

# **DISRUPTIVE IMAGES: STIMULATING CREATIVE SOLUTIONS BY VISUALIZING THE DESIGN VISION**

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## **ABSTRACT**

In a contemporary design context it is important to be able to communicate design strategy at a high abstraction level and at an early stage in the design process. At the same time, in our postmodern consumer society that is largely dominated by media, it is important to be able to communicate ideas visually. This paper describes an informal technique for developing and presenting design visions, by visualizing abstract ideas with the aid of ‘disruptive’ images. Practicing this technique with three cohorts of industrial design engineering students in subsequent design courses showed that the technique enhanced the early stage communication of design goals and stimulated the implementation of creative design solutions. The use of ‘disruptive’ images showed to be particularly effective because it stimulated the students to look for opportunities on a higher level of abstraction, and the associated visualizations tended to make out-of-the-box solution directions more plausible.

*Keywords: Design vision, visualization, creativity, design education, design practice*

## **1 INTRODUCTION**

Since postmodernist thinker Jean Baudrillard published his *Simulacra and Simulation* in 1994 [1] it has become apparent that we live in a world that is dominated by visual images. With the immense growth of the new media since, the idea that we perceive the world around us through the images that are representing that world, has been strengthened. Therefore it is important to raise visually literate students. That is, people that are able to express themselves through images and understand the possibilities and powerful impact of images. At the same time Anna Valtonen [2] has argued that the design profession is shifting its importance to higher levels of abstraction, from merely designing products via product management and branding towards design as an innovation driver. The added value of design is therefore more-and-more defined at strategy-level. In this context it is important to be able to communicate design strategy at a high abstraction level and at an early stage in the design process, visually. This paper shows how an informal technique for developing and presenting design visions in an early stage of the design process can enhance this process, especially for design students. The basis of the technique is visualization, aiming to support three important aspects of creative solution seeking: illumination, evaluation and acceptance [3].

## **2 DESIGN VISION**

The overall aim of the technique is to make a design goal visible in an early stage of the design process, this in order to be able to communicate and discuss the design goal cross-discipline. The visuals are also aimed to communicate the design goal at a high level of abstraction. This is in alignment with known creative solution seeking methods like TRIZ [3] and the Vision in Product Design approach [4], where the design problem is translated to a higher level of abstraction first, before seeking for solutions. In an example you can imagine that the assignment “design a new elevator” is more restrictive, and will lead to less creative solutions than the assignment “design a means of transporting people from level X to level Y” (Figure 1). Linear to this, Leblanc [5] also showed that assignments that are based on problems and activities lead to higher innovation levels than assignments that are based on products. Thus the assignment “create a new stool” will result in less innovative designs than the assignment “design a playful means for sitting in a kindergarten environment”. Because of this higher abstraction level the outcomes of the technique can be described as design visions, rather than concrete descriptions of a design goal [6].

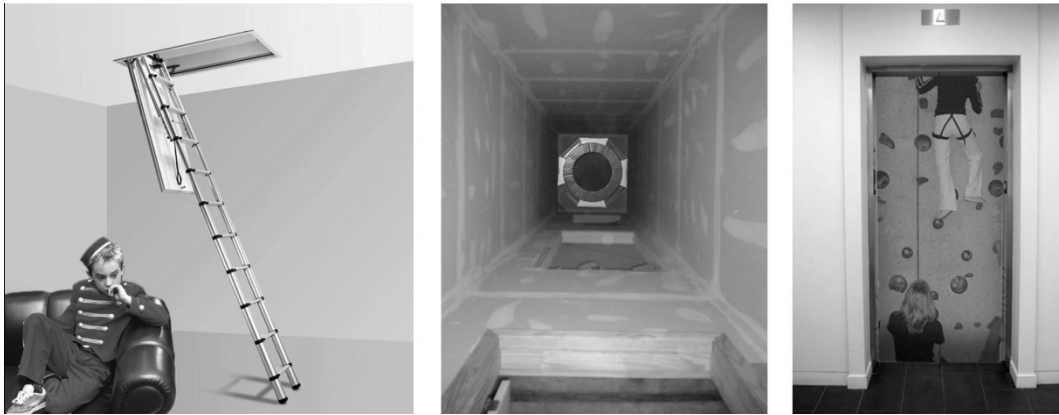


Figure 1. Example of students' work: expressing possibilities for an elevator redesign as "a means to transport people from floor X to Y", representing a part of the design vision

### 3 DISRUPTIVE IMAGES

The technique for visualizing the design vision is based on the application of 'disruptive images'. The term 'disruptive images', expresses the idea that the visuals represent something uncommon. By combining different images, mostly of recognizable objects that are displayed 'out of context', the resulting visual should contain elements of surprise. Hereby stimulating the viewer to question conventions and propose a new perspective on the subject at hand. An exemplary example that is also shown at the instruction of the technique is the "Prada value meal" by artist Tom Sachs (Figure 2, left). In this artwork, a McDonalds happy meal is mimicked with a print of Prada logos to articulate the cheapness of the original. In the end it is all about the presentation of familiar things in an unfamiliar light, so that surprise and wonder will allow the viewer to gain a new experience of objects or visual clues (Figure 2, right).



Figure 2. "Prada Value meal" by Tom Sachs (left) and "Street wars" by SpY (from 'Urban interventions' [7]) (right); examples of disruptive images from the workshop instructions

The idea of combining subjects in this way is a form of alienation that is the basis for most creative problem solving techniques. This is for a large part dutiable to the Surrealists, who made this principle of combining unfamiliar things popular in their artworks that were based on inspiration from the dream world [8] (Figure 3). Arthur C. Danto [9] described that the result of this 'displacement' is that the characteristics of the separate subjects are projected onto each other. Within this projection the original objects are altered because they are interpreted differently by the viewer. Danto called this alteration the 'transfiguration of commonplace objects', because the result of the displacement is that common things become special. In the case of the 'Aphrodisiac Telephone' by Salvador Dali for instance, the sexual association of the lobster food is transferred to the communication device, making it a poetic object for calling lovers. So in this way, working with disruptive images supports the so-called illumination, or creative thinking.



Figure 3. Surrealist artworks based on the principle of 'displacement'; "Aphrodisiac Telephone" by Salvador Dalí, 1936 (left); "The red model" by René Magritte, 1935 (mid) and "Table with bird feet" by Meret Oppenheim, 1939 (left)

#### 4 WORKSHOP

The disruptive images are created in a workshop setting. The workshop was developed in the context of an elective course in Industrial Design Engineering for 3<sup>rd</sup> and 4<sup>th</sup> year students, called 'Design for a specific theme' [10]. In this eight weeks course, the students work in groups of four people, and they can generate their own assignment within the given theme. In the three subsequent course years within which the disruptive images workshop was practiced, the themes were 'Leisure', 'The future of sports cars,' and 'Public space'. The whole course is set out as project oriented education which aims explicitly at the development of the students and their competencies by placing the students in a realistic engineering environment [11]. Therefore the students were briefed by, and had to present their work to an external client. Two times this client was a design agency (D'Andrea & Evers Design) and one time this was a little sports-car manufacturer (Donkervoort).

Every instance, the images workshop was held at the second meeting of the course, after the student groups had established an idea for a sub-theme or problem to address. Within the half-day workshop itself, the students were invited to look at their subject from different perspectives and search images that correspond to different sub-themes of the design problem. For instance on "what is wrong in the current situation", "What will an ideal situation look like" and "How is this problem solved in other fields of interest". The answers to these questions had to be summarized, and were used to inform the design vision. An example is the ideal situation of having fun while waiting for public transport (Figure 4, left). Another example from students work is depicting the problem of the incompatibility of sports car design and the normal city environment, in the current situation (Figure 4, right).

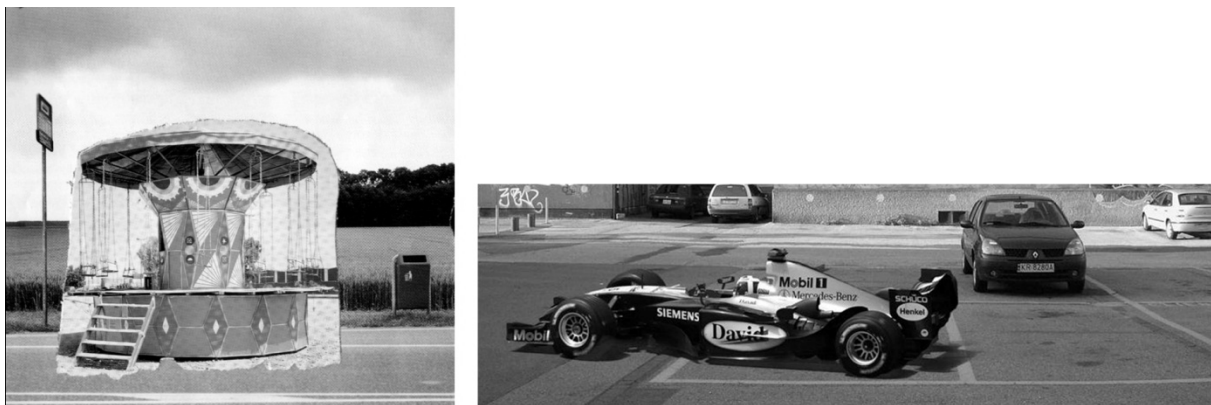


Figure 4. Example of students' work: images depicting an 'ideal situation' within the leisure theme (left) and a 'problem with the current situation' of sports cars (right)

Concluding the workshop, the groups had to present their design vision with a series of the images that they had generated, forming an argument. This was inspired by the idea of the *visual essay* as a form of academic writing, by Leslie Arthur and Phillipa Martin [12]. They showed that it is also possible to 'write' in the academic tradition with visuals, as long as academic standards like proper referencing, objectivity and the right way of building arguments are met. The visual essay then follows the same lines as a normal writing in building storylines and arguments. An example of students' work of such

an argument is shown in Figure 5. Here, the assignment was to investigate the future of electric driving, considering the Dutch sports-car manufacturer Donkervoort. The visualized argument is, that developments in electronic driver assistance in combination with road safety and increased density, will put the driver in a stringent harness (left), leading to illusionary freedom (mid). The solution for a true sportive experience has to lie in substantially less car, instead of more car (right). In this way, the visualizations can support the evaluation of design ideas.



Figure 5. Example of students' work: three disruptive images, forming an argument

The presentation of the design vision in the form of disruptive images was also particularly suitable for discussion with the clients, especially if they represented a multidisciplinary audience. It showed that it was possible to visualize different solution directions in a very early stage, and the inherent absurdity of the images forced to really concentrate on the idea. Viewers are not distracted by design- and styling preferences or drawing skills (either being too vague to see the point, or being too realistic to leave space for discussion). On the other hand, the fact that the 'absurd' ideas are visually expressed makes them 'thinkable' (Figure 6). In this example from the course considering 'Public space', the problem assignment was described as "having to use train toilets is a disturbing experience". The visualized solution directions can be characterized as: offering a more 'natural' toilet environment (left), offering extra services (mid) and regarding the toilet as a separate unit for better maintenance (right). In this way the early stage visuals also can contribute to the acceptance of radically different design solutions and thereby stimulate their implementation.



Figure 6. Example of students' work: visualizing different directions for design solutions

The workshop was developed initially to help the students to get a better understanding of the rather abstract themes of the course, and push them to create a more concrete view of the subject [13]. It showed that the early visualizations actually were very effective in steering the students towards more tangible solutions for the rather abstract themes.

## 5 APPLICATION

After the development of the design visions, the students had to develop inspiring solutions and end up with a plausible design. It showed that the visualization of design visions helped to focus the design work and on the other hand stimulated the designers to strive for less obvious outcomes. The visuals made the 'thinkable' also more acceptable, and a lot of student groups ended with designs that were both plausible *and* out of the box. The students that created the images of figure 5, for instance, were inspired by the ultimate freedom of the displayed parkour runner to design a minimalistic vehicle as some sort of extension to the human body (Figure 7).

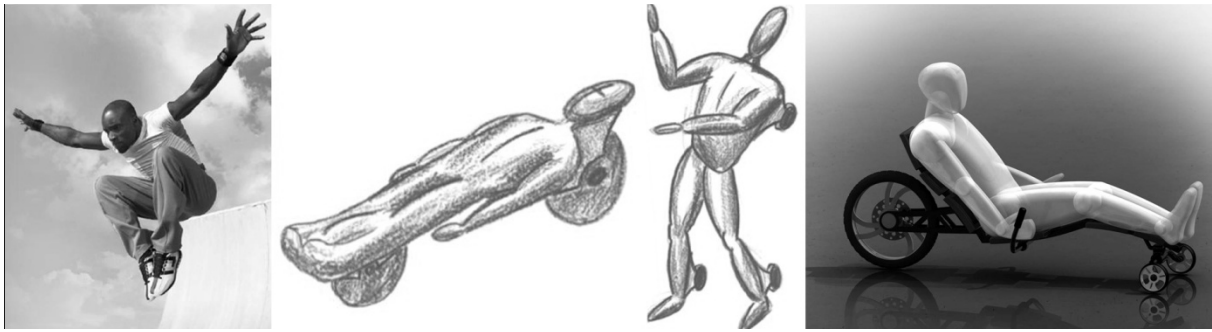


Figure 7. Design process, following the design vision shown in Figure 5

The student group that worked on the train toilet made an integrated unit inspired on an underwater world as a variant on the ‘natural’ environment pictured left in Figure 6. The design featured a special lighting effect from daylight falling through a coloured liquid in the ceiling. The movement of the train would provide constant rippling of the liquid, which in turn would lead to breaking of the light in a natural dynamic way. The result would be an almost real underwater effect. The group that investigated the possibilities to improve the public space of an elevator (Figure 1), also ended up with a radically different system. In their solution people were moved in private capsules to avoid awkward situations with other users. The capsules were propelled by numerous actuators, mimicking a biological peristaltic. To improve the efficiency of the system the capsules could also move sideways to overtake each other (Figure 8).

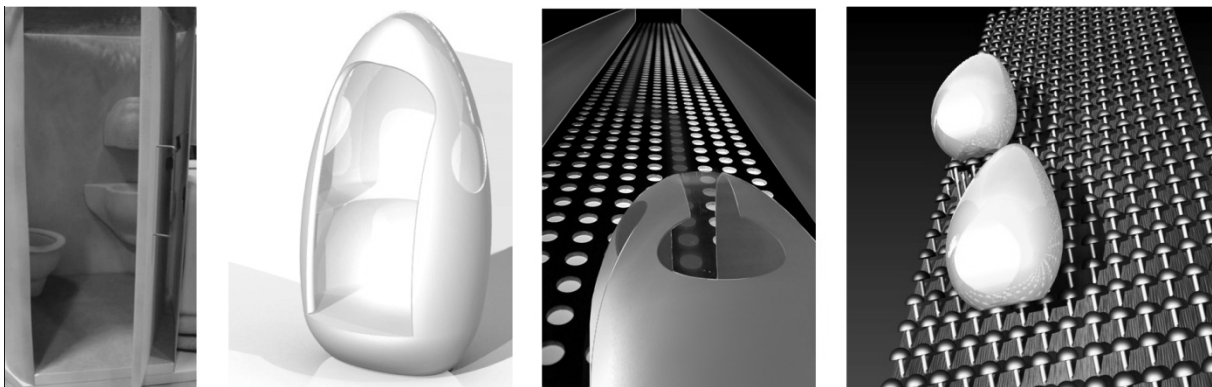


Figure 8. Solution for a train toilet with a ‘natural’ feeling, caused by an underwater effect (left), and three images from a biomimicry-inspired elevator system<sup>1</sup>

## 6 CONCLUSION

The brainstorm-principle of putting uncommon combinations together was used to create images that addressed abstract design problems. Students were asked to put these images together to present their design vision in the form of a visual argument. The visuals of the design vision then helped the students to steer their design process in the desired direction and stimulated them to aim for a desired solution that lies behind the obvious. The application of such images not only stimulated creativity in design solutions, but also supported the discussion with the clients of the assignments to clarify the desired design intent. In particular for this last reason, the clients of the workshop were very enthusiastic about the visual results. Student evaluations however, were more ambivalent. The relatively high variance in appreciation of the course could indicate that the proposed technique is not suitable for everyone, and should be treated as an alternative, rather than the best way to develop design visions.

The disruptive images workshop technique seemed especially suitable for design problems on a higher level of abstraction, focusing on problems or activities, rather than products, as is becoming more common in human-centred design. Practicing this technique with three cohorts of industrial design engineering students in subsequent design courses showed that the technique enhanced the early stage communication of design goals and stimulated the implementation of creative design solutions.

<sup>1</sup> see for a demonstrator video: <http://www.youtube.com/watch?v=qMRWsMf4CDw>

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