

The following text is part III of a threefold string of lectures I was honoured to deliver at the Academy of Art named after Kamoliddin Bekhzod in Tashkent at the occasion of our short termed affiliation to this school. In September 2000, Ros and I stayed at Tashkent for three weeks in order to instigate the Design department of the academy for a stronger integration into the enormous history of art and craft of Uzbekistan. This third lecture was meant as an introduction into the field for an audience of minor knowledge. It is reprinted here without images but besides this without alteration to the form presented.

Multimedia in Design

History and Concepts of Reproduction, Multiplication, and Scenic Inventions

All design needs media – from the beginning of design. The preparation of the first World Fair in London in 1851 saw the launch of the Copyrights Act of 1843, the first law on the ownership of creative efforts as an economic good. These copyrights had to be guaranteed by drawings and reproductions and were granted not to individuals but to states, countries, or interest groups. Thus the catalogue of the Crystal Palace exhibition – which was what you may call the design department of this World Fair – had collected all shown goods and works in steel etchings or wood cuts accompanied by a short description in the text naming the manufacturer and the city or country where he came from.

This even went so far that it included statues by then renowned sculptors like Christian Daniel Rauch from Berlin whose statue of Victoria was displayed in 1851 as bozzetto and realized in bronze in 1856. So the publication as etching in this case functioned as a trademark guarantee as it gave full details of the artist's style and idea. The better the quality of the reproduction, the nearer the picture to reality, the better was the understanding of a design as a creation worth protecting.

Since its invention in 1839, photography was *the* medium for depicting material qualities and difficult forms, and its truthfulness gained near to mythical prime. One of the inventors, William Henry Fox Talbot, had remarked in his early handbook *The Pencil of Nature* that photography was a useful tool in legal cases, and such his former assistant Nicolas Henneman in 1851 received the assignment of photographing all objects which were subjects of copyright in technical details. The commission ended in endless court cases and gained no public result as the photographs themselves were too expensive to be printed in large quantities necessary for legal use.

Photography became a medium only by the ability of being printed, and this was due to the invention of a German and an Austrian printer. In 1883, Wilhelm Meisenbach from Munich and Karel Klietsch from Vienna were granted patents on the Autotype lithography of halftone reproductions. The method is displayed here in a later article of an illustrated newspaper [if necessary : description] and is basically still in use – except for the fact that the old glass grids (counted as line per millimeter or inch) were replaced by the electronic dots per inch (dpi).

The communicative use of a technical medium like photography emerged slowly and aside of artistic considerations. The first series of images printed was this page „Behind Prison Bars“ in the Illustrated American of March 3, 1890 – and it could appear anywhere, although somehow modernized, in any magazin today again. The interest in the picture story, today by any media theory accepted as an inherent quality of media communication, lies in the fact that it is perceived (not read!!) a lot faster than written words.

The next step was merging the photographs into each other which on one hand distracted the viewers from photography's reliability but on the other hand produced effects for gaining the viewers' attention - in all media this attention is rated a higher value than credibility. At this point returning to design, you can trace from both histories of media and design that there is a deeper conjunction between these two forms of creation than between art and media or craft and media. But the consciousness for these relations arose slowly – it took near to a full century in industrialized and post-industrial countries to see a common sense of design and media.

Things progressed slowly as might be shown with this page of the Werkbund annual of 1916. The German Werkbund (work guild) was (and still is) an association of architects, artists, craftsmen, designers, politicians, and manufacturers of products relating in any form to design as a whole. Theodor Heuss, the first German president after World War II, e.g., had been secretary to this association for more than a decade. Short before World War I, the German Werkbund started an annual which included a number of pages with photographs and drawings of designs considered to represent Germany in the world. These pages were named the German pattern book (Deutsches Musterbuch) and showed household objects of any kind – including designs for people of minor income like workers and unemployed. The pages as well demonstrated designs like railroad interiors, trams, bus stations and other elements just below the average understanding of architecture.

Exactly at the same position the famous Bauhaus started its own media strategies. When Lucia Moholy arrived at the institution in April 1923 accompanying her husband László Moholy-Nagy who just had received the chair as professor of metal work and the preliminary courses, she immediately understood the importance of media work for the school which was facing enormous financial problems. So she began to produce dozens of photographs meant for use in catalogues or publications.

Her method of taking pictures was the most primitive imaginable: She put the objects on a glass plate which was laid on two chairs or seats, spread a piece of paper or cloth in the back and placed the whole setting in the vicinity of a large glass window in the studio. These daylight photographs like, e.g., the image of the famous Bauhaus lamp of 1924 did not have to be more precisely worked out – the only importance lay in the sharpness and clearness of detail which was obtained by using a large format camera (8x10'). By the way, this famous lamp was designed by three Bauhaus students more or less in a team – but when copyright became a personal law able to be pursued by the heritage of an artist there was no word of a team anymore. In Germany and the Western world the copyright of this lamp is held by the heritage of Wilhelm Wagenfeld, in Hungary and the Eastern world by the heritage of Gyula Pap – and Karl Jucker, the third creator, is simply forgotten.

The results were to be printed in illustrated papers or magazines which used heavy retouching for obtaining clean surfaces on objects, straight gray walls in rooms, or an even black plane as a sufficient background. Whereas in the early Bauhaus era black was the distinctive background colour, it soon emerged into light gray or white when – after 1925 – lithographing and printing machines could handle this technique better. So most of the Bauhaus classics were mediated by photographs with a light gray or white background – no matter who the photographer was (as this white background began to become the Corporate Identity of Bauhaus design, the designer conceiving this idea could be forgotten – a new convention was born, a new canon had emerged). Of course, this convention still exists when the medium is changed. A Bauhaus photograph is a Bauhaus photograph whether in print or in the internet.

But the exchange of reproduction media is not without importance to the message delivered. You may have heard the philosopher Marshall McLuhan's phrase „The medium is the message“ coined in 1964. Certainly, I would not follow him on the whole but there is evidence in the fact that any medium sends messages besides the

original content – in linguistics named connotations as side semantics of a given word or term. When Erich Consemueller's image of Lis Beyer in Marcel Breuer's Wassily chair photographed in 1927 on the occasion of designing an invitation card for the famous metallic feast appears as a reproduction in the internet – by the way doubly illegal as there is still a copyright of the Bauhaus archive on the image and another copyright of the Breuer heritage on the chair – this appearance changes the meaning considerably. I found the picture on the homepage of a design agency dealing with the conception and promotion of web-sites, and their explanation of using this image clearly stated that the people involved in this agency did not know anything about the image and its origin but simply gave the notion that „there must be some mystery in modernism“. If it were that easy...

It is that easy. Take any object that looks similar to a famous object (the original to this seat is white or black, a design by Willie Landels from 1965 for the Italian manufacturer Zanotta) and it will perform the basic ideas of modernism, comfort, volume, or surface. And these ideas can be transferred, even simply transmitted to others for emotional or functional uses. This chair, although it can only exist as a cheap bootleg (=illegal) copy of another one, could be found on the homepage of an internet retail seller distributing – in his own words – „modern and famous objects“. But to do so, there are some basic needs that influence the methods of transmitting, transferring, and thus transformation.

First, there is colour. When I started a series of lectures on colour systems in the computer age five years ago, the only students listening to me were electrical engineers as they felt to profit from an account of mathematical models used in describing colours which, to the opinion of artists, craftsmen, and designers, had hitherto in principle psychological qualities. Today, most brain metabolism researchers are convinced that colour reception in the human brain is based on statistics of experiences produced by the cortex to cope with the enormous amounts of information flowing into the head via eye receptors.

Hence mathematical models of colour mixing have a certain appeal although they surely must not be that primitive as these two examples shown from a handbook on BTX design, the first communication system of computers which gained a certain amount of interest among the open public in the early 1980s in Western Germany, France and the USA. At these times, computer screens were not able to differ more than 256 colours, and the results were, in terms of reproduction, ridiculously poor.

Following the model of additive and subtractive mixing developed by the chemist Wilhelm Ostwald in 1915, most of the printing colour scales in the world are derived from three-colour charts with either darkening or lightening each mixture in order to resume an effect. Printing depends, like painting, on pigments which are, physically seen, of solid state and will therefore be reflected by either sun light or electric bulbs. When electric lighting was spread over the world engineers clearly foresaw that these inventions would change the perception of colours fundamentally. In 1932 the Commission Internationale d'Eclairage (Commission of lighting engineers) worked out a model for colour perception on the base of the human eye's capability for receiving a fraction of the emitted wave spectrum of sun light. The model clearly grounded not on Ostwald's colour circle but on a model formed by the American painter Henry Mansell around 1920. The CIE triangle now is the international standard model for the reception of colour, and you will find a derivation of it in any handbook on colour printing, in the help files of good computer printers, and on numerous web-sites. Rarely to be found on these occasions, but of equal importance, is the tiny curve you see in my slide: named after the physicist Max Planck, it shows the line of emitted radiation on which the human eye is able to adapt in favour of reorganising its own colour chart again. [examples: sunset, tungsten / wolfram bulb, neon light, bright sun, high altitude]. This is not only import for manufacturers of bulbs but for any designer, too.

Forgotten may be one more important result in the media perception of the world: looking onto TV screens and monitors means looking into a light source. This is extremely unusual in nature and has a high mystical quality which I will not talk about here. But I will simply confront you with the fact that on a screen which is constructed from three colour signals and their light intensity there is no possibility of mixing earth colours depending on solid-state pigments. But the reception and differentiation of earth colours were extremely important for the survival of mankind as long as it exists – and look back on strong craft traditions like the Uzbekian, and you will find an equally strong emphasis on earthy colours. On the screen, there is no earth colour as this is a subtractive mixing impossible with light sources. What may seem earthy on this chart of a random colour access program for testing monitors is either a reproduction fault caused by pigmentation of the photographic film used, or it is a inconsistency of the light source in mixing which resembles a subtractive mixing but is not. For modernists like the Bauhaus people or the famous architect

LeCorbusier, the results of the CIE conference in 1932 were landmarks of their human understanding: If mankind was able to fly it does not need earth colours for orientation. I will not cite one of the many jokes made on the daily use of the Global Position System but there is a certain evidence that we will need earth colours for more than the next few decades.

But since anything seems constructable by computers and their founding mathematics, the mediation of a conception and its origin fell into each other in the way of an implosion. Before I start to present you a number of examples how designers and artists of today deal with these relations of media and creation I will give some minor hints on the basic facilities computers offer to creators - not in the sense of advertising a brave new world but in the eye of a forthcoming change in perception. To my opinion, this change is neutral to any questions of being Western or Eastern, to any language and ideology, and to any media theory. This really simple example of halftone retouching may show you that there is no reliability left when looking at a photograph - no matter whether it is printed, reprinted, or projected as in the internet or onto a screen.

More subtle is the finer retouching given as sharpening, filtering, or re-defining surfaces. Here you can improve emotional qualities in reception, or you can guide the attention given to a certain subject by distracting it from average vision. The claim of manipulation is difficult in these cases: no photograph today is printed, mailed, sent, or shown without these retouches. As you may gather from this ten year old example, the quality of colour control and retouching has advanced rapidly but not changed the basic notion of coding images that resemble other images. This is the importance of design to media: Without designing elements there is nothing to be coded and decoded. Any code needs something to be coded.

Only for this reason I included this ghastly piece of montage in this lecture - the car has nothing to do with the apparatus sold by the company. It is simply a direct translation of the word 'projection'. Wishing to drive or own such a fun car is, psychologically seen, a similar projection to using this highly recommended machinery. The ridiculousness of this ad lies in the fact that it cannot work - either you are too poor to buy or lease the equipment, or you are not in need of it. This problem is older than digital media but has grown by exponents since their introduction. On the other hand, designing by computer has its advantages. You will surely know that any three-dimensional construction has to be built up by grids before planes can be set behind which those areas are hidden that the eye (or the photographic lens) cannot see in a similar view. After this

construction, most of the architectural computer programs allow you to implement the drawing style of famous architects like LeCorbusier or of typical 1950s' approaches.

The qualities of computer aided design (CAD) have always been over-estimated by theoreticians and engineers alike. In 1990, a world tool was released for operating all necessary movements in Virtual Reality projected by two small monitors into a head display. Today we know that wearing these helmets will not transport you out of the real (in computer specialist terms: meat) space, and any small VR software in the internet like the CosmoPlayer moves better around virtual environments than this tool ever did. A new form of design is given with the creation of simulations. Developed from a bomber flight training program (hence the oblique areal view) the computer game Simcity gained not only fame as one of the best-selling venues. It was also used after the re-unification of Germany to train forthcoming local politicians in the new countries.

Simulation bases on the fact that the brain forgets the bodily relations between space, time and muscle movements. It starts with the fact that you cannot trace the origin of an image attracting your eye – an old challenge to both art and design. But despite computer industry's phrase „What you see is what you get“ you see something else while viewing a monitor image, even in reproduction. This anonymous slide out of a press release for a Cologne fair from 1994 shows the reproduction of a well-known photograph of the American politician John F. Kennedy in a book onto a screen monitor. But the monitor image cites – in clipping as well as in colour – an equally well-known video excerpt of a speech delivered by the same politician to the German nation. So the company seemingly wanted to guarantee the acceptance of their products by doubly coding the image reproduction to a memory of value within a certain nation. You will surely find similar examples on postings, ads, and other media vernaculars of international companies in Uzbekistan.

The doubling of codes works as well the other way around: Computer operating systems not only present the software to be used by icons and display management but they urge you in using them to follow an abstract scheme prepared by the system itself. Companies like Microsoft or Apple engage hundreds of screen designers to optimize the arrangement of necessary elements. The result is the only obvious difference between two operating systems: Apple's MacOS treats the monitor screen like a plane with graphic elements whereas Microsoft's Windows gives the impression of a Basrelief, like in antique writing on clay or engraving tombstones.

Another drill in understanding is given by a technical detail in computer industry which is a big threat to orthography in any language. The order of elder operating systems to title files with an eight-dot-three letter code led extreme vocal abbreviations like given in this example of the first Dutch grassroots internet server whose name is to be read (you surely will have noticed it by now): Access for All. After all these premises of possible headache originated by turning reality and virtuality upside down you may think that German designers luckily mix life and projection, media and conception, process and product – just looking for a nice result to be consummated on a rainy afternoon (it rains more than 200 days in a year there). The contrary seems to be the case, especially when you look at educational endeavours like the work of Gerhard Schmitt in the first year of architectural training at the Technical University of Zurich. He advises the students to take a photograph of the room they live in, and then to render it on a rather simple 3D program.

Samples of these works can be easily traced over his institute's web site which presents one of the best introductions in post-industrial architecture and design imaginable. Remember that the renderings are not image corrections by photoshop or any such program; they are brand new renderings from the data taken off the photographs like room measures, direction of sunlight etc. But the new rooms differ from the old rooms by a number of objectives. Surfaces are reconstructed, the light is directed more straight, furniture and accessories are removed. The result is a completely abstract room, again: taken from the data offered by reality and its photographic reproduction.

A totally different way is taken by Niklaus Kohler from the architectural department of the Karlsruhe University. Here the students were asked to produce models of a house neither existing in reality nor in images. The James Bond film 'Tomorrow never dies', of course, incorporates another Dr. Evil who now lives in a hidden, subterranean house never shown in the film. But from a number of film scenes one could extract that the house had curved walls and an oval ground plan. Computer renderings were made from the camera movements in the respective scenes, and the results ended in a space reminding of a nautilus shell – another mystical model of ancient times. From there it was relatively easy to develop cuttings of possible house models and to design a number of rooms including furniture and specific elements of decoration. Returning to possible realities the result of this experiment – its internet presence ceased to exist, unluckily – you receive a mixture

of film stills, computer renderings, and conceptual ideas which form another level of fiction – from possible realities into film effects and from there into cyber space. But not a single one of these jumps between levels of reality would be possible without the knowledge of given experiences. And these are made in space and time, related to your own body. Obviously it is this bond to existence and consciousness that attracts artists and designers alike in these fields.

In the forthcoming minutes I will show you a number of entries to competitions from the years 1998 and 1999, not only winning ones but those which I consider typical for the situation of art and design in media. The pixel contest of the Association of Freelance Photo-Designers in Germany was won by Corinna Holthusen with a set of digital photographs combined from real portraits and object photographs of puppets used for training nurses, first-aid helpers, and alike. Although I would not have followed the jury in its judgement – compared to other entries – there is a certain evidence in her conception: all of the elements are well known (at least to young parents and several professions in Germany) but their combination has never been recognized before. This is the true meaning of the word montage, and it is clear that most of all digital computer imagery follows this line to success.

The principle had been acquired before but has gained such acceptance in media industry that in a similar contest of the same association only for photographers entries like the one by Dietrich Halember follow it, too. The photographs of his fashion series are not merged into each other – this has to be done in the minds and memories of the viewers. This is, of course, basic film theory and the program of each cut; it gains, however, a different evidence when used in still images, even in larger sizes or with a specific colour graduation. Two pages with the minor entries of the pixel award named before show the typical set of memories and montages preferred by designers these days: family pictures from the own childhood, multiplications of the ego, stripes of time zones, plastic covering of pre-fabricated food, merging of faces. On the whole, these methods represent the average consumerism of Western existence and its subsequent ways of transforming objects into fetishes. Where the bodily relation to time and space is disturbed the projection naturally laid on sex or one's own birth and death will be transferred towards objects – as psychological shift this is as old as mankind and manmade objects. But in times of an omnipresence of multimedia offers the objects are themselves transformed into images. So today images of objects function as had the objects

done two hundred years ago. As a technological shift this paradigm of cognition cannot be denied, it is simply there, like it was there when the wheel came upon mankind, when the clock replaced sunrise and sunset, when people began to wear glasses instead of looking through curled fingers.

After the invention of the computer the monitor began to emerge as the basic projection screen of both abstract signs as of emotions – just like the screen in the cinema had been before. So it was all too clear that projection would become a theme in the theme. To overcome the basic problems of difference between screen and print, some competitions in the last years began to ask for either submitting only screen-based works or only printed works. The following examples had been successful entries to a contest named Digital Worlds which accepted works on paper only. As member of the founding committee as well as of the first jury I was astonished how far printed works could differ. Astrid Herrmann whose work you are looking at for a while already, submitted huge prints of roughly 150 to 250 cm – showing literal projections of rooms that do not exist or which have a different background from what you and I see.

Piet Wessing's work submitted to the same contest only measured the average size of a paper document only – A4 as we name it in Germany. His montage cites the material used within spy agencies or national security administrations. But none of us knows what is real here, and what is not. Wessing who works as a journalist and picture editor surely knows which line to draw between real and falsification – but he will never tell, and thanks to electronics or data storage, we will never know.

Susanne Bruegger – I presented her work in the last lecture already – had used a similar idea of montage but with a different lay-out and effect. Her „conjunctions“ are square meter sized plates with photographs and well visible inscriptions or alterations by computer work. The shown traffic flow of average street crossings is reduced to insectan movements worked over or commented by texts, signs and other elements obviously not belonging to the image. Of course, the author gives no description how to read or use these images. They look as if they were scientific notes or plates and could be used for purposes of traffic control or alike. But the conjunctions printed belong to German literature or linguistics. They may be read as connotative remarks on everyday language and its unclear use of phrase or metaphors. Thus Susanne Bruegger constructs an imagery as uncertain in meaning as everyday life in traffic, a metaphor for existence in post-industrial society. She clearly defines herself as an artist within media – for this work.

Christiane Kirsten uses a similar metaphor by duplicating herself to the anonymity of masses. Even her childish appearance fits into the frame as media are connotated with youth myths. She pursues these ideas by using a choosing places typical for childish activities and even attributes her cloned life with school uniforms (totally unusual in Germany). Katharina Jahnke traces us back to the meaning of technical transmission within media and thus the creditability of images transported by them. Her portrait „John“ of 1998 cites the common effect of square dissolution while reducing complexity in image storage. This effect was over-used by the first generation of computer artists and designers, as was the pose of film stills within amateur portrait photography. By combining these two styles as coded citations Jahnke expresses the problem of innovation in art – if there is any creation possible in art after all these developments.

You even cannot be sure of your own body in these ways. Under the slightly cynical title „Re-Design“ Roger Schneider present photographs resembling medical surgery as practised in areas of everlasting beauty: film industry, high society, and mass media hypes. A number of artists already have crossed the border of medicine and performed painful or harmful acts. Performing artists like Orlan have had at least 50 operations correcting her face and figure – well documenting all stages of bodily distortion throughout the process of being altered, others like Stelarc had pieces of electronics implanted to send video images from their body interior.

Roger Schneider leaves the solutions open which you only can do with the help of computers. The lines drawn on ears look exactly like the lines used in the surgical procedure but nobody can tell whether they are drawn to the posers or to the image. Nobody can tell as well if the right or the left images represent the original body depicted. In my opinion, this work is design at its best. It shows medical design, duplicates it by using the same material of visual distinction but a different method of representing, and it leaves all cues to the viewers themselves. Design took over a number of functions that were compelled to art in socialist countries – like providing instant insight, help in education, setting ethic or moral values, and so forth.

The line between art and design becomes very thin in the work of Beate Gütschow. She uses 3D programs conceived for the creation of computer game backgrounds – terminus technicus : level designer – and with their help produces large format images (this print is more than a meter wide in original) that resemble pastoral scenes in the landscape painting of the 17th and 18th century. One

could easily mark her work as a hat-trick far too simple to be accepted in connoisseurship but what she does with painting and is felt to be totally out of range is openly done and widely accepted with photographers like Manuel Kubitzka. His series called Night in Peripheria, of course, bases on perfect architectural photographs taken at boring scenes in nightly neighbourhoods – and he is a well trained architectural photographer anyway. But none of these works were possible without the aid of image software to overcome the enormous differences in light and shadow graduation offered by the given night light. We are simply used to it...

Do you remember my first two slides? The chairs and statues of the London World Fair catalogue? If somebody transforms photographs into these methods of presentation the results at first glance seem to look ridiculous. Holger Albertini who not only produced a number of these images but presented them in tiny books and small formats (none of the images expands over 10 to 15 cm) under the neat title „The Ladies and Gentlemen Storage House and Grain Elevator“, won an number of competitions with this effect – and was forgotten soon. Franz-Josef Wamhof who had been a student at the Hochschule für Gestaltung Karlsruhe chose a more intelligent way to follow the same path. First, he reduced his subjects to similar objects of those presented in the London catalogue – anonymous household goods and design of his childhood in the 1960s. Second, he developed a sophisticated way of depicting them – polaroid photographs on a white background, copied on a high-tech flat-bed scanner, the results being overworked several times by a number of image software procedures, and then being printed in huge formats (more than 2 m high). The results had been presented at several occasions, and three years later these images are a common style of depicting memories.

An equally conceptual approach towards art and design is given in the work of Alexander Steig. Reminding the possibility to store images on data banks he chose the micro-floppydisk format as a metaphor of image transportation as well as image transformation (since he was a student at the participation of the contest he might as well remember the utterances of professors like me that students today only copy their knowledge but never read their files nor even try to understand them). Consequently he reproduces only the form of the floppy disk and gives it the same size as the original painting. The form of presentation were photocopies on screen hanging flat on the wall thus resembling the meaning of the word floppy in the disk depicted.

Conceptual art as derived from movements in the 1960s and 1970s may be a little too dry for many viewers but it freed the minds of artists and designers alike. And it made possible to free the material of art and design from its all too strong connotations as developed in former centuries. Mireille Schellhorn – I had shown you the sample of her work before – had studied textile design, and her work is still based on weaving techniques. But she transposed elements of this work onto every medium she could get hold of – the camera as described yesterday, and today she is well installed as a cutter for video clip productions. She also teaches all sorts of video cutting software in several schools, even in a design department.

Franziska Lamprecht took exactly the other way. She came from photography and moved to drawing in the form of comic strips, and added an advanced form of montage to her cut and framed designs. The results were printed on a cheap ink jet printer in small sizes like A4 and less. Lamprecht's „Ladies' images“ tell comic stories without text but with a lot of impact on imperfection (as a female role and projection at the same time) and on the sadness of the perfection proclaimed by media life. The metaphors are as simple as in any comic strip but the ideas and forms are not. Again, these pictures could not have been made without the aid of advanced computer technology, and as drawings they would not cover the existential implications proliferated by endless reproduction circles. As with other examples presented here, my consideration of Lamprecht's work is in the field of design as the clues drawn from it react short-handedly to the situation of their production.

You might expect Feuzi Konuk's web-site approach named „Ayatola_X“ to be part of the second competition I wanted to present but it actually belongs to the first as the designer printed his conceptions on paper. Whether this was an easy method to follow the regulations of the contest or not, it gives a notion on media differences even in computer aided forms of design. Two pages of a web-site are by no means enough to exemplify a dramatical conception necessary to any web offer. Konuk's work is interesting from another point of view: He belongs to the third generation of Turkish immigrants to Germany, and he deals on his page with the media perspective of islamic fanaticism – a question dangerously under-estimated by politicians and sociologists alike. The pity with his web pages is that they are well meant but without knowledge on dramatical plots or storyboard comparable to films or videos.

Exactly these qualities are asked by the annual Europrix Multimedia Contest from which I will draw the last few samples of my lecture today. The language learning software „Red Dragon“ directly follows the lines mentioned with the comic strip approach – here comic strips gain an interactive timbre hitherto unknown in print editions. Children should not only learn a language but receive competence in simple conversations and a certain knowledge of the country where this language is spoken (here, of course, the United Kingdom as seen from a German angle). Interaction is the domain of the CD-ROM.

The design of a web-site must be a lot more simple than the one of a CD-ROM but it follows similar conceptions of drama and scenic interaction. Smartmedia is a Berlin company producing CD-ROMs but won a price for a technical based web-site on cheap telephone rates. As this information is asked by a lot of people who may not be interested in complicated flows of multi-directed frames the quality of this design lies in its simplicity. CD-ROMs are produced by teams – another difference between artists and designers. Very rarely a designer works alone or in a workshop although 95% of my students end as freelancers. Designers form teams on projects, and very often a company is only founded for one project and dissolved after the work is done. Another CD-ROM on learning a language (English as well, but this time produced by a Norwegian team) works with the common model of importing storyboards proofed by television and other media before. The A-Files follow the set of a criminal story and put the necessary information into a sort of game control display.

Interesting as you may have gathered from some of my examples so far, is the line between art and design when talking about the history of art and design itself. As the Spanish painter Joan Miró for most of life proclaimed an interest in puzzling together the parts of his paintings, the Fondation Miró asked from the designers commissioned for a CD-ROM project to work their storyboard around a puzzle. The best of designs are made when the proposals are open enough. Pieter Bruegel the Elder painted a picture named „The Netherlandish Proverbs“ and thus depicting them. So the producers of a CD-ROM on that subject can work from a wealth of material provided by literature historians as well as by art historians. The montage principle presented at length to you here is equally well used in educational presentations of this kind. First you introduce the viewers to the whole image, then you empty it out and re-fill it with the individual scenes and their metaphoric or etymological derivations. The Bruegel CD-ROM is an often praised

sample for the best of edutainment and received a number of prizes – but the company went bankrupt (for whatever reasons), the CD-ROM soon was sold out.

One last example may be given by a project I was involved in, too. The city of Karlsruhe incorporates a suburb designed by Bauhaus architects under the supervision of Walter Gropius. When the houses of the Dammerstock area were threatened to be restored without preservation of their historical details the ZKM and the Hochschule für Gestaltung decided to produce a CD-ROM showing the importance of the architecture and its social ethos as well as the history of this suburb. My work was simple and totally un-designated: I had to help in claiming copyrights for old images. The White Ratio CD-ROM has served its function by giving the city politicians a feeling for historical values which they had not developed before – and as you see from the catalogue reproductions here, received one or the other price, too.

Returning to the beginning of my lecture and thinking of what might be important to you in my presentations allow me a conclusion on the background of the craft traditions of your country which I admire since I first came across them. I had scanned this reproduction of a silken fabric donated to my wife by friends from here half a year ago, and I had planned to present you a number of slides with colour corrections according to the colour maps released for fashion industry as basic line for the fall season of 2002 (the fashion for 2001 is already sewn and the textiles for the next year have to be dyed, woven, and prepared). But when I did so I foresaw the problem of colonialisation again: Why should you accept a colour chart basically designed in Italy for the needs of wealthy American and French women?

Another problem was technically grounded: The colour method of my three image processing softwares base on the HSL model which forms a convention for photographic use, printing, and correction. But textiles are no photographs, and the same colour model does not function in this field. The last two problems which we could discuss at length if you wish so form a fundamental claim that keeps me at my work and alive. According to economists and sociologists (not designers!) roughly 80% of all businesses in the world could be improved by design. It is not only a question of wealth and taste, not a singular and, often enough, lonely process of making art, not a matter of technical competence and crafty skills. The improvement of a nation's economy by design simply means that you help people match their daily struggle better, if you are lucky, a lot better. Is that not one of the best jobs to do in the world?

