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Desma 10
Design Culture - an Introduction

Lecture Notebook 3

This notebook does not contain complete slides from the lecture! It is only meant as an aid to your memory. To get the complete idea, you must attend the lectures!

Illustrations will not be included – they are only shown in class!

Meeting 3 (Oct.13,2006)
Design, Society, Work

Design – the etymology of the word

From *disegno* (Italian) = drawing

During the Italian Renaissance *disegno* was used as a way of planning paintings. It served as a set of instructions for the master painter's helpers. The same idea can be found from the panorama painting of 19th century. The large circular panoramas were too large for one person to realize – collaboration was needed. Before painting, the panoramas had to be planned ('designed') very precisely.

Pattern Books

Disseminated designs in the form of technical drawings. Models for production, either directly or in modified form. Served design education, passing the knowledge from master to student. Pattern books were the visual "memory" of emerging design culture. They are still widely used.

"The intelligence, the thought or idea..."

"Design is what all forms of production for use have in common. It provides the intelligence, the thought or idea that organizes all levels of production, whether in

graphic design, engineering and industrial design, architecture, or the largest integrated systems found in urban planning.”

Richard Buchanan

The Beginnings of Modern Design Culture

The birth of industrial design in the late 18th century marks the transition from artisanal to industrial production.

In artisanal production, no clear separation between design and manufacture exists. Designs are traditional, passed from master to disciple, or copied from pattern books. Designer and producer are often one and same person.

The birth of the industrial designer’s profession is related with this transition. The designer’s role gets separated from the manufacturing and marketing of designed items. Designer becomes a specialist with a distinct professional identity.

Designing Automata

Automata were famous demonstration of mechanical skills and ingenuity. Many were made over the centuries, but few have survived. They often looked like humans or animals and mechanically simulated their behaviour.

The ‘android children’ Charles, Marianne and Henry designed and created by the Jaquet-Droz family of clockmakers in the 1770s are the most famous surviving ones. They are kept today at Musée d’art et d’histoire, Neuchâtel, Switzerland, and still perform regularly. One of them writes, another one draws pictures and the third one plays music, ‘powered’ by complex clockwork mechanisms.

Automata were unique showpieces (ways of getting fame and demonstrating skills) by clockmakers and mechanical engineers. In many ways they belong to the world of skilled craftsmanship. Automata were also popular as ‘attractions’, shown by touring showmen. The firm of Jaquet-Droz still exists, now as part of the Swatch group. They make high-end watches.

Early Manufacturies

In the 17th and 18th century state-financed manufacturies in Europe (gobelins, porcelain figurines). Usually prestige production for the upper class. Designs from court artists or

pattern books. This happened under the economic policy of mercantilism (resources, skills and products for the purposes and profits of the state, embodied in the ruler).

Jacques de Vaucanson (1709-1782)

- Became famous as a master automata maker. In 1738 presented “The Flute Player” and in 1739 “The Tambourine Player” and “The Duck”, his most famous creation (could flap its wings, eat and digest grain)

- In 1741 became inspector of the French silk manufacture. Achieved a far-reaching re-organization of the production and delivery.

- Improved existing looms and invented the idea of punch-cards to automate production. Received hostile reaction from weavers. The technique was later perfected by Jacquard, ‘the father of the modern loom’. Use of punch cards anticipated the computer.

- Like the Jaquet-Droz androids, the Jacquard loom was a programmable device, but unlike the androids, it served a practical purpose. Punched cards controlled hooks and needles, introducing the idea of machine following an algorithm.

- The (useless) automata and the (useful) programmable devices like the Jacquard loom are some of the origins of today’s industrial automation.

Craftsmen and Designers

- A craftsman makes, and sometimes also designs; an industrial designer does not make, but designs, usually for industrial production.

-With the introduction of industrial design, many craftsmen who had earlier worked at home as contractors at their own pace were forced to turn into factory workers. This led to protest movements like ludditism.

Ludditism

The shift from artisanal to industrial production led to social unrest. *Ludditism* was a social movement in the early 19th century against the use of machines (like power looms) for mass production. Luddites were ‘machine breakers’ concerned with their jobs and lifestyles. Named after their mythical leader ‘Ned Ludd’.

In the 1990s, the concept “neo-ludditism” was discussed, referring to the negative psychological, social and economic impact of the use of computers.

Rationalization of production in England

In England in the late 18th century efforts to systematize, rationalize and standardize production, centered in factories, often powered by steam engines (a novelty!). Search for cheaper materials (Sheffield plate, etc.)

Pioneering industrialists: Thomas Chippendale, Josiah Wedgwood, Matthew Boulton.

Products: furniture, dishes, “toys” (buttons and other small everyday objects), textiles

Wedgwood wanted "*to make such machines of the men that cannot Err*". This anticipated the ideas of “full automation” and Taylorism.

The Birth of the Industrial Designer

John Flaxman (1755-1826), neoclassical sculptor, has been considered “the first industrial designer”.

Provided neo-classical tableware designs for Wedgwood’s Etruria factory (Stoke-on-Trent, England)

Worked from London, far from Wedgwood’s Etruria factory, becoming a “designer at a distance”.

A contractor, could work for several clients at the same time. Like Flaxman, many early designers were professional artists.

Designs always focused on standardization, the elimination of chance and variation: all products had to be identical!

Marketing designed products

Wedgwood’s London showroom was a novelty. Orders could be made by viewing samples displayed in the showroom or perusing Wedgwood’s catalogues. From the 1820s on, specialized shops, often in arcades (“passages”), proliferated. Arcades were a “liminal zone” between the city street and the “home” (between being outside and inside). They became a favourite way of spending time – “window shopping” ! The shop window became an effective way of promoting products. In the second half of the 19th century, the importance of the window display increased further, with the appearance of the department store.

The Department Store holiday display became a special attraction – example: the mechanical Christmas spectacle at Macy’s, New York. The old tradition of the automata found a new home from mechanized shop windows. Eventually shop window design became a new branch of the design profession.

“The American System”

- Became a model for effective and large-scale mass production
- Originated around 1800 in gun manufacture (Eli Whitney, Samuel Colt), spread to other products: clocks, agricultural machines, sewing machines, typewriters...
- *definition*: large scale manufacture of standardized products (with interchangeable parts), using powered machine-tools in a sequence of simplified mechanical operations
- In the USA many new kinds of products were created (like agricultural machinery); in England, rather, *new ways* of producing old kinds of products (fabrics, tableware...)
- Made its international breakthrough at the Crystal Palace exhibition (the first world’s fair) in London, 1851. American products were considered practical, but less ornamental (= less beautiful?) than European ones, but their rational and practical design was admired.
- Method adopted gradually in all industrialized nations. Its greatest prophet: car manufacturer Henry Ford (1863-1947). Ford was admired and imitated also in the Soviet Union in the 1920s and 1930s.

Full Mechanization, definition

(1) hierarchy of standardized segmented and subsegmented parts and subparts, all interchangeable, (2) continuous, sequential assembly line, (3) fully ‘Taylorized’ workforce, performing standardized repeated actions

The Origins of the Assembly Line

Division of the work process already found in Wedgwood factory, late 18th century. Real assembly line first introduced in the slaughter houses of Cincinnati and Chicago (1860s) . The assembly line was perfected in car manufacture (pioneered by Henry Ford’s Highland Park Factory, opened 1913). At Highland Park, unskilled or underskilled workers worked long hours and handled repetitive simple tasks. They were often felt to be becoming parts of the machine themselves.

Taylorism

- A scientific theory of work developed by Frederick Winslow Taylor (1856-1915). Also others contributed (the French physiologist Etienne-Jules Marey, the Science of Work developed by Frank and Lillian Gilbreth, etc.)
- Taylor's main work was *The Principles of Scientific Management* (1911): it was a major influence on Henry Ford and many other industrialists.
- *Main principles:*
- Develop a "scientific analysis" of every job, including its rules motion, standardized work implements, and most effective working conditions.
- Select workers with the right abilities for the job.
- Train these workers scientifically, based on physical analysis of body functions and motions, to do the job, and give them proper incentives to cooperate with the 'job science'.
- Support these workers by planning their work and by smoothing the way as they go about their jobs.

Taylorism was admired, but also ridiculed and feared. It was accused of turning the worker into an automaton, or a machine part. It was said to lead to "neurasthenia", a psychological disorder (a state of chronic fatigue without an outlet). A biting satire of the effects of Taylorism was Charlie Chaplin's *Modern Times*, 1936

"Counter machines"

Other kinds of machines ('counter machines') began to appear in the late 19th century. These were product dispensers, game machines and other entertainment devices found from public places like amusement piers and penny arcades. Did they offer pleasure, a cure from neurasthenia, or just an embarrassment?

These machines are often known as "coin-ops". Many of them had 'proto-interactive' features – the user was drawn to them, and negotiated the experience, which often began by inserting a coin in a slot. Arcade video games are inheritors of this tradition.

For more: read Erkki Huhtamo's article "Slots of Fun, Slots of Trouble" on the website!

From "Full Mechanization" to "Full Automation"

Since the 1950s, the principles of "full automation" have often been replaced by "full automation". Instead of human workers, computer-controlled industrial robots performs the work by the assembly line. The human workers now work as helpers and controllers. Has the worker been liberated or displaced by the machine?

For more: read Erkki Huhtamo's article "From Cybernation to Interaction" from the website !

Early Car Production

Early growth: The production of the Oldsmobile rose 1901-05 from 600 to 6500 units.
-T-model Ford production: 20 000 (1910), 600 000 (1916). By 1927 nearly fifteen million had been produced.

-Production system perfected at Highland Park factory 1913-14 (factory opened 1910)
-Commitment to a single design made it easy to use single-purpose machine tools and a single production line. Only slight changes until 1927! Finally strategy destroyed by competition, particularly from General Motors.

From Fordism to Sloanism

Impulse for change came from General Motors under Alfred Sloan, who hired Harley T. Earl as head of new "Art and Color Section" in 1928. In 1938 the "Styling Section" had already 300 people!

-Basic issue: cheapness vs. novelty. This led to the ideology of styling: frequent changes to external appearance, which technical components changed much less and more slowly.

-Styling became closely associated with advertising design, marketing

- The idea of "built-in obsolescence"; trading the old model in partial exchange for the new one production. Fashions in car design had to be short-term. The consumer had to get fascinated with the new design, and then soon bored.

-Marketing came to dominate car industry

The Birth of American Car Culture

-Model for economical high volume production

-Embodiment of the American Dream (individualism, mobility)

-Speed became a symbol for design culture of the 1920s. Also linked with the ideology of modernism.

-Buying on credit was introduced by car industry, spread to many other fields; stimulated consumer demand

-Materials (cheap sheet metal) and synthetic finishes inspired other products; color,chrome plating..
