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CUMULUS  
Conference  
June 3-7, Milan

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Pre stampa e postproduzione digitale: [digitaltypes.it](http://digitaltypes.it)

ISBN: 9788838694059

Proceedings of the Cumulus Conference, Milano 2015



# The Virtuous Circle Design Culture and Experimentation

3-7 June 2015, Milano, Italy

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Publisher: McGraw-Hill Education Italy

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ISBN 9788838694059

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# Mind Your Deep Breath. Communicating Pollution Issues in China Through Visual Artifacts

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Breathing is the primary action performed by any living form. Without even thinking we provide ourselves with the main ingredient of life, which is air. The act of breathing becomes evident only in the presence of impediments that make it difficult to perform, transforming it in a conscious effort.

The paper herein reports an academic experience that started as a cry out for the basic right to breathe without thinking and aimed to trigger the attention on the importance of communicating this right in the Chinese socio-political context. By choosing to tackle the Beijing air pollution issues, in a multimedia and communication design course, the multidisciplinary team of design teachers and students took an action against a worldwide-criticized problem.

The argument will unfold in four main parts: the first part will introduce the critical situation of the air pollution in the Beijing area as well as the main factors that contributed to the increased air pollution. It will be shown how the rapid economic growth of China had a drastic impact on the quality of life of the population however generating unprecedented health and lifestyle mutations. The second part will explain how the observation of the actual situation became the trigger to proposing a final year communication design project that involved a multidisciplinary group of teachers and experts. In this part the course structure and the development of the collaboration will be explained as a joint effort to introduce a new generation of young designers to real social issues, giving them the opportunity to express their opinion in communication artifacts. The third part will briefly introduce the outcome of the course and describe in detail some of the most successful projects as well as the impact that the final exhibition had on the academic community.

Finally, a fourth part describes some of the projects.

## Keywords

Air pollution, Multimedia design, Communication, Multidisciplinary collaboration.

## INTRODUCTION

The main argument of the paper is to stress out the potential of the communication messages imbedded in artifacts and their importance in raising the awareness towards the necessity to act not only as a consequence of the critical environmental conditions, but also in order to prevent their escalation.

More than a report on an academic project, the paper intends to setup a debate on the most effective ways to raise the awareness about the need to improve the sustainable policies and behaviors in China and Beijing in particular. In this context communication and multimedia design projects are shown to provide the necessary tools to involve the younger generation into a conscious battle with pollution. Moreover the graduation project organized by Beijing Institute of Fashion Technology, known as Deep Breath, is amplified by the international collaboration with graphic designer Rick Valicent from the United States.

## AKNOWLEDGING THE CRISIS

### THE PREMISES OF AIR POLLUTION IN CHINA.

In the last decade the Chinese economy has experienced an important growth, arriving in a short time to be the second global economic power and being expected to overcome the US as the world's economic leader until 2020 (Yao, et al., 2012). In particular, the development of the heavy industry has unbalanced the ratio between high energy demand and low energy consumption. Due to this fast development, the Chinese industry is at the peak of the high energy consumption growth, using roughly 20% of world's total energy consumption. Considering that 70% of the country's energy comes from its vast reserves of coal, the environmental impact of the present trends in the energy consumption sharpen the environmental threat both globally and most important internally, for the Chinese population. According to Malcolm Moore of the Telegraph newspaper (Moore, 2014), there were between 350,000 and 500,000 premature deaths caused every year by air pollution diseases.

The air pollution problem is particularly relevant in urban areas, being accentuated by the internal migration of workforce from rural to urban areas, and is therefore related to the increased demographic density in the major cities of China. In order to counter balance the environmental problems, many literatures have pointed out to the necessity to improve public awareness on the impact of unprecedented energy consumption and the major impact of the air pollution on the air quality and national health.

## ECHOES REGARDING THE AIR QUALITY IN INTERNATIONAL PRESS.

Far from being a local issue, the improvement and enforcement of public policies regarding air pollution is an internationally acknowledged problem. In the context of the rapid growth of China's international economic relations, the preservation of air quality became one of main arguments debated by global environmental agencies and reported by the international press. As an example in february 2014, The Economist reports an improvement in the level of transparency policy imposed by the Chinese government to the large heavy industry producers as an important step forward towards raising the public awareness on the causes of pollution.

This strategy is partly due to the pressures from bottom-up Non Governmental Organizations such as the Institute of Public and Environmental Affairs which publishes interactive maps and reports regarding the air, soil, and water pollution. Moreover the attention given to the Chinese environmental policies by the country's government is also a result to international political pressure. Regarding this, Matt Schiavenza of The Atlantic Monthly reports the measures taken by the Beijing government as a struggle to combat the smog and bad air quality during the recently concluded Asia Pacific Economic Cooperation Forum (Schiavenza, 2014).

## COMMUNICATION ARTIFACTS THAT CARRY AN EMERGENCY MESSAGE.

Apart from the government's rush to enforce environmental actions for preventing air pollution, and the bottom-up initiatives to monitor and communicate the polluting emissions of the heavy industry, there is a growing interest to adress the serious pollution issues through design. Perhaps one of the most important and powerful signs in this direction was the show of QIAODAN Yin Peng Sports Wear Collection (fig. 1) at the recently concluded Chinese fashion week in Beijing (Kelley, 2014). As Sarah LeTrent of CNN reports, this is the first time when an environmental issues becomes inspiration for the fashion industry, signaling to the international fashion world the behavioral mutations in the Chinese society (LeTrent, 2014).



FIGURE 1 - QIAODAN Sports Wear for pollution

## PREPARING THE YOUNG GENERATION FOR TACKLING SOCIAL AND ENVIRONMENTAL ISSUES.

### WHY CHOOSING TO OBSERVE THE SURROUNDING CONTEXT IS IMPORTANT.

Wearing stylish face masks in an international fashion show is only one of the manifestations of the communication message about the hazard of air pollution. Bringing their contribution to the struggle to cope and raising awareness on the un alienated right to breath, the Beijing artist Liang Kegang brought and auctioned for 860\$ a jar of fresh mountain air collected in Provence, France. (Stampler, 2014). This symbolic gesture brings forward the power of design and art forms to connect the international media on the quality of the everyday life in China and Beijing and, more important, the necessity to educate the young generation of artists and designers to sharpen their attention and train their sensibility on the social and environmental issues in which the design discipline can activate important creative resources.

The “Deep Breath” initiative presented in this paper inscribes in the types of actions presented above, educating students that their voice counts. As a leading fashion education institution in China, Beijing Institute of Fashion Technology is facing a pedagogic duty not only to create trends in fashion design by designing beautiful clothes, but also to be responsible for interpreting trends dealing with designing social innovation and responsibility. Going beyond the mere

acknowledgement of a state of emergency, the pedagogical experience is aimed to set the premises for an ongoing collaboration with a multidisciplinary group of experts and designers with an international background.

## INSPIRING STUDENTS TO GIVE VOICE TO THEIR DISCONTENT.

Although the environmental crisis situation is a reality that the young generation has to face day by day, the strength to react to the menace of pollution reclaiming the right of breathing stays in the personal stamina. The aim of the Deep Breath initiative, started in 2013, was to establish an extended pedagogical activity to empower students to use their talent to react against the living conditions in which they have to live.

The initiative spanned ten months during the progress of undergraduate graduation project and the interventions were designed to awaken dialogue about air pollution and to invite the audiences to respond and act. The Deep Breath Initiative echoed a philosophy in design to embrace an integrated approach across boundaries of design disciplines. 20 students from Beijing Institute of Fashion Technology bring to this initiative their training in graphic, photography, industrial, product and digital media design. The Deep Breath Initiative, known as DB 1.0, was organized by five faculties from the School of Art and Design, Beijing Institute of Fashion Technology in association with Chicago graphic design Rick Valicent.

## BRINGING TOGETHER A MULTIDISCIPLINARY TEAM FOR A SHARED VISION

### SETTING UP A COLLABORATIVE RESEARCH AND PEDAGOGICAL AGENDA.

Many literatures have shown the creative advantages that a diverse group of experts might have over a more homogeneous one (Pillan & Suteu, 2013). Nevertheless the reality of collaboration is far from simple. In the case of DB 1.0, the challenging came from the virtual lack of practice of the teaching staff with other colleagues from different departments. Moreover due to the hierarchic administrative structure of the university, the organizational procedures slowed down the organizational process.

The types of challenges to overcome were of several types: - Speeding up the decision making process in the organization from the top down. This step was necessary in order to gain departmental recognition as a multidisciplinary team.

- Establishing common grading standards and methods for students with different disciplinary specializations such as graphic design, multimedia and product design. As an example, debates about grading happened in particular during the negotiation process with staff from the department of product design where students generate tangible outcomes and therefore teachers have obvious

requirements for graduation projects. This came in contrast with the department of new media, where teachers can easily evaluate student projects by assessing the novelty of the narrative of the project.

- Reinforcing team power by engaging a top administrative representative in the negotiation process. By choosing to adopt a top-down strategy, the project and team gained increased access to a large dedicated project space, 80 sq meters, for 10 months in our school, but also the project resulted a smooth yet successful transition in 2013 as we practice new method for teaching in a design graduation project.

## DEVELOPING THE COURSE STRUCTURE AND BRIEF REGARDING POLLUTION ISSUES IN BEIJING.

Although all the above mentioned social and environmental issues are closely knitted and affect the life activities of the students involved in the course, the class activities schedule had to be designed in order to fit the skills and capabilities of a multidisciplinary team. The team activities were alternated with individual work in which each student carried out his/her part of the project. This type of organization facilitated the grading process of the final projects and allowed teachers to supervise student's work on all the specific aspects of the project.

The course was thus divided in four main phases as follows:

- i. Preparation. In this first phase students got accustomed with the project brief and with the different perspectives of team members and were introduced to the course goals.
- ii. Collision on design culture. In the second phase the students were encouraged to carry on the desk and field research on environmental issues, and the way these issues have been expressed in other design projects. This concluded with a series of visual reports that helped students to find design inspiration on the directions in which they wanted to design their projects (fig. 2).
- iii. Team-up workshops. In the third phase a series of team workshops were organized, in order to develop and analyze the research of case studies generated in the second phase. A parallel stream in this phase was the search for sponsorship.
- iv. Individual projects. In this phase the teams split in order to develop individual projects. This was necessary in order to leave students the liberty to choose the theme of their own choice but also taking into account the quality of the individual work in the context of a final graduation project.



FIGURE 2 - Visual reports dealing with pollution issue, from students of various design backgrounds. Courtesy of Dagong Chen.

## TELLING THE STORY OF BREATHING IN BEIJING

### POLLUTION SEEN THROUGH THE EYES OF THE STUDENTS.

Starting from the expression of deep concern regarding the death toll paid by the Beijing citizens to the air pollution crisis, in the “Gone with the air” graphic arts project, to the envisioning of the pain and panic of suffocation, in the photography project “Eyes closing for a breathing” to the interactive emotional experience in the “Paint your sky” and “Panoramic breathing” new media projects, the students demonstrated their talent, skill and creative capabilities to craft beautiful communication projects.

The emotional impact that the projects convey comes from the interesting mixture of traditional craft techniques with contemporary technologies in an effort to reach and speak to a wide local and global audience.

This comes forward in a poetic manner in “Gone with the air” where mourning and death are symbolized by the use of traditional Chinese cut-outs, and in “Breath me in, breath in me” typography project where letters were formed by blowing / exhaling coal dust. The heaviness of the Beijing fog is captured in the photography project “Eyes closing for a breath” in an attempt to experience through images the suffocating air of the city.

### CREATING AND COMMUNICATING A POWERFUL MESSAGE WITH NEW MEDIA.

Two of the most interesting projects embrace the challenge to deliver an esthetic and emotional message through the use of digital media formats accessible on small and large-scale communication devices.

Paint Our Sky is project intended to create a collage of sky (fig. 3). Snapshots were collected on mobile devices. An impression of the sky’s transience can be seen as a broader spectrum. This idea resulted in a large-scale screen projection of photographic messages that features interactivity with a social media App named Wechat. All snapshots taken from various locations, times and people for documenting a moment of sky are harvested through Wechat backend server.

Over four thousands of photos are fed to the 14 meters wide and five meters high screen on the second floor of BIFT Park

Building. Photos are streamed in real-time. In two hours anyone’s sky snapshots will be displayed on the screen after processing. The placement of individual photos is random, but follows a basic rule: the algorithm tiles blue scale photos in the center to form a message. Grey scales are been placed either on the peripherals or to fill the gaps around the words. The screen projection is lively and refreshes over time. No two moments on the screen are identical.

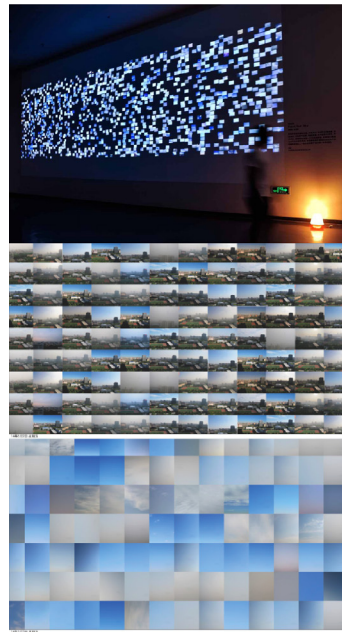


FIGURE 3 - Paint Our Sky, sky photos of Beijing collected from social networking app. Wechat. Courtesy of Dagong Chen.

**Panoramic Breathing** features a propagated screening of a short video on five surrounded screens (fig. 4). It invites the audiences into an immersive appreciation of a story about the struggles of polluted air performed and directed by students. Slow motions of the body movements repel dusts and exacerbate the pains caused by bad air. The story ends when the black/white pictures fade and color images are revealed.

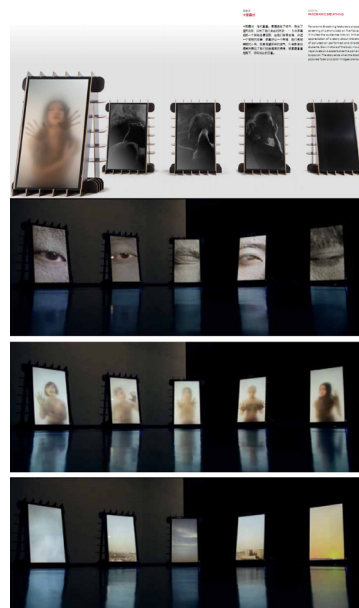


FIGURE 4 - Video installation Panoramic Breathing, immersive representation of polluted air vs. Beijing inhabitants. Courtesy of Dagong Chen.

## EXHIBITING AIR INFORMATION IN A PUBLIC CONTEXT.

“End of the Time” is a 3 dimensional representation of information based on the data of Beijing's Air Quality Index (AQI) collected between September to December 2013 (fig. 5). The installation filled the atrium in BIFT Park Building. The unique structure defined the form of this project: seven exposed steel beams at two different levels span the atrium and frame a calendar grid. The Building architecture provides the armature for the data visualization. The project titled “End of the Time” has two reasons: One, December marks the beginning of winter and heralds a time of frequent weather of haze in Beijing. People suffer from air pollution in the final days of a year. And second, the title signals an apocalyptic sense that our environment demands an immediate response now. AQI data from all 31 days in December is visualized by using 31 customized-made weather balloons situated in a calendar grid and aloft at different height.

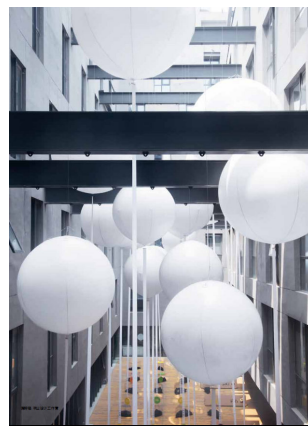


FIGURE 5 - Visualization installation in a public context for interpreting Air Quality Index of Beijing. Courtesy of Dagong

## CONCLUSIONS AND FUTURE WORK

DB 1.0, initiated September 2013 and ended June 2014, was conceived to reflect the social problems we focused on and propose artifacts based on our design thinking. It was a project organized with poetic graphical approach linking the audience visual understanding on the Beijing air issues. Public attention occurred during the final exhibition prepared by the university that had led video reports from CCTV and Beijing TV to be largely publicized on the online video sites like Youku and Tudou.

Going beyond the mere communication of a state of the fact in the drastic air pollution situation in Beijing, the goal of DB 1.0 is to address the impact of the local environmental issues at global scale, urging students to reflect on the local facts and their consequences, in this way raising their awareness not only the potential of communication to reach a global scale, but also on their capabilities

to affect and improve the international awareness by designing powerful and effective communication projects and artifacts.

Furthermore, the success of the international collaboration came from the richness and relevance of the projects developed by the students and emphasized the importance to setup an exemplary project for designing a social innovation agenda in our school. This came in parallel with a more extended, further looking goal to create the conditions for establishing a longer term research and academic interest in sustainability, by developing a three years graduate course. These two parallel goals created a strategic advantage of the DB 1.0 within the university, and motivated students and teachers to engage into projects with an important social innovation impact. As DB 1.0 moves forward to the future, we anticipate exploring broader design issues linking with environmental and economic sustainability.

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# THE VIRTUOUS CIRCLE

CUMULUS CONFERENCE 2015

## DESIGN CULTURE AND EXPERIMENTATION

Design comes out of the interaction between a practice, which seeks to change the state of things, and a culture, which makes sense of this change. The way this happens evolves with time: practices and cultures evolve and so do the ways they interact; and the attention that is paid at different moments to one or other of these interacting polarities also evolves. In the current period of turbulent transformation of society and the economy, it is important to go back and reflect on the cultural dimension of design, its capacity to produce not only solutions but also meanings, and its relations with pragmatic aspects. Good design does not limit itself to tackling functional and technological questions, but it also always adopts a specific cultural approach that emerges, takes shape and changes direction through a continuous circle of experimenting and reflecting. Because the dimension and complexity of the problems is growing, it is becoming evident that to overcome them it is, above all, necessary to bring new sense systems into play. This is ground on which design, by its very nature, can do much. Indeed, the ability to create a virtuous circle between culture and practical experimentation is, or should be, its main and distinctive characteristic. However, for this really to happen it is necessary to trigger new discussion and reflection about the nature and purpose of design practice and culture.