

LECTURES



Jan 12th 2012

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10:30

RESEARCH, DESIGN, AND THE KIND OF DESIGN WE NEED

Jorge Frascara (CA)

This is a general introduction to research in design. It is not directed at the seasoned researcher. Instead, it attempts to define the necessary conditions for research in design, and describe the principles and objectives that define it. The article ends identifying the kind of design that society needs, and that is to a great extent missing from design practice and education.

1. Research

The purpose of research in design is the creation of new information, arrived at through an objective and systematically planned process (Ary et al 2006, 18), and generally including members of the user population of the device to be designed. User-research is an indispensable component of design research, since designs have to consider the possibilities and limitations of the intended users (Miller 1956; Wright 1981). Research normally involves first a search for existing information related to the problem at hand, to make sure that one is not duplicating efforts and losing time and resources, and to base one's own departure point on the state of the art of current knowledge. Research serves to: a) get reliable information; b) remove doubts and answer questions; c) test hypotheses; and d) defend proposals.

Some definitions relevant to research in design are listed below.

Basic research leads to the creation of widely applicable principles connected to human conditions; such as research on human factors.

Applied research is the study of specific situations to which existing knowledge has to be adapted. The situation-specific



1. Spencer 1968; Spencer, Reynolds & Coe 1975–2007

knowledge created may not be possible to generalize, but is indispensable to the project in question.

Qualitative research is common in the human sciences; it studies people's perceptions and actions, as well as the reasons for them, and offers insights into how to approach a design response to a problem.

Quantitative research is frequent in the hard sciences, such as physics and chemistry, but also in human sciences such as sociology and anthropology. Statistics is a quantitative method used in social research very often, to assess the frequency of a phenomenon in a given population. It helps the designer identify the presence and severity of something: such as industrial accidents or obesity, in connection with the planning of safety and health campaigns.

Design research and methods have been discussed by many authors (Alexander 1979; Bateson 1972; Cross & Roy 1975; Jones 1970; Morin 1977/1992, and others), and it is very useful to read them, but in essence one needs to develop a critical attitude and become able to design experiments that provide the information one seeks. Psychology, sociology and anthropology can provide insight into how to formulate research questions and how to collect pertinent and reliable information. Research can be used, first, to understand a problem, secondly, to develop a proposal, and thirdly, to evaluate a proposal.

It should be clear that designing, in and of itself, is not researching. As well, open-ended visual explorations, subjective development of expressive images, and intuitive arrangements of visuals, sounds and movement, are not research.

2. Design

Communication design is not centred on the conception and construction of communications, but on the reactions that people experience in front of them, affecting their knowledge, attitudes, feelings or behaviours. This puts people at the centre of the design activities, and expands enormously the range of problems designers can face, making obvious the need for research, particularly in the



social sciences (Frascara 1989, Frascara 2002). The ultimate purpose of design is to improve an existing reality that affects people.

The design of communications cannot be based on universal principles of aesthetics, linguistics or semiotics. Instead, design has to respond to situated, specific communication goals, in relation to a particular public, a particular task, at a given time, in a given place. This helps design products that **do** what they are intended to **do**. The purpose of research in design is to orient the practice. Research helps make informed decisions in design.

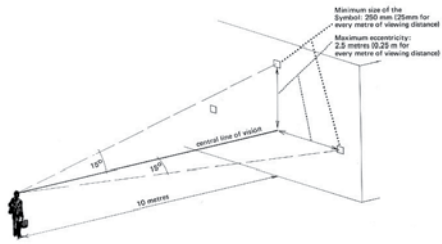
To conceive the best strategy to confront a complex problem we need to work interdisciplinarily. By interdiscipline I understand the merging of different fields, such as Design with Educational Psychology and Astronomy for the creation of teaching aids about the planets; or Medicine, Psychology, Materials Engineering and Design, for reconstructive surgery. The interdiscipline serves to solve problems well, but it also extends the designer's research tools by learning strategies from other areas.

Research in design can take many different forms

One can study the legibility or usability of texts, like Herbert Spencer (Figure 1) (Spencer 1968; Spencer, Reynolds & Coe 1975–2007), or Miles Tinker (Tinker 1963). Ron Easterby and Harm Zwaga, instead, developed research strategies to test the comprehension of graphic symbols (Easterby and Zwaga 1976; Easterby and Graydon 1981). These research projects were based on user testing involving a high number of subjects, and are examples of empirical research.

2. Principles for the implementation of pictograms considering the situation of use for the ISO

3. research on the usability of a website for emergency response



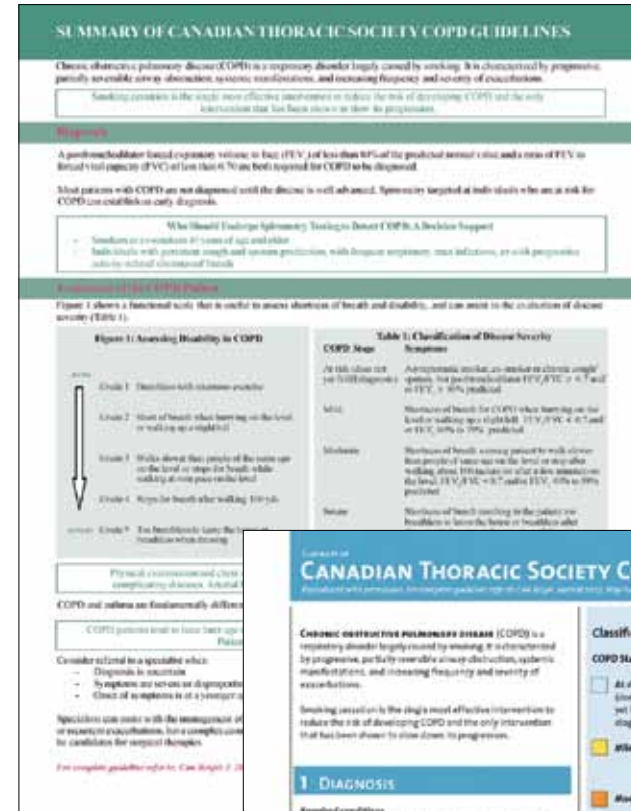
Bibliographic research is normally oriented at using existing knowledge to develop criteria for the solution of a specific problem. One does it to become familiar with the state of the art in a particular area on knowledge. For example, on the basis of publications on optics I developed principles for the implementation of pictograms considering the situation of use for the ISO (Figure 2). I did this to ensure that people could detect the presence of symbols in crowded spaces, because only when the optical problems are solved one can begin to think about the comprehension of a symbol.

I have also done research on the usability of a website for emergency response (Figure 3). Through a long series of interviews and observations of users, I found 63 cognitive, perceptual and behavioural deficiencies of the interface, and developed 34 recommendations for changes.

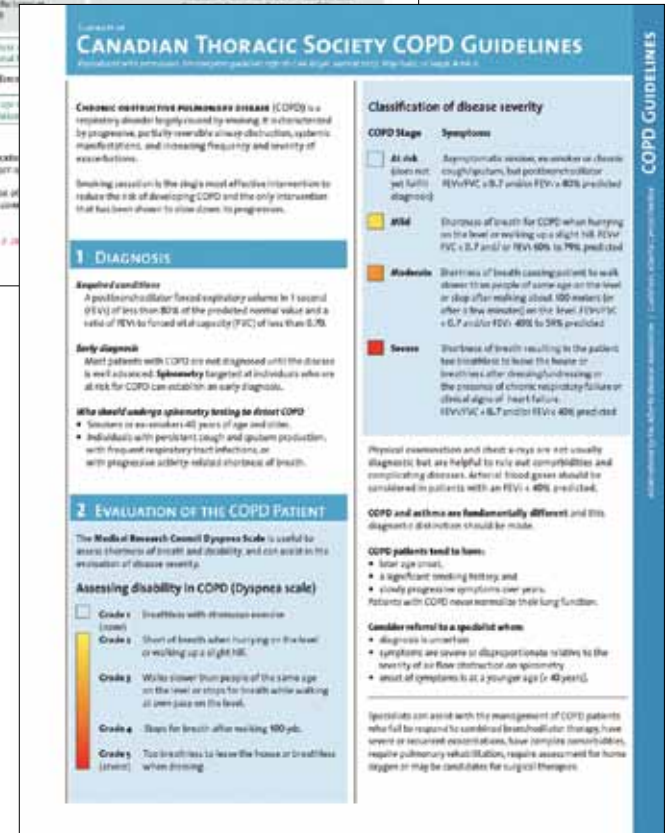
I also did the redesign of a document presenting information to physicians about the use of pharmaceuticals (Figures 4 and 5). The new design was developed after analysis of the existing one with the help of scientific publications and interviews with users. The redesign improved search and find tasks, memory, and general usability. Research helps obtain measurable results in human performance using communication devices.

Redesigning a hospital form (Figures 6 and 7), Guillermina Noél and I developed eight prototypes through an iterative process of interviews with users to arrive at the final form. Figure 8 shows 18 of the 52 modifications introduced.

4. redesign of a document presenting information to physicians about the use of pharmaceuticals – original document



5. redesign of a document presenting information to physicians about the use of pharmaceuticals – redesigned document



6.

7.

8.

- Reduced importance to the heading
- Check marks located to the left of the names
- Changed order of the instruction to "Specify"
- Each copy's destination is more conspicuous
- Urgency status at the beginning of the request
- Three degrees of urgency instead of two
- The date format is standardized
- New instruction: "Write in block letters"
- Gender is added after name of patient
- The sections are numbered
- "Affix patient's label" is before patient's data request ("Affix" instead of "use")
- "Health care code" is eliminated/Only patient's number
- First time patient category is added
- "Non-surgical request" is added
- "Adverse reactions" note is added and re-worded
- Foot notes are integrated with the texts
- Date goes closer to signature
- "Signature and" is added to "Name of ... doctor"

18 OF THE 52 MODIFICATIONS MADE TO THE FORM

Something to remember

- The more one knows about a problem, the easier it is to confront it.
- Every design project requires sufficient, precise and reliable information.
- One's current knowledge is normally not enough to solve a new design problem: this is the birth of the need for research, so as to create the missing information. Existing knowledge serves to begin a project and produce a first prototype: it is normally not enough to produce an optimal solution.
- It is the responsibility of the researcher to clearly define the limits of applicability of the information created by research. Knowledge is seldom generalizable.
- There are three types of generalization of knowledge: Representational generalization, that is whether the sample population tested represents the wider population to which the research will be applied; Inferential generalization, that is whether the findings can be applied to other particular contexts; and Theoretical Generalization; whether general principles can be deduced from the findings for more general application (Ritchie & Lewis 2003).
- Research is always useful, not only to produce a good proposal, but also to defend it.
- Almost every design problem is interdisciplinary.
- The interpretation of the results is not a mechanic process, and one has to pass judgement about where correlations are or not cause-effect relations.
- The presentation of the design project is a design project.

What happens when design is not supported by user research? Hospital signs (Figure 9).

This is what happens when a sign system ignores the cognitive and perceptual capacities of the users: 1) The colour coding has too many elements: impossible to distinguish some from others with certainty, let alone remembering them; 2) The repetition of arrows in the same direction is redundant and confuses more than helps; 3) The arrows have short shafts and are made more illegible because of the small circle in which they fit; 4) The distance between the names of the hospital's departments and the arrows makes it difficult to relate ones to the others. 5) The location of the sign behind the protective bar obstructs the reading of one line of text. 6) The small texts are not legible from a distance. 7) The writing of the names does not consider the users' key words: nobody looks for "Clinica Ostetrica" (Clinic for Obstetrics) but "ostetricia". The same applies to "Divisione Ostetrica" and "Punto Prelievi": they ignore the key word and foreground

9. Hospital signs



a meaningless one. The initial letter of the keyword is crucial in sign reading, and it should be leaning against the left margin. 8) The names of the departments are not ordered alphabetically, they are arranged considering where they are located in relation to the sign: but who confronts a sign wondering what is to be found to the right or to the left? One looks for a given department, doesn't one?

In sum, the sign does not consider the visitors' needs, nor the questions they have in mind.

Text for packaging (Figure 10)

The packaging for salty crackers shows the number of calories contained in the product (173), sugar (1.3 grams), fats (5 grams), saturated fats (2.5 grams) and sodium (0.56 grams). These are data, but are not information. The transformation of data into information requires a context: what is the amount of each component advisable for a good diet?

This is a typical example of a text that is expert-centred and not user-centred. The legislation is observed, but if one is not a nutritionist or a medical doctor the numbers do not mean anything. Without user research about comprehensibility, the public is not respected and the messages produced are useless.

3. The kind of design we need

Socially relevant projects need to be developed in design education and practice. One must find a need to be addressed; it can be an extreme need, such as teaching Africans to avoid AIDS contamination, or a simpler need, like making phone bills easier to understand. Social relevance should go hand in hand with methodological responsibility. To become an agent of change for the better, design needs to be supported by research.

A word about education

User research should be introduced from the beginning in design programs, since user performance is central to the success of any kind of communication. Studies at the Master level in design should not be a continuation of undergraduate studies, they should equip the students with the research tools and the existing knowledge of a specific design area. Doctoral research must be oriented at the generation of new knowledge. But without meaningful problems, research is useless, however carefully developed it might be.

As much as formal education needs attention, continuing education needs it just as much. Designers need to stay up to date with current research in the field. *Information Design Journal*, *Design Issues*, *Design Studies*, *Visible Language*, and *Design Research Quarterly* are journals that for many years have published good articles on design research, among others by Aaron Marcus (USA),

10. Text for packaging



Karen Schriver (USA), David Sless (Australia), Karel van der Waarde (Belgium), Robert Waller (UK), Patricia Wright (UK), and myself.

The need for design research

"If you are going to do something important today, you are going to do it with others" said Paddy Ashdown in a recent TED lecture. It is important for us to learn to work with others and not only for others, particularly when it comes to clients. If design research becomes a common interest for many people and not only for designers, then there are more chances that it will develop. Communication design, when supported by research, can lead to social innovation, so necessary in these times of social and economic change.

Research in design serves to create communications that respond to the possibilities and the needs of all segments of the population. Public information designed on the basis of research would avoid form-filling errors in hospitals, would facilitate reading instructions for medicines, would increase workers' safety in industry, would render administrative work more efficient, and would allow common citizens to understand insurance policies, legal documents and contracts. Information, when it is tailored to the users' needs, is ethical, it facilitates tasks, and reduces costs.

Access to information should be regarded as a civil right. To make this happen now, design research is not an option. It is a necessity.

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Jorge Frascara (CA)

Jorge Frascara is Professor Emeritus, of Art and Design, University of Alberta; Fellow of the Society of Graphic Designers of Canada; Editorial Board member of *Design Issues* (Carnegie Mellon University/MIT), *Information Design Journal* (John Benjamins) and *Arcos* (Rio de Janeiro); International Fellow, Society for the Science of Design (Japan), and Advisor, PhD in Design Sciences, University IUAV of Venice, Italy.

He has organized several international conferences and design education projects, has been advisor and reviewer of several design education programs and has lectured in 26 countries. He was Chairman of Art and Design at the University of Alberta (1981-86), President of Icograda (1985-87), and Convener of the ISO TC145 SC1 WG2, Design Criteria for Public Information Symbols (1977-84). He has been Board of Directors Member, Communication Research Institute of Australia (CRIA) and Editorial Advisor, Tipográfica, Argentina.

He is the author of *Communication Design* (Allworth Press, 2005); *User-Centred Graphic Design, Mass Communication and Social Change* (Taylor & Francis, London, 1997); and editor of *Designing Effective Communications* (Allworth Press, 2006); of *Design and the Social Sciences* (Taylor & Francis, 2002); of *Graphic Design, World Views* (Kodansha, Japan, 1990); and of the ISO Technical Report 7239, *Design and Application of Public Information Symbols* (ISO, Geneva, 1983). He has also published four books in Spanish and more than 50 articles internationally.

He has conducted research with the support of various Canadian organizations. His professional experience includes illustration, film animation, advertising and graphic design. Past clients include the Government of Canada, the Mission Possible Coalition (traffic safety), the Alberta Drug Utilization Program, and Telus Canada. He lives in Padova, Italy, working on information design with his wife Guillermina Noël, focusing on design for medicine (www.frascara-noel.net).

Jan 12th 2012

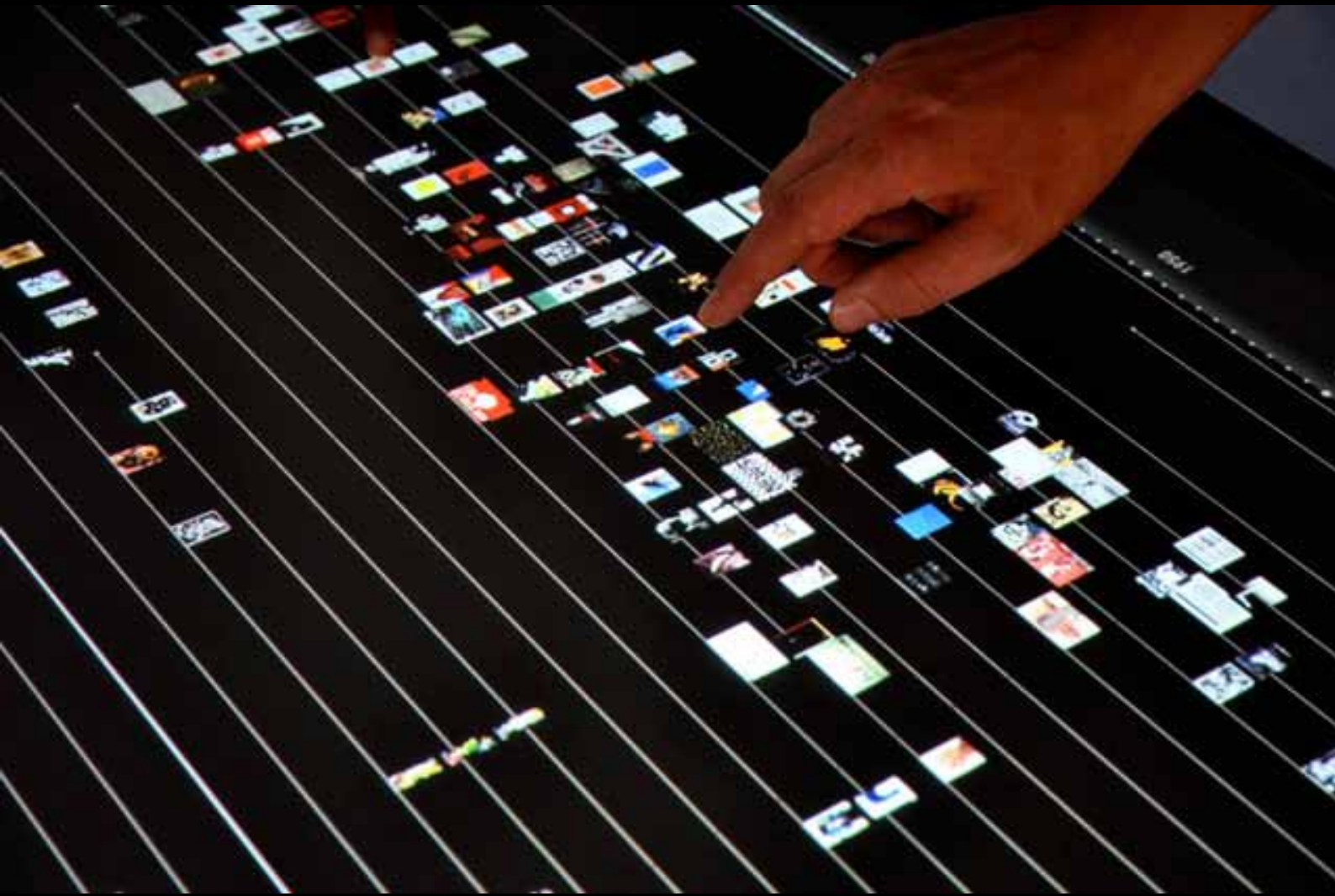
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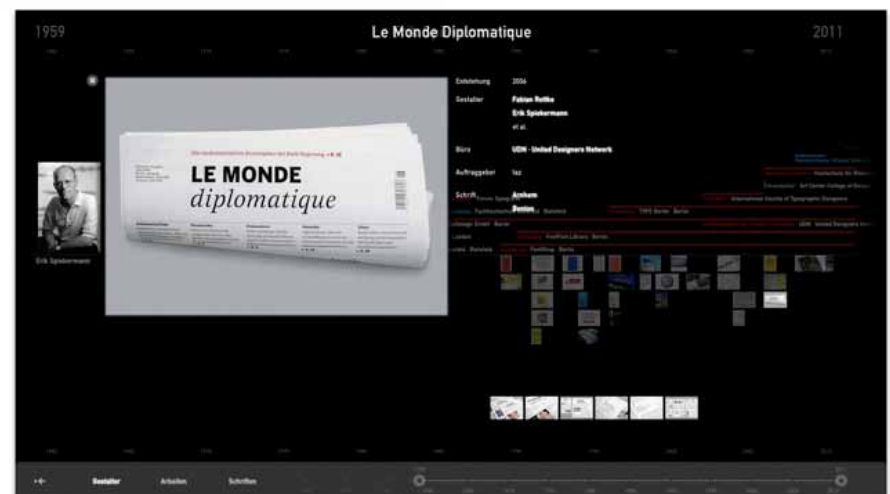
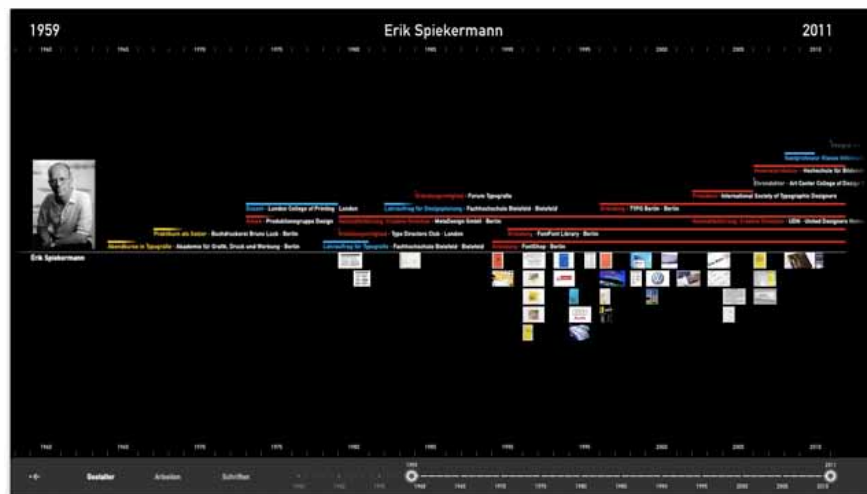
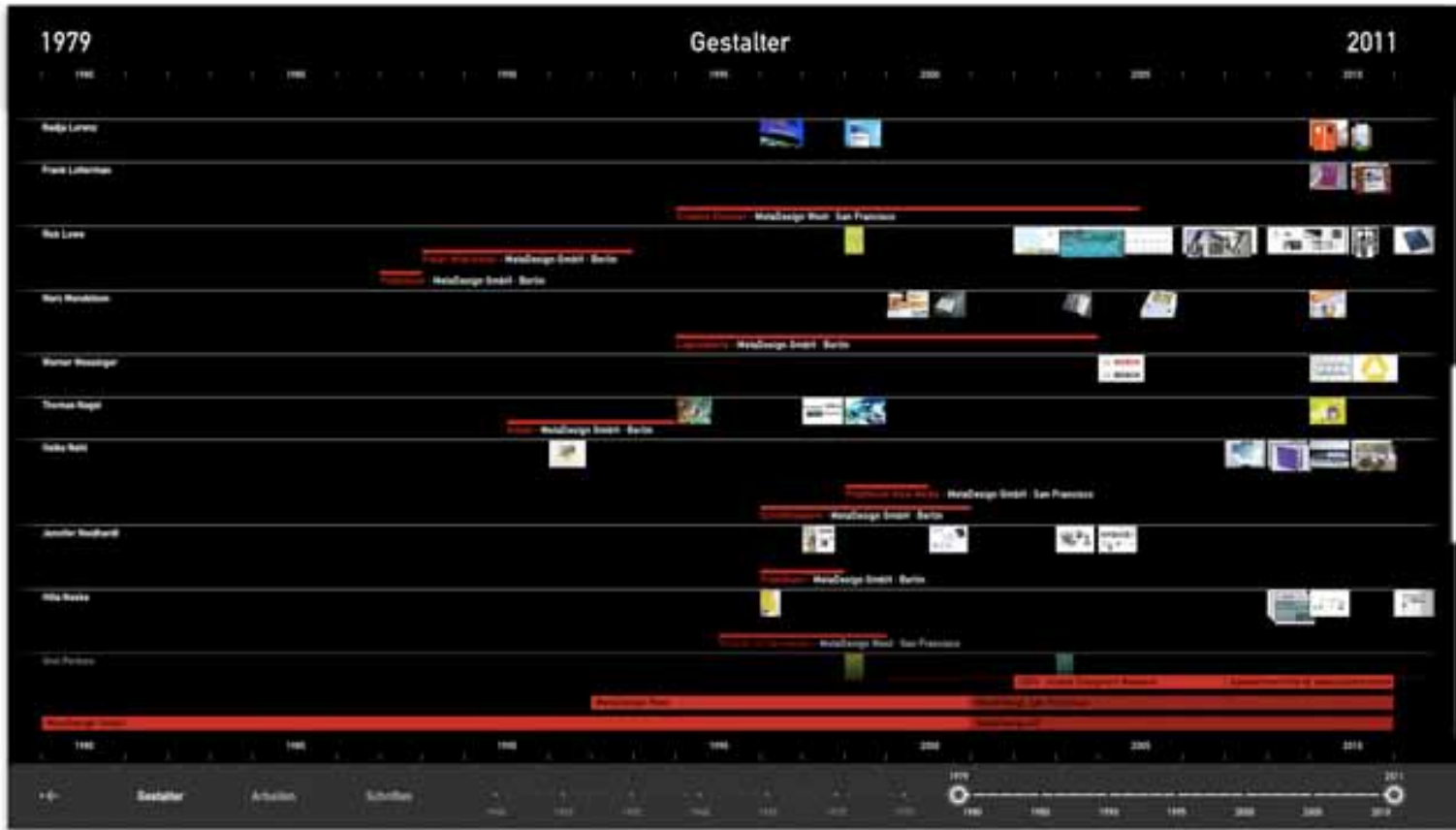


THE INTERACTIVE RESEARCH TABLE: COMPLEX MUSEAL ARCHIVES MADE ACCESSIBLE FOR A BROAD AUDIENCE

Severin Wucher (DE)

Doing research on visual objects and the question of how to present the results: That is what museums and archives do, and it is a complex process. Art historians and curators create links between objects, they find relations between those objects and other persons, institutions and places. The use of databases or spreadsheet applications has been making it way easier to organise and overlook extensive research projects, but the researchers are faced with the problem that databases tend to be quite uncomfortable to use or demand un-intuitive workflows. These constraints are the main reason why databases or spreadsheet applications mostly are seen like digital a slip boxes, but not as powerful and intelligent tools in order to visualise and structure data. Furthermore, this specific way of working with databases dramatically reduces the potential of raw data within the mediating process. Thus, insights are found beyond the powerful database-context, as for example in illustrated texts in catalogues or in exhibitions. The Interactive Research Table methodologically and technologically unifies tools which are normally used in separated ways: tools to collect, capture, structure, contextualise and present objects. Invented by Berlin-based design research institute Plural, the Research Table successfully helped strating a complex research project on the history of Graphic Design in Germany (1900-2010) at the Berlin University of the Arts (UdK). Whereas in conventional workflows those connections and resulting questions might stay uncovered, the concept of visual-based research can lead to new and surprising insights and can help to reveal questions much easier.





Severin Wucher

Severin Wucher (* 1976) is a designer and consultant at Berlin-based design network Plural, specialized in Visual Systems, Editorial Design as well as in Design Research. He taught Information Design as a Guest Professor at the Berlin University of the Arts (Universität der Künste Berlin) and at Burg Giebichenstein University of Art and Design in Halle/Germany. He gives lectures, holds workshops and takes part in juries at numerous international universities and design-related institutions. Currently he is co-organising a conference on reforming design education in Germany and is - which turns out to be kind of a life-task - working on his research project on the history of graphic design in Germany.

Jan 12th 2012

12:10

GRAPHICDESIGN&

Lucienne Roberts (UK)

I will be talking about the inception of the publishing and events enterprise GraphicDesign& and its relation to research and to my design practice.

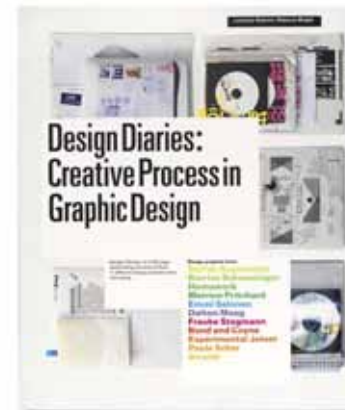
Co-founded by Lucienne Roberts [founder of the London design studio LucienneRoberts+] and Rebecca Wright [course director of BA Graphic Design and Graphic Design + Photography, Kingston University, UK] GraphicDesign& launched in April 2011.

While on a research trip for the book *Design Diaries: Creative Process in Graphic Design* [Laurence King, 2010], Rebecca and I took refuge from winter rain and chill in the café of the Stedelijk Museum CS. A breakfast coffee became wine and some hearty soup as we enthused about the projects included in our book: how they demonstrated what graphic design does best – connect with the rest of the world – and bemoaned that the essentially outward-looking nature of our practice is often not made explicit. Gradually an idea took shape. GraphicDesign&. The clue is in the name of course... GraphicDesign& publishes books and papers, hosts events and uses its online presence to explore the symbiotic nature of graphic design practice and celebrate how graphic design is always inextricably partnered with something else. In my conference presentation I will summarise the collaborative process behind our first outputs, which explore GraphicDesign& Knowledge, GraphicDesign& Social Science, GraphicDesign& Literature and GraphicDesign& Religion, and will outline the Bliss Bibliographic Classification system that determines our subject pairings. Each GraphicDesign& project connects graphic design to one of the myriad of subject areas it classifies.



GraphicDesign&

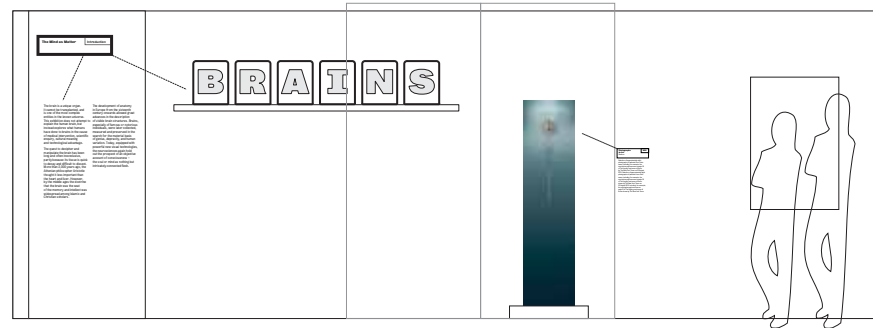
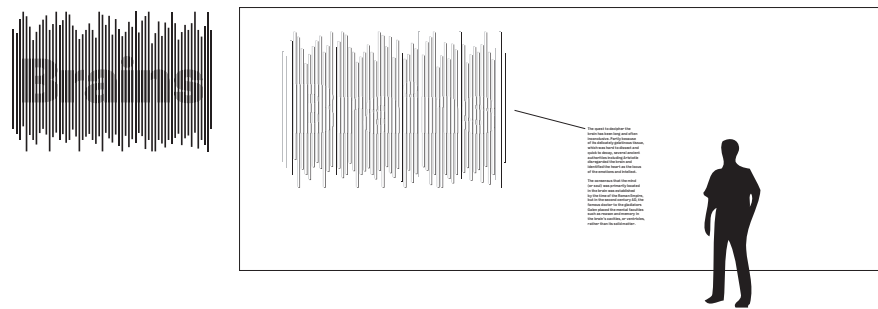
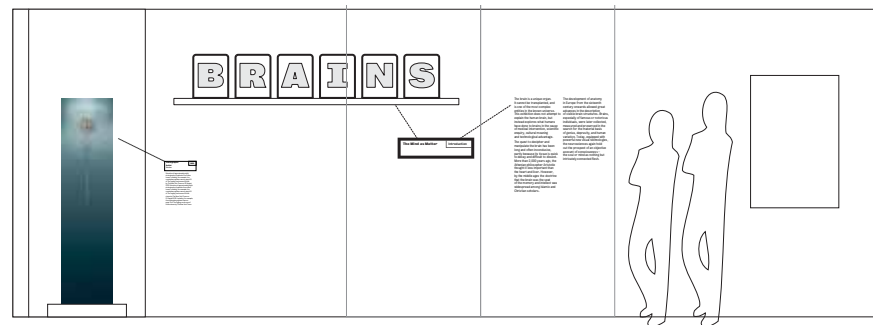
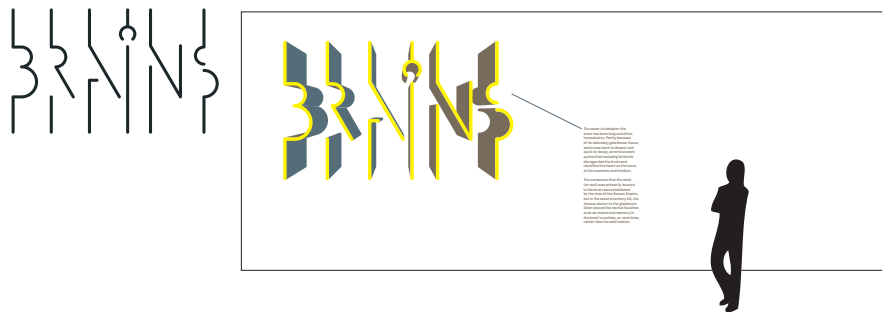
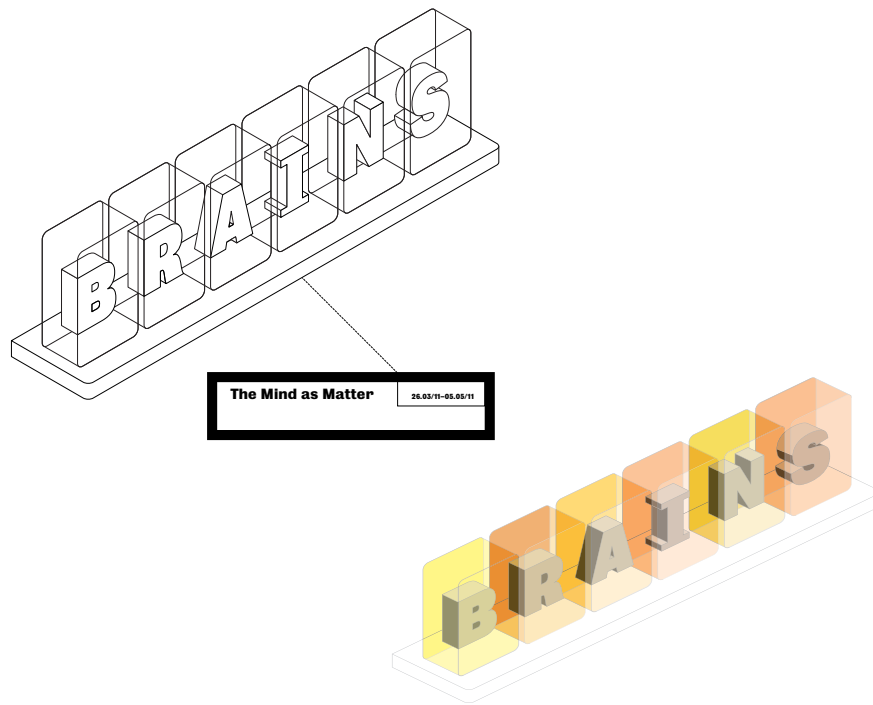
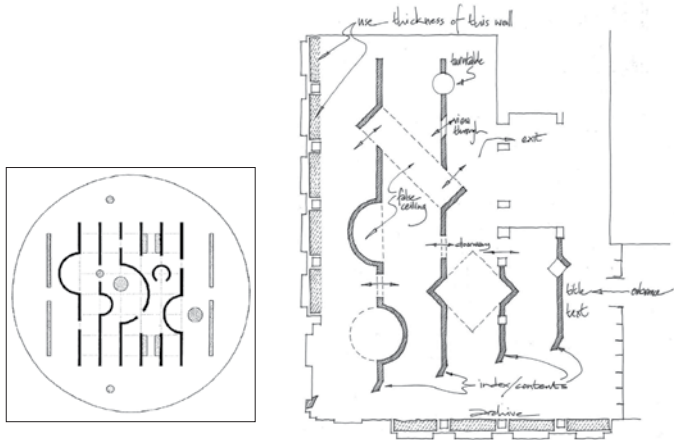
From philosophers to chemists, anthropologists to economists, psychologists to theologians, every GraphicDesign& output is a partnership between graphic designers and experts in another field. Varying in tone, perspective and ambition each is a new piece of work, designed to appeal to the culturally curious and be educationally valuable in the broadest sense. The premise that underpins the Bliss system is particularly relevant to our objectives. Critical of the systems available to him, the American librarian Henry Bliss working in the 1930s and 1940s, developed an adaptable method that provides distinct rules but allows for a subject to be put in more than one place, a concept called 'alternative location'. Bliss used every character available on his extensive and rather eccentric typewriter in developing his system. WFG is the code for Graphic Design. To demonstrate the 'real world' relevance of GraphicDesign& I will draw upon the experience of various LucienneRoberts+ design projects, most particularly a live exhibition project entitled Brains: The Mind as Matter which opens at the Wellcome Collection galleries in March 2012. I will outline the research that we are undertaking to develop an appropriate design system to demonstrate how graphic design, in this case paired with medicine/biology/history/cultural studies [and more] is being best utilised.



Design Diaries: Creative Process in Graphic Design
[Laurence King, 2010]



Brains: The Mind as Matter
a live exhibition project



Lucienne Roberts

Lucienne Roberts studied graphic design at the Central School of Art and Design. After a brief period at The Women's Press, Roberts established the design studio sans+baum, hoping to ally a commitment to accessible and engaging design with a socially aware agenda. Roberts' new studio LucienneRoberts+ started at the end of 2006. Projects have been wide-ranging and include exhibition design for the British Museum and Wellcome Trust; and identities for the Royal Academy, Petrie Museum and the David Miliband Labour Party leadership campaign. In 2000 Roberts was a signatory of the manifesto First Things First, which calls for a greater awareness of design responsibility. She has lectured widely, most recently at Yale and ESAD, Porto. sans+baum projects were included in the Barbican exhibition Communicate: Independent British Graphic Design since the Sixties. Roberts is a regular contributor to Eye magazine and Grafik. Her first book, The Designer and the Grid was published by RotoVision in 2002. Good: An Introduction to Ethics in Graphic Design, was published in 2007 by AVA. Roberts was design consultant to Breakthrough Breast Cancer for eight years and is currently acting in the same role for AVA Publishing. She was a D&AD judge in 2008. Her new book, Design Diaries: Creative Process in Graphic Design was published by Laurence King in 2010. Early in 2011 Roberts co-founded GraphicDesign& to explore the essentially outward-looking nature of design practice.

www.luciennerobertsplus.com

www.graphicdesignand.com

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12:50



GRAPHIC DESIGN AND INTELLIGENT ENVIRONMENT RESEARCH

Tiina Kymäläinen (FI)

Tiina Kymäläinen is research scientist at VTT Technical Research Centre of Finland & PhD student and lecturer at Aalto University, School of Arts, Design and Architecture.

Intelligent environment research implies to human-technology interaction (HTI) processes that are performed in ubiquitous environments (Weiser, 1991). One way to describe such research environment is the Internet of things or do-it-yourself environments that are currently very much in focus. Often intelligent environment research may concentrate, for example, to multi-device user interaction in smart environment context (see illustration¹). Or the research may aim to design the graphical user interface (UI) for an application that is operated in a smart environment (see illustration⁴).

The described examples are more or less describing the technological aims of the research, but the processes are also highly concerned with people who are operating, interacting and living in those environments - people whom the environments are being created for (Cooper, 1999). These complex, interactive environments and systems are studied by user-centered approach (Norman, & Draper (1986). The aim of user research in this context may be e.g. to offer support for users in technology-augmented environments. One important part of the design processes of intelligent environments is, that the attempt is to create highly intuitive and natural environments by focusing the interest towards user experience (Hassenzahl, 2010). The technology may be used e.g. by natural body movements, gestures, speech recognition or/and attention fixations. The intelligent environment research is seen as oppose to the early



1. Illustrations of the means to operate intelligent environments by mobile terminal. *Point Me, Touch Me, Scan Me* –project (2004) studied physical browsing. Physical browsing is a mobile-device-based interaction method to be used in operating an intelligent environment. In the first illustration, the user scans the room and all the links are displayed in the GUI. In the second illustration user selects a link in a movie poster by pointing to it. The mobile terminal reads the tag and the web page of the movie is opened.

development of the desktop model (that operated with a mouse) by offering more intuitive affordances (Weiser, 1994). One might argue that the use of mouse can easily be learned even by a three-year-old. But the counterargument is, that the usage situation of the interaction is hardly natural.

Especially in the early phase of the research, user research often employs creative means (Laurel 2004, Buxton 2007). In this article the attempt is to explain what intelligent environments are, by presenting the intelligent environment research projects that have exploited those creative means and the intervention of a designer.

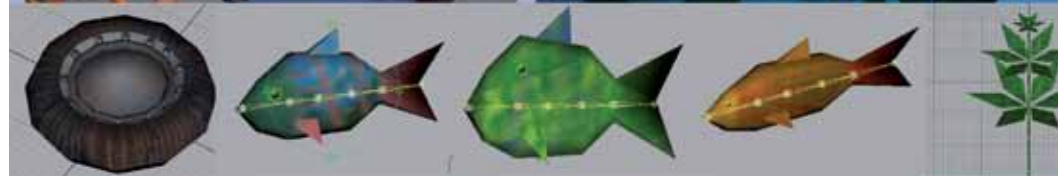
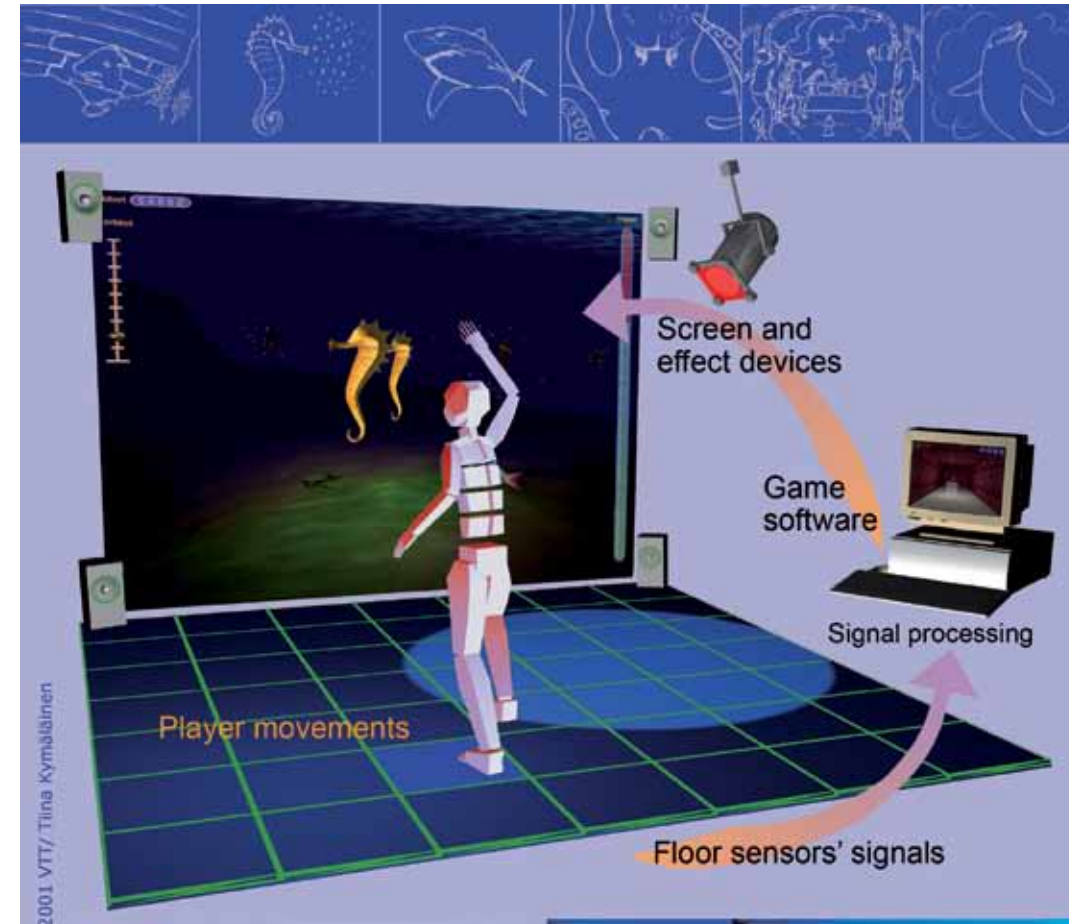
Intelligent environment research, which includes e.g. smart environments, -systems, -applications, -products, -experiences and – services, provides extremely challenging research subjects. The design process of e.g. the proof-of-concept or prototype often begins from a scratch; in some cases, there is no previously existing form of the overall concept, on which to base the design task at hand (Kymäläinen, 2010). Designers, developers and researchers meet an unknown territory and they have to gather applicable information from various sources. Yet still the aim is to create something that adapts to users' needs, something that is appealing, new, even surprising, but at the same time - embedded and unobtrusive (Greenfield, 2006). Because of the complex nature of the field, research groups are usually formed of experts from various professions: graphic design, user-centric (UCD) -, interface- (UI) and concept design and expert knowledge in diverse technology fields.

Experimenting and piloting smart environments, particularly with visual means; visualisations, paper and animation prototypes, graphical UI:s and graphic layout models, are significant part of smart environment research. They are often the only means to make the intelligent environments visible for the participants. That is a reason why graphic design has become an essential part of user-centered intelligent environment research. In order to communicate about the complex design contexts with users, graphic design and visualizations play vital role.

Designer's insights to smart environment research

I began to study intelligent environments as a graphic designer. My very first project was Lumetila: Virtual Space – User Interfaces of the Future (1999–2001) (see illustration 2). Lumetila – project aimed at developing virtual space computer game with floor sensor controls. In other words, while playing, users were expected to use their body movements to control the game. The aim was to create an immersive, aesthetic, captivating and usable smart space game. Because of my expertise and background as an animator and graphic designer, the design interests were diverse. In the first phase, the task was to come up with the conceptual story; manuscripts of several haptic games and the visual storytelling of the final game. Development phase included visual appearances from early sketches to final 3D modelling and animation. At the end of the project, the designers' role expanded to the field of user research and I concentrated on the visual feedback. Evaluations were carried out during several iterative phases.

2. Floor sensor game, Lumetila, was at first illustrated to make the technology visible for all the participants. The designer's task was to create several concepts that exploited the technology most adequately. One of the concepts was chosen to be developed further. The game design process resembled very much scriptwriting with a screenplay and illustrated storyboard. In the production phase, I designed and animated the 3D objects that were implanted to the game environment. The game was further developed according to user feedback, which was collected from several different user groups.



The research findings of Lumetila – project were exploited in the subsequent project, UbiPlay (2003–2004) (see illustration 3). The aim of project was to design an interactive playground. UbiPlay playground was aimed for three generations: children, their parents and grandparents for multiple purposes: e.g. for playing, learning and exercising. The technological aim was to offer a platform for programmable interactive playground. The augmented playground consisted elements, which used sensor technology, video displays, and computer software. The designer's task included the concept development of seventeen games. They were first written as short scenarios (Carroll, 2009) and then presented as illustrations and animation prototypes. As user researcher, the aim was to evaluate the concepts. Evaluations were carried out by qualitative interviews with the targeted user groups.

These two projects, UbiPlay and Lumetila were funded by TEKES (Finnish Strategic Centre for Science). There are different financing instruments for the intelligent environments projects, and funding



3. UbiPlay was an augmented out-door playground that exploited sensor floor-tile technology. Later the project participant, Lappset Group Oy, commercialised the learning and activity environments under the brand SmartUs.

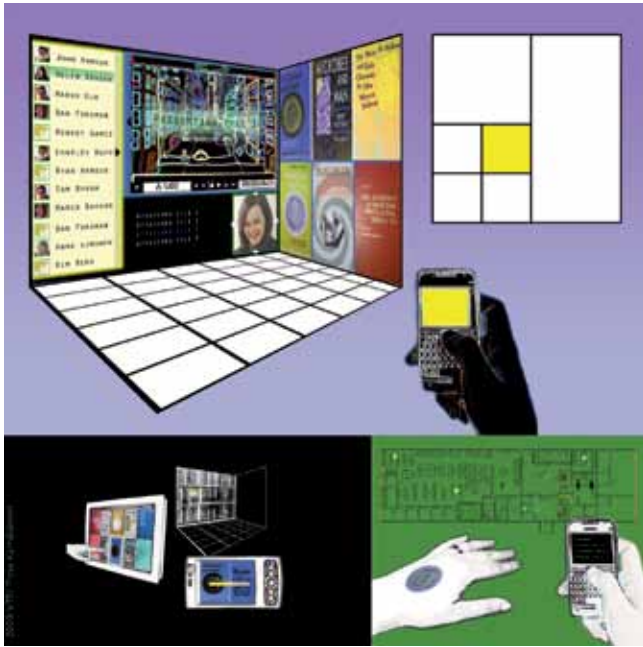
plays also important role in the design approach. Confidential assignments are research projects that are funded by a single financier/company. Often the design or research task is defined more precisely and the projects are shorter. Although for a designer/researcher it might be frustrating that the results of the research are classified for several years, the benefit of these short-span assignments are that the results are seen in production relatively soon. And usually the designer may learn lot of new valuable information when taking part to different kind of development processes. One of the assignment, that I have been involved as a graphic designer, included three months working period at Nokia premises, developing concepts, animated transitions and graphic design for UI of the mobile phone. Another case was the design and user research of a walking-style recognition demonstrator for Toyota (see illustration 4). Assignment for Toyota included graphic design of the user interface and user evaluations of a walking style recognition demonstrator.

4. User interface and user evaluations of a walking style recognition demonstrator for Toyota.



One confidential assignment that has publishable results was for the Library of Tampere University of applied sciences (see illustration 5). The aim was to outline future intelligent library that exploited ubiquitous computing. My designer/research scientist role was to develop concepts for the library – both for the physical environment and a new kind of learning environment. Assignment included user- and expert interviews and the final visualizations and concepts were based on the user evaluations. Visualizations were thereby used as early prototypes of the novel library.

Currently, for my part, the smart environment research is carried out in DIYSE: Do-it-Yourself Smart Experiences project. This long-term research project is funded by Eureka/ITEA2 programme. The project aims at enabling ordinary people to easily create, setup and control applications in their smart living environments, as well as in



5. UbiLib –project intended to find new technological means to create a library that would have multiple functions. It could e.g. be a meeting place for students and offer remote seminar facilities. One of the technological features was to locate the information with mobile phones using RFID technology.

the public Internet-of-Things space. The graphic designer/research scientist's role is to create and evaluate use cases for an intelligent nursing home. Research includes also evaluations of 'DIYSE Music Tool' for persons with intellectual learning disabilities, and evaluations of 'Book of Memories' application for senior citizens. One aim is to find new evaluation methods in order to co-create smart environments with users in the initial phase of the project. One such method has been to sketch the conceptual user interface together with users (Buxton, 2007) and evaluate paper-prototypes (Snyder, 2003) of the user interface.

Conclusion

There is no question about the fact that well-designed user-centered intelligent environment research processes require multiple perspectives - an interdisciplinary approach - but there still seems to be opposing thought how that approach is actually carried out. I have taken part also to projects in which the designer's role is seen as adding topping to a cream cake. These projects usually fail in having full benefit of the design expertise, and consequently, it has negative influence to the research processes.

There are more than one futures (Buxton, 2007) is the fact that is also recognised in smart environment research, and that is the reason why users' opinions are so carefully studied. But in intelligent environment research simple usability heuristics (Nielsen & Molich, 1990) do not apply. That is because the technology might be too immature or the prototypes are too rough for the process to benefit from detailed user evaluations in most process cycles. Often the user studies of intelligent environments aim to have feedback from the acceptance value of the intelligent systems and gather information about the needs and wants of the people who will be using the systems (Kuniavsky, 2003). This information is qualitative, and thereby the results of the user studies have more than one interpretation.

There are many advantages in involving designer's opinion and vision into user research processes. Firstly, during user evaluations, the designer may concentrate on particularly to the visual expertise - and discover observations and findings other researchers cannot see. Secondly, the designer receives imminent feedback from users, which is beneficial especially for agile development processes. Thirdly, the analysing process, the interpretation of results, becomes more productive.

At best, graphic design could be seen as a bridge between user research and technological development, as the feedback from user studies are brought to the subsequent design process in a concrete manner - by having learned the information by the users themselves. The more the designer has been involved in researching, the better the users' opinions are taken into account in the continuing design process. The evolution of ubiquitous computing is in progress and design expertise has proven its place in creating aesthetic, highly desirable and usable intelligent environments.

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Tiina Kymäläinen (FI)

Tiina Kymäläinen is research scientist at VTT Technical Research Centre of Finland and PhD student and lecturer at Aalto University, School of Arts, Design and Architecture. She has a Master of Arts degree (department of graphic design) from AALTO University, where she is also currently carrying out postgraduate studies, in the department of design. She also works as a research scientist at VTT Technical Research Centre of Finland, where she has been studying future user interfaces and smart spaces for more than twelve years. To date, her dearest projects have been virtual space computer games with floor sensor controls (Lumetila, 2001) and an interactive playground for children (UbiPlay, 2003). Her current work is related to Do-it-Yourself Smart Experiences for smart spaces. The research fields are graphic, interaction- and human-centred design.

In this paper, the topic is related to the co-operation between graphic design and intelligent environment research. Smart/intelligent environment research refers to technological development processes that aim e.g. to offer support for multi-device user interaction in smart environments or design processes of user interface (UI) and applications in smart environment context. In this article there are many concrete examples and visualizations illustrating the intelligent environment research.

AALTO University:

<http://design.aalto.fi/en/>

VTT Technical Research Centre of Finland:

<http://www.vtt.fi/>

http://www.vtt.fi/research/area/context_aware_services.jsp

http://www.vtt.fi/research/technology/user_interaction_technologies.jsp?lang=en

Published work:

<https://reseda.taik.fi/Taik/jsp/taik/Researcher.jsp?id=14577007>

Information about the author:

<http://www.linkedin.com/pub/tiina-kymäläinen/35/844/a91>

Jan 12th 2012

15:00



DESIGN RESEARCH IS DESIGN PRACTICE: MAPPING DESIGN INTELLIGENCE

Jan Kubasiewicz (USA)

The title of this essay describes precisely its core concept: Design research is design practice, and vice versa. When designers design, they research. In other words, what designers do through various processes and activities is a method of inquiry and a way of knowing. As Bruce Archer describes in his 1995 article “The Nature of Research,”¹, “Research is systematic enquiry whose goal is communicable knowledge.” Consequently, the core of design practice shares some of the goals of research. While exploring the topic, before anything else, I should clarify my viewpoints in order to keep the scope of the discussion within bounds and in focus.

When I use the term design, I mean design in the context of communication. My definition of *communication design*, however, is not restricted to the field known as graphic design. On the contrary, it encompasses the broader aspects of communication that occur across multiple disciplines. I refer here to various situations in which audiences interact with cultural artifacts, systems and environments that communicate something to the user. That communication happens by way of — but it is not limited to — products of graphic design, interfaces, industrial design objects and architectural locations. I will discuss communication as a frame of reference in more detail later on.

My viewpoints on all aspects of design discussed in this essay — from design praxis to design intelligence — are significantly influenced by my experience as a design educator representing

¹ L. Bruce Archer, “The Nature of Research,” CoDesign, January 1995, 6.

Research is systematic inquiry,
the goal of which is knowledge.

L. Bruce Archer, 1981

the specific teaching philosophy of a unique graduate program in communication design — the Dynamic Media Institute at Massachusetts College of Art and Design in Boston. There are many distinctive aspects of the DMI curriculum that are relevant to the topic of this essay and I will discuss some of them here.

The understanding of what research is in the context of communication design requires a brief overview of terms. In “The Nature of Research”, Archer brilliantly explains the conditions of his general definition of research, which he says must be “... systematic because it is pursued according to some plan.”² Indeed, the word “plan” usually appears in the first line of a dictionary definition of “design.” Research, Archer says, must be considered a “... goal-directed ... enquiry because it seeks to find answers to questions.”³ This description perfectly aligns with design defined as a “problem-solving” activity. However, the most essential element in Archer’s definition of research — and in my opinion, the sine-qua-non condition of design practice as well — is the term “communicable knowledge.” He describes communicable as “... the findings [that]

² Ibid, 6.

³ Ibid, 6.

must be intelligible ...” and understandable for an appropriate audience “... beyond providing mere information... ”⁴ of facts, skills and experiences. The knowledge and understanding gained by an individual as a result of communicable research is likewise the goal of communication design.

So far, the terminology and goals of research and design seem aligned. However we must be aware of a history of varying research environments as well as multiple classification systems based upon the intention of the research. The Science tradition in research has focused on the physical world, while the Humanities tradition has focused on humankind. Further potential for confusion exists in international design discussions since the Humanities and the Arts, regarded as distinct areas in most of the world, are almost synonymous in English speaking countries.

Certainly, there is a difference between creativity in the Sciences and the Arts in terms of the social structure of the fields. An experiment in science must be reproducible, the goal being an agreed upon “truth.” In art, a more subjective value resides in the recognition of underlying personal uniqueness. An idea, artifact or experience may be regarded as having value because it involves a unique way of seeing the world. These two research traditions belong to a longer list of polarities: Science/Art, Art/Design, Theory/Practice, Practice/Research, Research/Scholarship... The relationship between research and practice is the issue at the core of this essay.

Research conducted by practitioners is known as “action research.” It is a reflective process of problem solving that exists in design but also in medicine, business, teaching and other disciplines. Archer defines action research as “... systematic enquiry conducted through the medium of practical action, calculated to devise, or test new, or newly imported information, ideas, forms or procedures ...”⁵ The practitioner, is deliberately “... taking action in and on the real world in order to devise or test or shed light upon something.”⁶ This is what distinguishes action research from other categories — it is a kind of intervention to collect observations, eventually leading to conclusions. Because action research is performed in the real world, the findings — in comparison to laboratory results — may be contaminated. Yet, acting in the real world offers the advantage of gaining knowledge that otherwise would not be accessible. Research performed through action may have multiple goals, too. In the case of design practice, it could be “for” the purpose of specific project, or it could be “about”

⁴ Ibid, 6.

⁵ Ibid, 6.

⁶ Ibid, 11.

design — about its methods, its history, or its relation to people and society in the broader context to the Humanities and Social Sciences.

Is all practice the same as research activity? Certainly not. Practice may only be considered research, if it fulfills the goals of research as defined previously. Was it systematic? Was knowledge its goal? Was it rigorous? If the answers are affirmative, we may describe it as the practice of research.

The relationship of research and scholarships seems very relevant to the discussion of design research as design practice. Ernest Boyer, an educator, proposed a new classification of four types of scholarship, which describe the various types of research in a unique and creative way: “...the scholarship of discovery; the scholarship of integration; the scholarship of application; and the scholarship of teaching.”⁷

“The scholarship of discovery” refers to the traditional notion of research, the goal of which is the formation of “new knowledge.” Indeed, design demands both “discovery” and “invention” of knowledge that does not yet exist.

“The scholarship of integration” refers to bringing in existing knowledge from certain areas into others. Design is a system that interfaces with other systems, and therefore is cross-disciplinary by its very nature. It requires information from many disciplines that must be reconciled with design practice.

“The scholarship of application” refers to applied research, the goal of which is to extend knowledge for use in specific applications. It describes the core of design practice, which is applying existing knowledge in an innovative way.

“The scholarship of teaching” refers to research associated with developing new pedagogies and evaluating educational outcomes. In response to the shifting paradigms of design-based professions, current design education has shown promising energy in developing innovative, research-driven curricula on all academic levels.

Since its inception in 2000, the unique curriculum of the Dynamic Media Institute has been organically evolving in response to the shifts in information technology and design practices. Focused on the future of dynamic media in communication design, the DMI program accepts professionals from different backgrounds — graphic designers and new media artists, engineers and computer scientists, architects and filmmakers, journalists and musicians. They all bring



“The experience of dynamic media”

diverse viewpoints, different expertise, and a willingness to conduct a difficult dialog along the borderlines of multiple disciplines.

The students at DMI must also accept the concept of intentional communication as the modus operandi of their research, as well as the litmus test verifying their work. Representing the reflective approach toward the study and practice of dynamic media, student work is focused — as it is in the Humanities — on intellectual rigor in discovery and exploration of cultural artifacts. Those artifacts are human experiences mediated — or perhaps the better term would be “curated” — within the computational complexity of social communication. Students create and prototype an experience and observe their audience’s interaction with the work and with each other. Through the methods of ethnographic research, they discover what their work is about — as well as what they are about — and consequently they build up meaning and confidence. “Through a rigorous practice of research, prototyping, and writing, the students pursue their unique thesis vision that culminates in a rich body of original work and a comprehensive written thesis dissertations.”⁸

“Thesis topics, as varied as our students, range from interface design, interactive environments, learning applications, and data visualization to participatory narrative, sound and video installation,

7 Ernest L. Boyer. *Scholarship Reconsidered: Priorities of the Professoriate*, (New York: The Carnegie Foundation for the Advancement of Teaching, 1990), 16.

8 8. <http://dynamicmediainstitute.org/what-we-do>

smart objects and robotics.”⁹ In fact, the DMI curriculum philosophy can be best described as being a “listening post.” The participants bring their own researchable questions to the program, and as a result the focus of DMI work has expanded over time to correspond with the evolving current trends and best professional practices.

The territory of dynamic media design — and therefore the areas of research and practice at the DMI program — can be discussed within the following groups of concepts:

- Design for Information
 - communication
 - representation of information (modality)
 - mapping
- Design for Motion and Time
 - sequentiality
 - narrative
- Design for Interaction
 - interface
 - participation

Design for Information

The beginning of the Information Age was marked by the new understanding of “information” as defined by mathematicians solving problems of sending and receiving messages. Information was separated from the medium and eventually became a string of binary digits. Cybernetics — an interdisciplinary approach to the study of systems and structures of information born in mid 20th century — has forever changed the way we live and communicate. Today, dynamic media designers must see the world as an information structure that communicates continuously. Information embodies the essential notions of design practice and research as they relate closely to communication, knowledge, language, etc.

Communication is about understanding, and therefore learning. Learning, and subsequently knowledge, is a result of a communication process that can only be completed within an individual’s mind. The designer can help but cannot complete this process for the learner.

Images are one means of **representing information**. Yet logic, not imagery, communicates the true intention. Visualization of information supports our intuition toward understanding by combining the rational and the emotional — the knowledge frozen in words and numbers, and the knowledge vested in sensory experiences. Visualization extends to discovery.

⁹ Ibid.

Multi-sensory experience as a model for dynamic media communication makes a clear argument for multiple **modalities of information**. Multiple modalities correspond to Howard Gardner’s concept of *Multiple Intelligences*¹⁰ — a disposition toward certain types of learning “that originates in human biology and human psychology.”¹¹ In his book, Gardner identifies seven learning styles — linguistic, logical-mathematical, spatial (including visual thinking), musical, bodily-kinesthetic, interpersonal, and intrapersonal.

Can mapping be considered another form of intelligence?

Mapping seems to be a dynamic media designer’s natural way of thinking. It is a unique cognitive skill of finding connections among things, and making them visible to others who cannot see on their own. It requires the intellectual skill to research and theorize, and the manual dexterity to translate concepts into visualizations. Mapping is a process whereby knowledge may be created rather than revealed. It is a tool of the thought process.

Researchers in all disciplines apply dynamic mapping and simulation tools to observe and analyze the data in search of patterns and connections, often prior to defining a scientific hypothesis. This is what James Nicholas Grey termed “the fourth paradigm of science.”¹² In processing and analyzing unprecedented amounts of data collected via sophisticated tools of observation, researchers are helped by designers — contemporary cartographers. Designers create systems of mapping and dynamic visualizations, which allow researchers to navigate large scale structures in search of patterns of information. This is potentially the most practical solution for managing complexity.

Design for Time and Motion

Motion is integral to design. The notion of time, intertwined with motion, is considered the organizing principle around which all other design elements must relate. It is about the process of forming rather than static form alone. The meaning of motion and concepts of **sequentiality** already explored within multiple disciplines of art and science have become part of the vocabulary of communication design. Since Charles and Ray Eames’ “Powers of Ten”¹³ the integration of motion and sequencing with information design has

¹⁰ Howard Gardner, *Multiple Intelligences*, New Horizons (New York: Basic Books, 2006).

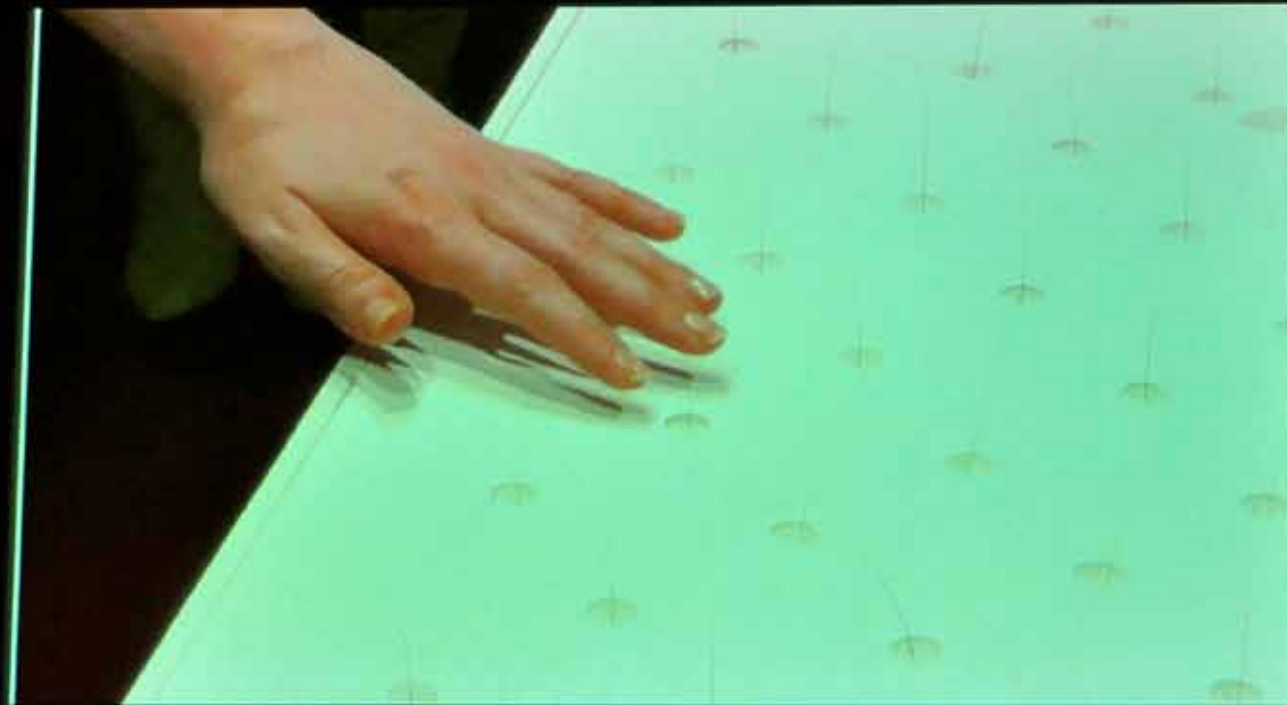
¹¹ Ibid., 6.

¹² Hey, Tony; Tansley, Stewart; Tolle, Kristin, ed. *The Fourth Paradigm: Data-Intensive Scientific Discovery*, (Redmont, WA: Microsoft Research, 2009).

¹³ *Powers of Ten*, dir. Charles and Ray Eames, 9 min. 1977.

design for **interaction**

- interaction > **participation**
 - participatory narrative
 - **participatory visualization**



Alison Kotin *Whisker Organ* MFA 2011

dynamic media

- information
 - communication
 - representation
- time + motion
 - sequentiality
 - narrative
- **interaction**
 - interface
 - participation**

demonstrated a tremendous potential for contributing, through sequential visualizations, to various disciplines of science, economy, and education.

Humankind's ability to create narratives has always been a powerful communication model. As the mind perceives visual, sonic, and kinetic information over a period of time, it continuously organizes discrete units or messages into a story, however abstract that story might be. A narrative, as defined by Aristotle, must have a beginning, middle, and end. Though, as Godard demonstrated, they need not necessarily be told in that order. In its hundred-year history, the language of cinema has evolved into a complex, universally understood system of communication, capable of translating a multi-sensory human experience into a kinetic sequence of audio-visual events, where motion serves to integrate all other channels of communication. Today, the cinematic vocabulary inspires metaphors of user interface as well. Indeed, interface can be considered a tool for narrative. Or, to paraphrase Marshall McLuhan, "the interface is the message."¹⁴

Design for Interaction

Bill Verplank, one of the pioneers of dynamic media, asks three fundamental questions of **interface** design while drawing his brilliant diagram in "Designing Interactions."¹⁵ The first is: "How Do You Do?" a question that relates to the possibility of an action the interface affords the user — "... you can grab a handle ... or push the button." The second is: "How Do You Feel?" a question that relates to feedback the interface gives to the user — "... feelings come from ... the sensory qualities of media." And the third is: "How Do You Know?" a question that relates to learning and understanding the interface — "... [the] map shows the user an overview ... the path shows them what to do."¹⁶ Verplank's questions focus on three fundamental areas of concern to dynamic media designers creating user experiences — regardless of the environment in which the interaction occurs. "Doing" means acting. "Feeling" means reacting to feedback. "Knowing" means learning and understanding the system.

The user interface is the front-end of an interaction. The back-end of any dynamic system of information — invisible to the user — is a database. Information architecture addresses the issues of structure

and the organization of information from the user's point of view. By running hypothetical user scenarios, the goal of the information architect is to design appropriate information flows within systems that are often very complex, with multiple "touchpoints" and modes of interaction and **participation**.

Information architecture is part of the practice of research in almost all work developed at DMI. However, it should not be considered a separate discipline. Information architecture represents an approach to design practice and research that allows the designers to see the information flow in any design product. It can be applied to traditional communication design as well as to other design disciplines, since information flow defines not only digital interfaces, but also analog interfaces of objects, as well as services and environments.

At the Dynamic Media Institute, we see the world as an information structure that communicates continuously and persistently. Any human experience involves dynamic information flow, and therefore a communication process, and learning. Indeed, communication and learning, which are as inseparable from human experience as from time and motion, are considered the central focus of our curriculum.

Through the reflective practice of design — which includes components of research, prototyping and writing — the work becomes systematic, intellectually rigorous, and produces communicable knowledge. Design practice becomes design research. And that is worth doing — the ultimate goal of any researchable question.

¹⁴ Aaron Koblin, "TED Lecture: Artfully Visualizing Our Humanity," 2011, http://www.ted.com/talks/lang/en/aaron_koblin.html

¹⁵ Bill Moggridge, *Designing Interactions*, (Cambridge, MA: MIT Press, 2007).

¹⁶ *Ibid.*, 127.

Jan Kubasiewicz

Jan Kubasiewicz is Professor of Massachusetts College of Art and Design in Boston and Head of Dynamic Media Institute—the graduate program in communication design wherein students from diverse backgrounds pursue a unique thesis, through a rigorous practice of research, prototyping, and writing [dynamicmediainstitute.org]. He has served as visiting lecturer and critic at numerous universities in the USA, Australia, China, Japan, Korea, Italy and Poland. He has organized exhibitions, workshops, seminars and conferences on the topic of communication, design and media.

Jan 12th 2012

15:40



BEYOND THE LOGO: THE YIELD OF VISUAL COMMUNICATION DESIGN IN TRANS-DISCIPLINARY DESIGN RESEARCH

Jennifer Williams (AU) and Ian Gwilt (UK)

ABSTRACT

*"Designers deal with possible worlds and with opinions about what the parts and the whole of the human environment should be."*¹

Contemporary design's value no longer lies solely in the manufacture of want, but in an allegiance to a broader society. These shifting dimensions lead us to imagine design's value afresh, asking how its role in negotiating an increasingly complex and multi-dimensional society can be underpinned and sharpened through research to both anticipate and plan change.

This lecture explores the potential roles for visual communication design in transdisciplinary research teams. While acknowledging the tangible manifestations emanating from visual communication in research – such as information design and the design of documentary materials – we posit that it can also play a fundamental role in both the framing of research enquiry as well as the forming of research agendas. These design methodologies initially employed to discover sites of enquiry can be deepened through critical and ethical dimensions that are emerging as core capacities of design education and research. This approach to the use of visual communication in transdisciplinary research teams also flags

¹ R. Buchanan "Rhetoric, Humanism and Design" in *Discovering Design*, R. Buchanan and V. Margolin, eds (Chicago, IL: The University of Chicago Press, 1995, 25

facilitation as a legitimate design activity rather than being a mere preamble to operational tasks.

We will outline several emerging (macro level) constituent parts as a way of thinking about visual communication design in research and also discuss the benefits to inclusion of visual communication design yields to trans-disciplinary work exemplified through a 2-year trans-disciplinary action research project led by the Institute for Sustainable Futures (ISF) at the University of Technology Sydney (UTS) over 2010-2011. In terms of a holistic research agenda the trial also teases out a fledgling model for visual communication design as both a critical and social discipline. Its placement at the 'fuzzy front end' (FFE) of the project promises to disclose fuller disciplinary capacities, demanding an exploratory, speculative, and provocative stance.

In this case study, bringing practice-based research design to the project contributed to facilitating the socio-cultural process of transitioning to unfamiliar systems of sanitation as well as yielding glimpses of future research scenarios to be tested further.

LECTURE

Introduction

Thank you for organizing and inviting us to this exciting and timely conference. We are honored to be here in Katowice.

"Beyond the Logo" was our first idea for the title of this talk and on reflection is probably still the most appropriate as it signals a discovery mindset in expanding visual communication design research and practice that potentially nourishes and strengthens the discipline.

Today we are going to be talking about research not **for** design but research **through** or **by** design, a condition coined by Christopher Frayling² in respect to fine art research inquiry. We should also mention here that we use both 'visual communication design' and 'graphic design' as interchangeable terms, not the separate disciplines that they are recognised as here in the school.

Historically, design's role has been to respond to pre-defined problems or briefs, in short, a service model, one whose remit is predominantly determined for and by private industry. What we are advocating is a situation where visual communication design might be considered in terms of a more holistic and located set of practices, and on a larger plane.

2 Frayling, C (2003). 'Research in Art and Design', Royal College of Art Research Papers [1]. London: Royal College of Art

Importantly, this integrated approach moves us from thinking about visual communication as a **problem solving activity** to a **questioning activity**³, providing insights and different perspectives to a field of enquiry, particularly in larger scale, 'wicked' problems. With reference to this latter field it is important to reflect that while today's complex social issues cannot be solved by any one discipline alone, design – at its highest pitch, an activity that negotiates the complex and is intellectually limber enough to engage with multiple strands of enquiry and resolution – is well placed to partner such initiatives. This talk, therefore, also explores the potential roles for visual communication design in a trans-disciplinary team where issues of both breadth and depth are located⁴.

The trans-disciplinary space

Due to the nature of the trans-disciplinary – fluid, complex investigations – and design's nascent role in such work, opportunities are emerging to re-position research and practice in this space. Key to this concept is locating visual communication design at the 'fuzzy front end' (FFE) where it can begin to play a fundamental role in not only the framing of research enquiry but also the forming of research agendas. It privileges open-ended exploration, suspending 'finding solutions' in favour of identifying and framing project propositions as well as excavating potential interconnections between project stakeholders. Hence, embedding visual communication at the formative stage of a research project opens the possibility for design strategies to be used in discerning and defining issues of concern and navigating any number of them through the arc of a project. Conversely, delivering only the end product – the summative – often means missing the important conversations that lead to questions and their context. We contend that it is at the formative where design can deliver much greater value, that to do otherwise is to leave its potential dormant.

This 'front end' position moves us away from the traditional practice of design as merely a service delivering finite solutions to one where it can be embedded as an equal partner in a research team

- 3 'Problem finding' (though currently a popular term) is limiting; not every issue can be so narrowly defined. 'Questioning activity' gives greater flexibility and opportunities to discover sites of enquiry from multiple perspectives and to determine what kind of design investigations are required.
- 4 Comprehensive definitions of multi-, cross-, trans- and inter-disciplinary design can be found here: Dykes, T.H., Rodgers, P.A., Smyth, M. (2009) Towards a new disciplinary framework for contemporary creative design practice. *Co-Design*, Volume 5, Issue 2 June 2009, pp.99-116.

(Figure 1). These design-led research strategies are intended to be open-ended and continuous by nature, privileging the *speculative* (or prototype) as a valuable position in its own right, yielding knowledge in the form of visible, tangible feedback loops – mirroring current thinking and also potential future directions at key points in a project – to project partners. This heralds the need for a significant shift in thinking by designers who have been taught to privilege only the finished artefact as the ‘outcome’.

Broadly speaking, we see research through visual communication design operating principally through the lenses of:

- *Critical practice* to examine and shape agendas, to signal changing values and opportunities throughout the arc of a project, and potentially beyond it;

1. Attributes of traditional practice (design placed at back end) contrasted with a more contemporary strategic approach (design placed at the fuzzy front end)



- *Reflexive enquiry* asking designers to understand the implications of their actions within the larger discipline itself – questioning and articulating their strategies, materials, processes, responsibilities and agency;
- *Framing* and *re-framing* questions and actions as a catalyst to accepted norms;
- *Clarifying complexity* and defusing any uncertainty of intent in order for informed discussion to ensue;
- *Speculative prototyping* of ideas using visual communication typologies to seed conversations as well as provide opportunities to provide on-going feedback loops about further directions;
- *Provoking* debate and conversations of alternative points of view;
- *Connecting* as the role of advocate to a broader society by determining parameters and boundaries of an issue rather than serving a single ‘client’;
- *Partnering* initiatives and understanding that there are many clients in this space – of which design is also one – that vary in number and intensity across the arc of a trans-disciplinary project.

We might pause here to consider that this integrated design approach does not begin or end with the ‘post it’ note, flip chart or brainstorming session, where the ubiquitous term, ‘design thinking’, has become almost synonymous with the profession of design. Instead, we argue that the deep knowledge of visual communication design needs to be recognized as having something of value to contribute to research agendas; that these contributions can – and must – be articulated far beyond ‘post it’ notes and through the cogent use of visual communication design typologies such as: animation; information design; typographic interventions, environmental graphics and so on. We posit the need to explore and validate the use of moving beyond the conventional ‘design thinking’ process to one of ‘thinking through designing’, locating it in what we call the ‘formalised speculative’. And it is these practice-based activities that need to be analysed in terms of their contribution as research to a project’s research quantum.

As larger societal issues/problems are tackled in trans-disciplinary projects, this space also demands much more of the visual communication designer. From within the discipline itself, we believe the designer should be:

- *Shifting* from problem solving to excavating questions for propositional scenarios;
- *Defining* issues and visually contextualising these to pre-figure change;

- *Bringing* a robust and deep understanding of design as a discipline as well as an engaged, though broad, understanding of other disciplines;
- *Offering* a more holistic perspective to a team, as well as seeing potential in the 'collision of the unfamiliar' where boundaries intersect;
- *Prepared* to question one's own disciplinary perspectives and boundaries in order to develop new insights within the trans-disciplinary space;
- *Prepared* to engage materiality differently in the formative space (via the speculative or prototype) where 'yields' are considered as knowledge informing future directions, rather than reaching only for finite solutions;
- *Understanding* that the speculative in the FFE space and subsequent prototyping tease out further questions to explore and potentially upscale;
- *Embracing* new forms of activity – such as 'facilitation' and 'knowledge exchange' – as genuine design outcomes, though not necessarily, or always, tangible.

Transitioning to Sustainable Sanitation: a case study

The case study we wish to discuss endeavours to show some of the above principles moving into action. *Transitioning to Sustainable Sanitation* is a 2-year trans-disciplinary action research project led by the Institute for Sustainable Futures (ISF) at the University of Technology Sydney (UTS), running from 2010–2011. The project investigated how human urine might be used as a potential substitute for phosphate rock, a rapidly depleting non-renewable mineral resource integral to chemical fertilizer production. It involved the installation of urine diversion (UD) toilets in a public university environment where urine was collected to be later treated and re-used in agricultural food production. The agenda was ambitiously configured: as well as the above, it aimed to discover factors determining the successful uptake of UD toilets as a socio-technical innovation in wastewater management; and importantly, to introduce a 'greenfield' issue to the general public – the depletion of phosphorus (P) reserves world-wide, predicted to reach peak levels by the end of the century. While the flush toilet has transformed health outcomes, its resource-intensive qualities are viewed in contemporary society as unsustainable, resulting in the need for

alternate sustainable models.⁵ Of note here, too, is that many such trials are driven from technical-only perspectives; however, in this pilot, examining the yield from multiple learning environments was also high priority, for example, chief investigators mentoring doctoral and early career researchers who in turn mentored under-graduate students, stakeholders and the university at large, all of whom contributed to the research quantum.

Visual communication design was one of five integrated and equal research strands comprising the project team.⁶ It was tasked with creating highly visible and accessible tools that would help to configure and pre-figure what change would look like for the everyday user of UD toilets. ISF had hypothesized that visual communication had a critical role in introducing such a 'greenfield' issue into the public imagination; its remit was not to respond to pre-existing agendas as in a conventional client-provider relationship, but instead charged to find interventions through collaborative discussion with other stakeholders. Questions quickly arose, categorised thus:

'Front-of-house' questions (the public face of the project):

-
- 5 For further information about the project, a number of papers from different disciplinary perspectives have been generated, for example: Fam, D.M., Mellick-Lopes, A., Willetts, J.R. & Mitchell, C.A. 2009, 'The challenge of system change: an historical analysis of Sydney's sewer systems', *Design Philosophy Papers*, vol. 3/2009, pp. 1–14. Abey Suriya, K., Fam, D., Hagare, P., Williams, J. 2010, 'Transitioning to sustainable sanitation through cross disciplinary, practice-based research: an on-campus pilot of urine diversion at UTS', Conference paper, Australian Campuses Towards Sustainability (ACTS), Melbourne, September 30, 2010. Lopes, A., Fam, D.M., Williams, J. 2011, 'Designing sustainable sanitation: involving design in innovative, transdisciplinary research', *Design Studies*, UK, pp. 1–22. Gwilt, I., Williams, J. (2011). Framing Futures for Visual Communication Design Research. *Design Principles & Practices: an International Journal*. Volume 5, Issue 5, pp.81–98. And for further information on phosphorus futures, please visit the Global Phosphorus Network: <http://globalpnetwork.net>
 - 6 The other research strands and mandates are: TECHNOLOGY (investigating all aspects of hardware, installation and operation of agricultural trials); STAKEHOLDER ENGAGEMENT (monitoring knowledge and attitudes—staff, students, visitors, maintenance staff – and where interventions might be appropriate to shift understanding); REGULATORY INSTITUTIONS (understanding barriers and opportunities in the current regulatory environment, identifying legislation needed for urine diversion and storage); INTEGRATION (overview role to ensure 'whole-of-systems' approach).

- How do we shift perceptions of urine from waste to a resource?
- How do we engage the university community and the broader public in a conversation about the story of (P)hosphorus?
- How do we encourage the community to participate in trialling these toilets?
- How do we inform users of the new practices the UD toilets require?
- How do we encourage careful use and discourage vandalism?

'Back-of-house' questions:

- How do we engage with cleaners/ maintenance staff to support changed practices, as well as be mindful that these changes impact on budgets and labour? Additionally, how do we communicate with cleaning staff whose first language is not English?
- How do we bring clarity to unfamiliar technical problem situations for technical staff?
- How can we document patterns and preferences in toilet use?
- How do we gather feedback and involve users in further developments?

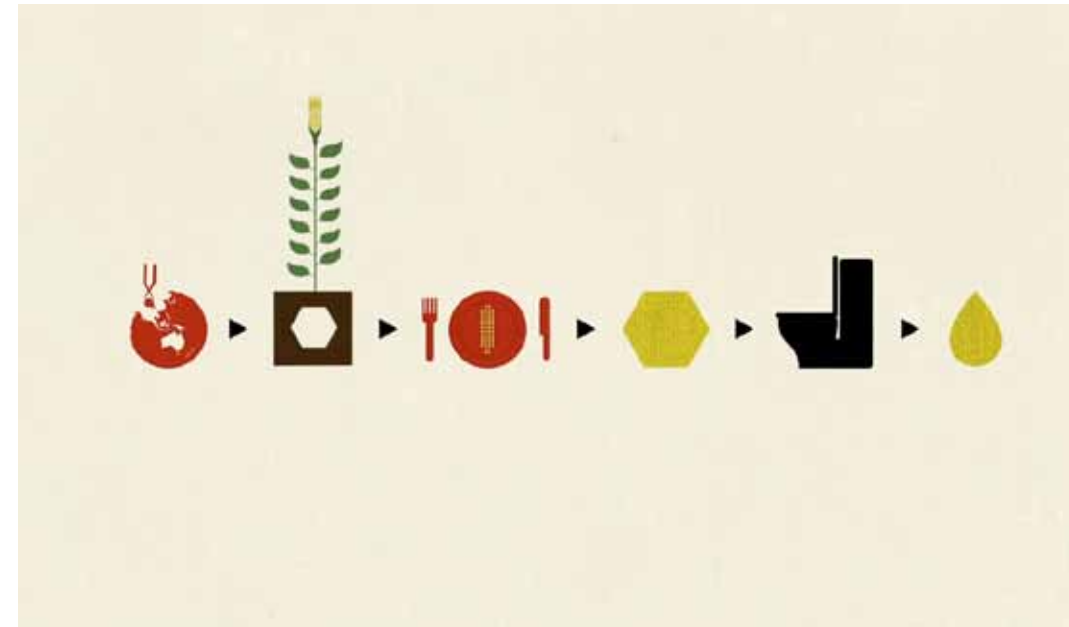
Larger philosophical/ ethical concerns (beyond ambit of this particular trial):

- How might people respond as citizens rather than consumers regarding the re-use of their waste?
- What kind of public conversations could/should ensue where citizens could discuss whether private or public interests take precedence ie ownership of the resource?
- What legal infrastructures are in place to answer the above? What needs to be written? What level of material needs to be designed in order for this to be debated by citizens and leaders?

Speculative design work: creating visual languages to create narratives

We'd now like to show you a selection of work created by 3rd year Information Design students from the Visual Communication Design course at UTS. The visual prototypes that follow are informed by deep engagement with social data and independent design research. Initially supported with detailed briefings and ongoing input from

7 'Vandalism' means something quite different in this context: UTS has a high proportion of international students (9,300 of 27,000 in 2011), many of whom have radically different toileting customs, such as using squat toilets. Over 27 toilet seats per week need to be replaced due to squatting on and breaking conventional toilets. Any education initiatives about UD toilets need to accommodate educating safe usage.



2. 'Taking the Pee': an animation explaining the P (Phosphorus) deficit and UTS pilot trial.
Designer: Dylan McIntyre

key investigators, students were operating within an unfamiliar framework of more open-ended, exploratory spaces through which to engage with contemporary issues.

Students were challenged to design their own working briefs, identifying key issues to 'give voice' to the project – as mentioned in the previous section – prior to posing a visual argument. The work here falls into two major categories: designing understanding and designing systems.

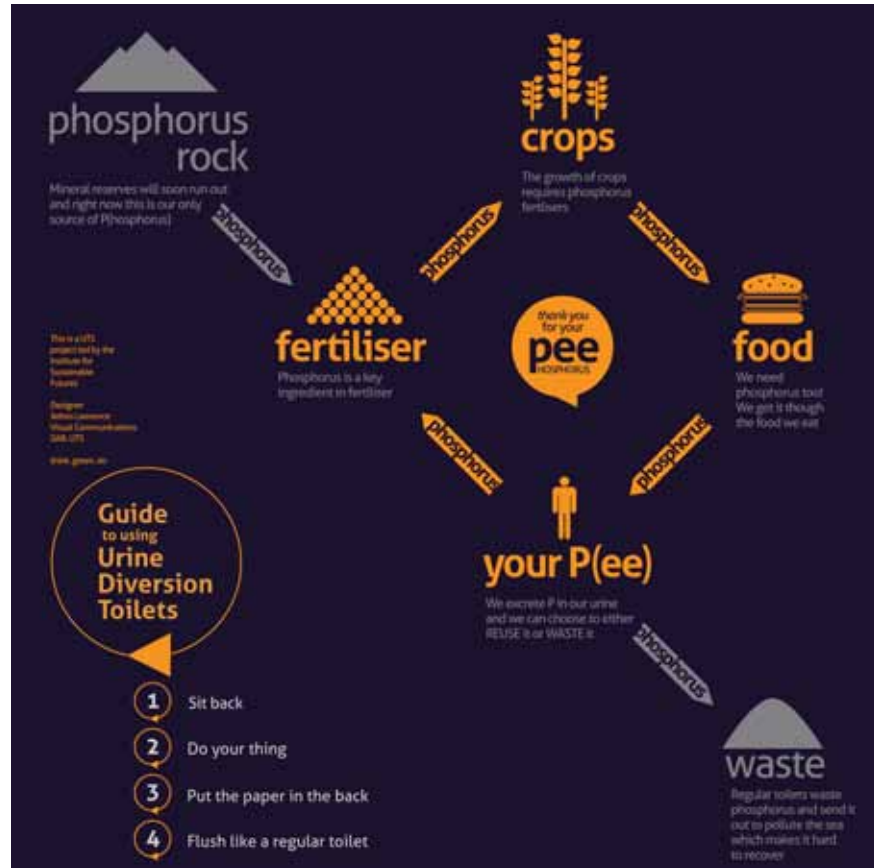
The re-framing of sensitive issues such as taboo aspects of toileting, resulted in materials that shifted thinking towards the collective rather than to the private good, to a more inclusive approach in addressing public health issues. The development of sophisticated, contemporary visual languages across the range of work reduced any potential embarrassment by focussing on the public good, and with a sense of dignity.

'Taking the Pee' (Figure 2), an animation, is not an artefact in the conventional sense, that is, the dressing up of findings. Here, the visual signals alert us to tone; it becomes a reflection, the form

3.



5.



3. 'Thank you for your pee' heat sensitive sticker.
Designer: Jethro Lawrence
4. *In situ* motion sensor lightboxes in front of urinals.
Designer: Jethro Lawrence
5. Still of 'Closing the Loop' cycle graphic.
Designer: Jethro Lawrence
6. 'Joining the Loop': an animation that is played as a result of motion sensors in place in front of urinals. Its length coalesces with the average length of a young man's urination.
Designer: Jethro Lawrence

6.



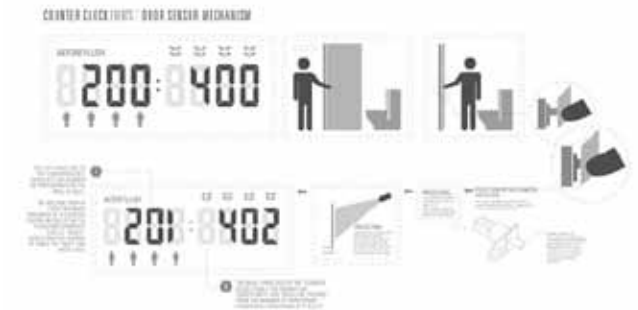
expanding and enriching the conversation, showing what design can mean when applied to research questions.

Another example, where 'Thank you for your pee' (Figures 3, 4, 5 and 6), a simple phrase replaced more elaborate concepts to tangibly 'reward' participants for donating their urine, noticeably shifting the act from a transaction to one of serving a larger purpose. It was coined from a collective and unstructured class discussion, a phrase neither ingratiating nor limp, taking visual form in diverse applications such as sheets of toilet paper and heat sensitive stickers adhered to urinals. It resonated because of its simplicity and honesty; users could engage with the issue unfettered by a transactional mentality. Originally, elaborate concepts to tangibly 'remunerate' participants for donating urine were devised; no other construct could be imagined by the student designers other than that of reward. As deeper research was undertaken, including informal talks with other investigators, a noticeable shift in thinking occurred: 'reward' was deemed not only unnecessary but also undesirable and selfish. Why couldn't and why wouldn't people 'donate' their urine in both service and support for a larger, altruistic purpose? 'Fun theory' was used as a springboard to unpack complex information about phosphorus, situating the user in the cycle of 'closing the

7. Graphics for toilet paper showing why mining of phosphorus needs to be re-thought. Based on '8 reasons why we need to re-think the management of phosphorus in the global food system' by Dr Dana Cordell. Designer: Rebecca Lam



8. 'Harvest' clock schema and in situ; the university community could see on a minute-by-minute basis how much urine was being collected and what equivalent crops could be harvested. Designers: Fivefold



loop' by inviting them to 'join the loop'. Similarly, Figure 7 shows a provocation to unpack the complex in a disarming way, using toilet paper to disseminate key facts about phosphorus.

Curiosity as to what actually could be grown with human urine as fertilizer was met visually by a simple mechanism, a clock-counter that The 'counter clock' installation (Figure 8) displays quantitative feedback gathered from participants in the trial. It is designed to show the value of each contribution by calculating the number of trial participants against the statistical equivalent in crops and plant yield.

Asking the right questions

At the beginning of this talk we commented on its title – 'beyond the logo'. As we hope to have demonstrated, design interventions have encompassed a range of speculative work that has dovetailed

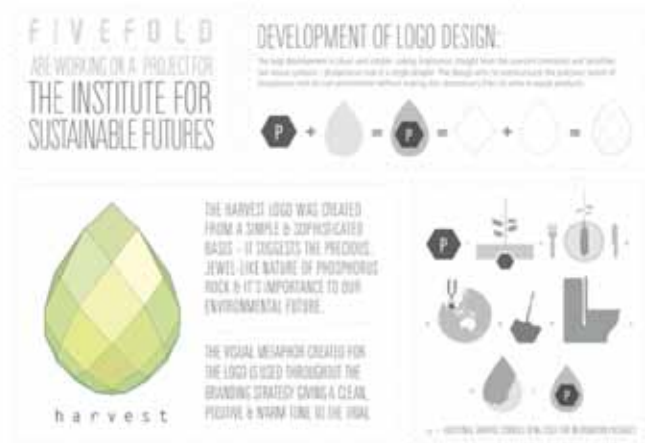
with the project's objectives. However, some work was curiously inappropriate, and here we'd like to turn to an identity suite called 'Harvest' designed by a student group. It disappoints for a particular reason: consumed by traditional typologies, it fell victim to the notion that everything had to be branded, regardless of need. It used form to make insights; however, the formal conventions of branding took over. Hence, there is a resulting tension between pleasing artefacts that are overly aestheticized. The logo (Figure 9) shows the positioning of a drop of urine as a jewel, playing to the notion that 'pee' (urine) is a precious resource, not waste. While there is no argument here – this concept is bridged intelligently and very capably – the subsequent rollout of 'promotional materials' – such as paper craft fruits and vegetables, 3-d paper versions of the logo, and an electronic feedback mechanism that demonstrably *limits* accessing deep feedback – is blind to more pressing needs (Figures 9, 10 and 11). Handsome and

professionally articulated, to be sure, its inappropriateness underlines a fundamental tenet of working at a more strategic level, and that is, asking the *right* questions. The right questions, we'd contend, need a forensic approach, teasing understanding into being as the principal goal at the expense of the aesthetically driven 'finished' artefact. "The application and dedication of the students is not in question here, like all designers, they at some point in their career have been seduced by the sheer pleasure of creating a beautifully resolved piece of design, indeed this activity is conventionally perceived as the core activity of the designer, and the work here is unquestionably visually articulated to a high standard, but conceptually less resolve".

Future Implications

The yield here has ramifications beyond this immediate project, and the challenge now is to model it from the legacy of what has been gleaned here in further trans-disciplinary scenarios. Of especial import is embedding design at the "fuzzy front end of system change where boundaries are set and decisions made, enabling designers to frame interventions from a *proactive* stance rather than from an historically *reactive* position. It also highlights the relevance of finding leverage points for appropriate intervention in existing systems as well as using design's capacity to anticipate future drivers. Of vital importance is the necessity to visualise – speculatively – what system change might be, thereby intentionally forecasting cultural change. In doing so, the 'formalised speculative' becomes a mirror, a 'feedback loop' of macro or micro proportions to be used at any stage of a project. It also can be seen here as operating as a media bridge, and as a 'meta' activity. Additionally, the yield stresses the importance of collaboration over individual action; there is no place here for the cult of the 'star' designer; rather it privileges the issue(s) at hand for the benefit of the common good, surely a sign of maturity for design as a discipline.

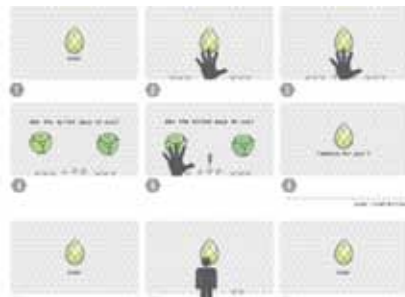
9.



10.



11.



Thank you.

- 9. 'Harvest' ogo for the project. Designers: Fivefold
- 10. Paper sculpture. Designers: Fivefold
- 11. Feedback mechanism. Designer: Fivefold

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With respect to the *Transitioning to Sustainable Sanitation* design prototypes, the authors wish to acknowledge the following contribution to the overall project of:

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Jennifer Williams

Jennifer has lectured for the past ten years in Visual Communication Design at the University of Technology Sydney, teaching principally in the fields of information design, typography and illustration. She is also an Early Career Researcher (ECR) and co-leader of the Visual Communication strand in the project discussed in this lecture, 'Sustainable Sanitation Futures'. Jennifer is currently completing a PhD – Pro Bono Publico – a thesis through which the potential of 'critical design' and the trans-disciplinary in visual communication practice and research is explored through the notion of 'public design'. As a practitioner she has worked for Television New Zealand, and also for the Museum of New Zealand (Te Papa Tongarewa) where as a member of the initial core design team she designed a number of exhibitions, pan-museum signage and wayfinding systems. Additionally, Jennifer holds a music degree (Voice) from the Sydney Conservatorium.

E: designresearch@optusnet.com.au

W: <http://uts.academia.edu/JenniferWilliams>

Dr. Ian Gwilt

Ian Gwilt is a Professor of Design and Visual Communication at Sheffield Hallam University. He holds a PhD from the College of Fine Arts at the University of New South Wales, examining the theory and practice of mixed-reality art. He also has an MA in Interactive Multimedia, conferred by the University of Balears (UIB) in Spain, and the Royal College of Art (RCA) London and a BA Hons in Communication Design from Manchester Metropolitan University. In addition to a number of years working in the field of visual communication design and visual communication design education he has shown interactive installations and digital work at a number of international new media events, galleries and exhibitions. His current practice/research is concerned with augmented reality and locative media, the graphical user interface as creative/cultural artefact, and exploring new forms and contexts for information design and post consumption visual communication forms.

E: i.gwilt@shu.ac.uk

W: <http://shu.academia.edu/iangwilt/design>

Jan 12th 2012

16:40



MOVING TYPES – LETTERS IN MOTION. A RETROSPECTIVE OF TYPOGRAPHY IN FILM FROM THE EARLY DAYS OF THE CINEMA TO THE PRESENT.

Anja Stöffler, Kristofer Oedekoven (DE)

Media Exhibition

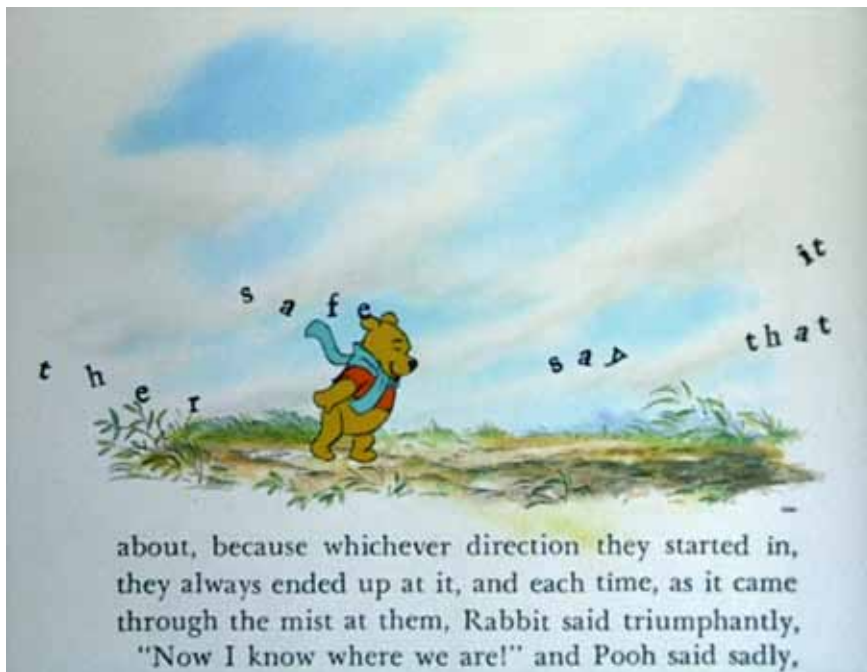
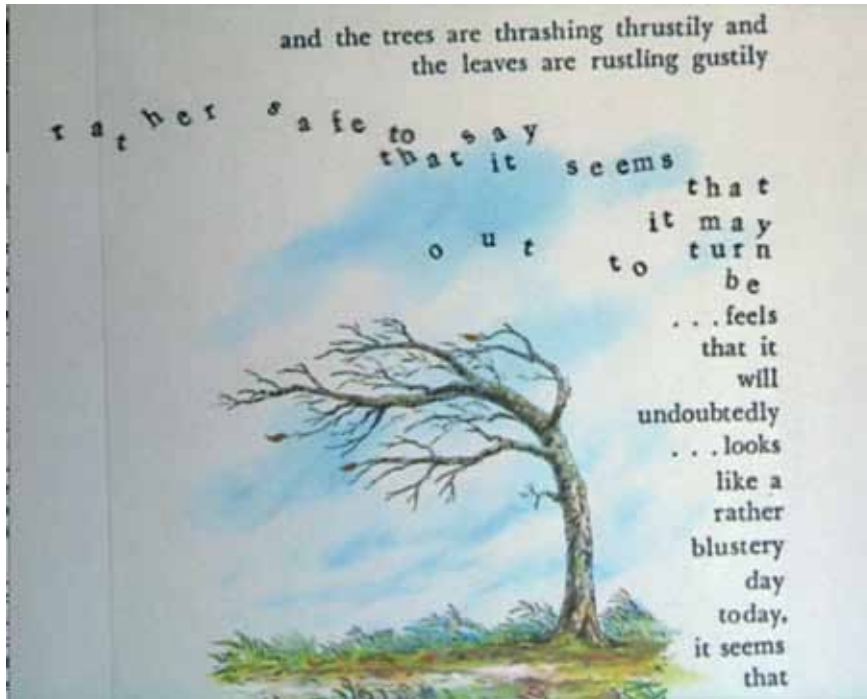
Gutenberg-Museum, Mainz, Germany

Anja Stöffler, Ralf Dringenberg

The exhibition is taking place against an exciting historical backdrop. The capability to reproduce written texts, which had previously been the province of scribes and copyists, was accelerated through Johannes Gutenberg's invention of book printing, among other factors. Accompanying developments included the humanization of knowledge with the beginnings of an educational system, and followed the publication of pamphlets and newspapers and debates about values in society (to name but a few aspects) and so on.

In 1893, with the invention of motion pictures – about 450 years after Johannes Gutenberg – animated letters exploited the technical possibilities to conquer the script environment. Letters became three-dimensional and dynamic. Letters could act, and transcended the static medium. They were capable of demonstrating physical processes, of evaporating, dissolving to liquid or chronologically illustrating “human traits.” Among other examples, semantic aspects are found in the entertaining children's film “The Many Adventures of Winnie the Pooh,” the Disney classic produced in 1977.





“The Many Adventures of Winnie the Pooh”,
 Director: John Lounsbery, Wolfgang Reitherman,
 USA, 1977

Here the typeface is animated in a rather conventional manner. The little bear jumps from side to side, leapfrogs with the typography; letters waft away like dry leaves or fall like raindrops and interact with Winnie.

The “Moving Types” exhibit is a retrospective of moving typography and reflects aesthetic, media-cultural and media-technical developments. What began as static representations of information on the title and dialog slides of the silent picture era has veritably developed into “living typography.” The integration of the dimension of time makes it possible to steer the viewer’s attention by controlling the flow of reading, thereby facilitating the communication of additional information or the addition of an interactive aspect, as well as referring to specific meta-levels or connotations in combination with sound.

Our goal is to demonstrate this evolutionary process, present the current state of affairs and illuminate potential future applications of animated typography. The center of our attention is the manipulation of the temporal dimension of typography, according to the following aspects:

1. Technological innovation
2. Formal-aesthetic, methodic dimension
3. Concepts regarding content

Technological innovation

Technical inventions and their consequences for design
 e.g. the procedure used to reproduce films in the early 20th century (e.g. Pfarrers Töchterlein, 1912), developments in the area of computer technology e.g. 3D (opening titles from Superman from 1977) or motion tracking (opening titles “Stranger than Fiction” from 2006), current stereoscopic developments (as in the closing titles of the movie “The Green Hornet” from 2011) and installations conceived for specific spaces – to name just a few aspects.



“Des Pfarrers Töchterlein”, Director: Adolf Gärtner, Germany, 1912



“Superman”, Director: Richard Donner, USA, 1977



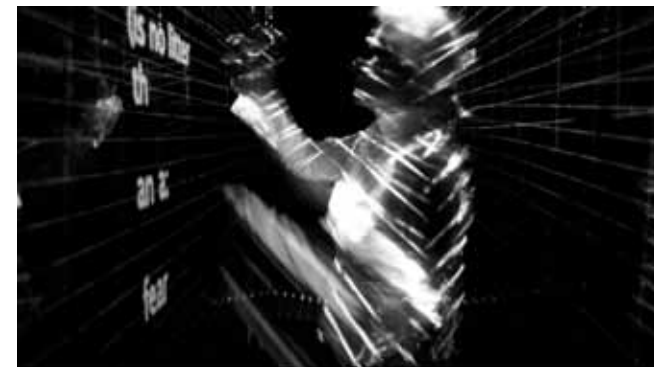
“Strangers than Fiction”, Director: Marc Foster, USA, 2006



“The Green Hornet”, Director: Michel Gondry, USA, 2011



„Projections“, Artist: Jenny Holzer, USA, 1999 ongoing,



“Air”, Artist: Ewa Satalecka, Poland, 2011

Formal-aesthetic, methodic dimension

This refers to the overall use of syntactical design parameters, e.g. typography superimposed on an image or integrated into an image e.g. using masking technology, or typography that itself is transformed into an image. Successful design makes itself obvious by means of distinctive application of design parameters such as form (shape), color, movement etc. – in other words, a visually consistent method that avoids arbitrariness. A fine example is “Arte Info”: The typeface and size demonstrate consistency, the movement is oriented on the geometry and perspective of the images, the dramaturgical principle pursues the “Panta Rei” – “never stand still” as an inevitable continuum. No interleaving, but a continual flow of occurrences in real time.



“Delicatessen” (camera always moves out of the field of vision), Director: Marc Caro, Jean -Pierre Jeunet, France, 1991



“Violence at school”, Agency: Dream On. Paris, France, 2001



“Arte Info”, Agency: Velvet, Director: Matthias Zentner, Munich, Germany, 2004

Concepts regarding content

This refers to contextual conception aspects such as Kyle Cooper’s title sequence for the film »Seven« from the year 1995. The visual and typographical aesthetic is characterized by sporadically overlapping and sometimes hard-to-decipher letters and words. Fast cuts and subtle macro shots suggest the theme of the detective story, or the typography in the silent film “The Cabinet of Dr. Caligari” from 1920. The typography underscores the muddled character of the Doctor in the spatial dimension. The “artists against piracy” commercials are another fine example. The type dances to the music and at the same time elucidates the creative process used by artists – namely composers. Semantic aspects are also seen in Winnie the Pooh and in the educational movie “Lisa’s World.” A child explains complex political contexts using “very simplified” terms in the style of children’s stories.



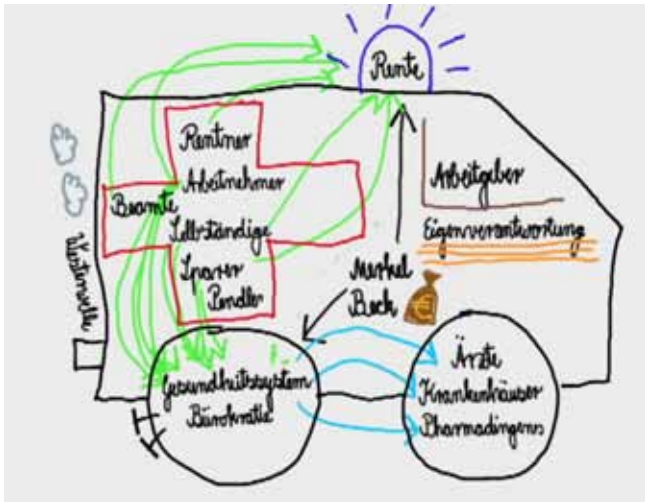
“Seven”, Director: David Fincher, Title Design: Kyle Cooper, USA, 1995



“Dr. Caligari”, Director:
Robert Wiene, Germany,
1920



“Artists against piracy”,
Agency: Digital Kitchen,
USA, 2001



“Lisa's World”, Autor:
Thomas Dauser,
Graphics: Uli
Mundschen, Germany,
SWR Report Mainz,
Germany, 2004–2006

We selected 230 of the more than 500 works in our database and allocated them to six clusters or thematic areas. The works are chronologically arranged in the main exhibition space. Our vision was to sort the works into thematic “data clouds” within the space. Works for children can be found on a level of their own in each of the clusters.

Thematic areas

Film titles and typography in film

The “staging” of typography in film, e.g. to further the plot or as a “film before the film” (Saul Bass) that sets the emotional mood and introduces the main characters. Examples range from the early days of silent films to the current 21st century, from static title cards to computer-animated sequences.

Art and Experimental

Art and Experimental presents independent, artistically outstanding, experimental and pioneering works in the context of moving type. E.g. spatial aspects such as iPad Light painting and the Oscar-winning short film “Logorama”. They include the works of artists like Marcel Duchamp, Len Lye, Jenny Holzer and Paul Sharits (to name but a few).

Commercials

In the area of **Commercials** everything revolves around using typography to present products and brands. Often influenced by the prevailing artistic mood and the technological possibilities of their time, these examples show the impressive evolutionary process that led from banners that were set in motion manually to fully digitalized advertising spots. In 1897 Thomas Alva Edison animated typography by unrolling a ribbon with letters on it. Today, typography actively tells stories, as in the two commercials ASICS and Water<Less from Levi's – both produced in 2011. Different portrayals: Typography coupled with people running (technique: motion tracking, aesthetic: digital typography) or integrated into a variety of imagery styles with a view toward communicating sustainability (technique: stop-motion and digital postproduction, aesthetic: handmade type / analog typography).

Music Videos

From Bob Dylan to Björk, moving type often plays a central role in musical “video clips.” Typography visualized lyrics, underscores the message of a song or creates, as in Alex Gopher's “The Child,” an entire urban environment using New York as an example.

Corporate Motion

Corporate Motion unites the broad segment of TV-Design, from Station IDs to program credits like those for “Dr. Who” (BBC), which has advanced to the level of a classic of media history.

Information Graphics

In spite of the media-technical evolution it has undergone, typography still serves to communicate content. This is particularly evident in this section. We present examples that visually demonstrate complex processes, facts or data so they can be easily comprehended by the viewer.

Interviews with designers

In the past two decades, thanks to the increasing availability of production materials and deregulation of media channels, time-based design has grown dramatically. Against this backdrop we started interviewing international designers about their artistic outlooks and work methods. Some of these filmed interviews are included in the exhibit. We are always interested in the people behind the artistic efforts, in their ideas and concepts as well as their technical implementation.

We would briefly call attention to two different attitudes and methods:

Inspired by traditional Chinese water calligraphy, Gundela Kleinholdermann uses a sponge on a broomstick to write out a poem – right on the pavement of Seilergasse street in front of the museum. The temporal process of writing in the spatial dimension, along with the dissolution of the writing through natural processes such as wind, water and air call attention to the “ephemeral” context of the work and the poem by Oda Schäfer. You have to find the right moment in time, as it were, then take the time to read what is written – before it disappears. In contrast, the work by Parisian design agency H5 and the team around Ludovic Houplain. The short film “Logorama,” which won an Oscar in 2009, plays with logos and brand design to create a 3D “brand architecture” based on the city of Los Angeles. The use of familiar logos and the way they are integrated into the urban landscape is subtle, and furthers the plot, culminating in the end of the world due to an earthquake. These two examples demonstrate the broad range of the exhibited works, but also how the job description of the profession has expanded as the media and technology have developed.



Gutenberg-Museum, Mainz
Gundela Kleinholdermann

Gundela Kleinholdermann, Gutenberg-Museum, Mainz
© z zg, Anja Stöffler, Ralf Dringenberg



H5, Paris
Ludovic Houplain

Ludovic Houplain, H5, Paris
© z zg, Anja Stöffler, Ralf Dringenberg



Media façade

The concept behind the exhibition

1. Media façade

The subject of the exhibition announces itself on the outside of the museum building. Passers-by and exhibition visitors can send text messages that appear on the building's façade. They are digitally encoded and move across the façade in the form of pulsating LED pixels before becoming legible on the bridge that connects the two parts of the museum building. This makes the exterior façade itself part of the exhibition. Motion sensors outside and inside the building change the color or appearance of the typography in response to the movements made by people passing by.

Our ambition was not only to make the subject visually manifest in a public space, but also to enable people to participate in the exhibition by contributing messages of their own. Our experience has shown that the concept works very well. The media façade is an emblematic presentation of the subject of animated typography in the 21st century.

2. Media lounge

"Moving Types" is an interdisciplinary media exhibition. It not only reproduces media, it is a media event in its own right. From the outset, we knew we didn't just want to present 230 works on 230 monitors. It was a priority for us to depict contemporary media behavior. The screen/monitor has traversed the last few meters that separated it from our bodies, and we now carry them around in our pockets. We used to get together and go to the movies, later we sat around at home watching TV, and now we are "permanently online" and more or less able to access information with devices of our own wherever we are – and watch each other doing it.

Within the exhibition architecture, cubes illuminated from inside represent the individual exhibits. All the exits are digitally encoded within the space. So-called QR codes, quick response codes, link to the animated images. You need a tablet PC (an edition of the iPad 2) to be able to access and view the exhibits. The QR codes determine what the exhibit looks like. Projected onto the white, illuminated cubes, the exhibits seem to float among curvy constructions of steel wire. The cubes are chronologically arranged and bear dates and the names of the exhibits for easy orientation. As is the case with the "Internet of Things," the information can be accessed from a specific location. The design of the media lounge is reminiscent of a rotated QR code. And the protrusions painted with blackboard paint stand for the missing pixels. The cubes also symbolically call to mind the movable type invented by Gutenberg, which could be arranged and rearranged in infinite combinations. The QR codes were also the basis for the floor plan of the exhibition.

The medium used to display the exhibits is the 21st century equivalent of the blackboard: the iPad. Like virtually no other piece of technology, it exploits the current potential for manipulating media. iPads are available for visitors to use. They feature a specially developed App that serves as a scanner and a medialibrary. Designed and programmed for the exhibition, the App reads the code directly and automatically triggers the display of the digital exhibits.

Our App harks to the community feeling of social networks and makes use of their functionalities: **collecting – evaluating – sharing**.

Many networks such as LinkedIn, vimeo, youtube, twitter – to name just a few – influence the way we use media. The way we present the exhibits recalls the way we make use of these (social) networks.

Sharing Aera

In a special section of the exhibition – the "sharing area" – it's possible to "publish" content by projecting it onto a large screen.





Media lounge



This “sharing area” pays tribute to contemporary media technology while at the same time encouraging visitors to reflect on their own media habits. Selected QR codes be loaded into the sharing station from visitors’ individual iPads. The projector immediately plays the exhibits. In addition to the sharing area, the exhibition demonstrates the historical evolution of media. To do so we brought together tremendous technical achievements. The result is a concise representation of the history of media-technological development. Digital picture frames create a timeline that lets visitors track the progress made.

3. Sustainability: Website & Media Library, Media Catalog

We print out an individual QR code for the visitors after they have experienced the exhibition. It contains a code number that lets

them access Medialibrary on our website www.moving-types.com. There they can again watch all the film exhibits for which we were able to acquire online rights. The catalog is based on the same idea. More than 80 works can be accessed via QR tag and displayed on individual smartphones or tablets (Apple or Android) using a specially programmed App. This makes the printed catalog a “cinema.” In some cases, the students who designed and created the QR tags were inspired to do so in the style of the works they refer to. The scanners are capable of reading even inverted tags or tags with distorted perspective. Catalog: www.moving-types.de/katalog.html

z zg – Zentrum Zeitbasierte Gestaltung, Germany

Anja Stöffler, University of Applied Sciences, Media-Design, Mainz, Germany

Ralf Dringenberg, University of Design, Schwäbisch Gmünd, Germany

Both doing work in the area of “animated typography” for many years – as designers, researchers and instructors. Over the years, our research collaboration on the topic of time as a parameter of design has resulted in what has become a quite substantial collection containing more than 500 international, aesthetically or technically outstanding, typographical works. As the archive grew, so did our idea to put together a retrospective exhibition on the subject. This ultimately resulted in the current exhibition project “Moving Types – Letters in Motion” at the Gutenberg Museum in Mainz, with the support of the “City of Science” initiative. Conceived as a touring exhibition, it will remain in Mainz until April 22 in 2012 before moving to the Galery in the Museum Prediger in Schwäbisch Gmünd. Coordination work is underway with additional venues in France, the Netherlands and Poland.

Anja Stöffler

Professor of Digital Media

Head of Media Design, Institute of Media Design Mainz

After studying Communication Design at the University of Wuppertal, Anja Stöffler worked for the television stations RTL, Arte, Nickelodeon and ZDF in Departments of Corporate Design, TV Motion and Branding. In 2000 she switched to Razorfish Frankfurt as the Head of the Department Experience Network. Since 2001 Anja Stöffler has been teaching as a Professor of Digital Media at the University of Applied Sciences Mainz.

Her teaching focuses on applied and experimental projects in the fields of Motion Graphics, Animation and TV Motion. With students and external partners projects have been developed for 3sat, ZDF, RTL, SWR and Adobe Systems. Anja Stöffler's main areas of research are in Digital Media and their presentation within Time Based Design. She was responsible for the establishment of the cooperation CME (Consortium Media Education) between ZDF and the University of Applied Sciences Mainz. In cooperation

Kristofer Oedekoven

M.A. Assistant Department of Design, University of Applied Sciences Mainz, Germany. Kristofer Oedekoven has studied North American Studies with emphasis on media, culture, and politics at the University of Bonn. April 2010 he started working at the University of Applied Sciences in Mainz, assisting during the development of "Moving Types – Letters in Bewegung". Since October 2010 Kristofer Oedekoven has been responsible for the coordination of interdisciplinary teaching at the Department of Design at the University of Applied Sciences Mainz.

Jan 12th 2012
17:20



THE RENAISSANCE OF SPACE

Joachim Sauter, Jussi Ängeslevä (DE)

We generally see a renaissance of the physical world as a reaction onto now nearly two decades of communication in the virtual world of the internet. We see an increasing number of people leaving the isolated situation in front of a computer at home, going into a museum and other narrative spaces to experience information in a physical environment together with other people.

The big difference in designing these narrative spaces compared to the design approach in the pre-digital times is that the visitors are now computer literate and know about the qualities of the digital medium such as interaction, collaboration, networking and want to find them also in the physical space.

The presentation will review key-projects projects from ART+COMs 23 years history and traces the development of new media from screen to space.

Terravision

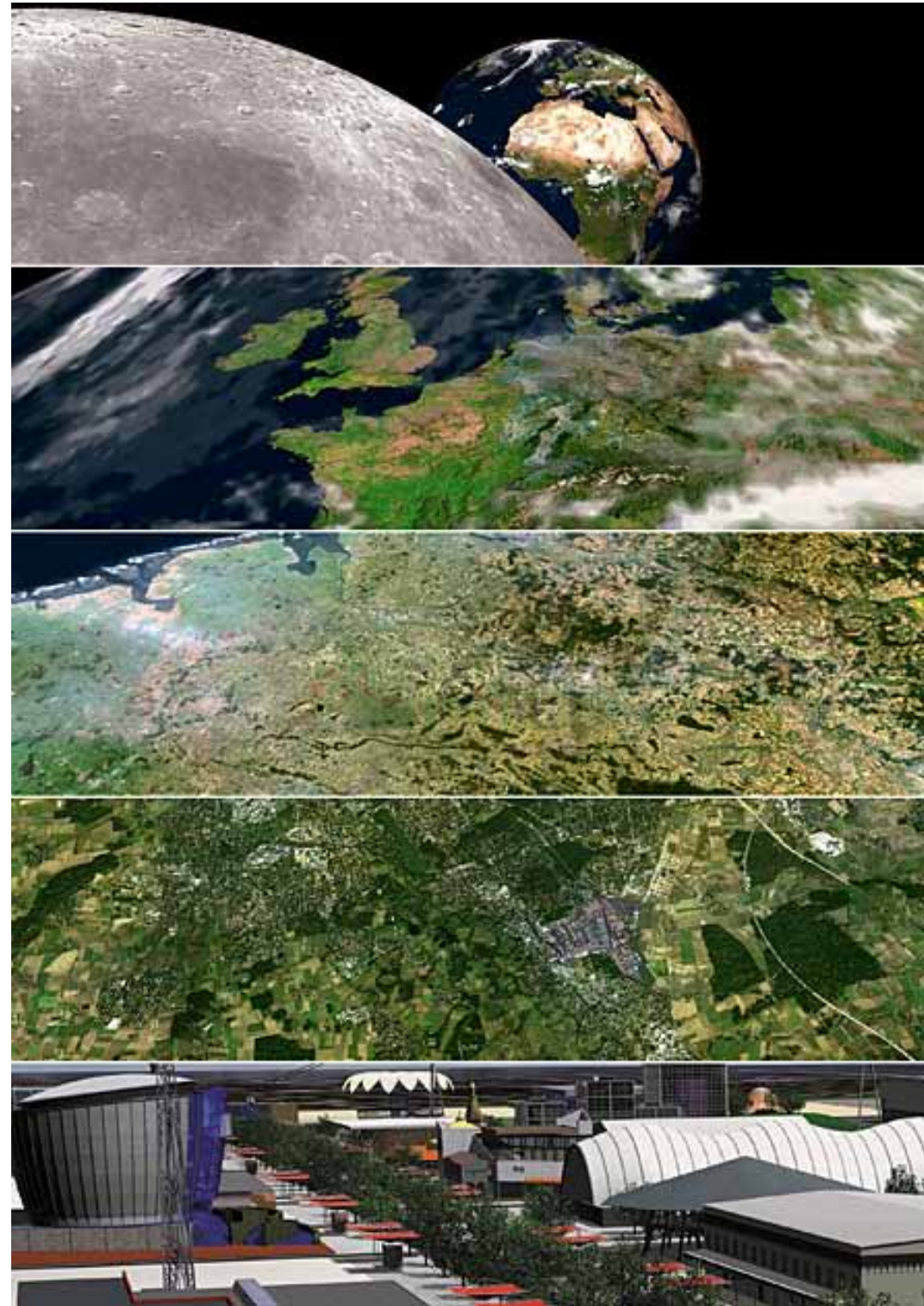
1994

Terravision is a networked virtual representation of the earth based on satellite images, aerial shots, altitude data and architectural data. It serves as an environment to organise and access information spatially. Users can navigate seamlessly from overviews of the earth to extremely detailed objects and buildings.

Additionally to the photorealistic representation of the earth, all kinds of spatial information-data are integrated. Even historical aerial shots and architectural data are offered in the system; this allows users to navigate not only spatially but also through time. All data are distributed and networked and are streamed into the system according to the user's needs.

Terravision was the first system to provide a seamless navigation and visualisation in a massively large spatial data environment. In order to navigate this data, three core components were created as an interface: A large sphere referencing the globe to pilot the planet; a 3D mouse to fly around; and a touch screen to interact with objects on the virtual earth.

Terravision is an isochronous realisation of Neal Stephenson's literary idea in the novel "Snow Crash" as well as a prequel to Google Earth.



Duality

Tokyo, 2007

Duality was created for a new development site in the center of Tokyo. Compared to the traditional “art in public space sculptures” the goal was to design an interactive installation that responds to its location in terms of the content and physically to the passers by.

The boundary between a walkway and an adjacent artificial pond was chosen as the location for the work. This interface between “liquid” (water) and “solid” (land) was thematically used and augmented by the question of “real” (water ripples) and “virtual” (artificial light waves).

On the walkway, a 4 x 4 meter white monochrome LED plane was installed and covered with a sand-blasted, opalescent glass. The glass tiles are equipped with load cells measuring the exact position and power of each footstep, triggering corresponding virtual waves on the LED plane. When these virtual waves reach the pond’s border, they extend into the water by precisely controlled mechanical actuators.

The perceivable reaction in the environment creates different sense of identification with the surroundings.



Anamorphic logos

Deutsche Bank, 2011

In the redesigned Deutsche Bank headquarters in Frankfurt am Main, the BrandSpace is providing insight into the bank's history, present, business areas and its brand philosophy. The Deutsche Bank Logo by Anton Stankowski serves as starting point for the spatial design and is now translated into three-dimensional narrative space.

To avoid permanent spatial logos that dominate and frame the space with simple three-dimensional extrusion, the logo was translated through anamorphosis: The shape is transformed into an abstract architectural structure that is legible only from one vantage point. These logo sculptures integrate three media installations that offer different approaches to the brand for the visitor.

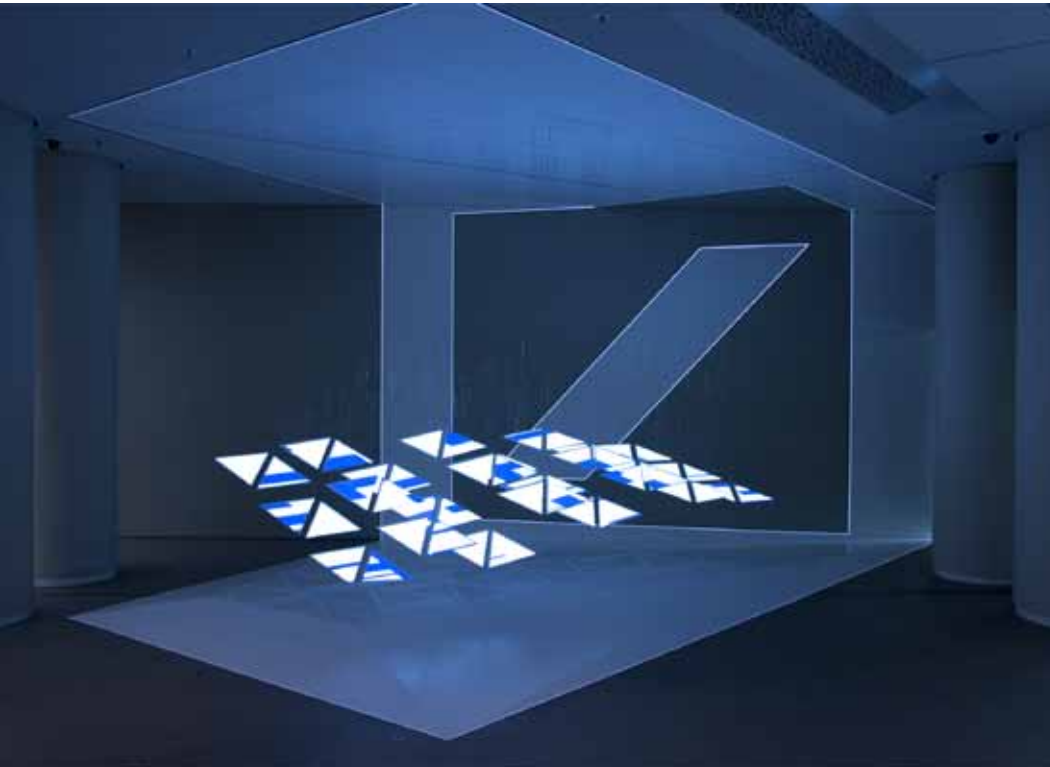
In the first installation, visitors can navigate through information on the bank's history and current affairs on a touch-sensitive surface. When visitors enter the second installation they are detected by a 3D camera tracking system and their silhouettes are imaged in the projection on the wall. With their movements they trigger the display of statistical facts about Deutsche Bank.

The third installation takes a purely associative and aesthetic approach to translate the brand values of passion and precision into space. The logo becomes a kinetic sculpture with its central, diagonal part sliced up into 48 triangles. The triangles move in a complex choreography of flowing 3D structures that appear to hover in the air. In addition the surface of the triangles is animated by a layer of projected video textures in some sequences.

A fourth installation at the end of the stairway leading up to the BrandSpace is also based on the principle of anamorphosis. It consists of a faceted mirror and blue light projected onto the opposite wall. Visitors walking up the stairs at first only see the seemingly chaotic blue light reflections. But as they get closer, gradually the blue reflections arrange, ultimately becoming the bank's logo.

The BrandSpace is a joint project of ART+COM and Coordination, Berlin.



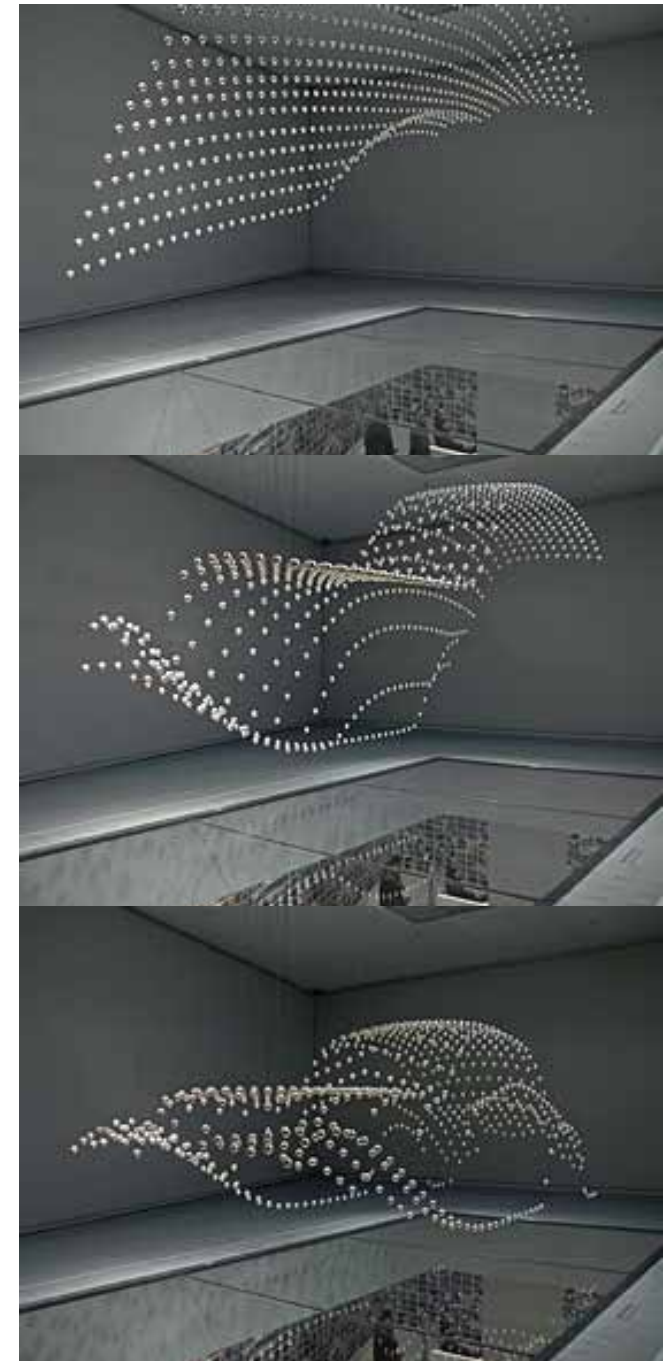


Kinetic Sculpture

BMW Museum Munich, 2008

The Kinetic Sculpture is a metaphorical translation of the process of form-finding in art and design.

714 metal spheres, hanging from thin steel wires attached to individually-controlled stepper motors and covering the area of six square meters, animate a seven minute long mechatronic narrative. In the beginning, moving chaotically, then evolving to several competing forms that eventually resolve to the finished object, the kinetic sculpture creates an artistic visualisation of the process of form-finding in different variations.



Joachim Sauter (DE)

After graduating from the academy of fine arts in Berlin, Joachim Sauter studied at the 'German Academy for Film and Television', Berlin.

Since the early 1980s, he has been working as a media artist and designer. From the beginning, Joachim Sauter has focussed on digital technologies and is experimenting how they can be used to express content, form, and narration.

Fuelled by this interest, he founded ART+COM in 1988 together with other artists, designers, scientists, and technologists. Their goal was to practically research this new up-and-coming medium in the realm of art and design. Until now, he is leading this interdisciplinary group.

In the course of his work he was invited to participate on many exhibitions. Beside others he showed his work at 'Centre Pompidou' Paris, 'Stediliek Museum' Amsterdam, 'Museum for Contemporary Art' Sidney, 'Deichtorhallen Hamburg', Kunsthalle Wien, 'Venice Biennial', 'ICC' Tokyo, 'Getty Center' Los Angeles, 'ZKM' Karlsruhe.

He received several awards like the 'Golden Lion, Cannes', the 'D&AD Black Pencil', the 'Ars Electronica Interactive Award', the 'Los Angeles Interactive Media Award', the 'Prix Pixel INA', the 'BAFTA British Academy for Film and Television Interactive Award', ADC New York and ADC Germany Gold, the 'Grand Clio', the 'Red Dot Grand Prix', the "Designaward of the Federal Republic of Germany" and many other national and international awards'.

Since 1991 he is full professor for "New Media Art and Design" at the 'University of the Arts' Berlin and since 2001 adjunct professor at UCLA, Los Angeles.

Jussi Ängeslevä (FI)

Being involved in academia, design industry and conducting his individual experimental work, Jussi Ängeslevä is focussing on embodied interfaces, experiences and services for the public. His work as Creative Director at ART+COM media design agency is consistently yielding international recognition in exhibitions, installations and awards. In parallel he is an honorary professor at the Berlin University of the Art teaching Digital Media Design and has been serving as a juror, chair or advisor in various academic and design bodies such as D&AD, ARS Electronica, TEI and Siggraph.

His design ethos is leveraging hardware, software, physical and graphic design in the search for elegance in highly specific solutions, where the meaning of a work is inseparable from the medium communicating it.



Jan 13th 2012

- 250–290** Gerard Unger (NL)
Research into type design – the exploring designer
- 00–00** Indra Kupferschmid (DE)
Typeface classification
- 00–00** Guillermina Noël (IT)
Improving the visual material to assess word comprehension in people with aphasia: a research study
- 00–00** Marina Emmanouil (TR)
**Graphic designer + user + specialist(s):
Calling for a triple co-operation in the area
Of haptic information design**
- 00–00** Alecos Papadatos (GR)
Logicomix: the experience of a graphic novel
- 00–00** Karel van der Waarde (NL)
**Graphic Design and research: love at first sight
or an arranged marriage?**
- 00–00** Richard B. Doubleday (USA)
A visual investigation of contemporary cultural identity
- 00–00** Jorge Meza Aguilar (MX)
**Design education, interdisciplinary work and innovation
for social needs**
- 00–00** Marja Seliger (FI)
Practice-led research in graphic design
- Gerry Leonidas (UK)
A new Masters program in typeface design for educators,

Jan 13th 2012
10:00

RESEARCH INTO TYPE DESIGN – THE EXPLORING DESIGNER

Gerard Unger (NL)

no abstract



Gerard Unger (NL)

Gerard Unger Born at Arnhem, Netherlands, 1942. Studied graphic design, typography and type design from 1963–'67 at the Gerrit Rietveld Academy, Amsterdam. He teaches as visiting Professor at The University of Reading, UK, Department of Typography and Graphic Communication, and he is Professor of Typography at the University of Leiden. Free lance designer from '72. He has designed stamps, coins, magazines, newspapers, books, logo's, corporate identities, annual reports and other objects, and many typefaces.

In '84 he was awarded the H.N.Werkman-prize for all his typographic work, for digital type designs in particular and for the way he reconciled technology and typographic culture. In 2009 he received the award of the Society of Typographic Afficionados.. He wrote articles for the trade press, and several larger publications, such as 'Landscape with Letters' (1989), linking the usually limited scope of type and typography with a much wider cultural view. His book *Terwijl je leest* — about reading — has been published in Dutch, German, English, Italian and Spanish. He lectures frequently in Holland and abroad, about his own work, type design, the reading process, and related subjects.

All my type designs:

Markeur (1972)
M.O.L. (1974)
Demos (1976)
Demos (new version 2001)
Praxis (1977)
Hollander (1983)
Flora (1984)
Swift (1985)
Swift 2.0 (new version 1995)
Amerigo (1986)
Oranda (1987)
Argo (1991)
Delftse Poort (1991)
Decoder (1992)
Gulliver (1993)
ANWB fonts (1997)
Capitolium (1998)
Paradox (1999)
Coranto (2000)
Vesta (2001)
BigVesta (2003)

Jan 13th 2012

10:40



TYPEFACE CLASSIFICATION

Indra Kupferschmid (DE)

Classifications are useful but the common ones are not

Why are classifications helpful?

It is a recurring phenomenon that we tend to classify and sort what comes in large amounts – to be able to grasp it, for quicker reference of what is available, and to find it back more easily. Once organized, you don't have to look at everything all the time but only consult the parts of your current interest. Grouping typefaces also breaks down the process of identifying them into a less challenging task.

Any categorization covers three aspects – 1. sorting in (this is what scholars and historians do, also type manufacturers), 2. reference (educating) and 3. “taking out” or finding back (this is what the user usually does). The aspect of finding a typeface though is crucial to many more people, every day, than the act of classifying them. You sort your CDs once and then only look at the respective shelf when you want to listen to Jazz in particular. This is why I think a (more) useful classification is one that helps the user to find and select typefaces and is structured accordingly.

What happened?

Assigning names to typefaces and classifying them is a rather new occurrence in our 560 years of typography. In the beginning, i.e. the first 400 years of typography typefaces didn't even have specific names. Foundries and printers called them by their size (which actually were names like “Paragon”, “Great Primer”, “Nonparaille”, not numbers). All type looked more or less the same anyway and was



Caslon, 1728
No specific names but size and number

suitable for more or less the same jobs – continuous text. If a printer had more than one version of a roman text face available they gave them different numbers, e.g. “Great Primer Roman No.2”.

Then the industrial revolution happened. And with it the wish for louder and more eye-catching typefaces than regular Bodoni at 24 pt. Plenty of flashy new designs were invented, numerous variations in style and jobbing type were starting to get available. With this, people saw the need to give the novel things terms to communicate about them. But which? Most typefaces weren't based on historic models where you could derive terminology from.

So type foundries all invented their own, more or less arbitrary designations for their new styles, e.g. “Egyptian” (because Egypt was super en vogue back then), “Gothic” or “Grotesque” (because that new alien style seemed weird) for sans serif typefaces or “Ionic”, “Doric” and “French Antique” for slab serifs. Not only the designs were becoming more individual but also the terminology, resulting in the problem that names were not universally understood anymore. Terms were determined by marketing, not by style or historic roots.



Still, the actual typefaces themselves were not given individual names like today. A foundry rarely had more than two or three “French Clarendons” on offer and an easy solution was to just number them.

Until around 1900 only the slightest to no attempts were made to sort or classify typefaces. Rather it was considered “redundant, impossible oder utterly inconvenient”. One of the earliest endeavor was the system proposed by Francis Thibaudeau in 1921. It is solely based on the form of the serifs, which I regard less ideal, but up until this stage in type history, it admittedly was a characteristic feature picturing the different style periods rather fittingly.

By the mid 20th century, with new type issued weekly, it became increasingly difficult to keep put with the developments and to obtain a working knowledge of the countless variants known. For the first time classification was regarded as a problem and serious efforts were made to establish a systematic approach to sort typefaces and to come up with an international solution.

The Thibaudeau system was developed further by Maximilian Vox (born Samuel William Théodore Monod) who published his version in 1954. Continuing with the same main groups his unique invention are terms for groups derived from the most iconic examples/printers (Garalde, Didone) or techniques (Manuale).

The (slightly modified) Vox-system was taken over by the ATypI (Association Typographique Internationale) in 1960 and later internationally adopted as a standard. Adapted versions were published by the German DIN in 1964 and as a British Standard in 1967.

ORIGINE, TRANSFORMATION & CLASSIFICATION
de la
LETTRE D'IMPRIMERIE

DÉTERMINÉES
par son
EMPATTEMENT (1)



La Majuscule.



ORIGINE, TRANSFORMATION & CLASSIFICATION
de la
LETTRE D'IMPRIMERIE

DÉTERMINÉES
par son
EMPATTEMENT (1)



La Minuscule.



LES QUATRE GRANDES FAMILLES CLASSIQUES

<p>L'ANTIQUE TRACÉ PRIMITIF SANS EMPATTEMENT ☞ Relevée sur les inscriptions PHÉNICIENNES et réalisée en types mobiles au commencement du XIX^e siècle.</p> <p style="text-align: center;">M</p> <p style="text-align: center;">Type de l'Antique ou lettre bâton.</p>	<p>L'ÉGYPTIENNE 1^{re} TRANSFORMATION AVEC EMPATTEMENT RECTANGULAIRE Relevée sur les inscriptions GRECQUES et réalisée en types mobiles au commencement du XIX^e siècle.</p> <p style="text-align: center;">M</p> <p style="text-align: center;">Type de l'Égyptienne à traits bruts.</p>	<p>Le ROMAIN ELZÉVIR 2^e TRANSFORMATION AVEC EMPATTEMENT TRIANGULAIRE Relevé sur les inscriptions ROMAINES et réalisé en types mobiles à la fin du XVIII^e siècle.</p> <p style="text-align: center;">M</p> <p style="text-align: center;">Type du romain Garamond ou Elzévir.</p>	<p>Le ROMAIN DIDOT 3^e TRANSFORMATION AVEC EMPATTEMENT A TRAIT FIN HORIZONTALE Principe innové par PHIL. GRANDJEAN et généralisé par F.-A. DIDOT au XVIII^e siècle.</p> <p style="text-align: center;">M</p> <p style="text-align: center;">Type du romain Didot.</p>
<p>ÉGYPTIENNE ANGLAISE</p> <p style="text-align: center;">M</p> <p style="text-align: center;">Caractéristique : Arrondissement intérieur des angles d'empat- tement.</p>	<p>Les ITALIENNES</p> <p style="text-align: center;">M</p> <p style="text-align: center;">Caractéristique : Empattements renforcés. Traits intérieurs amaig- ris.</p>	<p>Sous-Familles : Les LATINES</p> <p style="text-align: center;">M</p> <p style="text-align: center;">Caractéristique : Empattement triangulaire horizontal adapté à la graisse de corps de l'Égyptienne angl. —</p>	<p>CLASSIQUE DIDOT</p> <p style="text-align: center;">M</p> <p style="text-align: center;">Caractéristique : Ajouté d'empattements triangulaires sans mo- dification de la finesse de trait des déliés. —</p>
<p>(1) L'EMPATTEMENT consiste dans la forme donnée à l'attaque ainsi qu'à la terminaison des jambages de la lettre. Il est la base de la classi- fication des familles. —</p>	<p>Les MONUMENTALES</p> <p style="text-align: center;">M</p> <p style="text-align: center;">Lettres d'inscriptions à pointes d'empattements vives et accentuées. —</p>	<p>Les DE YINNE</p> <p style="text-align: center;">M</p> <p style="text-align: center;">Retour à la forme élzévi- rienne avec exagération des pleins. —</p>	<p>Les HELLÉNIQUES</p> <p style="text-align: center;">M</p> <p style="text-align: center;">Traits bi-concaves réali- sant l'empattement tri- angulaire. —</p>

LES QUATRE GRANDES FAMILLES CLASSIQUES

<p>Le ROMAIN ELZÉVIR A EMPATTEMENT TRIANGULAIRE Alphabet minuscule extrait de la <i>Caroline romane</i> et adapté à l'empattement des capitales romaines d'inscription par NICOLAS JENSON à la fin XV^e siècle.</p> <p style="text-align: center;">m</p> <p style="text-align: center;">Minuscule Elzévir.</p>	<p>Le ROMAIN DIDOT EMPATTEMENT A TRAIT FIN HORIZONTALE Transformation de la minuscule romaine d'après le principe d'empattement innové par GRANDJEAN dans son <i>romain du roi</i> et généralisé par F.-A. DIDOT au XVIII^e siècle.</p> <p style="text-align: center;">m</p> <p style="text-align: center;">Minuscule Didot.</p>	<p>L'ANTIQUE SANS EMPATTEMENT ☞ Adoption de la forme romaine de l'alphabet de NICOLAS JENSON pour l'ajouté d'une minuscule au type primitif des majuscules phéniciennes.</p> <p style="text-align: center;">m</p> <p style="text-align: center;">Minuscule Antique.</p>	<p>L'ÉGYPTIENNE EMPATTEMENT RECTANGULAIRE Adoption de la forme romaine de l'alphabet de NICOLAS JENSON pour l'ajouté d'une minuscule aux majuscules des inscriptions grecques.</p> <p style="text-align: center;">m</p> <p style="text-align: center;">Minuscule Égyptienne.</p>
<p>Les LATINES</p> <p style="text-align: center;">m</p> <p style="text-align: center;">Empattement triangulaire horizontal adapté à la graisse de corps de l'Égyptienne angl. —</p>	<p>CLASSIQUE DIDOT</p> <p style="text-align: center;">m</p> <p style="text-align: center;">Ajouté d'empattements triangulaires, mainlien de la finesse des déliés.</p>	<p>(1) Dans la constitution de la minuscule on re- trouve toutes les particu- larités d'empattements caractérisant et classi- fiant les capitales. —</p>	<p>ÉGYPTIENNE Anglaise</p> <p style="text-align: center;">m</p> <p style="text-align: center;">Arrondissement intérieur des angles d'empatte- ment. —</p>
<p>Les DE YINNE</p> <p style="text-align: center;">m</p> <p style="text-align: center;">Retour à l'attaque d'empat- tement de l'Elzévir avec reprises horizontales. —</p>	<p>Les HELLÉNIQUES</p> <p style="text-align: center;">m</p> <p style="text-align: center;">Montants bi-concaves réa- lisant l'empattement triangulaire. —</p>	<p>REMARQUE. — Aucun dessin d'alphabet de lettres d'imprimerie ne peut se soustraire à la loi de l'empattement et quel qu'on puisse l'imaginer, il contiendra fatalement dans ses terminaisons de jambages, sa coupe et sa graisse, des éléments- types permettant de le classer à première vue dans l'une des quatre familles classiques ou de leurs sous-familles.</p>	<p>Sous-Famille : Les ITALIENNES</p> <p style="text-align: center;">m</p> <p style="text-align: center;">Empattements renforcés ; traits intérieurs amaigris.</p>

CLASSIFICATION MAXIMILIEN VOX

Groupes	HUMANES	GARALDES	RÉALES	DIDONES	MÉCANES	LINEALES	INCISES	MANUAIRES	SCRIPTES
Formes des empaitements, pieds et extrémités des lettres.									
Aspects généraux de la lettre capitale	IS	IC	IS	IC	IS	NES	ERSI	LAC	DE
romain et italique	TS	IC	IS	IE	IN	ICA	AUG	POLK	DH
						ICA	NES	BAM	BB
Aspects généraux de la lettre bas de casse	ica	aie	ier	ien	icn	sodi	abce	cisel	er di
romain et italique	nic	aic	aic	aiu	inc	sodi	abcm	renoi	en ei
						onde	nord	lona	eo en
						onde	nose	chou	en ie
Études morphologiques de la lettre	Technique de fonte primitive et rudimentaire. Empaitements le plus souvent triangulaires mais les a ronds peuvent être fourcheux. Lettres avec pieds et débord. L'italique ne fit son apparition que vers le début du XVII ^e . Aspect général lourd. XV ^e , XVI ^e , début XVII ^e siècle.	Technique de gravure de matrices et de fonte à point volant. Empaitements triangulaires allongés et allongés pour passer aux points de hauteur aux hampes, pieds et capots. Hampes pointues au centre. Lettres avec pieds et débord de deux ordres. Aspect léger et rasé. XVI ^e , XVII ^e s.	Technique de fonte à point volant. Empaitements triangulaires les plus nets, pointes fines allongées et soudées par une courbe aux hampes. Certaines lettres communément des pointes allongées légèrement épaissies. Lettres avec pieds et débord au ras. Aspect plus léger de la lettre. XVIII ^e s.	Technique de fonte à point volant. Empaitements à l'extrême haut et en bipédiment au-dessous, empaitements triangulaires mesurés, système d'extrémités des débord et des ras en lettres d'empatement. Lettres avec pieds et gros empatement. Aspect sérieux et formel. Du XVIII ^e au XIX ^e .	Empaitements à l'extrême haut et en bipédiment au-dessous, empatement par un ras au-dessous. L'alignement des lettres avec pieds et ras est très net, les pieds et capots sont très nets, les hampes sont très nettes. Empaitements les plus nets, système d'extrémités des débord et des ras en lettres d'empatement. Aspect sérieux et formel. Du XVIII ^e au XIX ^e .	Empaitements à l'extrême haut et en bipédiment au-dessous, empatement par un ras au-dessous. L'alignement des lettres avec pieds et ras est très net, les pieds et capots sont très nets, les hampes sont très nettes. Empaitements les plus nets, système d'extrémités des débord et des ras en lettres d'empatement. Aspect sérieux et formel. Du XVIII ^e au XIX ^e .	Empaitements à l'extrême haut et en bipédiment au-dessous, empatement par un ras au-dessous. L'alignement des lettres avec pieds et ras est très net, les pieds et capots sont très nets, les hampes sont très nettes. Empaitements les plus nets, système d'extrémités des débord et des ras en lettres d'empatement. Aspect sérieux et formel. Du XVIII ^e au XIX ^e .	Empaitements à l'extrême haut et en bipédiment au-dessous, empatement par un ras au-dessous. L'alignement des lettres avec pieds et ras est très net, les pieds et capots sont très nets, les hampes sont très nettes. Empaitements les plus nets, système d'extrémités des débord et des ras en lettres d'empatement. Aspect sérieux et formel. Du XVIII ^e au XIX ^e .	Empaitements à l'extrême haut et en bipédiment au-dessous, empatement par un ras au-dessous. L'alignement des lettres avec pieds et ras est très net, les pieds et capots sont très nets, les hampes sont très nettes. Empaitements les plus nets, système d'extrémités des débord et des ras en lettres d'empatement. Aspect sérieux et formel. Du XVIII ^e au XIX ^e .
Caractères appartenant à chacun des groupes	LEHRE de Nicolas JONSON Sonneur de Nicolas de Neufville GENTIL de Rouillé et de Neufville L'ÉPIQUE de Christophe de Neufville LEHRE de Nicolas de Neufville RENAULT de Neufville RENAULT de Neufville	GARALDE, GLE MARQUE L'ÉPIQUE de Neufville L'ÉPIQUE de Neufville L'ÉPIQUE de Neufville L'ÉPIQUE de Neufville L'ÉPIQUE de Neufville	LEHRE de Nicolas de Neufville Sonneur de Nicolas de Neufville GENTIL de Rouillé et de Neufville L'ÉPIQUE de Neufville L'ÉPIQUE de Neufville L'ÉPIQUE de Neufville L'ÉPIQUE de Neufville	LEHRE de Nicolas de Neufville Sonneur de Nicolas de Neufville GENTIL de Rouillé et de Neufville L'ÉPIQUE de Neufville L'ÉPIQUE de Neufville L'ÉPIQUE de Neufville L'ÉPIQUE de Neufville	LEHRE de Nicolas de Neufville Sonneur de Nicolas de Neufville GENTIL de Rouillé et de Neufville L'ÉPIQUE de Neufville L'ÉPIQUE de Neufville L'ÉPIQUE de Neufville L'ÉPIQUE de Neufville	LEHRE de Nicolas de Neufville Sonneur de Nicolas de Neufville GENTIL de Rouillé et de Neufville L'ÉPIQUE de Neufville L'ÉPIQUE de Neufville L'ÉPIQUE de Neufville L'ÉPIQUE de Neufville	LEHRE de Nicolas de Neufville Sonneur de Nicolas de Neufville GENTIL de Rouillé et de Neufville L'ÉPIQUE de Neufville L'ÉPIQUE de Neufville L'ÉPIQUE de Neufville L'ÉPIQUE de Neufville	LEHRE de Nicolas de Neufville Sonneur de Nicolas de Neufville GENTIL de Rouillé et de Neufville L'ÉPIQUE de Neufville L'ÉPIQUE de Neufville L'ÉPIQUE de Neufville L'ÉPIQUE de Neufville	LEHRE de Nicolas de Neufville Sonneur de Nicolas de Neufville GENTIL de Rouillé et de Neufville L'ÉPIQUE de Neufville L'ÉPIQUE de Neufville L'ÉPIQUE de Neufville L'ÉPIQUE de Neufville

The limitations of those systems

An ever growing market for typefaces and variants in style show that the classic systems like Vox put too much emphasis on the historical order and the early seriffed typefaces. At the same time they generalize greatly when it comes to sans and slabs. This is understandable when we regard the age they were created in. The popular and influential neo-grotesques of the late 1950s like Helvetica and Univers weren't even issued yet and the international style – and with it the surge of sans serif type – was just starting to take off.

The original idea of Vox was to enable the combination of different groups and terms, like eg. to have a Garalde sans serif (= humanist sans). This alas was never really implemented apart from variations in the British Standard and additional explanatory text for the DIN classification. A similarly overlooked detail is that ATypI originally suggested the simple structure to be subdivided by their members/countries to their liking. They also did not define the terminology since this was the point they found it especially hard to agree on. Instead they assigned numbers to the groups to make comparison and the translation of foreign adaptations possible.

Unfortunately, those ideas are largely forgotten about. In fact now with a fully international market and type community we see that it is exactly the diverse terminology that became a big obstacle. Neither the terms coined by the type foundries nor the ones used in published classification systems are anywhere near being internationally compatible. For example the French call sans-serif faces Antique, the Germans Grotesk, the Americans Gothic which on the other hand is the term for blackletter in European countries.

Unambiguous terminology might now be even more important than a coherent, rational approach to classify typefaces. Because before we even attempt to achieve this, we have to be able to communicate over type and letterforms with all parties involved – designers, printers, compositors, students, manufacturers, scholars, engineers and perhaps even laymen.

Two (new) different ideas

I want to introduce you to two different approaches of classification which I regard more practical.

1. Classification according to form model

This is an idea based on the writing and letter-theories of Gerrit Noordzij which I first put together after learning calligraphy and typeface design in the Netherlands. It doesn't follow Noordzij's terminology exactly but I always looked for more "generic" terms, not connected to a certain style/period, over the historic ones because



angled/vertical stress
open/closed aperture
divers/regular proportions

I experienced those cause quite some confusion among beginners. What makes a brand new font a Old Style typeface? Or what does Humanist, Renaissance and Garalde mean anyway?

I expanded this approach into a layered system comparable to "bones, flesh and skin".

Most text typefaces can be differentiated according to a small number of basic form models. You could call these the bones or skeletons of a typeface. They are largely determined by the former writing tools – e.g. the broad nib or pointed nib – and how the stroke contrast originally came about.

1. Forms (contrast and structure) derived from writing with a broad-nib pen = Translation or dynamic form model
2. Forms derived from writing with a pointed pen = Expansion or static (rational) form model
3. (adding the traditional German approach of foundational writing) "drawing" the linear skeleton form with a round pen, like in Futura = Rotation or geometric form model
[image overview form models]

These three models, the underlying structural principles, are also visible in the letter forms when you reduce the stroke contrast or remove serifs. They determine the impression and the application of a typeface to a very large extent. Of course, a beginning designer doesn't understand terms like expansion or broad-nib pen any easier than French Renaissance. But what most of us can agree on is the general appearance of character shapes:

1. Writing with a broad-nib, held in a certain angle, delivers an inclined course of contrast, open aperture and diverse stroke width. This gives the letters a dynamic and varied general form and feel (also in the italics and caps, which follow the proportions of the Capitalis).
2. In writing with a pointed pen, the thickness of the stroke is related to the pressure put upon the nib while "pulling" the pen to form a stroke. Because this is applied to the down-strokes only, the axis is vertical with high but less modulated contrast and rather closed aperture. This gives the letters a more static, stiff impression. The letter forms (e.g. q, p, d, b) and the proportions of the characters are rather similar, especially the width of the caps.
3. The rounded-nib renders linear, more "drawn" looking constructed forms (e.g. circular o) like in Futura or monoline scripts. Caps often follow the classical proportions of Capitalis.

The second level – the flesh – is about the equipment and features applied to the skeleton of a typeface. Those are serifs and stroke contrast, either strongly visible or just a slight contrast to achieve the impression of optical linearity. The actual form of the serifs – triangular, bracketed or straight – is not as determining in my mind as it was for Thibaudeau. One can incorporate these specific differences into the third "layer" of descriptives.

The third, the skin level, gives us the possibility to introduce an infinite number of finer differentiations between the main groups of typefaces to describe even the most singular feature someone could ever look for. Descriptives can address different forms of serifs, like bracketed or straight serifs in the traditional categories of rational serifs, Scotch Modern and Didone, or ornamented ones. Also decorative features like stencil, inline, shadow are possible or terms related to style or application like western, horror, comic or agate, typewriter, low-res are possible. This detailed graduation can also be seen as a collection of tags.

With this set at hand, all kind of typefaces can be easily described by combining the terms of the groups, just like Vox imagined it, too. A Tuscan typeface for example could be characterized as face with modern skeleton, little stroke-contrast, bi-furcated serifs, western-style, chromatic, poster, decorative, shadow, display and so forth. Okay, this is probably not the unique, dedicated term most of us

would like to have at their disposal for typefaces, but they describe the typeface appropriately.

The big advantage I see in this system is that the groups relate to the impression and to some extent also use of the typefaces. It is relatively easy to assign atmospheric keywords to the form models, like warm, open, friendly to the first and rather regular, strict, formal to the second form model. This helps the selection of typefaces enormously, because this is usually what you think of when you start looking for a typeface. At least I do. Also, it aids combining typefaces as all fonts that stand in one vertical column here combine harmoniously, whereas mixing the horizontal ones should better be avoided. If you are looking for a more contrasting combinations you can pair the typefaces diagonally. So, either stay in one form model or go for lots of difference.

This system was published in German speaking reference books and since then is in relatively widely used in Germany. However, it is not flawless and sometimes difficult to adapt for real-life applications. The terminology stays my main construction site. Do people actually understand what is meant by "dynamic" and "static"? The latter was my replacement term for the initial "rational" but right now I tend to get back to this again, because I have a hard time describing a rationalized english roundhead or modern italic as "static".

Also, one could argue that the problem of a taxonomical approach like this is, that a typeface can only be "one of those things" even if we think of it more like piles or fraying clusters and less of self-contained drawers. It's not realistic to say that a typeface can only be serif or sans given the numerous semi-sans and semi-serif examples. In the same way do we know typefaces who happily live in the middle of the old-style and the modern form models. So, where to put those? I'd advocate to place them on the play-board near what determines the feel of the typeface most, even if we give up immaculate grouping for that. An alternative would be to introduce more piles.

One would think that an interactive system solves all those problems but actually the adaption for FontShop's applications was more difficult. This system works surprisingly well as a simple list, because it brings the chronological order of the first few groups out more clearly. It works okay in a matrix, although I changed the axes over the years (form models in horizontal order or vertical). But sorting the 7400 typefaces from the FontShop catalog into the classifying adaption for their iPad app was a challenging acid test. The main reason for my problems was the set-up of their database though, which only allowed typefaces to be assigned to one class. This inevitably proved to me that the world of type is not as simple (anymore).

2. Micro-Classification or tagging

A possible solution to this problem and another approach I grew very fond of in the last 2 years is the micro-classification you can call tagging. It is at first a non hierarchical approach, which makes it far more flexible and user-centred, often even user generated. You could call it a democratic take on classification. If people regard this typeface as “holiday” or “girlish”, then why not have them find the typeface with those keywords. The problem with keywords added by users, or also marketing people, though is monitoring. I did this voluntarily for MyFonts in the past 2 years extensively (besides tagging typefaces) and was just stunned at times by the silly and ridiculous tags that were occasionally added to fonts.

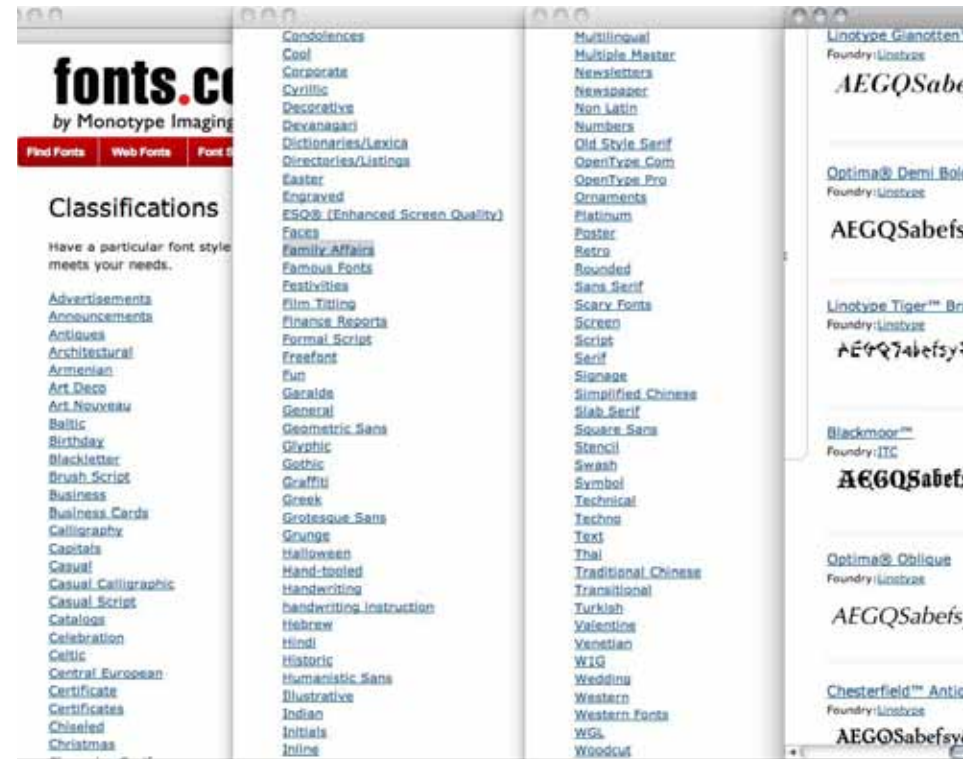
Tagging of course works more or less only in a (interactive) database environment. The most consequent example for it might be the MyFonts website, but also other type vendors work with a similar system more or less successfully. Here, the browsing or search interface is crucial, as you see in the example of fonts.com with its confusing list of keywords. What is most confusing here, on a page they call “classification”, are keywords like “serif” or “script” or “simplified chinese” next to “scary” on the same level. In my opinion, it is key to also offer tags in a basic hierarchical order as an entry point to all those different styles of typefaces. In my opinion there are different “levels” of keywords. Is “serif” a more weighty ones than “holiday”?

Speaking to manufacturers though I got an additional view. Some told me that sales went up significantly after they added more tags, and more informal tags that is. So, what should you do when you see that people find the typefaces they want this way. Should you force educate them, force your classification on everyone if it is maybe not even helpful to them?

A failed research

As I am busy with this topic for 14 years now and get really desperate at times. I can understand why my predecessors did not want to bother further at some point and the discussion is preferably avoided at conferences. Although I had intensive experience from teaching and earlier tests I was hoping to find some new starting points in a small research. What are the more “weighty” characteristics? How do people differentiate typefaces?

Well, that was not as fruitful as I thought and just brought up what I already knew or suspected. I confronted students and friends of different level of knowledge with a pile of type samples and let them sort them into groups however they wanted. After that I asked them to assign names to their groups. To break you the most disappointing



outcome first – this last task did not bring up anything at all. They had a very hard time to name the groups. Students with some knowledge used the existing terminology, blending all systems they know of, i.e. called some dynamic or static, others used Vox or the traditional Anglo-American terminology. The ones who did not have any education in typography were able to describe what they saw and sorted, but couldn't come up with a single, catchy term. Well – what did I expect. This is not surprising at all.

What was verified is that they separated script or decorated faces from text faces first. As a second they separated serifs and sans. As a third – and actually more pronouncedly than I thought – they separated typefaces with stroke contrast from linear ones. Even to the extend that some separated fonts that are supposed to look linear, thus with just small optical adjustments, like in Univers or Bureau Grotesque. My guess is that this come due to the lack of other criteria they had at hand, e.g. not being familiar with the idea of form model for further distinctions. The form model was, not surprisingly, the



most advanced, hence most difficult thing to recognize. It is probably a fact that distinguishing typefaces must be learned.

Conclusion and outlook

The problem with research in any field is that you dive into a subject on such specialized and detailed level that you forget that your distance to the language and knowledge of the normal people gets greater and greater. It helps to step back every now and then and ask the actual user. This view, in my opinion, is what historical and overly complex taxonomical systems are lacking: a classification should help the user find, select and combine typefaces and not the scholar in the first place. Or at least this is what is lacking right now. The historically savvy expert has sophisticated language and methods to describe letterforms of the past and maybe even present. But e.g. I sometimes forget that others don't easily see those differences in typefaces that I can make out in seconds. I want to find a tool that helps also those entry-level-users of type.

My hope is to be able to combine all those approach into one flexible system that works on several levels of sophistication – for beginners and experts. We cannot abandon all old classifications, and even less so, all the different terminology established over the years. We have to come up with a way how to integrate all this into a new scheme and explain it well.

My proposal works well with most the traditional groups of text faces, it follows the historical order in the serif categories. At the same time it is open to new additions to the typographic palette.

One can easily incorporate different levels of descriptives (1. form-model, 2. main formal features (serifs, contrast), 3. detailed features/associations). The third level could even work as a user-centric tag system.

I would like to take on the original ideas of Vox and ATypI and leave the framework open for additions and perhaps even nationally different terminology. Because terminology is still the biggest crux. In Nick Sherman I found an English native partner in crime and expert in the field with whom I am currently working on the topic intensively. We recently opened the can of worm and had a round table discussion with designers and manufacturers at last year's ATypI conference in Reykjavik and we would like to present a paper/proposal to the ATypI in time for their assembly this year again. I think a good solution is near.

“Unfortunately, many researchers in type classification become so involved they forget the basic purpose of any attempt to formalize a structure—simple communication.” This is very true. But I promise I make this my main goal towards a practical classification for today's needs.

Indra Kupferschmid

Indra Kupferschmid is a German designer and teacher at HBK Saar, Academy of Fine Arts Saarbrücken, where she holds a professorship in typography and heads the department of design and Masters program "Lettering & Type". Alongside this she is occupied with book design, bitmap fonts and other type related projects, DIN committees, the history of Grotesks and discussing type classification. She is co-author of Helvetica forever by Lars Müller Publishers and other typographic reference books and writes for websites such as fontsinuse, typedia and typographica as well as her various own fun blogs and journals.

Jan 13th 2012

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IMPROVING THE VISUAL MATERIAL TO ASSESS WORD COMPREHENSION IN PEOPLE WITH APHASIA: A PRELIMINARY STUDY

Guillermina Noël (IT)

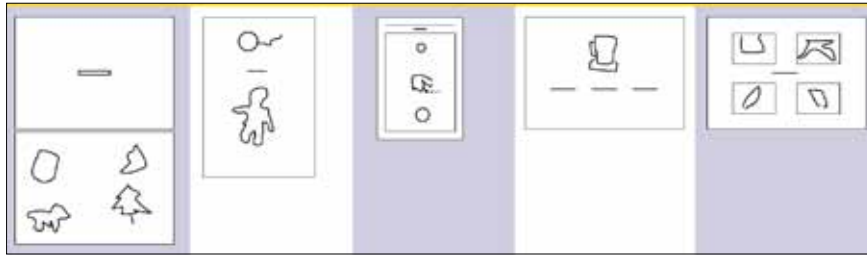
Introduction

This study forms part of my doctoral dissertation on how can visual communication design contribute to the assessment of aphasia. Aphasia is a communication disability caused by brain damage that affects speaking, understanding speech, reading, and writing. While the damage affects the language system in the brain, aphasia affects daily communication, and thus impacts significantly on the quality of everyday activities and social life.

A speech therapist assesses the person to identify language and communication. This information allows the therapist to plan rehabilitation. Therapists use a variety of tools to conduct the assessment. While studies of therapist-patient interaction have been conducted, no research has explored the complex dynamics between the therapist, the person with aphasia, the tasks, and the visual material. There is no current evidence that the test materials to assess aphasia have been designed with a state-of-the-art knowledge of visual communication design. This study draws on current research in visual communication design and cognitive psychology to investigate the question of how a visual communication design approach might inform the visual display of materials to assess aphasia.

Purpose

The purpose of this research is to improve the material used to perform word-picture matching. Word-picture matching is an activity used to assess the comprehension of written words. Several



1.

layouts are currently used to display images and words (Figure 1). For example, sometimes, the word is in the middle of the page (i.e. pear), and four images are in each corner. One image corresponds to the word, the other three are distractors (semantic: orange, phonological: peer, not related: bike). The task of the patient is to read the word, look at the four images, select and point to the image that corresponds to the word.

This study investigates the impact of the type of task and of the visualization on the matching of words and pictures. In particular, it explores:

- What type of layout facilitates word-picture matching for people with aphasia.
- What type of activity is most appropriate to match a word and a picture: pointing, placing a label, or matching cards.
- What type of task is most engaging to people with aphasia.
- What type of visualization is most appealing to people with aphasia.

To do this, I designed four different sets of material using the 16 words selected from a previous study, and used this material with 6 people with aphasia.

Problem statement

Despite the fact that many assessment tasks use visual materials, their impact on the answers of people with aphasia is underestimated or misinterpreted. To design the visual material it is important to consider the cognitive abilities and limitations of people with aphasia when performing word-picture matching. Hence, the study applies the Cognitive theory of multimedia learning (Mayer, 2005), and Frame theory (Minsky, 1974) to inform design decisions.

When the layout of the material is confusing, or the material contains information that is not relevant to achieve the goal of the task but must be processed, the cognitive capacity of the person is overloaded. Mayer (2005) called this situation extraneous overload. The author proposes principles to reduce extraneous overload. Three of these principles are:

- 1) The Coherence principle proposes to eliminate words and pictures that are not relevant to the goal of the task.
- 2) The Signaling principle proposes to place signals to direct the person's attention to the essential material. This principle provides cues to the person, thus reducing extraneous processing.
- 3) The Spatial contiguity principle suggests placing together words and pictures that are related, to facilitate their integration. Looking back and forth would require the person to hold information in working memory for a long time.

These principles were applied to the design of the four prototypes used with people with aphasia in this project.

On the other hand, recognizing an object (image) requires the viewer to apply knowledge: syntactic, semantic and personal. As it is well known, knowledge is stored in an information package called a schema. It is “used to organize a particular class of concepts formed from our experience” (Ruddell & Unrau, 2004, p. 1474).

Similarly, Minsky (1974) proposes that this knowledge is structured into frames that we use when we encounter a new situation. A frame guides recognition providing information about what we can expect in a context or event. For example, there are certain objects we expect to find in a kitchen. It appears that knowledge about the scene being a kitchen plus knowledge that the object is a square with a long handle might activate the oven node more quickly. Thus, it seems that the presentation of objects in their scene context might facilitate their identification.

Another problem is the content of the test (in this case the words). Through interviews with speech therapists and a literature review, I found that: a) words must be relevant to the person with aphasia, and b) word selection must be based on an evaluation of how picturable the words are.

To arrive at a set of words that were relevant and picturable, in a previous study, I asked people with aphasia to write 15 words that they use daily, and 15 words that they need to use but that are difficult. Most of the words people with aphasia reported belong to a context: the kitchen, the bathroom, or the bedroom. Following frame theory, and given that most of the words that people with aphasia reported belong to contexts such as the kitchen, one prototype prepared for this study explores the impact of presenting the objects in their context.

This study also explores the impact of the type of activity on performance. Activity refers to what the person has to do to integrate (mentally and physically) a word with a picture. Mayer (2005) makes a distinction between being behaviourally active (i.e. writing, pointing) and cognitively active. Being cognitively active means

making sense of the material presented, selecting essential elements, and using prior knowledge to create explanations or solve a problem.

Viewers need to select only the information that is relevant to the task and to integrate this information with their prior knowledge to create a mental model. Schnotz and Bannert (2003) showed that the form of visualization can facilitate or interfere with the construction of a task-appropriate mental model. The authors stated:

Pictures facilitate learning only if...the subject matter is visualized in a task-appropriate way. ...If good readers with high prior knowledge receive a text with pictures...visualized in a task-inappropriate way, then these pictures may interfere with the construction of a task-appropriate mental model. (p. 154)

All this principles and ideas were used to inform design decisions during the creation of the prototypes.

Designing and using the prototypes

As already mentioned, I designed four different sets of material using 16 words. I used this material with 6 people with aphasia and 2 people without aphasia (not reported here).

To facilitate the process of designing and using the prototypes, each of them was assigned a name. They are called: a) *radial*, b) *two columns*, c) *context*, and d) *cards*. See Figure 2.



A general principle applied was to reduce the number of images in the material.

Following the Coherence principle, the *radial* and *two columns* prototypes display 4 words and 1 image. One word corresponds to the image, the other three are distractors (semantic: orange, phonological: peer, not related: bike).

The *radial* prototype displays outline images. Despite the fact that tone can facilitate the identification of objects. In this case, adding tone to the image would have been distracting. Adding tone would have caused a visual segregation of the image from the words. To obtain a homogeneous visual tone and avoid the image being too distracting, the image is presented in line only.

The case of the *two columns* prototype is different: the layout divides the page into two sections, one for the image and the other for the words. In addition, the four words are placed in a column, forming a tonally homogeneous group. Presenting the image in line and tone creates a tonal balance between the two visual areas.

The *cards* prototype also presents the image in line and tone. Tone is also used as information, for example, the handle of the knife is darker than the blade.

The *context* prototype presents the images in colour. There are two reasons to use colour: a) as information (i.e., a lemon is yellow)

	Prototype and activity			
	Radial Pointing to the word	Two columns Pointing to the word	Context Placing a label	Cards Matching cards
Coherence principle	Eliminates pictures not relevant to the task	Eliminates pictures not relevant to the task	Reduces the number of distractor words. Instead of 64 words to read there are 27	Uses other target words as distractors, this reduces the number of words to read from 64 to 16
Signaling principle		<ul style="list-style-type: none"> • Uses 2 clearly different colour areas, one for the image, the other for the words. • Uses tone in the image to facilitate object identification 	<ul style="list-style-type: none"> • Uses arrows to signal where to place the label and which are the relevant objects. • Presents the background in grey to reduce the visibility of irrelevant objects. • Uses colour to signal relevant objects in the context 	<ul style="list-style-type: none"> • Word cards have a coloured background, image cards have a white background • Uses tone in the image to facilitate object identification
Spatial contiguity principle	Presents the words and the picture in a separated format	Presents the words and the picture in an integrated format		
Framing theory			Uses context to facilitate the recognition of objects	

and b) as a signal communicating to the viewer that coloured figures are relevant. The use of colour as signal forces the presentation of the background colour of the kitchen to be grey to reduce its importance. Figure 3 shows the principles applies to each prototype. Note, that each prototype is presented together with the activity to perform. Since text and picture comprehension are goal-oriented, it is difficult to talk about the task without talking about the visualization.

Regarding the drawing criteria, following Rosch's (1975) concept of *goodness-of-example*, the 16 images were drawn from real and familiar objects of contemporary use within a kitchen context. Following Johnson, Paivio, and Clark's (1996) description of *canonical perspective*, the objects are depicted in the viewpoint that maximizes information about their identity.

Using the prototypes with people with aphasia

Six people with aphasia collaborated in the evaluation of the four prototypes. The participants were three women and three men, their age ranges from 39 to 82 years, and all of them have Italian as their first language. Table 1 shows their age and level of aphasia according to the clinical judgement of their aphasia therapist.

The meetings with people with aphasia were individual. Meetings were audio-recorded. To avoid memorization of the 16 nouns by the participants, activities such as reading brief texts and an interview about two different informed consents were alternated with the evaluation of the prototypes. The whole procedure had 10 steps.

The impact of layout on word-picture matching: evaluation of the *radial* and the *two columns* prototypes.

In these two cases, the prototype was placed in front of the participant. The instructions given to the participant were: Please,

Table 1

Participants	Age	Aphasia severity
P.1	44	mild/moderate
P.2	35	moderate
P.3	74	moderate
P.4	39	moderate
P.5	69	moderate
P.6	82	mild
P.7	81	mild/moderate
P.8	76	moderate

Table 2

Performance time depending on the layout						
Prototype	P.1	P.2	P.3	P.4	P.5	P.6
RADIAL	11.5	13.1	4.6	6.8	2.4	2.6
2 COLUMNS	6.7	9.9	2.4	5.2	1.4	1.8

look at the elements in the page, and point to the word that corresponds to the image. The total time required to match the correct word to the picture and the number of errors made were recorded.

Visual acuity screening.

I also did a visual screening. Several authors have highlighted the importance of identifying the presence of visual deficits in people with aphasia (Hallowell, Douglas, Wertz & Kim, 2004; Hallowell, 2008). Failure to do so may lead to invalid data collection.

The impact of the *type of activity*: evaluation of the *two columns*, the *context*, and the *cards* prototype.

The evaluation of the *two columns* prototype was as described above.

To evaluate the *context* prototype, it was placed in front of the participant. The participant was instructed: Please, look at this image. I will give you a label with a word; place the label close to the arrow that corresponds to the image.

To evaluate the *cards* prototype two rows of cards were arranged, the top row for words, the bottom row for images. The participant was instructed: There are cards with words and cards with images. Please look at the cards and match the word card to the corresponding image. The total time required to match the correct word to the picture and the number of errors made were recorded for each of the 16 nouns. Comments that the participant or the aphasia therapist made were also recorded.

The total time was added up and divided by 16; differences in performance between conditions were noted. The errors made were colour highlighted on the list of words of the register chart, and their total was added up.

Results

Results about the layout

The results in Table 2 show word-picture matching takes more time when using the *radial* prototype. This was also observed with the

participant without aphasia. The average time the six participants took using the *radial* prototype compared to the *two columns* prototype was 58% higher. Only one participant made errors (shown in red in Table 2), but the number of errors was lower when using the *two columns* prototype.

It was noticed that when participants were reading the *radial* prototype, the reading path varied from page to page. This lack of consistent reading order was present in most of the participants. Since this reading behaviour was present only when reading the *radial* prototype, it was assumed that this behaviour was caused by the layout. Specifically, it might be due to the lack of guidance in the layout. In a study about newspaper reading, Holsanova, Holmberg and Holmquist (2009) using eye-tracking technology, found that when reading a radial layout readers have no preferred reading order. The authors explained that given that the reader has several decisions to make “to choose the entry point, to decide about the reading path, to find relevant pieces of information, to create a connection between them and to integrate them mentally – the material might be judged as difficult to grasp” (p. 1224). This extra cognitive activity of deciding the entry point and the reading path is reflected in this study in the longer time it took to read the *radial* prototype.

This reading order behaviour was noticed because the six participants were reading aloud, although they were not instructed to do so. Participants were not instructed to read aloud to reduce the task’s cognitive effort. However, this verbal protocol provided valuable insights into the reading of the material. This has important methodological implications for future studies.

The findings about the lack of a consistent reading order support the Signaling principle (Mayer, 2005). Placing cues directs the reader’s attention and reduces extraneous cognitive processing. Lack of cues, on the opposite, is detrimental.

Matching time performing 3 different activities

Activity	P.1	P.2	P.3	P.4	P.5	P.6
POINTING	6.7	9.9	2.4	5.2	1.4	1.8
PLACING LABELS	5	3.6	3.2	2.6	1.6	1.7
MATCHING CARDS	2.3	7.6	1.2		1.7	1.5

Table 3

The results also support the Spatial Contiguity principle (Mayer, 2005). Placing the words and the image closer facilitated their integration. The *two columns* prototype made it easier to integrate the word with the image. The two areas of the layout require less scanning, and also avoid holding information in working memory.

Results about the activity and visualization

It seems that the type of activity affects word-picture matching. Table 3 shows that three out of the six participants performed better when matching cards, this is when using the *card* prototype. However, and despite the fact that the *context* prototype requires more visual search than the *two columns* prototype, four out of the six participants spent less time matching using the *context* prototype.

The results show that the impact of the type of activity on performance varies depending on the severity of the aphasia. The table shows that for participants 5 and 6 the impact of the activity is smaller than in the other participants.

Note taking of comments and audio-recording provided relevant insights. Two participants took longer finding the image of the word *gas burner* in the *context* prototype. One of the participants, after reading the word *gas burner*, immediately said: “Gas burner we place it here, above the oven.” This comment show that previous

Table 4

How engaging it is?

Activity	Participant 1	Participant 2	Participant 3	Participant 4	Participant 5	Participant 6
Painting 1 <i>Radial P.</i>	Quite a bit	A little	A little	A little	A little <i>It is too simple</i>	A little <i>The procedure is too simple</i>
Placing labels <i>Context P.</i>	A lot <i>This is my kingdom</i>	A lot	A lot <i>It remains in my mind</i>	A lot <i>It is more interesting</i>	A lot <i>because one has to think. It makes me think</i>	A lot <i>It helps you search for the object using the logic</i>
Painting 2 <i>Two columns P.</i>	Quite a bit	Quite a bit	Quite a bit	Quite a bit	Quite a bit <i>Better articulated</i>	Quite a bit
Matching cards <i>Cards P.</i>	Quite a bit	Quite a bit <i>It has fewer words. Here you go directly</i>	A little <i>It is too simple. Even a child can do it. Even with the eyes close</i>		A little <i>It is not a big deal. It is too simple</i>	A little

knowledge and experience with the objects is indeed very important. People search according to their previous knowledge and experience. The comments also show that word picture matching requires searching strategies. For example one participant was searching according to the place; and another was searching according to the colour. The two of them had different searching strategies in mind.

It would seem that the context facilitated the recognition of objects, adding information such as where in the kitchen you find the burners.

Comments made by another participant is also worth noting. When searching for the fruit, he said: "I have seen it before." This supports Mayer's (2005) theory that using signals, in this case colour, facilitates recall of emphasized information.

The context also made it easier to reject distractor words, for example, when reading the word *letter*, a participant commented: "No! No! No! This one is of no use for me." This seems to support the Coherence principle: people perform better in word-picture matching activities when the number of distractor words is reduced.

Visual cues, such as the arrows in the relevant objects, facilitated the identification of relevant objects for four out of the six participants. This supports the Signaling principle.

Results about how engaging was each activity

Despite the fact that some participants took longer performing the word-picture matching when placing the labels, the six participants selected *placing the label* using the *context* prototype as the most engaging activity.

Table 4 shows the participants' comments. The comments from participants 5 and 6 "it makes me think" and "it helps you search... using the logic" suggest that this activity is more engaging because there is a problem to be solved, an object that has to be found. Searching and finding the object presents a challenge.

Participant 1 instead liked *placing labels* because it takes place in a kitchen, which she seems to love. This suggests that two aspects that promote engagement are a certain level of challenge and the topic.

Some participants found pointing using the *radial* prototype and *matching cards* too simple. This suggests that participants do not like activities that are childish or too simple.

Results about how appealing was each prototype

The most appealing visualization for the six participants was also the *context* prototype. See Table 5. The participants' comments made reference to different aspects of the visualization, such as the topic and the colour. One participant liked because in this prototype she could see at the end of the session all that she had achieved, a situation that cannot be observed in the other prototypes; another participant liked the idea of having a panorama in which objects are located.

Table 5

How appealing it is?						
Prototype	Participant 1	Participant 2	Participant 3	Participant 4	Participant 5	Participant 6
Radial P. <i>Pointing 1</i>	A little	A little	A little	A little	A little	A little
Context P. <i>Placing labels</i>	A lot <i>I love the kitchen, I like yellow</i>	A lot <i>I like this here. I like to see all this. To see all that I have accomplished</i>	A lot <i>All the objects are visible. There is more colour. I see the images immediately because they are in there place</i>	A lot <i>It is easier</i>	A lot	A lot <i>The colour. It becomes more relaxing. The patient already had a black & white. Seeing a bit of colour is not bad.</i>
Two columns P. <i>Pointing 2</i>	Quite a bit	Quite a bit <i>I like the image. There is also colour</i>	Quite a bit <i>The image is bigger</i>	Quite a bit	Quite a bit	Quite a bit <i>It is a nice thing to look at. All that colour</i>
Cards P. <i>Matching cards</i>	Quite a bit	Quite a bit	Quite a bit		Quite a bit	Quite a bit <i>Colour is good</i>

Discussion

The results show that visual material to assess word comprehension through a word-picture matching modality must be designed considering the attention and working memory limitations of people with aphasia, but also their needs and interests. The results also show that indeed the cognitive theory of multimedia learning (Mayer, 2005) can help create material that reduces unnecessary cognitive demands.

Attention can be guided through the appropriate use of signals such as clear visual areas for text and image. Working memory limitations can be reduced by a task-appropriate layout, for example placing the words and the image closer, and reducing the number of areas to inspect.

The results seem to indicate that the most appropriate activity for assessing word-picture matching, might be *placing labels* with words on a large image displaying a context. The combination of this activity with this type of visualization seems to promote active cognitive

processing to match the word and the picture. It seems to encourage people with aphasia to make sense of the material and to favour the use of prior knowledge to identify the objects.

The study showed that word-picture matching is a search and find activity. Guthrie, Britten and Barker (1991) asserted that search is affected by the document structure. They stated, “to be selective in inspection of a document, the person must grasp the organizational structure of the informational display and know how to enter this structure” (p. 322). This assertion supports the findings that the layout and the type of visualization affect word-picture matching performance. If the visualization of the material does not provide a clear structure and appropriate cues, finding is more difficult, creating problems with attention and working memory.

As previously mentioned, presenting the words in their context might help create engagement in the activity. Perhaps presenting the words in everyday contexts such as the kitchen, the bedroom, or the living room, makes the material more connected to the person's life – more purposeful. As Byng and Duchan (2005) suggested, engagement involves making people feel more connected and equipped for everyday real life. This implies that the *context* prototype better addresses the needs and interests of people with aphasia. Future research needs to include a variety of contexts, other than the kitchen.

Limitations

These preliminary findings are promising but need further research. The findings need additional confirmation with a larger population, using a larger number of words, and including difficult words.

Conclusions and implications

This study presents new insights into the design of word-picture matching material for people with aphasia. It suggests that the layout of the material influences performance. It also supports the idea that the type of activity to perform to match a word with a picture, together with the visualization of the material affect word-picture matching performance.

What type of layout facilitates word-picture matching.

The *two columns* layout used in this study is more appropriate than the *radial*. The *two columns* layout facilitated the integration of words and pictures for all the participants. This was shown in the shorter performance time it required.

What type of activity is most appropriate to match a word and a picture: pointing, placing a label, or matching cards.

Placing labels with words on a large image displaying a context (i.e., a kitchen) seems to be more appropriate.

Showing the objects in their natural context allow people to use their prior knowledge and experience. This is, the *context* presents task-relevant information promoting active cognitive processing.

What type of task is most engaging to people with aphasia.

Participants with and without aphasia agreed that *placing labels* with words on a large image displaying a context is the most engaging activity. It seems that, to be engaging, matching activities for people with aphasia need to present a moderate challenge, a topic, and they must not be too simple or childish.

What type of visualization is most appealing to people with aphasia.

All the participants selected the *context* visualization as the most appealing.

Implications

For visual communication designers, the results provide support that the material must be created taking into consideration the cognitive abilities and limitations of people with aphasia, and using a user-centred approach. A challenge for visual communication designers is to have access to speech therapists and people with aphasia in their assessment environment, and also to resources that can facilitate the evaluation of the prototypes.

For aphasiologists, the results not only provide evidence about the need to include visual communication design expertise in the development of aphasia material, but also about the many factors to consider when designing the material and the possibilities for improvement.

This study shows that visual communication design can make a significant contribution to the assessment of aphasia.

I hope this results can help improve the assessment of aphasia, enhancing the quality of the visual material, and enabling therapists to better help the people with communication disabilities find the path toward, as Holland (2007) outlined, a more pleasurable, engaged, and meaningful life with aphasia.

I also hope this paper provides an example of research in visual communication design.

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Guillermina Noël (IT)

Guillermina Noël is a visual communication designer. She first graduated from the University of La Plata, Argentina in 1997. She received a Master of Design degree from the University of Alberta, Canada in 2006. She is now completing her PhD in the Sciences of Design at the University IUAV of Venice, Italy; supported by a Doctoral Fellowship from the Social Sciences and Humanities Research Council of Canada (SSHRC). For the last nine years her research has focused on the design of materials for adults with severe speech and reading impairments. Her research in this area emphasizes the importance of applying an evidence-based and a user-centred design approach. She has taught design at the National University of La Plata, Argentina and at the University of Alberta, Canada. As well as workshops at the Philadelphia Institute of the Arts, United States; and the University Positivo, Brasil.

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GRAPHIC DESIGNER + USER + SPECIALIST(S): CALLING FOR A TRIPLE COLLABORATION IN THE FIELD OF TACTILE INFORMATION DESIGN

Marina Emmanouil (TR)

Keywords: participatory design; visually impaired people; accessibility; tactile graphics; graphic design education; museum

INTRODUCTION

Participatory design, for those unfamiliar with the term, is the approach by which all stakeholders (designers, users, institutions, etc.) are actively involved in a design process. This approach is of course not new. It was developed with the functionalist design movement in the 1950s and 1960s. The theory around this practice sprung more vividly in the 1980s, and already a decade later, the approach was considered 'a maturing field of research and an evolving practice among professionals'.¹ During roughly the same period, critical writings on graphic design provided us with a social-oriented theoretical basis that guided our thinking and practice since. Jorge Frascara's 1988 paper 'Graphic Design: Fine Art or Social Science?' is one of these works that remain useful today especially because of the democratisation in the media, such as web-related media, and in other fields.²

- 1 Kensing, F., Blomberg, J., 'Participatory Design: Issues and Concerns', *Computer Supported Cooperative 7* (1998), pp.167–185.
- 2 Frascara, J. 'Graphic Design: Fine Art or Social Science?', *Design Issues* 5, no.1, 1988, reprinted in Bennett, A. (ed.), *Design Studies: Theory and Research in Graphic Design*. New York: Princeton Architectural Press, 2006, pp. 26–35.

The edited volume *Design Studies: Theory and Research in Graphic Design* (2006) includes already good examples on participatory design in the field of graphic design. Considering, therefore, this fairly well-defined and well-implemented practice in the design world in the last decades, to talk about participatory design, in particular, to argue for the benefits of a user-centred approach today, seems an obsolete statement. However, there is an area in which participatory design in the field of graphic design has been largely neglected as an approach. The specific area I am referring to is the design of tactile graphics, that is, raised interpretations of visual images that are intended to be read by touch (rather than sight) by vip.

The practice I am talking about is part of the broader field of tactile information design for the visually impaired that is already well practised and includes to some extent, the involvement of this special audience. I refer to the design products and services available in the market, for example, the state-of-the-art auditory and digital gadgets, the tactile pavements for easier and safer transport. This paper focuses on the specific area mentioned (tactile graphics) that can be used as educational or/and informational material in schools for the blind, museums, and other cultural establishments and institutions. It feeds primarily from my experience as a graphic designer in co-designing this material for and with visually impaired people.

Let's ask a basic question: How many visually impaired people there are in the world? And by *visually impaired* people I mean both blind and partially sighted due to cataract, glaucoma and other severe sight diseases. According to the World Health Organization, 285 million people in 2011 worldwide are visually impaired, and approximately 65% of that figure is aged 50 and older.³ Considering that this age group comprises about 20% of the world's population, we realise that this audience is a countable figure in society, especially with an increasing elderly population in many countries.

This work takes up as a case study the Accessibility Programme developed for a museum exhibition. Being the coordinator of that Programme, I would like to share my experience in its implementation, and particularly, report on implications entailed in the collaboration of the stakeholders (designer, museum staff, vip and associated institutions). My goal is to describe the process and the type of interaction between the collaborators, spot out the gaps or/and problems in this process, and suggest possible collaboration

³ Fact Sheet N°282, October 2011: 39 million are blind and 246 have low vision. An estimated 19 million are children. <http://www.who.int/mediacentre/factsheets/fs282/en/> (Accessed on 28 December 2011)



1.

modes for future projects. I hope to offer a workable plan that highlights the significance of three types of Actors. These are: the Users, the Designers, and the Specialist(s).

1. The Exhibition and the Accessibility Programme

In June 2009 the Benaki Museum, which is an established cultural entity in Greece, opened its doors to a private collection of Pre-Columbian Art, the first documented collection in the country so far and a unique opportunity for the Greek audience to explore. The collection itself consisted of 153 objects (ceramic, stone, and textile artefacts), and nearly 2,500 swirls. These are listed in the exhibition catalogue, which basically comprised the main historical source of information.⁴ For the first time, too, in the museum's history, an

⁴ Filini, A., McEwan, C., *Pre-Columbian Art at the Benaki Museum, The George Gontikas Collection* (Athens: Benaki Museum, 2009). The Georgios K. Gondikas Collection was donated to the Museum some time before the exhibition. More information on the exhibition can be fetched at www.benaki.gr.



2.

exhibition was made (potentially) accessible to 21,000 individuals with visual impairments in Greece through a special programme.⁵

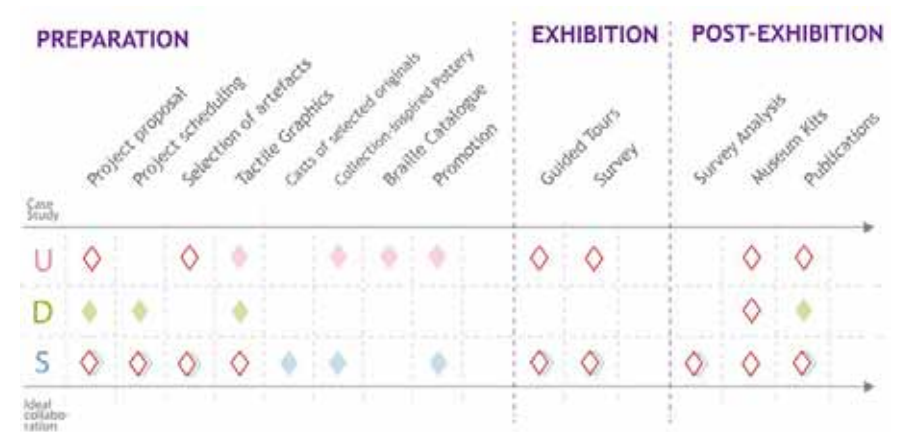
This programme was built around the development of Guided Tours, in which a representative sample of 10 pieces was discussed and comprised the material for the touch-on activities. Some of the artefacts selected for the tours included: a cylindrical ceramic pot with an impressive decoration of a god-shaman figure; a ritualistic vessel of an exceptional technical craftsmanship, and a Mexican ceramic mask (Figure 1).

The User contribution in this programme comprised the development and production of the tactile materials: the Braille catalogue,⁶ and the tactile graphics, which provided supplementary information on the objects' shape and decorative details.⁷ And lastly, the collection-inspired pottery produced by vip adults, students at the Ceramic Pottery course at the Lighthouse of the Blind. All of the pottery pieces were on public display at a defined space within the exhibition gallery (Figure 2). In effect, the co-citation of the programme and its props in the same gallery space, allowed sighted people to engage with it and the works produced, making

⁵ According to the records offered by the official Greek organisations for visually impaired people.

⁶ Produced by members of the Lighthouse for the Blind, www.fte.org.gr.

⁷ The printing was made with the kind assistance of Angeliki Verykokaki, mobility instructor for the visually impaired at the Panhellenic Association for the Blind.



3a

the interaction to work in more than one direction; that is not merely between the museum and vip, but between visually impaired and people with sight.

2. Project plan: Actors, Tasks and Collaborations

In the three main stages of this project: the Preparation, which involves both general organisational aspects and design-related works, the Exhibition and the Post-exhibition stage, a number of actions were taken (Figure 3a). During the Preparation period, the Accessibility Programme was proposed to the exhibition curator. Upon the project's approval by the curator and the museum's director, the scheduling of this event followed after.⁸ Then, the following four tasks concerned the material used at the Guided Tours. These were: the selection of the artefacts; the design of the tactile graphics; the production of casts of selected original artifacts; and the production of the Braille catalogue. And lastly, the promotion in the media.

During the Exhibition period, that is, from mid June to late August 2009, the Guided Tours were organised every Thursday.⁹ Also, during this time, a Survey in the form of a Questionnaire was

⁸ Here I need to say that similar proposals were made to other museums, the Benaki museum was the only to respond positively.

⁹ Guided tours were offered every Thursday, which day the Museum closes at 24.00, allowing also the employed visitors to attend. Also alternative days were possible upon request.

provided and one could fill it in at the Exhibition. The Post-exhibition period included the Survey Analysis, the design of the Museum kit and Publications.

The three letters in the diagramme, U,D,S, correspond to the three main Actors involved in the given tasks/actions. 'U' corresponds to the Users, that is the visually impaired people and their associations. 'D' stands for the Designers, i.e., graphic designers and exhibition designers, etc, and 'S' refers to the several specialists that were involved or there expertise was needed in this project.¹⁰

My work experience at the Museum of Fine Arts in Boston (as an assistant involved in the organisation and implementation of the educational programmes for vip), and also my second academic qualification, as a design historian, were helpful, since they allowed me to contribute in some of the tasks (other than design-related). For example, interpreting historical information from the catalogue and deciding on the artifacts most representative of the cultures represented in the collection. Yet, I should note that this multi-tasking activity proved problematic at times, because I was asked to undertake a task that is the field of expertise of another professional. For the first 3 tasks of stage 1, and also in the tasks for stage 2 and 3, I worked as a leading actor for a task that is the area of expertise of another specialist. For example, due to my former experience I was thought by the User's institutions to be the best to lead the guided tours. In my opinion, a specialist guide should have undertaken this task, who would have experience in oral descriptions.

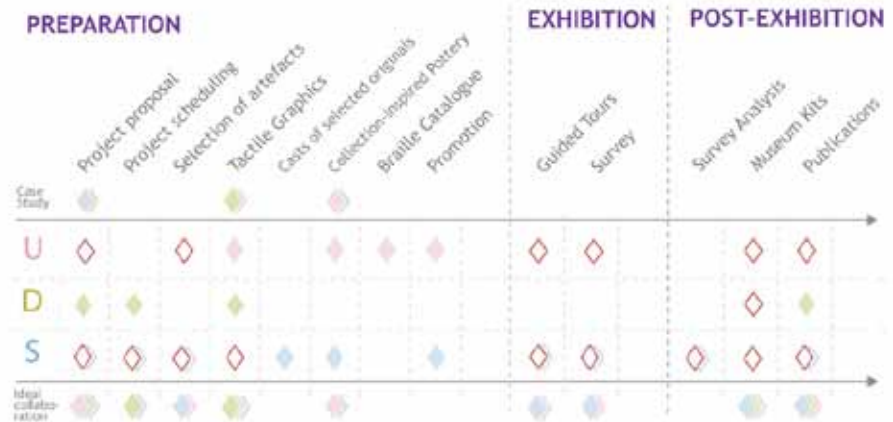
The next diagramme (Figure 3b) presents the possible collaboration types between the Actors, indicating the leading and the supporting ones. In the following figure (Figure 3c), the kind of collaboration between the Actors achieved for the Accessibility Programme, which appears as 'case study', can be seen on the top line/arrow, whereas the ideal collaboration (from my point of view based on this experience) is shown below the second line. There are several instances in which a triple collaboration between User, Designer, Specialist, would be beneficial. I would like to focus only on two of the tasks that I think a triple collaboration could have offered better results. These are: the part that concerned the project proposal to the museum, and the design of the tactile graphics. I will start with the part concerning tactile graphics.

COLLABORATIONS

Leading and Supporting Actors



3b



3c

¹⁰ The Actors are symbol and colour-coded in the diagrammes. The white diamond with a red outline indicates the missing actor for a specific action, and when this is superimposed on another diamond means that the task needed a specialized actor, but was instead performed by the most suitable available.

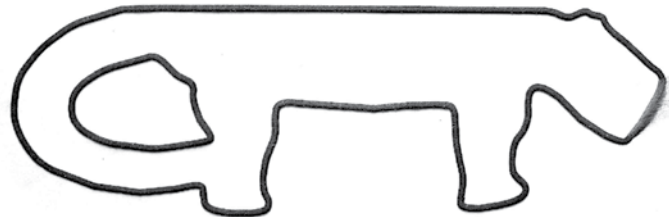
3a. Co-designing tactile graphics

Why a tight collaboration between designer and user is essential for the design of tactile graphics? It is essential because the special perceptual abilities of partially sighted and blind people pose a challenge to the designer's training and expertise, especially when it comes to rendering perspective and the three dimensions into raised images for tactual exploration.

From my experience, significant changes can be made to assumingly simple, 'unsophisticated' designs, as was for this four-legged stone vessel (Figure 4a). In its 3-D form, the tale is connected to the back leg creating in this way a handle. During the first stage in the design process, the object is usually photographed from its profile so that to capture, as much as possible, the full shape and realistic, not distorted or artistic, representation of the object.¹¹ In the first linear representation (prototype) (Figure 4b), the tale was connected to the line that defined the leg in this way. However, this



4a



4b



4c

¹¹ The seven stages (suggestions) in the design and printing process of tactile material can be found below the main text.

detail was particularly difficult to understand, even for a highly experienced tactile reader, as was the person who tested the tactile graphics for the programme.¹²

The User found the first draft tactile design rather confusing and complex, giving no hint to the tale's function as a handle or indeed the object's identity. Originally the User perceived the two lines that indicated the contour of the tale as part of the space of the main body of the animal. As a solution, the User suggested to add an extra line as a way to 'close up' the animal's body and differentiate this from the tale (Figure 4c). Moreover, the User suggested that the added line would be better if it was made thinner (in relation to the basic line width for the outline of the body) in order to suggest its secondary role during the tactual exploration of that particular point in the graphic. Also, the User asked for the small gaps that appear between the thin extra line and the leg line so that to be able to distinguish them from the basic outline of the object. Similar adjustments were made for nearly all of the tactile graphics. The following example showcases the importance of the Specialist and the specialist knowledge in this process.

The accurate representation of a god-shaman on a ceremonial cylindrical pot presents the designer with a challenge (Figure 5a). The highly complex image of the creature presented there, appears to be half bird, half snake, and decorated with a number of 'accessories' (mask, jewellery, knife, heads – probably skulls of the dead enemy). In the process of simplifying and prioritising the elements in the image, the designer is confronted with an important question: which of the elements to emphasise more than others (in this case the knife, the bird and the mask) (Figure 5b). In this decision making process of visual hierarchy, the historian or the curator would have guided the designer's decision, so that the indicated elements would fit into the overall aim of the exhibition and bring forward the key points the curator would like to communicate with the museum visitors.

Moreover, despite some basic design principles on how to construct these images (i.e., line width, distance between the lines

¹² Vangelis Avgoulas, blind by birth, is a young practicing lawyer, member of the Panhellenic Association for the Blind's Youth Committee and the International Organisation VIEWS for Young Visually Impaired. He has recently been elected vice-mayor at his Municipality for his commitment to making his locality a place accessible for all people and abilities. Vangelis, now in his early 20s, became a high-sensitive tactual user through early tactile education and intense practice. By this it is meant that he is more sensitive in feeling finer details through his fingertips, than other people who lost their sight later in their lives, and have less experience in reading Braille, or any tactile informational material through touch.



5a



5b

and motives/patterns used in the graphic), information and resources on how to design effectively for this special audience are limited. Some general advice can be found in the websites of the associations and institutes for the blind. As pointed out in the Royal National Institute of Blind People website, 'converting a visual graphic to an appropriate tactile graphic is not simply a matter of taking a visual image and making some kind of 'tactile photocopy'.¹³ The National Centre for Tactile Diagrammes in the UK, before it merged with the RNIB, included in its website more detailed instructions. Now, the two institutions offer jointly design consultancy.

Whereas the past few years innovative research has been developed in auditory and digital technologies for blind people, as seen through numerous fascinating and cutting-edge gadgets, there seems to be little progress in research for tactile graphics design, or the integration of research into practice, or indeed the inclusion of a course in the design university curricula. Polly Edman's textbook on tactile graphics, published in 1992, remains a key reference for contemporary research and publications, which is, however, out of print for several years now.¹⁴

¹³ http://www.rnib.org.uk/professionals/accessibleinformation/accessibleformats/accessibleimages/tactilegraphics/Pages/tactile_graphics.aspx [Accessed on 5 January 2012].

¹⁴ Edman, P. *Tactile Graphics* (New York: AFB, 1992). One can purchase it only second hand on amazon.com. Currently, there are 3 new and 12 used copies, which cost approximately from 200 to 20 US Dollars respectively. My copy belonged (most likely) to a library, of which the librarian apparently did not find it useful or popular any more to keep in the archive.

3b. Co-creating accessibility programmes

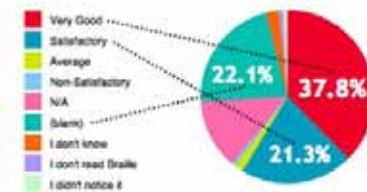
And lastly, the part that refers to the Project Proposal and its final evaluation. Despite that the Programme, and in particular the Guided Tours, were fairly well promoted in the press, the internet, television, and radio, and regardless of the fact that the programme received good reviews in the Survey (Figure 6) (and people asked for a similar programme to implement for the museum's permanent collection), the significantly low participation to the guided tours raised questions in more general issues, for instance, of 'supply' and 'demand' in the provision of cultural goods to this special group, and also, it raised serious questions related to the project itself.

There are several explanations for the low attendance, for example, time clashing with the opening of the New Acropolis Museum; the temporary nature of the exhibition and its planning during the summer. I would like to highlight one fundamental cause that is internal to the project itself. It is in my belief that the programme did not meet the initial expectations from an organisational point of view (at least) due to the fact that the Users were excluded from key areas in the decision-making process, in other words in the broader context of co-creation during the very first stage (Figure 7). No

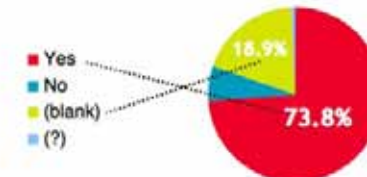
6.

9. How did you find the Educational Programme for visually impaired people? (Please give your comments for improvement)

Very Good Satisfactory Average Non-Satisfactory/Why? N/A



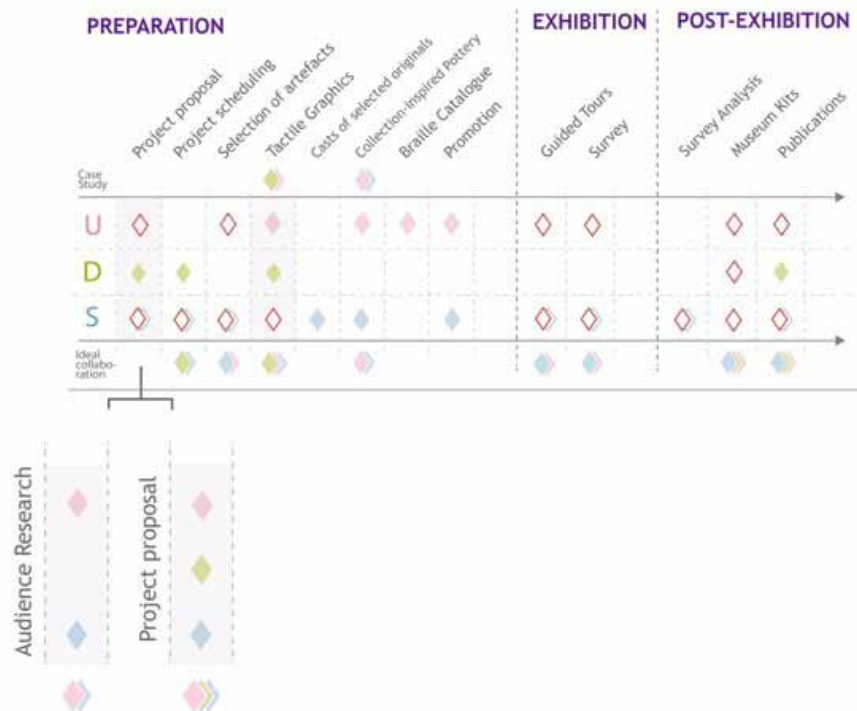
10. Would you like to see more programmes for visually impaired people for the Museum's Permanent Collection? Yes/No



preliminary audience research was undertaken to determine whether the Pre-Columbian art collection would be of interest to this audience. The initiative to develop this project was therefore based on the assumption that Pre-Columbian art is a subject that will be attractive to this audience, which appeared to be unfamiliar with this sort of initiatives in the first place.

Reassessing this programme, it is thought that skipping this important step, or undermining this essential information (the audience preference) would doom any effort for developing a project for the vip in the future to fail. Yet, does audience research is the only, or is it the most reasonable, way to proceed, especially in a country with a weak state plan for vip to interact and engage with culture, and with no stable museum policy toward accessibility and special audiences (other than educational programmes for schools)? Lastly, was the Athenian context and the several User organisation networks, too large to regulate and collaborate harmoniously with?

7.



Acknowledgements

I would like to thank the Agrafa organisers, especially Ewa Satalecka, for their invitation to participate in the Conference and for their warm hospitality. Also, I am grateful to Vangelis Avgoulas for his valuable contribution to the tactile design process, and for his inspiring stance in life. Lastly, I owe a huge thank you to Jan Eckert for helping me with the diagrammes visualisation and his support to this work, and to the Conference delegates for the generous exchange of knowledge and experiences, especially Jorge Frascara and Guillermina Noel.

Stages in designing and printing tactile material

The first stage is photographing the selected objects. The object is usually shot from its profile so that to capture, as much as possible, the full shape and realistic, not distorted or artistic, representation of the object.

The second stage involves the digital rendering of the outline (in black colour) of the object. This constitutes the digital 2-d representation of the object.

In stage three, the first draft of this 2-d design (not the actual photograph of the object) is printed on a special alcohol-infused paper. Afterwards, the paper with the black outline of the object is passed through a heat injection device (Thermoform). Then, the black-printed lines, after having absorbed the heat, more than any other part of the white paper, are swollen and appear raised.

The fourth, and most crucial, stage is the testing of the draft design by, ideally, more than one partially sighted and/or blind person. The result should produce a pleasant and informative experience for the widest range of tactual capabilities possible. The following three stages of the production process include the re-designing and re-printing, and lastly, the mounting of the final tactile design on a cardboard for durability and sustainability in use and time. Stage four and five can be repeated until a satisfactory result is achieved.

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<http://www.mfa.org>

All photographs and diagrammes (but Figure 2 and Figure 5a) are by the author.

Marina Emmanouil (TR)

Born in Athens, Greece (1977).

Marina is a lecturer at the Visual Communication Design Department at the Izmir University of Economics in Turkey since September 2010. She teaches practice and theory in the area of visual communication (graphic design) at an undergraduate level. She graduated with a BA (Hons) in Graphic Design (2001) from the University of Hertfordshire (UK) and an MA in the History of Design (2004) from the Royal College of Art (UK), where she commenced her PhD research on post-1945 graphic design in Greece. Her viva-voce examination was held in September 2011 and it is expected to complete her PhD studies in 2012. Her primary academic and research interests lie in the field of the history of graphic design, advertising and visual communication, and in the area of information design, tactile graphics, haptic information design, museum and accessibility.

With her design practice, Marina contributes to the development of accessibility programmes for visually impaired people in museums in the UK, the USA, and Greece. During her graphic design training, Marina worked as a tactile production assistant at the National Centre for Tactile Diagrams in 2001. Since then she participated to the implementation of educational programmes at the Museum of Fine Arts in Boston MA (2005), where she was responsible for designing tactile diagrams of artworks from permanent collections and exhibitions. Her most recent work is the coordination and implementation of the educational programme for the visually impaired at the Benaki Museum in Athens, Greece, for the Pre-Columbian Art exhibition in 2009. She is now working on a team project that works for the implementation of an accessibility programme for adults and students with visual impairments for a museum collection/exhibition of their choice (to be completed in Athens in 2012).

Jan 13th 2012

14:30



LOGICOMIX: THE EXPERIENCE OF A GRAPHIC NOVEL

Alecos Papadatos (NL)

The way from the very first, passionate discussion on the idea of a graphic novel to the completion of the book is long and the experiences innumerable. The comics artist rarely speaks except through brief, out of the box, interviews. This is an opportunity to share with you the moments that lie hidden behind the drawn characters, their surroundings, the panel compositions, the color in this particular creative adventure of Logicomix. We will follow the stages of production from script to the final, colored page.

<http://www.youtube.com/watch?v=Cbx9M-n7nCU>

http://www.facebook.com/note.php?note_id=192728377424828

www.logicomix.com/en

#1 NEW YORK TIMES BESTSELLER

LOGICOMIX

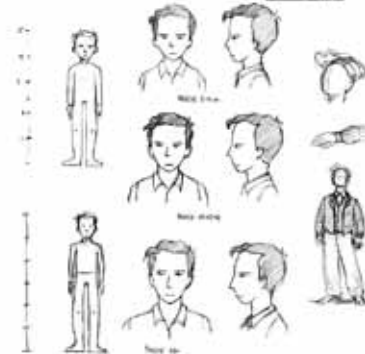


AN EPIC SEARCH FOR TRUTH

APOSTOLOS DOXIADIS AND CHRISTOS H. PAPADIMITRIOU

ART BY ALEGOS PAPADATOS AND ANNIE DI DONNA

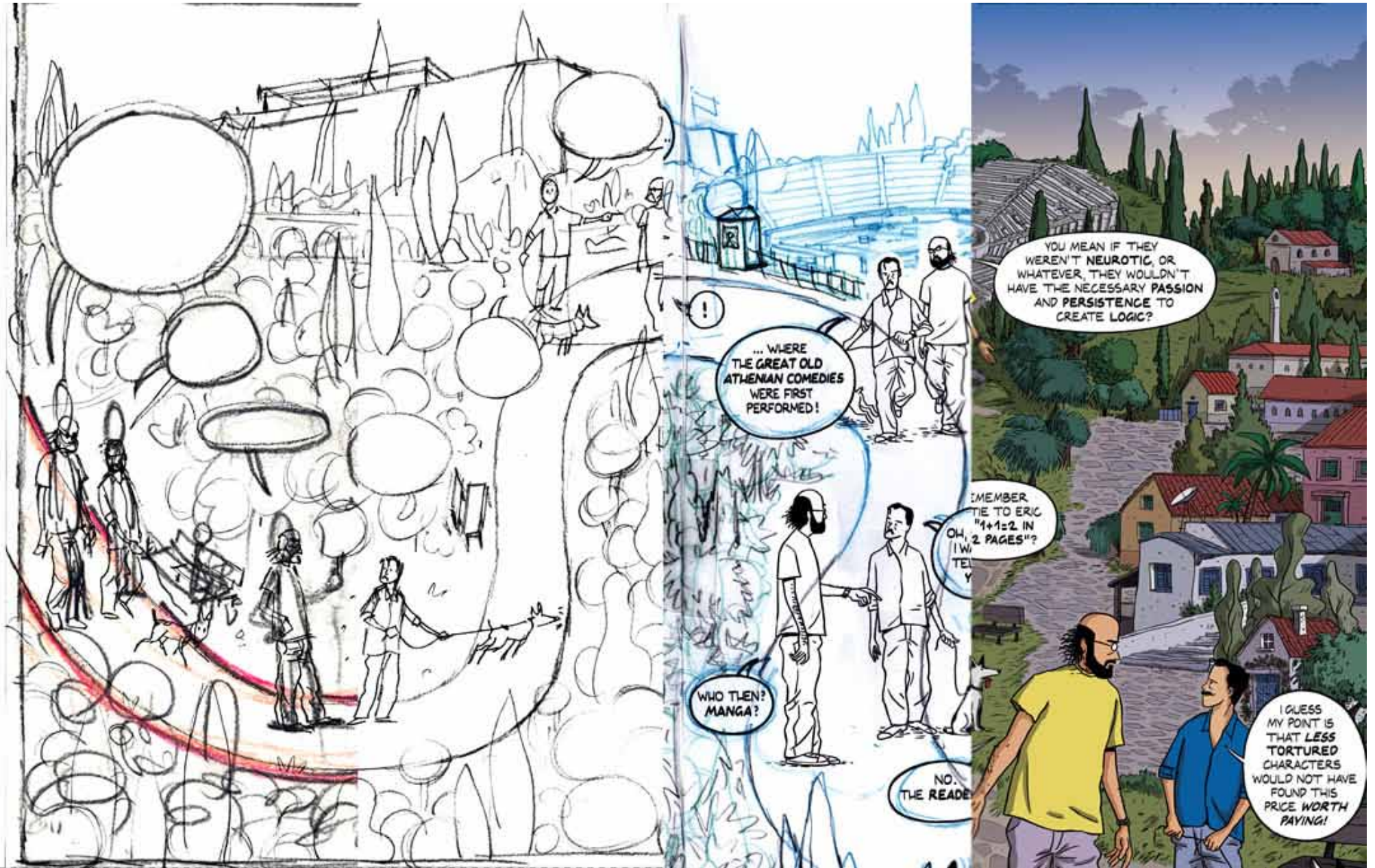
BLOOMSBURY





~~DAMN~~ DAMNED BRATS!







Alec Papadatos (GR)

Born in 1959 in Greece, studied Economics but in 1986 he gets professionally involved with his passion for drawing and design. Ever since, he has worked as animator, cartoon designer, director and comic book author. He is one of the LOGICOMIX creative team. His work on this project will be the topic of his presentation in Katowice. Currently he works on a graphic novel entitled Democracy.

Jan 13th 2012

15:10



GRAPHIC DESIGN AND RESEARCH: LOVE AT FIRST SIGHT OR AN ARRANGED MARRIAGE?

Karel van der Waarde (NL)

Introduction: thanks and outline

This is a lightly edited version of the speaking text of a presentation that I gave on Friday 13th, 2012 in Katowice, Poland. The conference was called: *'Research in graphic design: Graphic design in research'*.

First I like to thank Jacek Mrowczyk and especially Ewa Satelecka for inviting me to come over to Katowice and provide me with this opportunity to give a presentation. It's a pleasure to be back in Katowice. It is an exceptional conference in an exceptional venue.

I would like to talk about four fairly fundamental questions.

- First, I'll start by giving a description what graphic designers do.
- In the second part, I'll look at different types of research.
- Thirdly, I combine these and indicate how graphic design and research are related.
- And in the end, I'll tell you if they get each other and live happily ever after.

Part 1: Describing graphic design practice

About 5 years ago, I started to investigate professional practice. My university is based in Breda, which is a small city in the Netherlands. I went into the city of Breda and tried to get into contact with the graphic designers who work there. Initially, I just made a list of the companies based on websites, phone directories, yellow pages and so on. Very quickly, we found around a hundred design studios.

We have continued searching since and now have a list of about 170 graphic design companies in Breda. On average, there are about 3 designers in a design studio. And we found about 200 graphic

designers working for advertising agencies, printers, communication advise bureaus and larger companies. So, at the moment, there are about 700 graphic designers in this city of 140.000 people. It is therefore likely that 1 in 200 citizens earns a living as a graphic designer. That is a lot more than we ever anticipated.

But so what? Are all these companies really doing proper design work? Or are they just young university dropouts working in bedrooms with some illegal software? So, we interviewed graphic design companies about their work. We also interviewed information designers, advertising designers, and webdesigners.

Basically, we asked them four questions:

1. What are you doing?
2. Why are you doing this?
3. How are you doing it?
4. How do you know if it is any good?

And what seems to be the case? Is there a general thing that all these very different projects and all these companies have in common? Fortunately, I can say Yes. Two patterns are emerging from these interviews.

Part 2: Two patterns

The first pattern is related to the work that graphic designers do: They develop the shape of visual information. In a somewhat clumsy description we call this: 'they consider the visual configuration'.

The second pattern is related to the decisions that make visual configuration possible. The actual designing is only a part of the activities of graphic designers. There are a number of things that graphic designers need to do in order to consider visual configurations.

First, I'll show you some more details about these two patterns and after that, I'll apply these patterns to research.

Pattern a. Concept development: making ideas visual

All visual designers that we've interviewed work with visual elements. Designers tell us that they work with text, images, schematic elements and inseparable combinations.

For this audience it is of course not necessary, and it might even be an insult, to try to explain what 'visual elements' are. But I also give presentations to lawyers, pharmacists and medical regulators. These people who have little idea that there are different typefaces and how you can modify a photograph.

All designers that we interviewed recognized these types of elements and indicated that they consider these on a daily basis.

Some designers added that these visual elements can also be animated and can be accompanied by sound.

But considering these visual elements can go on forever. But what would be the purpose of these visual changes? Why does a designer select a particular visual configuration? This question leads to a second group of activities of graphic designers.

The second activity is to consider the aims of visual elements, and decide on a 'visual strategy' to achieve those aims. Graphic designers always search for a balance of three aims:

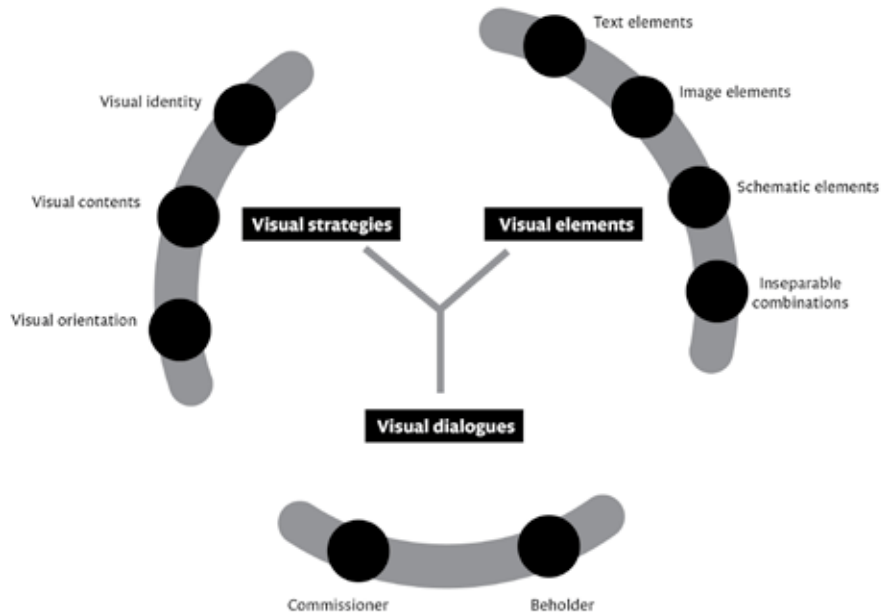
- the visual identity (where does the information come from?),
- visual representation (what is the contents), and
- the visual orientation (where should people start reading, what is the most important).

The designers we interviewed use different words to describe the strategy. However, the answers they provide for a specific design always relate to these three aims.

But considering a visual strategy does still not describe all activities of graphic designers. When they sit behind their very large computer screens, graphic designers can think that these visual aims have been achieved, and that they are correctly balanced. However, they are not the ones who are ultimately deciding. There is a third activity that designers consider.

And that is the relation between commissioners and beholders. I still have not found a word in the English language that really encompasses 'people who interpret visual information'. I've tried 'Users', but that seems to have connotations of drug-abuse. Alternatives like people, readers, viewers, citizens, audience are all too wide or not really appropriate. So I stick to clumsy word 'Beholder' until I find something better.

Graphic designers always work for commissioners. The role of a designer is to clarify the relation between the commissioner and the beholder. Designers anticipate what beholders want to know, and anticipate what commissioners want to say. Visual design shows this particular 'visual dialogue'. Visual design makes the relation between commissioner and beholder visible. So, now we have all three activities of graphic design.



1. **Concept development: Graphic designers develop visual concepts through a simultaneous consideration of visual elements, visual strategy, and visual dialogues. This process aims to combine these three forms of visual argument into a single, all encompassing 'idea' or 'concept'.**

This is what the complete diagram looks like. Visual designers consider three relations at the same time. They consider the visual elements, the visual strategy and the visual dialogue.

During the interviews and observations, it became clear that all these relations are considered simultaneously. Designers switch very quickly from elements to strategy to dialogue and back.

But if all is well, this is not really new for you. This is what all graphic designers do on a day to day basis. This is what we try to sell to our commissioners. This is what makes graphic designers unique: graphic designers are able to consider visual dialogues, visual strategies and visual elements.

However, this diagram shows where most graphic designers stop talking about their work. This is the most interesting part. Until we started asking during the interviews if they really spend all their time on these activities.

Then it came out that this diagram only shows a part of the story. It only shows a first pattern. There is a second pattern that seems to be applicable to most graphic designers too.

Pattern b. Nine reflections.

The starting point of the second pattern is the previous diagram. This is the specialism of graphic designers. They consider the visual configuration of information. But, that is not the only activity they undertake.

A second activity is the organization of projects. Visual designers plan and manage projects. They balance the necessary time, the skills and knowledge requirements, and the associated costs.

This is not a 'one-off' activity. This needs to be done before a project starts, during a project, and afterwards. And if there are several projects at the same time, this organizational activity can become rather complex.

The third activity that graphic designers must do is to persuade commissioners that a design has certain benefits. The arguments that are developed during the designing need to be presented.

Furthermore, designers need to be able to write these arguments down in reports and tell about them in verbal presentations. The arguments need to be structured to make sure that people can understand why a design looks like it does. But even a very convincing presentation can not provide all the arguments.

In some situations, it becomes necessary to undertake another activity. Some designs need to be tested and evaluated. This evaluation can consist of a very informal question to a few colleagues. 'What do you think of this?'. It can also be an elaborate usability test with potential users in an experimental setting. Testing and evaluation is a fourth activity that is considered by designers.

The fifth one are the modifications of a design after it has been approved. Both a commissioner and the results of tests usually suggests some changes to a design. Furthermore, a design needs to be produced and the production environment always has some specific requirements that will affect a design.

All these activities fall under the umbrella of 'realization'. They are all necessary to bring a well thought out visual configuration to the actual beholders.

The sixth reflection is probably the most problematic. A graphic designer needs to consider the situation in which he or she works. This has to do with factors like social, financial, historical, and linguistic issues.

An example of a situation is 'the healthcare system in Poland', or 'the election system in the Netherlands' or 'public transport in Venice'.

Before you can do any design work, you need to have a feeling for these situations. You need to speak the language, recognize the status of people, know a bit about the history, and know about the standard ways of doing things in a particular context.

The seventh reflection is related to a specific problem. It is rarely possible to change complete situations. That would be too upsetting and the results of a complete revolutions are usually unknown.

Designers therefore only look at a particular problem within a situation. They select the boundaries of a problem, usually in a discussion with a commissioner. So, a problem could be considered *within* the Polish Health system, or *within* the election system in the Netherlands or *within* the public transport in Venice.

And in order to approach a problem within a particular situation, it is necessary to consider a perspective or an approach. What would be the most suitable approach to tackle a problem within a specific situation? Should the strategy be based on technology? (How can I use digital devices?), economic (are there cheaper ways to do this?), ecological (the most sustainable way), esthetic (what would be the most attractive result?) and so on.

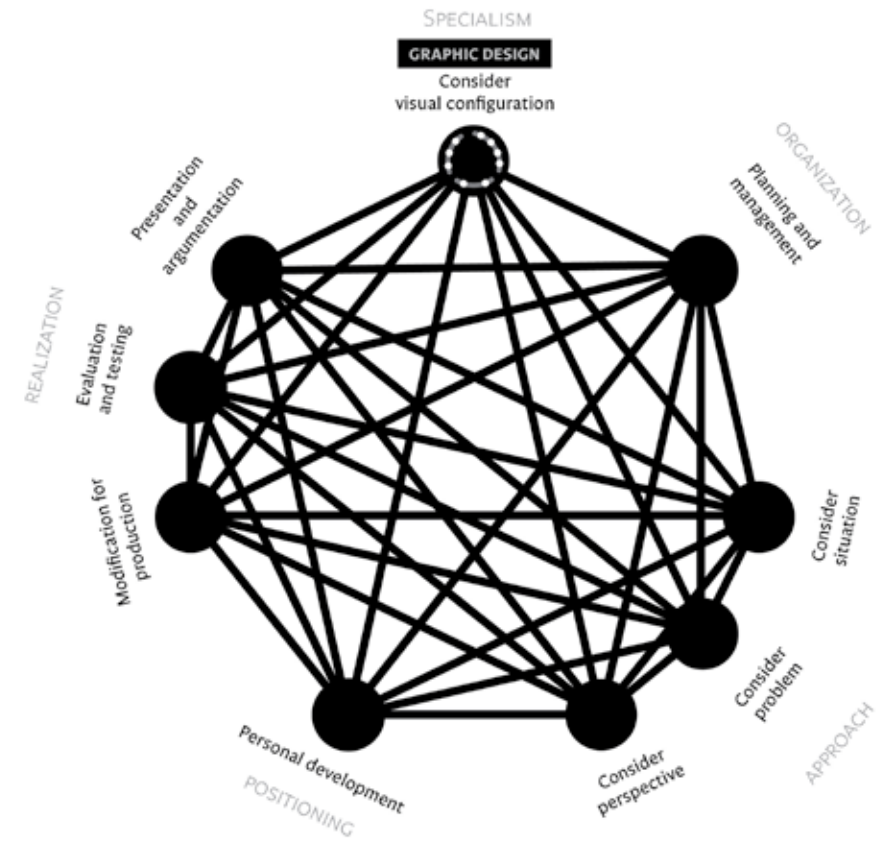
The situation, problem and strategy form together the approach of every project. Every design project needs to consider these because they have an influence on the visual design.

And the last reflection is slightly outside the range that I've shown until now, but nearly all designers indicated that this was an issue that they think about during every project as well. This last reflection considers if a project suits the personal development. For example, if someone asks to design a package for sigarets, or packaging for medicines? Or work for the army? Or for a department that only aims to cut costs in education? These projects might be profitable, but would you like to be related to it? Would your company like to show such a project on your website? On the other hand, some projects are so valuable that you want to do them, even if they don't pay at all. Every project has some influence on the position of a visual designer, and this position is carefully considered by nearly all graphic designers.

So, finally, these are the nine reflections that visual designers talk about when you ask what they do in practice.

Again, this should not be very shocking. This is what we do.

And this is how these nine reflections relate to each other. It is a 'web of actions'. Every action has an influence on all the other ones. And this is what graphic designers seem to be doing all the time. They switch very quickly from one reflection to the next. There is no set path through this web. The next move depends on the results of the previous one. There is no 'right' or 'wrong': the



- The 'web of reflections' shows the activities of graphic designers that are necessary to make the development of visual concepts possible.

decisions are based on experience and knowledge. You don't finish one reflection and move to the next. Designers switch very fast between them, so a complete process can be done in a few minutes, or an hour, or weeks.

This is not my personal view, but it is based on a substantial number of interviews with graphic designers.

The diagram shows that a design process is not linear. Each of the reflections could be used as a starting point. And probably, if you look at your own practice, you can find projects that started by considering different reflections. These diagrams also indicate

what professionals do better than amateurs: they can simply oversee an issue faster because they can relate the reflections quicker. Furthermore, they are likely to be more experienced in all reflections. This is the service that professional graphic designers offer.

At the moment, this seems like an accurate description of graphic design practice at the moment. Now we move to the second part.

Part 3: Three types of research

In this second part, I would like to show you a few different types of research. I've just shown what graphic designers do, now its time to look at the researchers.

I would suggest that there are three different types of research.

There is practical research: that is research related to a single project. Its aim is to support decisions that are related to one specific design.

There is practice based research: that is research related to a class of projects. Its aim is to find patterns and determine the value of these patterns.

And there is academic research. This aim of this type of research is to produce new knowledge.

This is very similar to the distinction in research that is common in the medical world: you have clinical research that is related to one single patient, applied research that investigates a group of patients or a class of problems, and there is fundamental research that looks at the ground rules. I'll show one example of each in Graphic design practice.

The first type of research is the practical research. You need to find information that you did not have before and relate that to your particular project. For example, if you have to design a new logo for a bank or a police force, it is worth checking the logo's that are in use at the moment.

For every project, you need to do practical research. You've got to find out about the situation, the problem and the approach. You got to find out about your commissioner and the beholders. The results will add to your experience, but are not useful for other designers. The scope is limited to a single project.

The second type of research is practice based research. This research tries to find patterns in professional practice and tries to determine if these patterns are effective and could be labelled as 'best practice'. These are the rules of a profession. The aim of this type of research is not to design, but to find and describe developments that occur in practice. Collections of different types of graphic design, for example posters, stamps, logo's, packaging form the basis of practice based research. The results of practice

based research can for example be found in the introductions of catalogues and exhibitions. These texts describe a 'group of projects' and provide a contextual frame. Another example is the analysis of a collection of similar projects to find out how other graphic designers have approached a similar problem. Basically, practice based research show how groups of graphic designers work. Based on this research, it is possible to predict current best practice and future behaviour.

The third type of research is academic research. The aim is not to design something, but to develop new knowledge. To find things that we did not know. Examples are studies into the ways in which people read, understand, interpret and compare visual information.

So, based on this division of research, I would suggest that all three types are essential in all these areas of graphic design.

Practical research is done in all the areas all the time. However, we don't know how well this is done: there are hardly any accepted methods or quality criteria. We simply don't know how good this practical research is. That is a bit worrying.

What is lacking at the moment is the practice based research and academic research in these areas. In these diagrams, we know most about the visual elements: that is where most research has been done.

But we fairly desperately need research into visual strategies and into visual dialogues. We know very little about graphic design commissioners. We don't have practical classification systems to distinguish between different types of commissioners. We also know very little about the ways in which beholders look at our work and how this could be used to modify the design.

We also need practice based and academic research in nearly all the reflections. For example, it would be good to find out how the best graphic designers present their work to the largest commissioners. That would be practice based research. And it would be very nice to have some decent academic research in these areas as well. We need for example comparisons of the evaluation methods, and validations of our problem descriptions. None of that is available yet.

So, all these areas provide very substantial opportunities for all three types of research.

Part 4: Graphic design and research?

Which brings me to the fourth part of this talk. Why do graphic designers need to do research or at least be familiar with the three types of research that I've shown?

Graphic design practice is doing very well at the moment. It is fairly easy to make a decent income in this profession. Why do we need to bother with research? Is it worth the effort, or should we just ignore it and hope it goes away? I think that it comes down to a very



3. Parking instructions in 2011 in Stockholm (Sweden) and Florianopolis (Brazil). A car driver needs to know if it is allowed to park, but the graphic design of these signs do not really provide this information.

fundamental issue. How strong can you make your arguments for change?

If you want to convince someone that your view is worth listening to, you need arguments.

You can base these arguments on your personal opinion and your personal experience. In most graphic design projects, this is probably enough. However, if a commissioner starts asking: 'are you really sure about this?', you need to use different types of arguments.

These different arguments can be provided by the results of practice based research. Best practice and common verified knowledge can be used to support your views. Arguments are a lot more convincing if you can show that a design has worked well in other situations, and that it has been verified.

And if a commissioner keeps asking to provide proof, you need to supply information that is based on fundamental verified knowledge. That is when you need to use appropriate research methods, based on long term research outcomes.

All three types of arguments, opinion-best practice- fundamental, are required. However, not for all projects. For most of the projects that graphic designers currently do, an opinion is enough.

But I'll show you now three situations that need some stronger arguments.

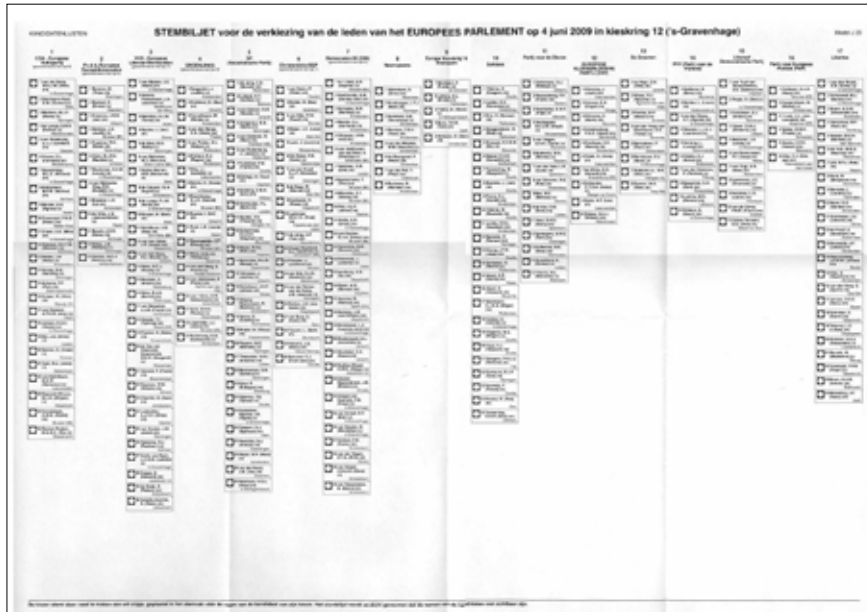
The lefthandside photograph in figure 3 was taken in Stockholm, the other photograph in figure 4 was taken in Florianopolis in Brazil. Once you have passed your driving test, you should be able to decipher these visual concoctions. There is nowhere in the world that has dealt with this situation successfully.

But it is clearly a graphic designers job to make this information clear and understandable. The question is fairly simple: can I park here? If you want to tackle this situation, you need all three types of arguments. And therefore, you need all three types of research to show that these signs are not really satisfactory. It needs your opinion, it needs best practice, and it needs fundamental verified knowledge to convince people that this design is not appropriate. The same three types of arguments are necessary to develop alternative graphic designs.

A second example in a completely different area. Ballot forms for an election. This is an example of a Dutch election form. You should just cross the box in front of a name to elect a person. Simple isn't it?

There are 17 parties. These are placed horizontally. Each party has a number of candidates. These are placed vertically. Even if you know about the Dutch electoral system, this is very confusing. This is a visual design problem. It needs all three types of research to provide the arguments that this is a real problem. Practical research could show the alternatives, practice based research could select best practice amongst these alternatives, and academic research could point to the fundamental problems with this form. This would be the basis for a new design.

Ok, a third example. Financial information. Here you see in figure 6 the Belgian tax form. It looks more like a conceptual piece of art, but millions of Belgians struggle every year to fill in the codes. It's completely incomprehensible without professional guidance. Figure 7 shows a statement of a credit card. It shows the payments that are made over a period of a month, and tells you all sorts of things about the necessity to pay and the interests that you have to pay extra if you don't pay on time. Again, this information is completely visual. And again, it is completely useless. However, to show that these documents are inappropriate from a visual point of view, you need very strong arguments to convince the Belgian government or this South American Bank to change these them. At the moment, we do not have these arguments. We simply have not done the research yet.



5. A Dutch ballot form for the European elections in 2009. The size makes it difficult to fill in, but also makes it very hard to visually locate the vote when these ballot papers need to be counted.

And it is not only parking information or transport, or the election, or finances. There are several other areas in which graphic design and research are inseparable. There is very little legal information that has been designed well. Teaching materials, healthcare information, nutritional information and most scientific information desperately needs graphic design help. Within all these areas, all three types of research are absolutely essential to provide the arguments to prove that it is essential to change the current situation. This brings me to the conclusions of this presentation.

Part 5: Some conclusions

Is it a sustainable relation? Is there any future in bringing graphic design and research closer together? Will there be a happy end?

It is clear that not all graphic design projects need all three types of research. Most projects can get by with some practical research only. Whatever is practically possible within the available time and budgets.



6. A Belgian Tax form for income tax, and a South American credit card statement. These individualized documents are very hard to interpret.



However, there is a substantial risk involved here. Practical research can only provide one type of argument, and it is likely that there are people who can provide this type of argument quicker and cheaper. And what is worse, graphic designers cannot guarantee the quality of their practical research.

We need to do research in all areas of these diagrams. We need to investigate visual elements. We also need to investigate visual strategies and in visual dialogues. We also need to investigate the different reflections.

As Jorge Frascara said in an earlier presentation 'research is not a luxury, it is a necessity'.

So, back to the main question. What is the relation between graphic design and research? Do they really get each other in the end and form a happy couple ever after? And the standard answer of the design consultant applies here too: 'it depends'.

It seems that graphic design and research have already found each other, but only in the area of practical research. Most projects

require some form of practical research, but we don't know yet if this is the most suitable and effective form. It's still in the butterfly stage – no firm commitment yet, but still a lot to discover in each other.

However, if we talk about practice based research, than the relation between graphic design and research can be seen as an arranged marriage. This relation is essential, especially in graphic design education, but in practice it is really forced marriage. It might still work, it is essential, but both parties are not really interested at the initial stages. It's hard work but like all arranged marriages, the success rate is fairly high.

For academic research, there is still hardly any relation at all. The partners have heard from each other. And both dream how wonderful a shared future could be. There are only a few dozen couples on this planet where a relation to academic research and design has been established.

It is clear that our societies need graphic designers to survive, just like humans need relations to survive. If we don't relate research and graphic design, it is likely that people can't park, can't vote, can't pay taxes, can't pay invoices and can't take medicines.

As graphic designers, we simply need stronger arguments to convince people that a lot of visual information needs to change. That is a substantial responsibility of graphic designers. And we have to develop these arguments ourselves. Nobody is going to do the research for us.

Thank you.

Karel van der Waarde (NL)

Karel van der Waarde studied graphic design in the Netherlands (Eindhoven) and in the UK (Leicester, Reading). He received his doctorate in 1994 for a dissertation entitled: "An investigation into the suitability of the graphic presentation of patient package inserts". In 1995, he started a design – research consultancy in Belgium specializing in the testing of information design. Most of the projects are related to information about medicines for patients, doctors and pharmacists. Typical products are information for patients (Bayer Pharmaceuticals, GSK, Proctor & Gamble, Novo Nordisk, Genzyme, Millennium Pharmaceuticals, Omnicare, Tibotec, Centocor, ...), information for doctors and pharmacists (Ministry of Health, Brussel; BCFI, Ghent), labelling, and design of hospital protocols. Other projects are for example the development of user instructions for Philips, tax-form analysis for the Dutch Taxoffice, readability research for the Open University Netherlands, and information architecture for websites. Karel van der Waarde is also professor in Visual Rhetoric at AKV|St. Joost, Avans University, Breda (The Netherlands). He is on the editorial boards of "Visible Language", "Information Design Journal", "The Poster" and "Iridescent" and was editor of Information Design Journal between 2000 and 2004. He is board member of the International Institute for Information Design (IIID) and a life-fellow of the Communication Institute of Australia (CRI).

Contact: Research group Visual Rhetoric
Avans University of Applied Sciences
AKV|St. Joost, PO Box 90.116, 4800 RA Breda,
The Netherlands

Jan 13th 2012

16:10

A VISUAL INVESTIGATION OF CONTEMPORARY CULTURAL IDENTITY

Richard B. Doubleday (USA)

A Visual Investigation of Contemporary Cultural Identity — five related studies — “German and Japanese Symbol Systems: A Cultural Study”; “Graphic Design in Britain, A Concept Book: The British Experience”; “Boston, United States of America and Nanjing, China: A Cultural Concept Book and Information Diagram Study”; “Typographic Narratives: Commentary on Violence in Contemporary Culture”; and “A Music and Visual Arts collaborative based on the melodrama *Pierrot Lunaire*, Op. 21.”

The talk explored graphic design communication and education and its relationship to different cultures by comparing and contrasting their visual language through five linked projects.

The lecture drew upon my initial study, *German and Japanese symbol systems: A Cultural Study*. By contrasting two countries, Germany and Japan, I developed two sets of symbols, given each country's culture, tradition, history and visual language. These symbol systems explore influences of these cultures upon semiotics, particularly those within transportation environments as a functional application of graphic design. **Universal symbol systems have been designed to serve people from all cultural backgrounds. However, this study was developed in the belief that public reaction to symbols may be related to culture, gender, linguistic and visual language, age and literacy.**

I also discussed the second related study, *A Concept Book: The British Experience*, by showing students London concept book solutions from my annual summer course, *Graphic Design in Britain*. This course provides a thorough grounding of perceptual



German and Japanese symbol system



and problem solving skills to graphic design, with emphasis on the selection and communication of appropriate pictorial images, symbols, and typography. The study of methods and procedures used in the practice of graphic design are taught in relation to the culture of England and the cultural diversity of London.

I then showed student design solutions from my China workshops entitled, *Boston, United States of America and Nanjing, China: A Cultural Concept Book and Information Diagram Study*. The objective of the first workshop was to compare and contrast Boston and Nanjing by taking a closer look at how living in or visiting a city influences our way of thinking, our perceptions, and our way of looking as graphic designers. What do Boston and Nanjing offer us to visually articulate these cities considering their multi-faceted characteristics? Furthermore, what are the similarities and differences between the culture of Boston and Nanjing? For the second workshop students could choose a theme for a personal timeline or develop an information graphic illustrating major cultural and art events across one decade. The purpose of this project is to exercise skills in hierarchy and visual logic and to design with clarity and legibility. The objective was combining multiple analyzed layers of data into an organized visual representation, enabling the viewer efficient navigation and use of information.

I then explained the fourth study entitled, *Typographic Narratives: Commentary on Violence in Contemporary Culture*. Students chose one word or phrase around the concept of violence and animated the word according to their interpretation of its meaning. Found in every level of society and contemporary culture, violence is one of the world's most complex problems. As the tenth anniversary of 9/11 just past and we are bombarded daily with news of foreign wars, political uprisings, gang warfare and domestic disputes, we feel compelled to wrestle with its root causes. The Boston University College of Fine Arts has presented a range of works that comment on its many different aspects. No piece of art, no matter how forceful, reflective or coherent, can offer answers – it can only provoke discussion by

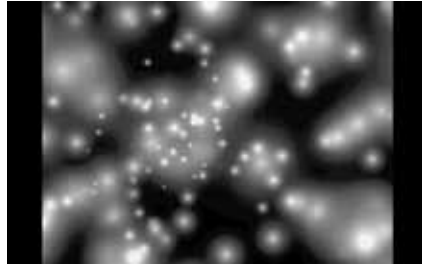
presenting one perspective on a multifaceted issue. The goal was to create a dialogue that explores solutions to this societal issue.

In conclusion, I showed student motion graphic explorations based on the melodrama *Pierrot Lunaire*, Op. 21. I have co-taught with a Boston University School of Music faculty member, an initiative to partner musicians and visual artists to develop creative works based on the melodrama *Pierrot Lunaire*, Op. 21. A setting of twenty-one selected poems from Otto Erich Hartleben's German translation of Albert Giraud's cycle of French poems of the same name. This collaboration between the School of Visual Arts and the School of Music is based on Boston University keyword initiative theme: *violence*. Students developed graphic representations of Arnold Schoenberg's melodrama *Pierrot Lunaire*, Op. 21 in the form of multimedia projected during a chamber ensemble performance.

London Concept Books –
Kristin Groener
and Sarah Hartwig



China workshops



Richard B. Doubleday (USA)

Richard B. Doubleday is an Assistant Professor of Art in the Department of Graphic Design at Boston University's College of Fine Arts. He has lectured and led courses and workshops in London, Japan, Mexico, and China, including, recently, at the Nanjing Arts Institute. In June 2011, he chaired the Fine Arts curriculum committee at Lebanese American University in Beirut. Doubleday has exhibited in international competitions, including the International Poster Triennial in Toyama, Japan, and the Lahti International Poster Biennial. Doubleday's work was recently published in *The Poster: 1,000 Posters from Toulouse-Lautrec to Sagmeister* (2010). He is a contributing author for *Phaidon Archive of Graphic Design* (2012), and *Meggs' History of Graphic Design* (2012), and was a guest juror at the Tokyo Type Directors Club Annual Awards and a contributing writer for the Tokyo TDC Vol. 20 (2009).

Jan 13th 2012
16:50

DESIGN EDUCATION, INTERDISCIPLINARY WORK AND INNOVATION FOR SOCIAL NEEDS

Jorge Meza Aguilar (MX)

Abstract

Problems are everyday more complex and require a real collaborative work to get solved. The Design Department at Universidad Iberoamericana has been encouraging *out of the box* thinking providing new learning models for innovation processes. During a one-semester interdisciplinary course, our students from Graphic, Industrial, Textile and Interactive Design work on new business, product or service ideas, through user centered research, design thinking and conceptual prototyping, around different local problems for which they develop different systematic, holistic and strategic design solutions. These 'diploma' projects had been very successful addressing complex needs of Mexican users that come from diverse economic, social and cultural backgrounds.

Keywords: *Interdisciplinary Work, Design Strategy, Innovation, Product and Service Development, Education, Social Responsibility, Design Management and Linkage Projects.*

Design Education at Universidad Iberoamericana.

Universidad Iberoamericana is a private, nonprofit institution, open to all faiths and nationalities. Its primary purpose is to form integrated, rather than solely informed, human beings through intellectual growth and self-realization. This implies creativity, the capacity to think critically, and the freedom to assert and establish one's own goals.

Universidad Iberoamericana is inspired by Christian values, and seeks to integrate them with the philosophic and scientific advances



through an attitude of permanent intellectual uprightness and the search of Truth. It emphasizes the promotion of the interdisciplinary dialogue as a tool for a higher academic quality.

The first program of Industrial Design in Mexico and Latin America started at the Universidad Iberoamericana 56 years ago (in 1955). The Design Department was officially created in 1963 and since then, it has grown to become one of the most dynamic departments in the University. In this Design Department, we believe that design is an important factor of social development and should become an integral part of the multicultural and multiethnic Mexico.

– Design’s Mission Statement:

The Design Department is committed to promote and collaborate with the development and education of its members (students, faculty and alumni), in order for them to be able to serve Mexico, through the planning and implementation of design strategies that will impact the conformation of the material culture.

– Design Department’s Goals:

- To provide an interdisciplinary and qualified design education to our students that will develop their abilities to think critically, solve design problems effectively and work actively in the sustainable development of the country.
- To broaden perspectives in order to visualize alternative types of work that will allow our students, faculty and alumni, to participate in the construction of a fairer Mexico.
- To confront the pressing problems of our country in an appropriate manner by using alternative methodologies and by trying to obtain an overall view of the social impact of the professional design activity.

What distinguishes our Design Department is a successful relationship between design theory (critical analysis), practice (synthesis), management (implementation) and innovation (user’s research) that is carried out each semester at the design core courses.

The areas of expertise of our Design’s faculty form the foundation of very strong undergraduate and graduate programs. Each of those programs has a perfectly balanced staff (part-time and full-time professors) of highly qualified designers, all of whom come from diverse university and professional experience backgrounds, representing ideas from various regions of Mexico, Latin American and the world. The professors differ in cultural background, design education and professional practice experience and are practicing artists, designers, engineers, illustrators, photographers, historians, managers, entrepreneurs, researchers and educators as well as

specialists in various fields of art, technology, business, anthropology and design.

Competitiveness, Innovation and Design

A viable alternative for Mexican organizations is to incorporate design strategies and innovation processes to generate desirable products and services, finding a way to improve and sustain their competitiveness, generating jobs and contributing to the regeneration and growth of local economies.

Unfortunately many Mexican companies still support their competitiveness in strategies centered on low cost of operation and production. Dr. Luis Arnal, alumni of our Design Department and PhD graduated from IIT, explains that: “innovation is currently a priority subject: almost all businesses compete in the international scene based on their own capacities to innovate. This does not mean to be the “most creative” company, but to offer new goods, introducing adequate strategies of differentiation, that represent clear benefits to the potential consumers”.

Organizations are the primary agent for innovation, unfortunately only a few of them have the right structure or conditions to successfully implement it. Innovation is one of the most undertaken themes in the contemporary design and management literature. Several authors (like Tim Brown¹, Roger Martin² or Roberto Verganti³) have approximated the phenomenon of business innovation, considering it as a transcendental aspect of the economic development process, generating added value for goods and services.

Product and service design represent a viable way in which small and medium companies can innovate and compete in the local scene. Mexican businessmen can develop, through user-centered research, new bases to generate value, redefining traditional management strategies.

Focused on discovering the particular needs and desires of costumers and the possibilities of production and commercialization of organizations, designers can define, prospect and develop better products and services.

Design is an intellectual activity concerned not only with the formal definition of objects, clothing, spaces or messages, but also

1 Brown, Tim. *Change by Design*. New York, N.Y.: Harper Business, 2009.
 2 Martin, Roger. *The design of business: why design thinking is the next competitive advantage*. Boston, Mass.: Harvard Business Press, 2009.
 3 Verganti, Roberto. *Design-driven innovation: changing the rules of competition by radically innovating what things mean*. Boston, Mass.: Harvard Business Press, 2009.

with the user's research, concept's ideation, organizational structure, management processes and generation of strategic solutions.

Any design process implies iterative phases of investigation, user's observation and analysis, formal synthesis, visualization (scenarios), prototyping, and prior evaluation (user's feedback) to the production and final implementation of a design's solution.

Ron Sanchez, professor of management at the Copenhagen Business School, affirms that: "designers can move beyond marketing surveys to garner special insights on consumer needs and preferences. They can then translate these insights into concepts for goods and services that result in valued experiences— including the appropriate "image" for a product, as well as the highest-value personal interactions with customers"⁴.

Design Linkage Projects

Our Design's Faculty has been questioning the capacity and potential of the macroeconomic models, in which we have been living in Mexico for the last two decades. We assume that it is necessary to look for a different kind of interdisciplinary knowledge that will provide a reorganization of design educational structures and teaching strategies in order to alleviate the social problems of Latin America.

At our Design Department, we know that if we want to educate committed professional designers that will be able to prospect strategic solutions for Mexico's urgent problems, we should give our students the opportunity to work in an interdisciplinary way and help them locate and understand themselves in the reality of a country of an enormous complexity, immerse in a society of great economic contrasts and part of a globalized world.

During the last years we have developed an educational path that joins the professional education (in classrooms) with the society through a series of educative experiences called *linkage projects* which give graduate and undergraduate design students the opportunity to interact with different users and environments through the resolution of real specific problems, providing them with a clearer conscience of the national complexity.

The work with real problems allows our design community to achieve newer and pertinent levels of analysis, giving them a more consistent conception of the culture and the relationships in the social world as well as the appropriate use and adoption of design and innovation.

4 Ron Sanchez *Integrating Design into Strategic Management Processes. Design Management Review*; Fall 2006. p.10.

Students and professors from Ibero Mexico City and U. R. Landívar Guatemala



Every year we collaborate with enterprises and non-governmental organizations, developing more than 40 *linkage projects*. These interdisciplinary works have allowed our students to acquire a series of experiences that have broadened their vision of the critical situation of Mexico and the world and, through those projects, the students have displayed a self-developed learning process that differs from the one generated in classrooms, which is clearly related to a more global and less fragmentary vision of our society's complex problems. The *linkage projects* facilitate the synthesis of theoretical and practical concepts and require a deep user's research as well.

Today the "*linkage projects*" support the formal education of our undergraduate design students and constitute a fundamental bridge to the implementation of functional schemes or strategically programs in developing communities and small and medium enterprises.

The "*linkage projects*" have shown and demonstrated the need to incorporate interdisciplinary practices, dialogue and reflection in design action, and the conjunction of theoretical, technological and practical concepts in the design processes.

Integral Design Course

Since 2007 all "diploma projects" are structured in a one-semester integral course where students from Graphic, Textile, Industrial and Interactive Design work together in innovative business ideas, concept prototypes, visual and product designs around different local problems and after that they develop different proposals.

Course objectives:

- Develop innovative design proposals incorporating user's perspectives and needs, the organization, the environment and the society.

- Design of strategies, services and products, assuming all responsibilities from its development and initial conception to its implementation.
- Analyze different Mexican issues (problems) with a holistic vision.
- Justify the application of ethical principles in design strategy.
- Development of a project considering its strategy, management, budget and presentation to organizations.

Topics:

- Responsible design.
- Design faced with latent issues in México (health, education and labor, environment-friendly design, universal design, social design).
- Design faced with the problems of social integration and globalization.
- Ethics, innovation and design.
- Design as a culture-contributing factor

Two professors, from different disciplines and backgrounds, guide the process focusing on:

- Developing projects that address relevant needs & desires of Mexican users, ideally coming from diverse economic, professional and cultural backgrounds.
- Generating design proposals that take stand and are clear on what the user's scenario is addressing and what it is not.
- Validating design's strategies with actual user's feedback.
- Students, working in interdisciplinary teams, must:
 - Have a high ability to analyze, with an innovative and interdisciplinary perspective, the problems related to the development of products, visual communication and services.
 - Be able to apply qualitative research methods centered on the user.
 - Have the capacity to understand and evaluate, from the perspective of strategic thinking, the impact of their proposals and projects, on enterprises and communities.
 - Be able to propose and develop strategies aimed at the development of organizations, based on design thinking, design management, co-creation, collaborative work and user centered design.

This course seeks to explore transversal design and innovation practices by way of cross-cultural and interdisciplinary models. The work with real problems allows them to achieve better and pertinent analysis levels, giving them a more consistent conception of the culture and the relations in the social world as well as the appropriate use and adoption of Design in enterprises.

The organization of problem-solving activities is developed in interdisciplinary teams (of 3 or 4 members) and is based in three main phases, which goal is to structure the design processes for planning, conducting and analyze the project.

Phase 1 – Understanding and discovering

Activities:

- Finding a design problem
- First period of field research (close observation of people needs and desires)
- Identification of social needs and possible design problems
- Generation of primary knowledge
- Early understanding of what is needed and why is relevant
- Nonjudgmental generation of first hypothesis and ideas
- Brief analysis of the more promising solutions
- Feedback from users, professors and classmates

Phase 2 – Structure of design problem

Steps:

1. Deep ethnographic field research and other investigation sources that are needed to analyze and understand the problems detected in the previous phase.
2. Insights and findings
3. Problem's descriptions (brief explanations)
4. Delimitation of context and users (contextual and participatory observation)
5. Definition of design goals
6. Definition of possible Scenarios
7. Synthesis of knowledge (construction of models)
8. Ideation
9. Configuration of firsts design solutions

Phase 3 – Definition and implementation of possible strategic solutions

Steps:

- a. Description of the final design problem
- b. Definition of design's strategic parameters (from perceptual to cognitive)
- c. Analysis of users and context (data collection, interviews)
- d. Possible fields for the design's proposal
- e. Design strategy (plan and actions)
- f. The implementation, utility, experience and interaction of the design solution.
- g. Users and topologies (cultural, physical, etc.)

- h. Main social, economic and cultural relations addressed
- i. Feedback (receive input from users on the impact of their actions on the system)
- j. Final Presentation to enterprises, NGO's or communities
- k. Evaluation and implementation

During the whole design process the students consider three key elements, related to problem solving and innovation, these are:

- Empathy – Continuous users' research and contextual analysis in order to learn about the possible product or service solutions, from insights and findings; understanding needs and real design problems.
- Interaction – Design transition to physical, emotional and cognitive media, needed for innovative products or services that will interact in new contexts.
- Sensation – Excitement based on emotional factors that will create positive feedback and maintain engagement with the design solution and acceptance of the service or product.

Once the scenarios and possible design solutions are defined, each team builds a prototype (considering the interaction and the user experience) to test it. Students mock up whatever the user would experience, see and do, thinking through different interfaces, the context of the user and results desired. The goal of rapid prototyping is to create a vehicle which best communicates the tangible experience of the design solution to the users and gain feedback and possible validation.

Successful Projects

Applied research, user centered innovation and design strategy, are key factors in social development. The *linkage projects* constitute a new platform of knowledge, discussion and information for students, professors, researchers, designers, managers, businessmen, entrepreneurs, producers and retailers.

Foodmates

Problem: Foods disorders have become more common and the lack of education about this issue has caused younger generations to be affected as well. The project's aim was to educate obese children about healthy food habits.

Solution: *Foodmates* is a system that combines reflection, fun and exercise, providing the necessary information in order to create better diet habits between children and their parents. To accomplish the goal, the system features three basic elements: an interactive toy, a video game, and a parental application. With *Foodmates*, children learn how to balance exercise with what they eat.



Kueponi

Problem: Teens who are not able to attend school need a chance to improve their knowledge and skills without relying on government run school, which simply cannot scale to the population growth of México; this leaves many without education.

Solution: *Kueponi* (to growth in náhuatl) is a system that creates and facilitates partnership between universities and companies that provide teens with an opportunity to obtain competitive and technical skills instead of a school education.

Capeltic

Problem: Tzeltal indigenous communities from Chiapas live in poverty with extremely limited access to health care, education and public services. Farmers are in transition from traditional production to 'organic certification', learning better practices for the cultivation of quality coffee.

Solution: Bats'il Maya is an enterprise that organizes indigenous coffee producers so they are not subject to pricing abuse. *Capeltic*. *Our coffee* is a brand strategy developed for the Ts'umbal Xitalha' coffee-producing cooperative. Each cup of this excellent organic coffee links producers and consumers in a moral economy, which promotes social solidarity, fair trade and environmental sustainability (website: <http://capeltic.org/>)

Social Impact: Design and engineering students started volunteering to work alongside indigenous communities in the northern jungle of Chiapas, Mexico some years ago. They have participated in the founding of the organization, and how the co-op works, as well as in the process for organic and fair trade certification. Actually they are working in the establishment of more coffee stores in Mexico, and goals for expansion.



1050° Ceramics Collective

Problem: Globalization has gradually meant the disappearance of traditional and artisanal trades. The conservation, valorization, and transmission of these techniques—in order to keep them alive—acquires a particular urgency. 12% of Oaxaca's population depends on traditional ceramics as their source of main income. Most of the producers face an unsustainable situation with pressing economic problems. The Mexican market, saturated with cheap plastic products, has decreased the demand of traditional ceramic products.

Solution: *1050° Ceramics Collective* is a sustainable-design project focused on rescuing pottery traditions. Through collaborative design strategies they have developed new products for new markets, adding value to ceramics.

Social Impact: Prof. Kythzia Barrera and some students and alumni have joined forces with pottery artisans from San Bartolo Coyotepec, Sta. María Atzompa and San Marcos Tlapazola, in Oaxaca, to develop innovative objects, recuperating the region's traditional techniques (<http://innovandolatradicion.blogspot.com/2009/10/1050-colectivo-de-ceramica.html>).

colectivo de cerámica
1050°

Brain

Problem: Natural disasters are becoming part of our everyday life. Children, all over the world, are forced to stop classes because of these natural disasters and schooling is continuously interrupted. The progress that kids should achieve gets diminished and hindered, so learning becomes a challenge.

Solution: *Brain* is an end-to-end organization that, through technology, will bring knowledge to children from 6 to 12 years old in shelters, which have interrupted their education due to natural disasters. Brain's objective is to help the cognitive and intellectual development of children during a hard time situation, as well as to reduce the post-traumatic shock of the tragedy.

Social Impact: Brain fulfills UNICEF'S core commitments for children in emergencies:

- Establishing a safe environment for learning, recreation and psychosocial support.
- Initiating basic education services, in collaboration with communities.
- Providing education kits and basic learning materials for elementary school children.

With Brain, thousands of Mexican children will be able to continue learning and developing their intellectual skills, this is a solution expandable to children in hospitals, nurseries or other scenarios.

<http://www.brainproject.mx/>).



Portavox

Problem: Seven out of ten Mexican citizens are victims of crime everyday, but only one of them reports it. 40% of the people who don't report a crime think there's no use, and 50% don't know how the process works. This results on a level of 98.3 % of impunity in Mexico.

Solution: PortaVox is a system that creates a community-reporting tool, which facilitates real time crime report, tracking and sharing information to help prevent and inform people about different crimes. By making the means of reporting present, easy, fast, and safe, Portavox increased the number of official crime reports and improves security in Mexico.

Social Impact: Portavox has three main benefits:

- It provides an easy, fast a safe e-tool to report a crime.
- It gives users free legal assistance and keeps them connected to the report process.
- And it allows the government to gather the necessary data in order to generate effective strategies to fight crime.

Results:

For more than fifteen years we have linked design education with Mexican society through a "linkage projects". This academic scheme has allowed our students to interact with different organizations through the resolution of complex problems. The integral design course is a great opportunity, for our Design students, for diagnosing emerging social needs and their possible contribution in order to solve them.

We have collaborated with organizations in different aspects:

- Socio-economic analysis: promoting a culture of citizen participation.
- Product and service development: innovating through user centered research.
- Communication and culture: promoting good values.
- Human rights: defending and promoting human rights.
- Sustainable economies: developing businesses and curbing unemployment.
- Improving quality of life: support services for people living in poverty.
- People and the environment: fostering a respectful attitude to the environment.
- Health services: promoting a culture of holistic health and nutrition.
- Community projects: collaborating with community centers, cooperatives and organized groups developing projects for deprived sectors to overcome poverty.

This educational strategy requires our design students and faculty to reflect on their professional roles, values, personal attitudes and practical measures that can change Mexican social reality. This is an excellent opportunity to achieve the University's mission as it raises the awareness of students and professors, promotes learning in a real-life situation and allows the application of specific Design's knowledge and skills.



movie will be placed here

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Jorge Meza

Artist, Graphic Designer and Systems Engineer

Born in Mexico City in 1971

As a child, Jorge loved drawing, watching t.v. and playing asteroids with his Atari 2600. In the early 80's he got his first computer: a commodore C16. Since then his life has been an enjoyable mix of Technology, Design and Art.

Like many digital designers Jorge Meza discovered the medium – and drew his early inspiration – from the video games and TV shows of his childhood. He studied Graphic Design at University Iberoamericana followed by an MFA in Visual Arts at the Academy of Fine Art “San Carlos”, both in Mexico City. After graduating from there in 1997, he went to Poland and studied Etching, Drawing and Poster Design for two years at the Academy of Fine Arts Jan Majteiko in Kraków. In 1998 he started working at the polish Advertising Agency Schulz (<http://www.schulz.com.pl/>), designing campaigns for Winiary (Nestlé), Pizza Hut, KFC and Carrefour. In 1999 he returned to Mexico City to open his own design studio, and projected web sites, digital animations, multimedia and visual communications for different Mexican clients.

In 2002 he became a full time professor at the Design Department of University Iberoamericana (www.dis.uia.mx), where he has had a successful academic career in education, management and research, founding the Bachelor in Interactive Design in 2004: a new program that integrates information technologies, visual communication, interface design, programming, networks and multimedia concepts.

He served as Head of Graphic Design (2002–2004) and Head of Interactive Design (2004–2006). In 2006 he graduated from a MSc in System Engineering and was designated chairman (Director) of the Design Department at the Universidad Iberoamericana (where he actually continues working). In 2009 he opened his new company: *estrategas digitales* (www.estrategasdigitales.com), where he develops software, videogames, social media campaigns and emarketing, understanding the designs and strategies for new media. He is ABD PHD in Art History and his research is in Digital Art in the XXI century.

Jan 13th 2012

17:30



PRACTICE-LED RESEARCH IN GRAPHIC DESIGN

Marja Seliger (FI)

This article brings forth the role of research in graphic design higher university education and proposes changes in curricula to enhance research. Practice-led research projects can bridge masters of art and doctoral education and prepare students both for professional life and research. In today's working life, design research methods are applied in problem solving and in creating artifacts. As the complexity of design problems increases, both artistic skills and theoretical knowledge are needed in design teams.

Complexity of design assignments

Graphic design has its roots on one hand in fine arts, and on the other hand in the media industry, which has developed rapidly since the 19th century. During the era of industrialization design was defined in relation to the mass production of goods, which in the case of graphics meant informative artifacts (Krippendorff 2006, 5). Markets grew for tangible media products, such as books, magazines and packaging, but also for the need to design corporate identities, promotional and advertising campaigns. The production of immaterial artifacts differs from the production of consumer goods, because identities and services are usually produced in single copies, tailored for clients and users. Another characteristic is that they are seldom creations of one designer, but instead designed in multidisciplinary teams.

The design of immaterial artifacts has significantly increased in recent years. The field of communication and service design has expanded to encounter new conceptual and 'wicked' problems.

Communication design is not only information and promotion but also participation in various dialogues and visualizing complex problems to make them understandable for different audiences. Societal and environmental values and the impact of design are regarded equally important as the efficiency in the production of goods and services for growing markets. When the complexity of design processes increases, they require co-creation and problem solving in multidisciplinary teams. This development brings forth the need to re-examine and rewrite the curricula for graphic designers' higher university education and research.

Graphic design higher university education and research

The studio-based education model of Bauhaus has been transferred to many design schools all over the world. This method has proven to be successful in teaching graphic design practice, but for university graduates that is not enough. They should be able to lead complex design processes, be innovative and responsible in solving problems and inspire their multi-talented teams. Today a designer needs theoretical knowledge, interpersonal and leadership skills in addition to practical and technical know-how.

My proposal is that practice-led research projects should be the method to bridge design practice and design research and combine multiple objectives in master of arts education. In fact, already the ambitious goal of Bauhaus was to develop science of design in addition to practical skills. Walter Gropius described workshops as laboratories and called for “– systematic experimentations, both in theory and practice – in formal, technical and economic field” (Droste et al. 2004, 17). In Bauhaus the major focus was directed towards reflecting on industrial methods of production and their consequences for design.

Today the task for design education is to reflect upon design processes and objectives, as well as their effects on the society and environment. Graphic design plays an important role in the contemporary visual culture and media, which dominate the global post-industrial societies. However, graphic design research hardly exists in recent visual culture studies, as Rick Poynor points out in his blog. Visual culture studies examine the power and meanings of photography, film and art but pay very little attention to the role of graphic design. “Graphic design has been overlooked precisely because it forms the connective tissue that holds so many visual experiences together,” Poynor writes and refers to the transparency of graphic design (Poynor 2011).

Current design discourse is vivid and much has been written about design thinking, visual culture and digital media. Therefore,

the lack of graphic design research is striking and requires instant attention in education. In the following I will elaborate the problem using a case study from my home university TAIK as an example and tell about the corrective actions taken to enhance graphic design research.

Aalto University School of Art and Design (here TAIK) was one of the first universities to begin doctoral education in art and design in the 1980s (Arts Aalto Research timeline 2012). The first doctors of art were graduated in 1991 and altogether 90 doctors of art have graduated from TAIK up until the end of 2010. A survey of doctoral dissertations shows that in twenty years design research theories and methodologies have been developed especially within the department of industrial design. The topics of dissertations include concept design, service design, experience and emotional design, in addition to the research of design processes, artifacts and their usability. During the time period 1991–2010 only three doctoral dissertations were published within the study program of graphic design, but lately there is a growing interest towards research and doctoral studies among graphic designer graduates (Arts Aalto Reseda. Research Database 2012).

It might be that digital techniques and media convergence in the 1990s changed the graphic design profession so drastically that all attention was required to modify professional practices and adjust to the requirements of the new media. On one hand the adaptation to the rapid technical development delayed academic graphic design research, but on the other hand New Media and Media Art university education and research emerged. In TAIK Media Lab was established in 1992, which gave a push for media research and doctoral studies. Interest in visual culture studies and media representations grew also in other universities and graphic design artifacts were researched within the faculties of art history, cultural studies, social sciences and communication studies. In technical universities computer scientists developed and tested designers' new toolkits, software and information techniques. Although the outcomes of these research activities are appreciated, designers' own research is needed to study the process from inside out.

Combining practice and research

My argument is that to reach the validity of an academic domain any profession has to nurture research of its own area in addition to education. Practical education and research are interwoven for example in engineering, economical and medical sciences, and so it could be also in the domain of visual communication design. Klaus Krippendorff writes about the science for design and concludes: “If

designers do not stake this territory to themselves, other professions will" (Krippendorff 2006, 207). We, graphic design educators should seriously consider, what the consequences are if research is separated from practice and outsourced to other disciplines.

In Finland, employers have noticed the high standard of graphic design practical education in TAIK and this has increased demand for students' creative work. Based on the requests from commercial enterprises and the public sphere, real-life projects have become an important part in master of arts education. Under the supervision of their professors students can practice design skills in multidisciplinary teams with real clients. The outcome of such a project and the quality of artifacts created has to be of a professional standard, but the learning outcomes are also important. It is essential to document and reflect on design processes and thus to make a distinction with working-life practice. Therefore emphasis is given to the expected learning outcomes when selecting proposals to be accepted as students' projects. The aim is that a practical design project could give material for a student's master of arts thesis, and whenever possible, doctoral students participate in supervising master of arts projects and theses. The method in TAIK today is to enhance graphic design research by building research projects in which practical real-life projects lead to academic research.

Many design researchers propose a paradigm shift towards human-centered design (Krippendorff 2006) and from objects to experiences to produce new knowledge and methods to inform decision-making (Davis 2008). Design research can help to see bigger contexts in which new artifacts are placed. Therefore visual culture studies, aesthetics and theories of perception and communication support practical design work. Rick Poynor writes: "Instead focusing on the designer, visual culture approach to design would focus on the effects of design as everyday, visual communication on its audience." (Poynor 2011)

Designing practice-led research projects

The real-life projects described above can also cause problems if they are too similar and do not correspond to educational interests. Therefore, in addition to project requests from commercial enterprises, professors in TAIK initiate projects, which combine practice with research and art with science according to the focus areas of the university. For example "City Sets – Discover the Design" is a multidisciplinary workshop-model and a research project aiming to study visual urban culture and design (City Sets 2011; Seliger & Tuomola 2011). Students from architecture, new media and graphic design participate in workshops to use visual ethnography methods

and collect pictorial material to create multi-point-of-view visual narratives. Thus, in the cross-disciplinary project masters of arts and doctoral students combine artistic and research methods.

Another example of practice-led research project is the initiative to visualize climate change information to promote sustainability. It is a research project being planned in collaboration with the Finnish Meteorological Institute and aims to explain and visualize the complex notion of climate change in order to persuade people to change their way of behavior towards a more sustainable culture. The Finnish Meteorological Institute has opened a portal (Ilmasto-opas 2011) containing a huge number of scientific articles about climate change – and very few illustrations. The portal was opened in Finnish language in October and the English version will be opened in 2012. With that portal we intend to test different visualizations and their impacts and interpretations among different audiences. The project will consist of two parts: 1) Creative production, and 2) Testing and research. The first part consists of practical design projects with master of art students. The second part involves also doctoral students and aims for a doctoral dissertation and articles. Thus the project would link art and design to research and science, which is one of the strategic goals of Aalto University.

Graphic design students in TAIK have the possibility to select their area of specialization and from that area they select the topic for their master of art thesis. The thesis can be an artistic production or a research project, but it always includes a written part. A survey of theses written in 1992–2011 shows a paradigm shift from graphic design tangible artifacts towards rather philosophical questions about effects, responsibilities and ethics in design (Thesis View 2011). Such 'wicked problems' as sustainable visual communication and action design have been addressed in recent masters of art theses.

In the current design thinking discourse the notion of 'wicked problems' means such complicated problems as pollution, urbanization or global warming, which are not possible to solve within one scientific discipline alone. "Wicked problems tend to shift disconcertingly with every attempt to solve them. Moreover, the solutions are never right or wrong, just better or worse" (Neumeier 2010, 15). My experience is that design students today are aware and concerned about the future and like to use their talent purposefully, to make the world a better place to live. They are cooperative and willing to work in multidisciplinary teams if we give them the opportunity.

To conclude, art and science are often seen as opposite activities. Science is referred to as something rational and objective, whereas art is referred to as something intuitive and subjective. Making science is called research and making art is called art practice. As

regards design, it has elements from both science and art. A design process has similarities with a research process, for both design and research processes include elements of problem solving. Design practice has also similarities with art practice, because artistic skills and an understanding of aesthetics are necessary for solving design problems successfully. Based on these thoughts we develop our graphic design curriculum at Aalto University School of Art and Design.

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Marja Seliger

Marja Seliger is a senior researcher at Aalto University School of Arts, Design and Architecture. She got her doctoral degree in 2008 and the topic of her dissertation was visual rhetoric in outdoor advertising. Her research interests are visual communication design, visual culture, semiotics and visual ethnography.

Marja Seliger is a professional graphic designer with an extensive working experience in publishing design and educational materials production in Finland and abroad. Since 2001 she has worked as a graphic design researcher and educator. At the University of Lapland she held the position of an acting professor in graphic design. At the Aalto University she works as a senior researcher and directs doctoral studies in graphic design. Marja Seliger is the vice-president of Grafiä, Association of Professional Graphic Designers in Finland.

Research projects and publications:

https://reseda.taik.fi/Taik/jsp/taik/Researcher.jsp?lang_global=en&id=24016

Jan 13th 2012
18:00



A NEW MASTERS PROGRAM IN TYPEFACE DESIGN FOR EDUCATORS

Gerry Leonidas (UK)

no abstract

WORK
SHOPS

Jan 9th-11th 2012



oo-oo Jan Kubasiewicz (USA)
Rigorous Practice of Research
for teachers and doctoral students

oo-oo Agata Szydłowska (PL)
Writing about design
for students

oo-oo Karolina Konieczna (PL)
3d Techniques
open for general audience

Jan 9th–11th 2012

RIGOROUS PRACTICE OF RESEARCH

Jan Kubasiewicz (USA), assistant: Agata Dworaczek (PL)

This 3-day workshop will focus on methodology and pedagogy of thesis development as practiced at the Dynamic Media Institute — the master’s program in communication design at Massachusetts College of Art and Design in Boston. Massart MFA thesis in design is a proposition advancing a new point of view, that is maintained by argument resulting from a rigorous practice of research, prototyping, and writing. Based on the same principles, but in a microscale, this workshop will provide an introduction to a broad range of relevant subjects.

Workshop participants will learn:

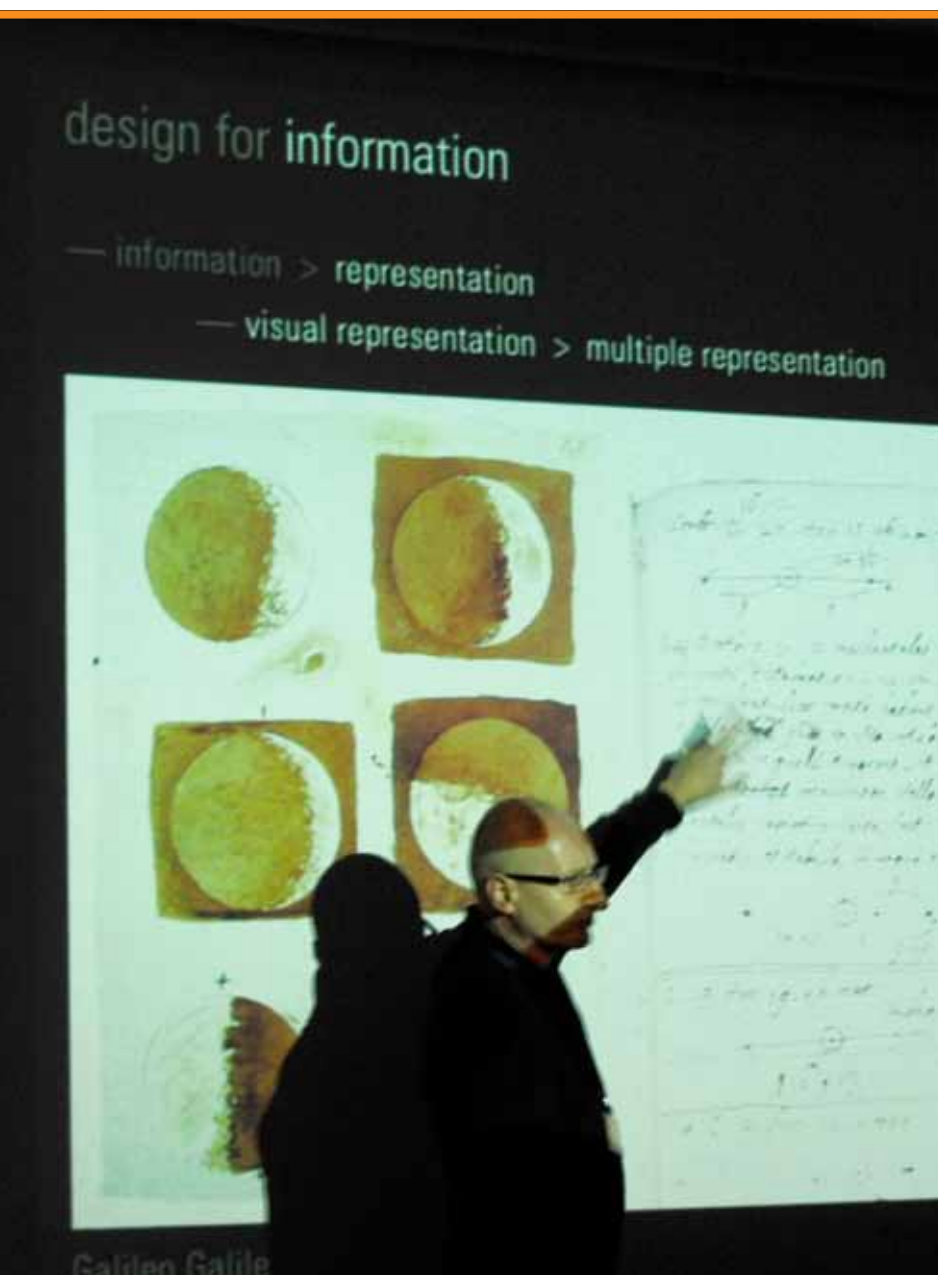
- to recognize multiple goals of research.
- to formulate a proper researchable question.
- to consider “prototype culture” as an approach to design.
- to understand “reflective practice” and the role of writing in design process.
- to document and to present a case study.

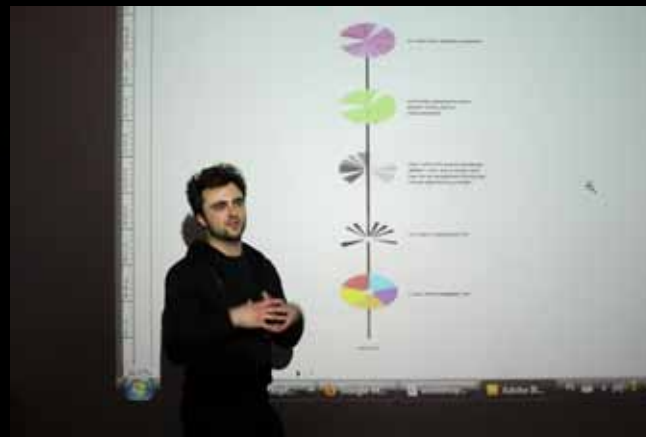
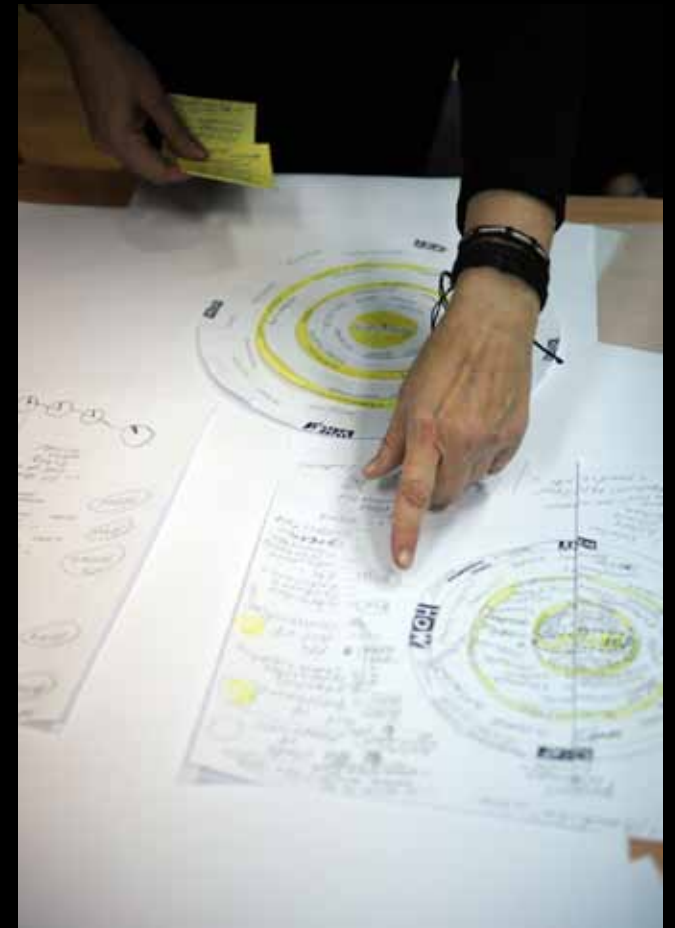
The workshop will include brief lectures, demonstrations, studio projects, and ongoing class critiques and discussions. Details of the projects will be given on the first day of the workshop. The workshop is open to students, professionals and educators in the field of communication design, graphic design or dynamic media design. Those interested in the workshop are encouraged to explore student work developed at the Dynamic Media Institute, especially its 2010 publication “The Experience of Dynamic Media,” available as PDF for free download at the institute’s website: dynamicmediainstitute.org.



Download
“The Experience
of Dynamic Media”

Download participant’s
final presentations





Jan 9th–11th 2012

WRITING ABOUT DESIGN

Agata Szydłowska (PL)

no abstract



Agata Szydłowska

Agata Szydłowska (b. 1983) is a design critic and curator. She graduated art history from the Warsaw University. Currently she is a PhD student at the Graduate School for Social Research at the Institute of Philosophy and Sociology of the Polish Academy of Sciences where she prepares a dissertation on the relations between Polish graphic design after 1945 and the national identity. From the current academic year she has collaborated with the School of Form in Poznań where she has lectured within a frame of the design anthropology block. She has published in "2+3D" and she has collaborated with the Association of Polish Graphic Designers among others. She is interested in sociological and political aspects of graphic design and the methodology of the research on its history.

Jan 9th–11th 2012

3D TECHNIQUES

Karolina Konieczna (PL)

Presented three-day workshops dealt with 3D and its practical application in graphic design.

On the very first day of the workshops, during the lecture, participants familiarized themselves with the 3D techniques – their division and range of applications. That same day they met closer to stereoscopic photography. Everyone had a chance to perform a series of stereoscopic images by an analog camera.

The theme of the second day was to convert the ordinary image into three-dimensional one. Using After Effects and pictures found on the Internet, everyone created a simple 3D. Second task of the day was to prepare a multi-layered graphics by Daniel Mróz.

Third day was devoted in the first part for 3ds Max and rendering stereoscopic images. The other part participants spent on creating their own 3D compositions using the knowledge acquired within the last three days.







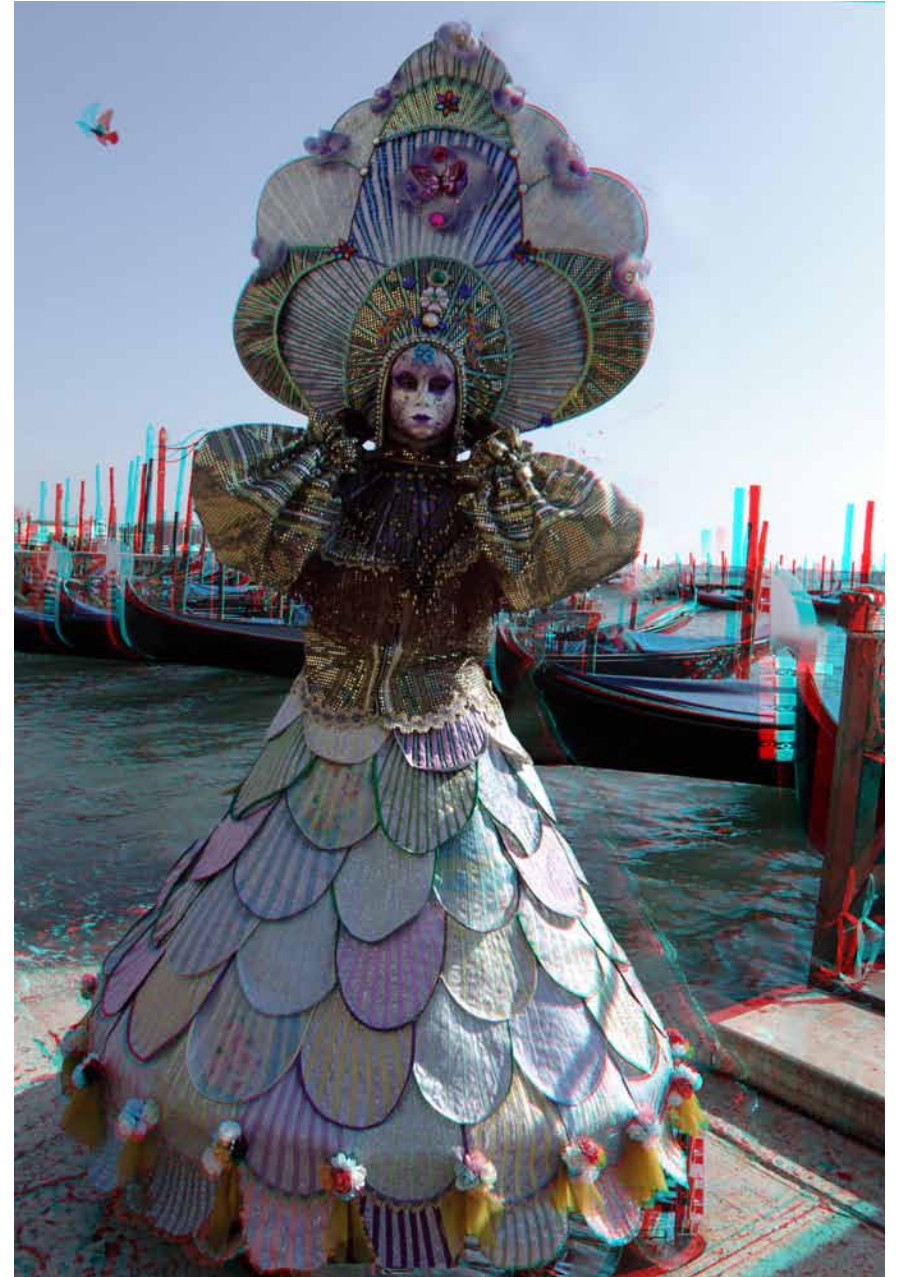






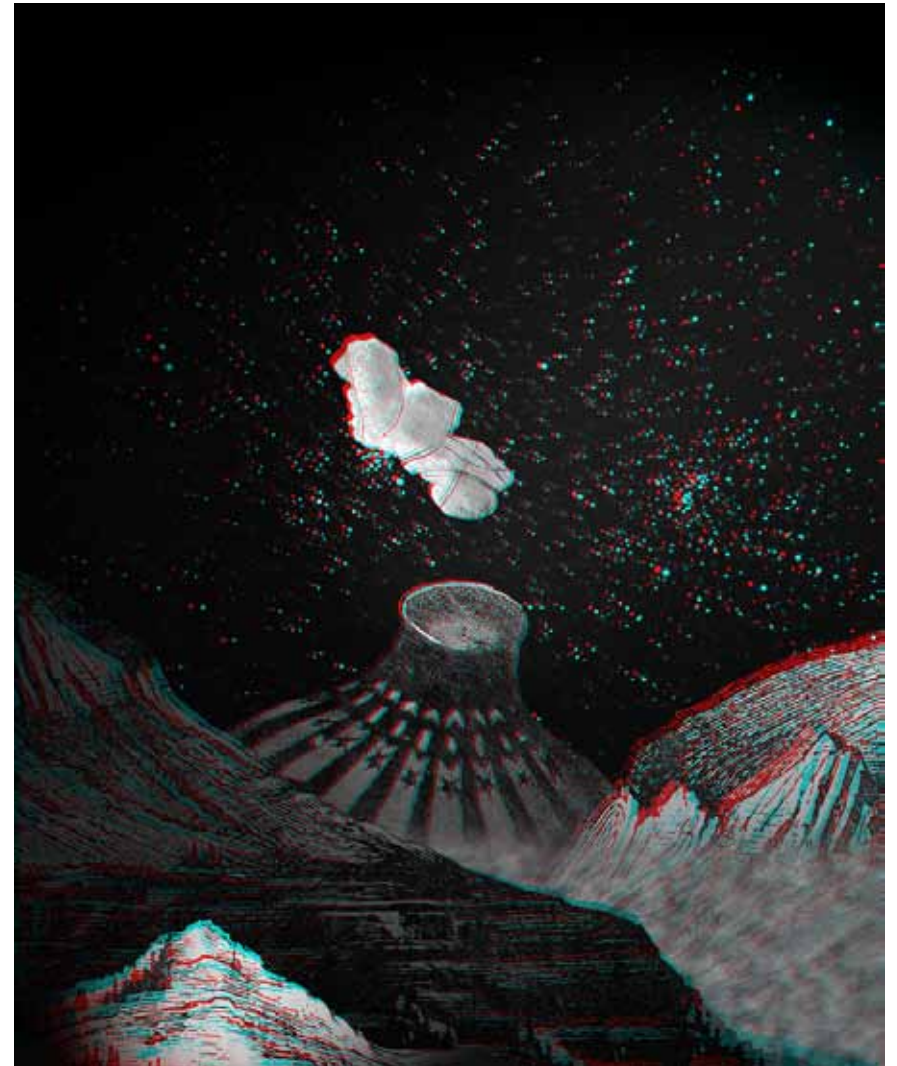


Day 1

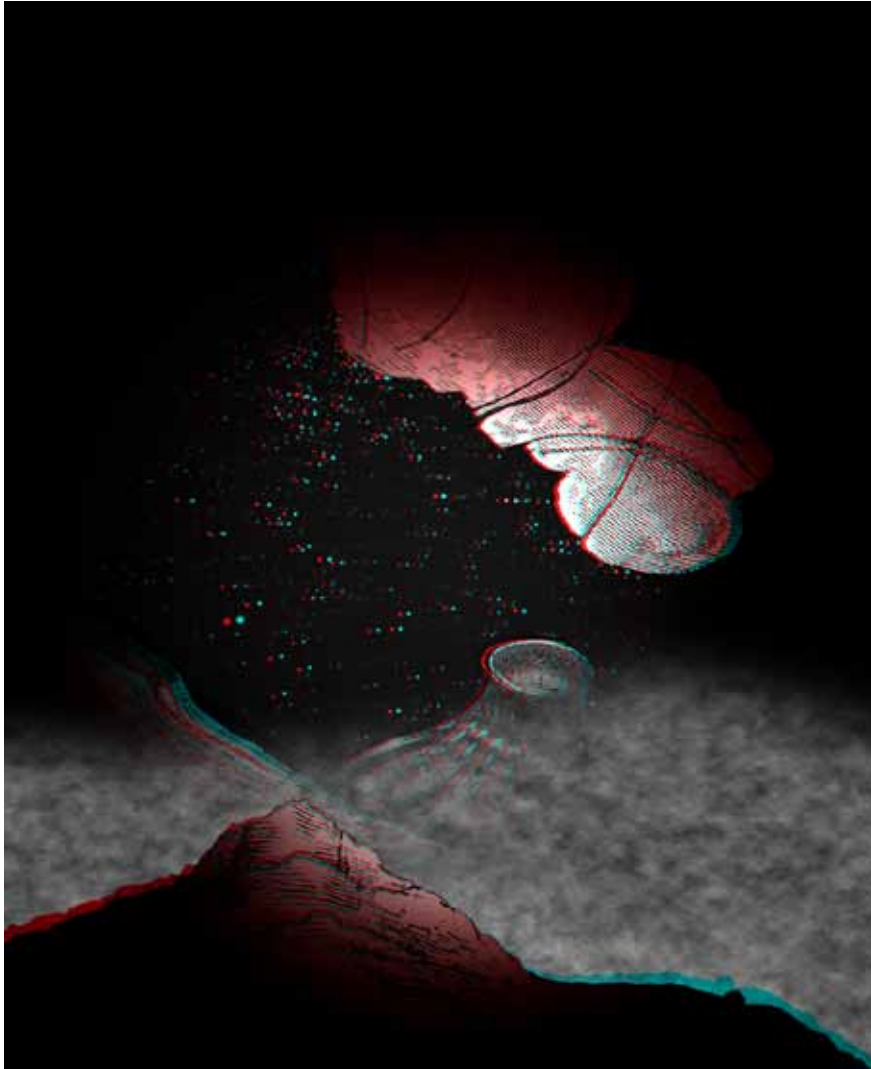


Day 2







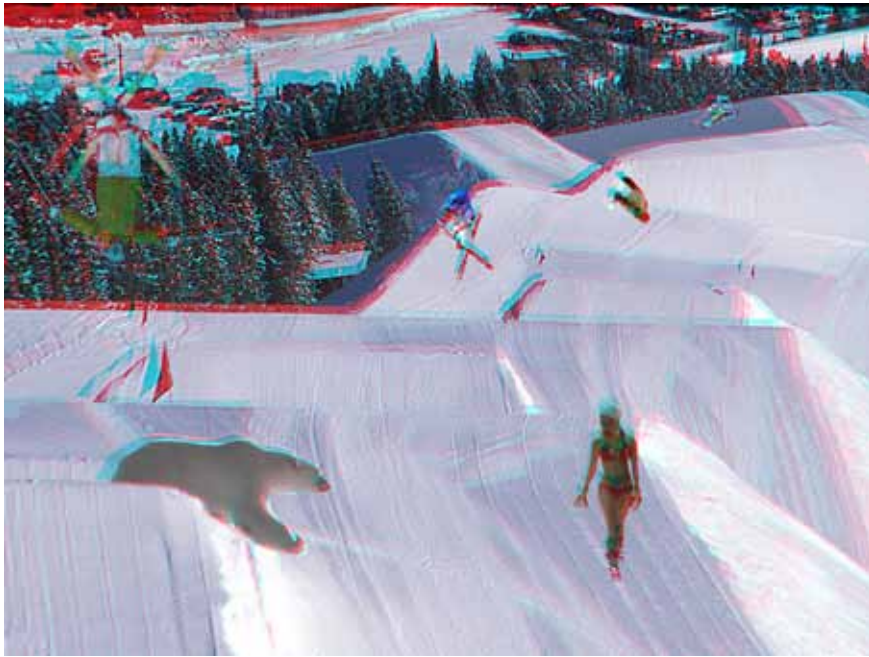


Day 2



Day 3





Karolina Konieczna

Karolina Konieczna (b. 1988) is a graduate from Academy of Fine Arts in Katowice in the direction of graphic design. Within defended in 2011 thesis, she designed magazine presenting different stereoscopic techniques from the traditional analogue photography to contemporary graphics programs such as 3ds Max. In designing she is interested in search for new, innovative technologies derived from modern science.