance was adopted by most manufacturers of electrical products in Japan at the time. Needless to say, not all producers based their designs on traditional architecture, they did however, base them on rational and simple geometric forms.

One explanation as to why this aesthetic was deemed appropriate is that, the geometric and rectilinear forms, which derive from Buddhist principles on purity, simplicity and lack of ostentation, also represent the masculine qualities of order and harmony. The notion of *Yin* and *Yang*, two opposites which together create harmony, which is applied to all aspects of life, is also relevant to the visual appearance of objects. *Yin* is masculine, solid and typified by angular forms. *Yang* is feminine, and typified by circular or curved forms. Serious objects, used for storage of important belongings or food are rectangular, almost as a reassurance of the strength and reliability of the design.

Perhaps in their first attempts to put forth a product, which looked distinctly Japanese, the designers choose a form, which would inspire

confidence and emphasise reliability. This view is supported by the fact that Japanese technological products in recent years, have moved from an angular, masculine form, to a softer more feminine form, at a time when the reliability and functionality are no longer in question, which is a point that will be looked at more closely later in this chapter. It is further supported by the fact that, as the designers gained confidence in their newly found identity they began to introduce more feminine values to the masculine products. The is evident in the Sony TR 55 transistor radio (fig. 5), whose rectangular form is softened by the gentle rounding of edges and the use of large, smooth circular controls.

The importance the Japanese place on the appearance of an object has no doubt had positive effects on the world-wide selling power of their products, but it may also may have lead to a very narrow definition of the role of the industrial designer in Japanese product development. Although industrial design was identified at an early stage as being an important business tool, it was not seen as integral to the product development process. In America in the 1970s the importance of human factors and ergonomics in design was growing due to the influence of research from NASA, and in the U.K. designers were central in solving the functional problems of products (Ohtani, 1997, p. 40). Japanese designers were stylists, whose function it was to quickly re-style or re-vamp products in very short development periods, but who were unable to function in any other way. This contributed to the high rate of manufacture of new products which only developed on one level,

resulted in a lack of development in considerations such as ergonomics and user-friendliness. The Japanese however, are always quick to find their weaknesses and to adapt accordingly, and in recent years designers are becoming increasingly multidisciplinary.

As technology based products became more advanced, two distinct visual directions began to emerge. The first, continued along the theme of simplicity, using understated forms and colours in a sophisticated manner to underline the technological refinement of the product. The second of these directions, resulted in a visual style which became known as high-tech and which became the greatest single influence on the style of technological products world-wide.

High-tech emphasised the technological sophistication of products not through simplification but rather through over complication. The multifunctional hi-fi sound systems, of the seventies and eighties such as the example from 1983 (fig. 12), are typical examples of the high-tech product look. Liquid crystal displays and multi-coloured electro-luminescence, typically seen in graphic equaliser arrays, combined with bold and colourful graphics and the proliferation of knobs and dials, were designed to persuade the consumer that buying this product, meant getting real value for money, and also flattered them by suggesting that a certain level of intelligence was required to understand and operate the device. However, this use of ornamentation did not start as a stylistic experiment, or as a means of cleverly manipulating consumers. New inexpensive production methods meant that electronic products, in

particular hi-fi equipment, were becoming nothing more than sheet metal boxes. Loud graphics and flash gadgetry on the products' facade created a more visually interesting product.

This flamboyant display of garish colours, complicated controls and flickering displays could be mistaken as being contradictory to Japanese traditional aesthetic values, but when one considers that Japan is a country of constant dualisms, (as can be seen for example in the co-existence of Eastern and Western lifestyles), one can hardly be surprised by the co-existence of two contradicting styles. The monochromatic, angular and simple style discussed above is contrasted by a style, which is colourful, flamboyant and diverse.

This tradition of diversity emanated during the *Edo* period, Japans 260 years of seclusion, when resources and energies usually expended in war, were channelled into art and culture. The *Edo* period was one of great innovation and experimentation in the country's cultural history and the ban on contact with the outside world at this time, served to preserve and strengthen all traditional aesthetic rules that had evolved up until then.

A number of flamboyant and enthusiastic art forms were developed during this era of experimentation, the most notable of which were the *kabuki* theatre and *ukiyo-e* wood block prints (fig. 19). The colourful and garish costumes of *kabuki* theatre were the high fashion of their time, and this style was spread throughout the country by the

merchant class. The *Ukiyo-e* wood block prints, often depicting fashionable ladies and gentlemen, were noted for their elaborate ornamentation and vibrancy, and could be compared to modern day fashion magazines in so far as they served to communicate the new style to the masses and were responsible in part for its diffusion into many aspects of Japanese life. In the late twentieth century, this style is visible, in the chaotic neon jungle of the urban environment and of course, in the complex technological look of high-tech products.

Fig. 19. *Ukiyo-e* wood block print entitled 'Foreigners in Yokohama', nineteenth century.

One of the most important legacies of Japanese traditional values concerning the creation of objects is the *mono no aware* concept, which is concerned with imbuing an object with qualities that appeal to the

human heart. Design in Japan has always been seen as an essential part of everyday life, which can enhance the quality of life by fulfilling certain physical, functional requirements, but also by fulfilling more subconscious needs. The traditional tea bowl (fig. 20) exhibits the *mono no aware* concept through the subconscious appeal it has for the user. The tea bowl is a beautiful object to use. Unlike Western cups, it has no handles and is designed to be held in both palms, so that the warmth of its contents can be felt almost by the entire surface area of both hands, creating a more sensual experience. Furthermore the rim of the bowl is thick and rounded, so that drinking from it becomes a soothing experience. The bowl's simple, delicately curved, organic form has a timeless visual appeal (Robinson, 1997).

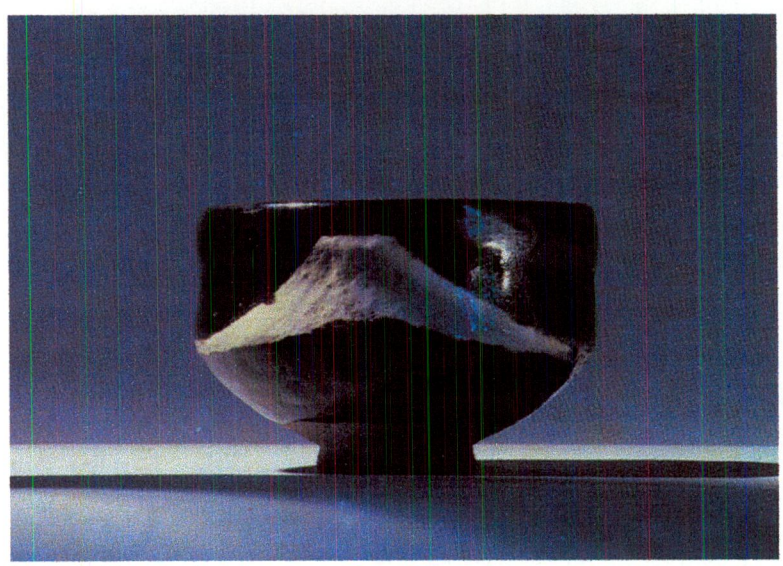

Fig. 20. Japanese tea bowl, eighteenth century.

The *Mono no aware* concept plays an active role in the design process today. This approach to the design of objects is as important today, in the competitive market of consumer electronic products, as

ever. It is one of the reasons for the huge success of Japanese goods in the West. When choosing between products of similar functional and technological sophistication, the consumer will choose the product which appeals to them on a deeper level, or rather, the product which appeals most to their heart. This appeal can be contained in a product in various ways; in the product's visual appearance, which may be beautiful, cute or humorous, in its tactile qualities and even in its auditory qualities.

Fig. 21. Sony Remote Control, 1997.

The Sony RM-V30 television remote control (fig. 21), designed in 1997, is an example of a contemporary product, which embodies the *mono no aware* concept. This particular remote control, is almost egg-shaped and is designed to fit snugly in the palm of the hand, making it, just like the tea bowl, it is a lovely object to hold. It may be argued that its form has been arrived at due to ergonomic concerns rather than in an attempt to make the object more appealing. However, because an object such as this is neither likely to be in constant use nor physically demanding of the user, ergonomic considerations do not play a vital role

such as this is neither likely to be in constant use nor physically demanding of the user, ergonomic considerations do not play a vital role in the design of the object. The product could also be compared to the tea bowl in that their gently organic shape lead to a simple visually appealing form. The elements of fun and humour are obvious in this design, in that the bottom portion of the remote control is weighted, causing it to stand up and wobble on its rounded base when it is left down, a feature designed to provoke an emotional reaction. The RM-V30 is one of the countless Japanese products, which successfully combine high technology with personal appeal.

In the development of an indigenous technological aesthetic, Japanese designers borrowed from each of the traditional influences to varying degrees at one time or another. In the 1950s, the pioneers of Japanese electrical and electronic product design, were influenced by the tradition of austerity and simplicity, using masculine, geometric and angular forms to house the complex functions within. As this style gained acceptance and the designers confidence grew, a softer, feminine, less rigid quality was introduced to many products and can be seen in the majority of Japanese products from the mid-1950s to the present. It was only a matter of time before the Japanese fascination with flamboyance, diversity and gaudiness were to emerge in product design, with the high–tech style of the 1970s.

The mid 1980s saw a backlash against the inhuman qualities associated with high-tech. The influence of the natural world, and

qualities valued in Buddhist concept of *Wabi,* such as organic form, irregularity and asymmetry became more and more prominent in products. The advancement of plastic production methods freed the designer from rigid constraints, and the product's form became true to the possibilities of the material, in line with *Wabi* ideals.

This movement into a softer technological look, which became known as Soft-tech, was also due to the fact that Japanese products no longer needed to emphasise their reliability as much as they did in the past, because the products' functional capabilities were no longer in question. This meant, that the strong, masculine aesthetic, transformed into more feminine, intuitive styling.

The expression of technology in products today is influenced by all of the principles dealt with in this chapter. There is a tendency towards simplicity of form, to underline user-friendliness, yet there is a rich diversity in colour options. There is also a trend towards using natural forms, towards making the object appeal to the user's heart and towards delivering to the consumer technology with a human touch.

Chapter 4 - Multi-functionality and Modularity

Multi-functionality has been a strong theme in many Japanese products since the 1950s. The practice of combining two or more functions in a single product, was pioneered by the Japanese. This practice is closely linked to miniaturisation and space-saving design, but it also has links with the Japanese heritage and their unique way of thinking.

The idea of multi-functional objects is not a recent development in Japan. The traditional *Furoshiki* is a piece of cloth (fig. 22), used for wrapping anything from money to food, to books (Dietz & Mönninger, 1992, p. 11). When not in use, it can be folded neatly for ease of storage. In the West, we tend to use a series of mono-functional products for carrying objects, for example a wallet for money, plastic bags for food or leather bags for books, whereas the Japanese tend to have fewer objects with more functions.

Fig. 22. Furoshiki.

The mono-functional object is suited for the intended purpose, but its use is limited to this purpose. The multi-functional object, however, is not as functionally limited, in fact its versatility is only limited by the user's imagination. The *Furoshiki* can therefore be described as software, whereas the wallet can be described as hardware.

This *Furoshiki* mentality is also evident in items such as the *Futon*, which is used as both a bed and a seat, or the *Shoji*, sliding screens, which are a combination of wall and curtain, and in the traditional Japanese home, where there is no distinction between bedrooms and living rooms. In the same way that Japanese product designers of the 1970s, saw little need to distinguish between separate products with separate functions, so that the combination of radio and alarm clock seemed like a logical development to the Japanese. This is not to say that the *Futon* directly influenced this design decision, but that the exposure to such concepts made the designer more alert to the possibility.

The Sony Jackal, produced in 1976 (fig. 23), is a typical example of a multi-functional Japanese product of the 1970s. It combined not only cassette recorder and radio, but also that of a TV screen. The combination of separate compact products is a uniquely Japanese concept, and may not seem ground breaking from a 1990s viewpoint, but in the late 1960s and 1970s it was revolutionary and strongly contributed to the success of Japanese electronic products world-wide, and by giving

an impressive visual impact, served to finally kill off the negative image of the 'Made in Japan' badge which still lingered at the time.

Fig. 23. Sony Jackal, 1976.

The hi-fi system (fig. 12) is another example of multifunctionality, but also serves to illustrate the influence of modularity on Japanese product design. In the regulated society of traditional Japan the modularity in objects served to emphasise a sense of order. The *kimono* for example is of standard size and shape for all adults, and the *Tatami* mat's standard dimensions, six feet by three feet, is based on the human body. This use of an appropriate standard size has influenced the design of the hi-fi system. Up until the 1970s, before the hi-fi system changed

the face of audio equipment, Western manufacturers produced record players, cassette recorders, and radios which were totally separate objects, bearing no relationship to each other whatsoever, either dimensionally or visually. The Japanese however, with their inherited sense of order, designed each unit separately but to a standard dimension which was considered appropriate - in this case the dimensions of the record player, and also made their individual visual appearances as standard as possible, meaning that each could be arranged or even purchased separately but could come together to form an integrated whole.

This conformance to an appropriate scale can be seen in such products as the pocket calculator or Sony's pocket transistor radio (fig. 5) and more recently in credit card sized calculators and radios.

The *Tatami* mat module is the basis of the traditional Japanese house. The floor space of each room is made up of an exact number off mats. Even today advertisements for Japanese apartments describe the size of a room by the number of mats it can hold. The traditional wall panels of houses also conform to the *Tatami* module, which means that the appearance of the whole is dictated by the base unit, similar to the thinking behind the design of the hi-fi system.

This tendency to design from the part to the whole is also related to the Japanese perception of form and space. The way in which we in the West deal with form in relation to design could be compared to a

stone sculptor who chisels away from the block to reveal the desired shape, whereas the Japanese are clay sculptors and tend to create the object by building up the form continually adding to it until they are satisfied. This unique perception of form and the traditional approach to design, emerge in the distinctly Japanese Jackal by Sony, and the modular configuration of the hi-fi, products that set a standard in consumer electronic goods which the rest of the world conformed to.

Chapter 5 – Work Ethic.

In 1962, just 17 years after World war II, Japan's economy overtook that of Britain, and by 1967 had surpassed that of West Germany. Today Japan is one of the world's wealthiest nations. This remarkable recovery can be attributed mainly to the successful export of high quality goods in large volume. It has been facilitated by the Japanese work ethic, which is strongly linked to the Japanese social code, which in turn is based on deeply-rooted religious, philosophical and traditional forces.

This work ethic results in a motivated, dedicated and highly skilled management and workforce, which work as a team in the pursuit of a common goal. This unique relationship, which is based on both mutual dependence and support, and the skill and dedication of the employees at all levels, led to an industrial harmony which facilitated Japan's emergence as a strong manufacturing nation after the war.

Buddhist teachings emphasise the importance of showing respect to elders and betters, to work to the best of one's abilities, to have pride in ones work, and to put the importance of family or larger social group before one self. Caring for the weak, overcoming obstacles and working for the good of the community, are also considered honourable. Confucian philosophies carry a similar message. Respect should flow upwards from young to old, pupil to teacher etc. and care, should therefore flow downwards as power and responsibility go hand in hand.

These beliefs are what the Japanese social code of today is based upon, a code which most of the Japanese people live by.

In a Japanese company the workforce at all levels is aware of its position in the hierarchy. This comes from not only a respect for elders and betters but is also the legacy of history of severe class distinction seen in the form of the 216 sumptuary edicts of the *Edo* period, which governed every aspect of Japanese life, from what one could wear to what one could eat, depending on the class one belonged to. Failure to comply with these rules resulted in punishment. The phrase 'the nail that sticks out will get hammered down' sums up the conformist attitude which is part of employee loyalty today (Evans, 1991, p. 38). The worker sees himself as a nail holding the structure of industry together, and a nail which sticks out would have negative effects on the group. As the group is more important than the one self, the nail will therefore stay in place.

To work to the best of ones ability and to have pride in ones work is another important ancient ideal, which is present in the mind of the present day Japanese worker. It is important to note that the Japanese see their life as being part of their work rather than their work being part of their life. Work is also seen as a test of ones skills and limitations, obstacles are there to be overcome and the completion of a difficult task is a noble achievement. This mentality has in no doubt contributed to the high production rate and high level of quality of Japanese industry. To have pride in one's work is another Japanese trait, which is central to success and is particularly relevant in modern industry in the form of

quality control. The methods of quality control introduced from the United States in the 1950s struck a chord with the Japanese. Almost all large manufacturing companies today organise quality control circles (Sparke, 1987, p. 37), which encourage the employees to become directly involved in the quality control of products. Suggestions on not only how to improve quality control but also on manufacturing and production methods etc. are sought by the company at all levels, both to maintain maximum efficiency and to ensure that each member of staff has a part to play in the final product. This approach is considered vital as the workforce's interest in their work goes beyond simply clocking in and clocking out, an attitude seen far too often in Western industry. Employees at all levels are striving for the same goal, which leads to a cohesive, motivated working unit. The development and production of the Sony Walkman is an example of this approach being employed by a large corporation. This approach and the anonymity of the designers, lead to suggestions that the product grew organically from the company (Evans, 1991, p. 81). Corporate decisions in Japanese companies are made only after lengthy consultation on every level. Although this democratic system is due in part to Western influence, it is also influenced by the Japanese traditional decision-making process, which is called *Go-Nin Gumi*, or five person council. The consultation process is considered important as it insures the support of all involved, including those, who may oppose a decision, as they feel, that their opinion has at least been taken into consideration.

However, it could be argued that the need for such cohesion and harmony could have a stifling effect on design. Japanese companies require a general consensus before going ahead with a proposal and this practice may result in a watered down concept, which has been compromised to suit the views of all involved. While Japan has produced some of the worlds most innovative and interesting electronic products in recent years, these are in the minority, and many Japanese electronic products could be described as being very bland and lacking in character. This tradition of consensus, which is so different to the Western individualistic and often confrontational style, may have very positive effects as regards the co-operation and communication of all involved and the general smooth running of things, however, it may also lead to a compromised design solution.

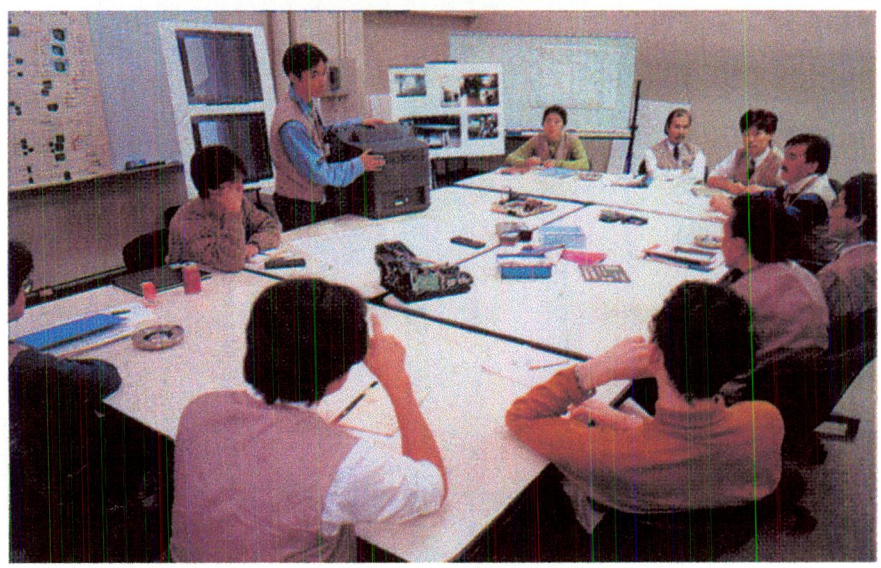

Fig. 24. Communication, Co-operation and Consensus are considered vital in Japanese companies.

Modern Japanese companies have a paternalistic relationship with their employees, realising that with power so too comes responsibility.

The company fulfils its obligations to its worker's respect and loyalty with job security, regular opportunities for promotion, health benefits, leisure facilities, accomodation and even education for the children of employees. This mutual dependence increases efficiency and productivity as both employer and employee are working diligently towards a common goal. The employee also gains social status by being associated with a big firm. This gesture to repay worker loyalty results in a further strengthening of the relationship.

The sense of loyalty and commitment to a firm is intensified in some professions where the apprenticeship system is in place. Traditionally a son took over his fathers business and inherited the honourable title of *sensei* or master only after his father has died and he, himself, has devoted the best his life developing his skill. This devotion to learning and achieving excellence is ever present in the Japanese culture.

In modern Japan the *sensei* system is employed in training in many specialist fields, one of which is product design. Design graduates, whose supply fall short of demand, are enticed into the larger corporations as soon as they leave university. The apprentice designer is placed on an intensive training course, under the instruction of the senior design staff, to gain experience in related fields such as marketing and engineering and to gain an understanding for the company ethos. Every skill, even sketching style must conform to the 'company way' (Ohtani, 1997, p. 47). Some companies claim that it takes three years before the

apprentice becomes a useful team member. The novice designer and the years of training involved are seen by the company as investment, as they know that the cost of developing this potential will be paid back in full by a committed and loyal team member. This mutual investment by both employer and employee means that this is usually a job for life, the fact that the initiation process is different in each company makes moves between positions in different companies are rare. The apprenticeship system leads to a committed and highly skilled workforce, which is the basis of a successful business. However, such conformance has a downside in that it may limit the designer's creative freedom. Furthermore, the sensei system, which is effective in cultivating loyalty and commitment, does not encourage individualistic thinking as Western design education does, and this often leads to a lack of both personal initiative and self confidence - qualities which are considered vital in the West. In recent years MITI and Japanese industry have realised that Japanese education needs to learn from the influences of international education and that students must be encouraged to think for themselves, however the country's education system still works on the basis that the teacher cannot be questioned (Ohtani, 1997, p. 164)

Flexibility of the worker which derives from loyalty and commitment, is important especially in the design profession. This in combination with the Japanese socially conditioned traits of being co-operative, avoiding conflict and having respect for senior member, are strengths which are conducive to a healthy exchange of ideas between

disciplines - a vital part of successful product development. Therefore, in Japan a designer must be flexible about working hours and about who they work with. The Japanese designer must be adaptable and committed enough to work in various locations. In the last ten years the practise of setting up satellite studios or design colonies has emerged. These colonies are set up in fashionable areas of large cities to immerse the designers in the street fashion and the social habits of the consumer.

Japan is a country in which traditional human values such as pride, honour, loyalty and respect have survived to the present day, through Japan's close link with its past. Japanese companies have avoided the path taken by their world-wide counterparts, particularly in the West and it is ironic that a country whose emphasis is on the aforementioned traditional values, should excel in sales and revenue, surpassing Western companies whose emphasis is on profit.

Big business in the West often involves a poor relationship between management and workforce, less respect flows up from employees and less care flows down from employers than in Japan, with workers often feeling they owe nothing to the company, and the company feeling little obligation, above their statutory requirements, towards the worker. As a result production rates and quality may be inferior due to a lack of interest or pride in the product.

Perhaps it is the fact that Japan condensed the industrial revolution into a few years, which has preserved their system of beliefs

and values, which seem to have been lost by the West, or perhaps the strength of these values in Japan's tradition was enough to stand the test of time. Whatever the reason, it is clear that the Japanese approach of cohesion and harmony in the workplace, due to loyalty and mutual respect, and the quality and volume of products, due to pride and honour, are vastly superior to the approach of the West, in terms of efficiency and productivity.

Conclusion

It may be expected, that strong traditional influences would only serve to hinder the progress of a developing nation. This however is not true for Japan. It is obvious, that tradition has handed down qualities, such as the work ethic and the ability to adapt, which are central to the Japanese economic miracle and its emergence from the ashes of World War II, as are the application of traditional philosophies and values to product design since 1950. However the question remains unanswered as to why these antiquated ideas have had such relevance to, and indeed such impact on the technologically advanced products of the late twentieth century.

Perhaps the present relevance of such traditional ideas and values is due to their timeless quality. For example, the ability of a race to adapt to a given situation, is a quality, which can only result in a positive outcome whatever the time frame. The same can be said of the ability to absorb the positive aspects of other cultures while holding onto ones existing strengths. Also, an attitude to work involving loyalty, diligence, and co-operation, among others, such as that of the Japanese can but be described as a virtue.

Japanese traditional philosophies and ideals concerning the creation of objects in particular also transcend the boundaries of time. The practices of miniaturisation and multi-functionalism for example, have practical advantages which are as pertinent today as they ever were,

similarly the *mono no aware* concept which is concerned with the creation of objects, that appeal to the human heart, is still active in product design today, as are the legacies of the contrasting traditions of diversity and austerity.

Of these timeless legacies the biggest asset which the Japanese possess is probably the ability to adapt and blend existing strengths from cultures. The world is constantly getting smaller and companies must be able to carry out development on a global basis in order to succeed. Adaptability is also vital in allowing companies to identify and address a weakness. This can be seen in the current efforts to address the negative aspects of the *sensei* system or the tradition of conformity, as outlined in the final chapter.

In general it is the Japanese awareness that there is always room for improvement, the willingness to change quickly if necessary and the appreciation of, and interest in, the approach of other cultures, which is the key to past success and will prove vital in the future.

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