

4² + 2⁴ + – 1: Designing a Prime

Johan Verbeke, Adam Jakimowicz

Sint-Lucas School of Architecture, Brussels – Gent, Belgium

This paper is intended to be a record of a reflective exploration of themes and influences on research by designing. It includes a search for a formula and order, definition of key themes, visual expression of important statements and assumes the reader's interpretational freedom, enclosed within a designed frame.

Themes

1. Serendipity	Surprising	Novelty	Creating
2. Associative thinking			
3. Delight as Knowing	Beauty		
4. Poetics			
5. Designing is a laboratory	Shaping	Studio	
6. The object as knowledge			
7. Research as a design activity	Projecting		
8. From "what is" towards "what can be"			
9. Peer-review	Sharing	Understanding	Communicating
10. Interaction			
11. Language	Two - way		
12. Listening			
13. Mountains (limit to see more)	Perspective	Interpreting	
14. Being Inside – Being Outside			
15. Not knowing	Meaning		



Creating – Novelty – Surprising – Serendipity

Sir Alexander Fleming (1881-1955) was a Scottish pharmacologist. In 1928, he was studying staphylococci and returned from holidays. On 3rd of September, before leaving he had stacked all his cultures of bacteria in the corner of his laboratory. Returning, he noticed that one of these was contaminated by a fungus and that the bacteria immediately surrounding it had been destroyed. After studying the situation he discovered penicillin, the biggest **novelty** of that time for which he obtained the Nobel Prize in Medicine in 1945.

On 28 January 1754 Horace Walpole wrote a letter to his friend Horace Mann, an Englishman then living in Florence¹:
"It was once when I read a silly fairy tale, called The Three Princes of Serendip: as their highnesses traveled, they were always making discoveries, by accidents and sagacity, of things which they were not in quest of: for instance, one of them discovered that a mule blind of the right eye had traveled the same road lately, because the grass was eaten only on the left side, where it was worse than on the right—now do you understand serendipity? One of the most remarkable instances of this accidental sagacity (for you must observe that no discovery of a thing you are looking for comes under this description) was of my Lord Shaftsbury, who happening to dine at Lord Chancellor Clarendon's, found out the marriage of the Duke of York and Mrs. Hyde, by the respect with which her mother treated her at table."

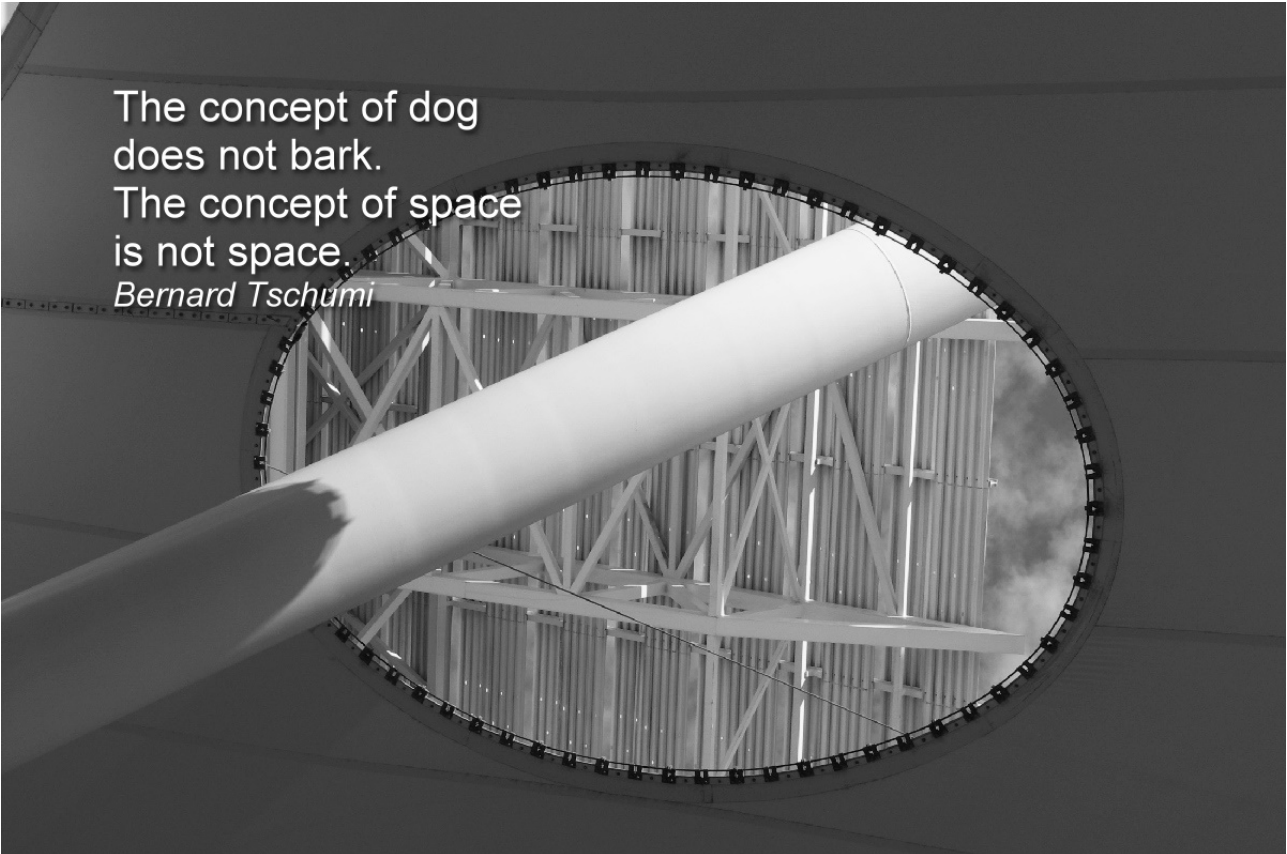
Since then the word serendipity disappeared for some time, reappearing in late 19th century and being included in the Concise Oxford English Dictionary in 1951.

The Cambridge online dictionary defines serendipity as "the lucky tendency to find interesting or valuable things by chance". It is the process by which one accidentally stumbles upon something interesting, **surprising** or valuable while looking or searching for something completely different (as Sir Fleming did).

When **creating** projects architects and urban designers carefully study the local culture, context and people. At such moments they look for interesting details which could trigger their inspiration. Following the famous citation of Louis Pasteur "Dans les champs de l'observation le hasard ne favorise que les esprits préparés"², they are open and absorbing information and clues. The availability of clay, an old track, an old story or person, all can trigger creative ideas for the open-minded designer.

¹ <http://www.sundaytimes.lk/050102/plus/11.html> [accessed 14th December 2009]

² "In the fields of observation chance favors only the prepared mind."



The concept of dog
does not bark.
The concept of space
is not space.
Bernard Tschumi

Creating – Novelty – Surprising – Associative Thinking

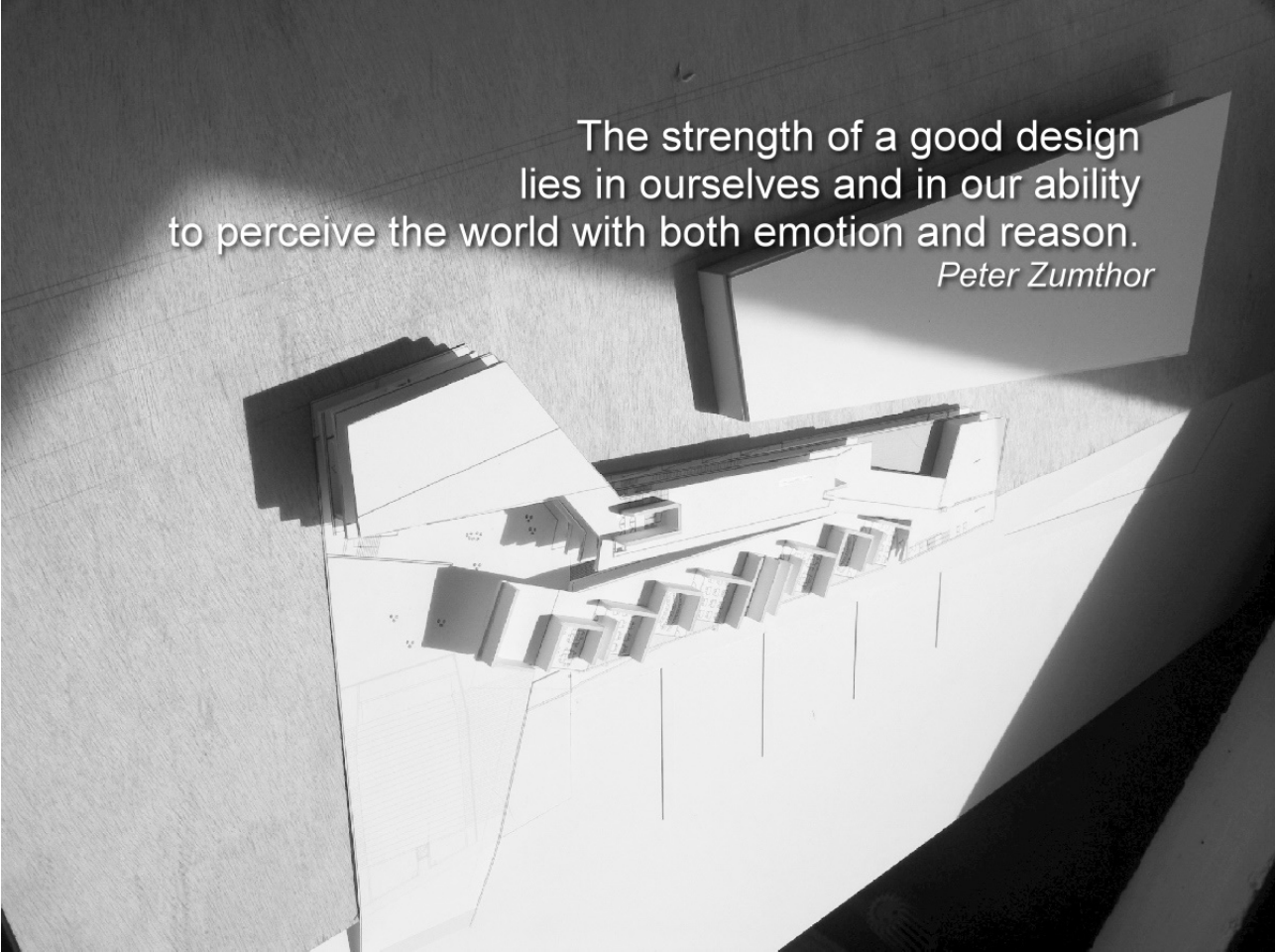
When problem solving, most people will connect to the familiar rational mental activities of collecting data, analyzing information and the use of analytical, logical and conceptual ways of thinking. However, since the earliest references to creativity, researchers have reported that this can involve a wide range of different mental processes which are very much different from the rational approach. Many names have been used for these processes which help creating **novelty** and **surprising** solutions: intuition, inspiration, unconscious processes, right-brain thinking, ... Their exact nature is still not very well understood.

Associative thinking is the way of developing free associations between subjects and concepts. It is the thinking process of making associations between a given subject and other pertinent factors without drawing on past or given experience. Part of the success of brainstorming lies in the fact that funny ideas generated by one person, evokes more ideas with other people. Associations and diversity help in **creating** novelty and unexpected solutions. Where the left part of our brain is connected to linear and logical thinking, the right side thinks holistic and poetic. It handles ambiguity and confusion. It handles music and is non-linear and connects multiple images.

The following story nicely illustrates how associative thinking works. "One afternoon, I sat down for a moment on a rock by the Aegean sea with a colleague, Alice, and we chatted about our work. When Alice asked me to tell her about image-work, I offered to demonstrate. I suggested that she allow an image to emerge that represented who she was or what she needed to know at that moment in her life. An image emerged of a tree in autumn, still full of fruit, but some of the leaves beginning to turn. The tree had a sacred feeling about it, a good deep ancient feeling. I asked her about the history of being that tree, and she remembered the time when she had been a sapling, and the tree had been more flexible, and she swayed with the wind.

I asked what was next for the tree. 'I need', Alice said, 'to develop a scent so that the bees will come and I can pollinate.' Then she laughed and called me all sorts of names, having suddenly realized that while she had started thinking of herself as a mythical, middle-aged being, she really wanted to develop her female scent, find a partner and have children. The whole experience took only a few stolen moments, but that evening, as I watched Alice dancing, her whole body language was different, and she looked ten years younger."³

³ Glouberman, D. (1989) *Experiences with Imagery*, London, Unwin Hyman, page 1.



The strength of a good design
lies in ourselves and in our ability
to perceive the world with both emotion and reason.
Peter Zumthor

Creating – Novelty – Beauty – Delight As Knowing

Within this context it is important to note that the process of discovery is often part of the delight. As Isaac Asimov once said: “The true delight is in the finding out rather than in the knowing.” The finding out forces us to explore, think, reconsider and at one moment, all aspects fit together (as in a puzzle) and at that moment we know we have reached a fundamental understanding.

In a very similar way, visiting the Chapel of Nôtre Dame du Haut of Le Corbusier or the Bruder Klaus Field Chapel by Peter Zumthor (a wonderful concrete chapel on the edge of a field in Mechernich) one gets delighted and one knows that some kind of God must exist. The beauty of these buildings is **creating** inspiration and knowing of a different kind. It is the type of knowing created by **novelty**, by feelings, by experience. Once seen and understood, it stays in our mind for the rest of our life, influencing all our future feelings and actions. One just knows this must be right.

*During the first year of mathematical studies, students used to have a basic course in Algebra, introducing the main theorem of Algebra. This theorem is proofed many times. The first time, it takes like 6 pages with very complex arguments to make the proof. After building up mathematical concepts, definitions and machinery, students managed to reduce it to 5 pages, then 4, 3, 2 and the final proof consisted of just one square scheme. This is visually very easy to understand and it is evident from this scheme that the theorem does hold. But, some 150 page are needed to develop this understanding. It is the final part and usually students are all filled with delight because of the easy and beautiful way the theorem finally is proofed at that moment. It is this **beauty** which makes students full of delight and energy to continue their studies. Understanding this beauty and way of proving this theorem made them feel happy and proud. One just knows this is correct and a fantastic way of doing things.*

I knock
at the stone's front door.
"It's only me,
let me come in."
"I don't have a door,"
says the stone.
Wisława Szymborska

WAY

Creating – Novelty – Beauty – Poetics

How to get to know things which themselves bring more than knowing? Can emotional or aesthetic experience be fully transferred using the terms and categories, which come from the outside of it? To what extent the surprising and momentary discovery can be shareable and objectified? Is there a reliable bridge, which connects its essence with the nature of knowing? Or, maybe, the borders of knowing can be freely widened and include all other fields of human experience? Are these questions relevant when thinking of poetics of design in the context of designerly knowledge? To what extent do they directly suggest easy answers, trying to give a way for a hidden will to avoid the true involvement?

It is not intended here to give a full explanation of neither poetics as such (including the possible interpretations of **beauty**), nor its relation to knowledge generation processes. First, it would require a deep terminological study to set the context of meaning of each of the key terms. Then the further argument could be developed – and this, to be serious, would be a work for years, if not for decades. This kind of research, a generalizing one, would still be an activity of thinking OF. It would be a kind of development of the competence of not getting involved. For a designer, for an architect it is an impossible position. So let us make a general assumption. Let us NOT prove, but DO risk, that researching does not have to be limited to the analytic knowing, but can be applied to, derived or emerge from, and be developed by the creative development of **novelty and beauty**.

This means that poetics, which brings the level of wonder and delight cannot appear as knowledge OF, cannot act as knowledge FOR, but by **creating** the new 'experiential' values and states becomes the **knowledge BY (or THROUGH)**.

We want architecture to have more.

Architecture that bleeds, that exhausts, that whirls and even breaks. Architecture that light up, that stings, that rips, and under stress – tears.

Architecture should be cavernous, firey, smooth, hard, angular, brutal, round, delicate, colorful, obscene, voluptuous, dreamy, alluring, repelling, wet, dry and throbbing.

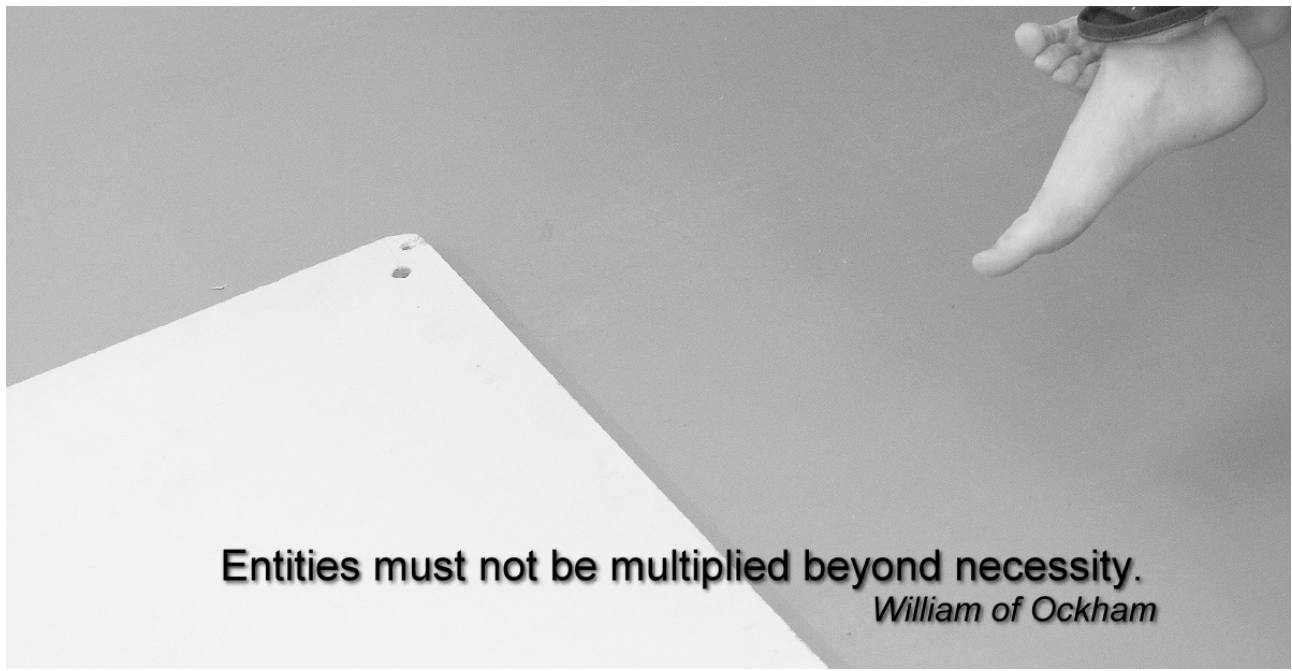
Alive or dead.

Cold – then cold as a block of ice.

Hot – then hot as a blazing wing.

Architecture must blaze. (Coop Himmelblau, 1980)⁴

⁴ Coop Himmelblau (1983) 'Architektur Ist Jetzt', Verlag Gerd Hatje, Stuttgart;



Entities must not be multiplied beyond necessity.
William of Ockham

Creating – Studio – Shaping – Designing is a Laboratory

A subtle reflective designer manual in 7 points:

1. Designing is a creative activity or process, by which the NEW appears, is shaped and manifested. This a bit shallow and very general statement can be applied to very different types of creating – a project, a building, a product, a concept, an art work, a research, a cloth, or even a meal. A designer is designing – and the core of this activity is that he or she is doing something by not repeating the previously developed solution.
2. This simply shows, that designing is reflective in nature, when done honestly. It takes into account the work done by a designer him-her-self, and the work done by others, who operate in the same field. When honest effort is put on **creating** an original thing, the probability of making the same thing as others did is extremely low.
3. For a conscious designer to become a reflective one, four things are required:
 - make his/her own designs;
 - know the work of others;
 - to be able to position own work in the context;
 - reflect by continuing to design

(“This process – usually carried out in three tranches of defining the proposition, identifying the ‘gaps’ (the term used as defined by Gerard de Zeeuw) between actual practice and what is needed to fulfil the proposition, conducting work in the practice to narrow the gap, evaluating, refining the proposition and restating the gaps, doing more work in the practice, evaluating and so on...”⁵)

4. It occurs that the above 4-points scheme is a recursive process. Circular. Its main node or spine is designing. The whole process of creation begins with, concludes and starts again with designing.
5. The scheme and the process it circumscribes shows a rich potential for where designerly knowing can be generated:
 - in the “content” of designs – specific solutions, concepts applied or derived;
 - in the ways by which solutions are developed – methods, the use of media, ordering or dis-ordering of thinking;

Content and methods are interrelated, but getting into research requires both flexibility and rigour
6. The starting point to generate designerly knowledge is designing. The indispensable condition to develop research in design is TO DESIGN. It is also the simplest conclusion for this issue.
7. The designer’s work takes place in the **studio**, but in fact the designer’s laboratory is both the studio and designing. It involves iterations of experimentation, failures, risk, **shaping** and defining.

At the Graduate Research Conference in Melbourne, in May 2009, one of the PhD candidates presented his research project. It was his third presentation, which means, that the research project was initially formulated and key issues selected. After an interesting and long discussion, the candidate asked a question: “what shall I do now?”. The panel chairman, professor Richard Blythe answered immediately: “Design! Continue designing!”

⁵ van Schaik, L., (2008), Report on Research Training Sessions, in Verbeke, J.,(ed) Reflections 7, Sint-Lucas School of Architecture (W&K), Brussels, Belgium,



Creating – Studio – Shaping – The Object as Knowledge

Design, read both as a noun and as a verb, is a projection of the expected reality to be created according to the rules it defines. In most cases these rules in fact constitute the knowledge, which the resulting object represents.

Here we face a very interesting relationship between design and object. On the one hand, design seems to be a “servant” of the object, which becomes the forefront carrier of the created values. On the other hand, it is design that brings the power, and the object is a “mere” executor. So the relation between them cannot be steadily established. In the domain of **creating**, this relation is challenging, because on the conceptual level there is a complete unity between design and object, but on the representational level, sometimes they seem to be very distant. Whereas intentions and concept lead to realization, the “language” of the object can be and often is blurred, obscured, unclear, ambiguous. That’s why, the process of decoding – firstly, when the design is formulated, and secondly, when the object is subjected to “reading” – is the essential process of knowing, characteristic for creative disciplines.

Ambiguity of the object however, can be an advantage. The object, in the creative process sometimes comes first, and design – as a mental or conceptual construct – may appear as a result of how the object is interpreted or treated. One of the most radical examples of this approach are Duchamp’s ready-made objects⁶. They were used as such, taken as they were, and the design of the new mental **shaping** emerges as a result of their existence and through a close encounter with an artist.

It becomes clear that we need a process in which object interrelates with designing, through mutual influence. Thus, design brings knowledge to understand the object, and the object itself, through its influencing power, inspires the development of designing. Such relation assumes both openness and circularity, where generative cycles begin and conclude, but each time on a different level. It is indeed interesting that this kind of doing goes far beyond a mere professional **studio** work, but becomes a deeper attitude towards reality.

In architecture, Peter Eisenman, developed several methodical approaches to the process of designing. One of them seems to be of special potential and relevance in the context of knowledge generation through designing. The project for South Friedrichstadt⁷ in Berlin can be a powerful “device” showing both the sequence of evolvement of design thinking and specific solution which set a coherent argument for the place.

The project created in 1982 is an important step between the conceptual breakthrough of House X, project for Cannareggio and later works as Romeo and Juliet, or Wexner Center in Columbus.

Having an urban block with a few remainings and well documented history, the challenge was to make history apparent and at the same time make a new intervention an adequate trace of the now. Therefore the architect constructs a new history for the place by creating abstract levels of time, but in spatial, material terms. The scheme of overlapping grids is “objectified” by the Mercator grid as a memory-forgetting device. The argument is being developed through rigorous designing and critical interventions within the concept, so both are deeply interrelated, and this relation is consequently realized in the constructed building. Thus, the object itself becomes knowledge in this specific context.

⁶: <http://www.marcel Duchamp.net/>

⁷ Eisenman, P., Robertson, J., (1983), ‘Koch-/Friedrichstrasse, Block 5’, Architectural Design, 7-8/1983, Academy Editions, London; see also: Bedard, J., F., (ed.), (1994), ‘Cities of Artificial Excavation: the Work of Peter Eisenman, 1978 - 1988’, Rizzoli International Publications, New York;



Humans are crucial.

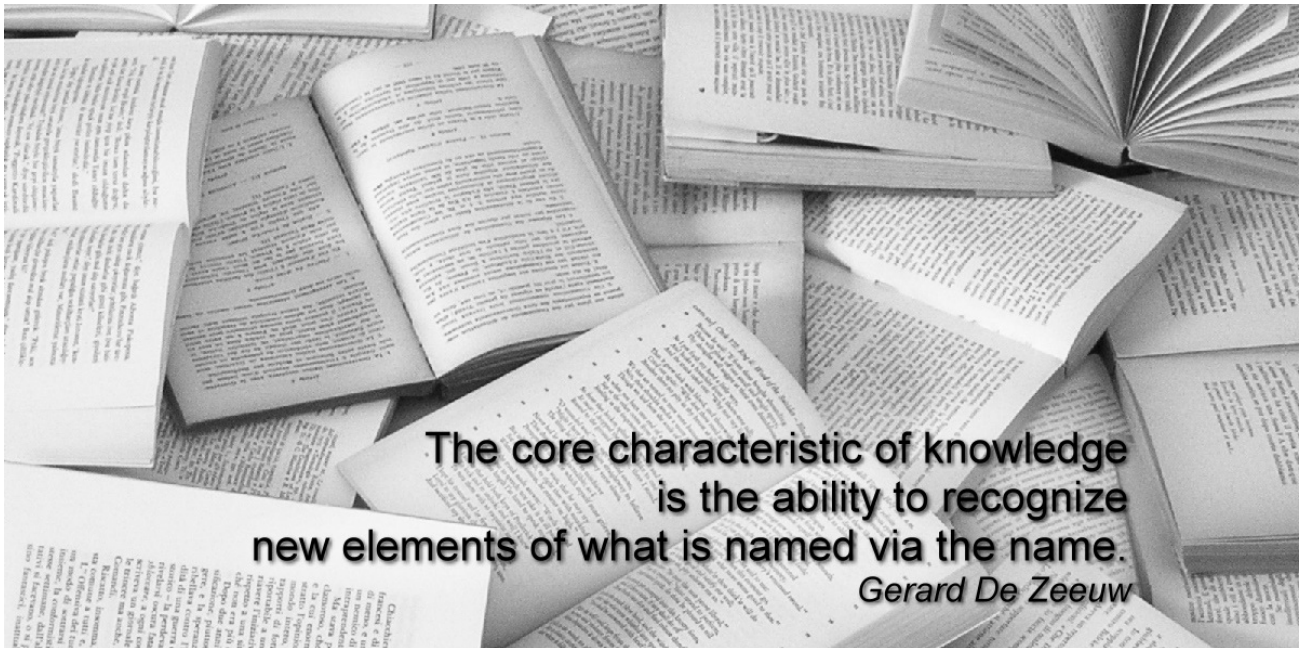
Creating – Studio – Projecting – Research As a Design Activity

In 1999 Ranulph Glanville wrote a wonderful paper 'Researching Design and Designing Research'⁸. He first explores aspects of traditional research and explains that there is a difference between the ideal and how science is practiced. The role of the experimenter (researcher) who plays with all aspects of the experiment until it produces results of a certain type is stressed as crucial. After some elaborations on the role of theory in research, Glanville concludes page 87 that the processes he described "is design and is design at many levels. And, therefore, (scientific) research is a form of design – a specifically restricted form. If this is so, it is inappropriate to require design to be "scientific": for scientific research is a subset (a restricted form) of design, and we do not generally require the set of a subset to act as the sub subset to that subset any more than we require the basement of the building is its attic".

It is well known that designing is not so much related to the past, but is related to **creating** possibilities for the future. It is about **projecting** ideas into the future, exploring possibilities and developing spatial qualities. As such, it creates a holistic view and develops future possibilities.

In architectural and design curricula, the main teaching takes place in the design **studios**. It is here that out of a context, and through processes of exploring different settings and expected outcomes, through associative thinking and through the understanding of special behavior of humans, ideas are envisioned and projected towards the future. The designer in the studio continues to explore and search until the design performs as is desired, expected or required. If sufficient quality of space is not obtained, the project is redesigned, possibly some constraints are changed and a new coherent whole is created. Finally, the designer may reframe all understanding in a theory. The understanding of one design may change the initial position and question and may lead to a repeated design effort improving the previous insight, integrating previous understanding and experience. This circular process of searching and developing is crucial to design.

⁸ Glanville, R. (1999) Researching Design and Designing Research', Design Issues, Vol. 15, Number 2, pp. 80-91.



Creating – Studio – Projecting – From “what is” towards “what can be”

Design professionals defined design in a variety of ways as⁹:

- A goal-directed problem-solving activity;
- Decision-making, in the face of uncertainty, with high penalties for error;
- The performing of a very complicated act of faith;
- The optimum solution to the sum of the true needs of a particular set of circumstances;
- The imaginative jump from present facts to future possibilities;
- A creative activity - it involves bringing into being something new and useful that has not existed previously.

This clearly refers to exploring possibilities and **projecting** future realities. It is this process of mapping complicated conditions and constraints into a vision of future developments that is the dominant activity in **design studio** education. It forms the core of the field. It is about inventing and **creating** truths, it is less about the facts and conditions, but it is about possibilities and change processes in a long term perspective. It is creating new and interesting possibilities for humans and envisioning their future and developments.

For the Brussels Capital Region many Urban Development Plans have been developed. Some have a formal status and have been approved, but others have not overcome the status of a proposal. Nevertheless, these projects incorporate very interesting concepts and knowledge on future developments and possibilities. They are communicated in a way that communicates visions and ideas rather than very detailed descriptions. They, on purpose, leave space for interpretation and flexibility, but they include some very strong positions which cannot be denied and which envision ideas for the future of the city. These alternative urban development plans will probably never been realized, but by creating, developing and designing them, the authors influence how the field is thinking about the urban problems in Brussels. A good example to illustrate this position is eg. the ‘Vision for Brussels, Imaging the Capital of Europe’¹⁰ by The Berlage Instituut (Rotterdam). 16 architects and professionals explored between 2004 and 2007 Brussels and developed a proposal for the future, envisioning our future society. The project was presented to the main political authorities as well as to the wide public. It generated a lot of discussion and ideas for future development. Some will probably be picked up by future designers as the local context is still too complex to accept just one proposal for the Brussels Capital (Brussels consists of 19 smaller communities).

⁹ John Chris Jones (1970) Design Methods: seeds of human futures, John Wiley and Sons, New York and Chichester.

¹⁰ Pier Vittorio Aureli et al. (2007) Brussels – A Manifesto Towards the Capital of Europe, NAI Uitgevers, Berlage Instituut and A+ BOZAR, The Netherlands, ISBN 978-90-5662-552-8.



Truths are to be invented not just discovered.

Communicating – Understanding – Sharing – Peer - review

The nature of designer's or artist's work lies somewhere between the work's singularity and the author's autonomy.

Designing itself, however is a form of **sharing**, it is expressing ideas and concepts in a form of both – the project and/or designed object. So the work, in a way, speaks for itself and for a designer. It is assumed it is singular, i.e. does not duplicate any other work, and is performed within the assumed creative freedom, although sometimes must be “framed” formally (as in architecture – by the complex process of procedures leading to construction).

Autonomy as a mental, but also a cultural condition is indispensable in all creative activities. Yet, at the same time, the work of art cannot be examined, as the object of science, and objectively assessed, because there is no general reference in creative disciplines, comparable to the “objective truth” in science.

Let us make here a risky, but probably quite relevant juxtaposition of basic references: when in science there is one general reference point, which is the truth, proved and stable, then in arts and design we deal with the plane of interpretations, dynamic and “fluid”, which constitutes the shared **understanding(s)**. Is the shared opinion of competent peers a reliable evaluation of the creative work?

These formal or informal bodies of evaluation in creative disciplines represent both strength and weakness. The main challenge in this context is the multitude of the systems of values. It seems to be a problem, but only if one cannot see a chance and important value there. It is indeed the consciousness of the richness of this landscape of thinking systems, which makes the research in creative disciplines motivated and justified. Therefore, the horizon in this landscape is to generate and constitute these creative systems understandable and communicable, probably by following the path of formulating – reflecting – **communicating**.

Design competitions do show this richness as a positive value – not as decisive and validating power, but as the “environments” of intellectual disagreement, where the different arguments can be set up, represented and can compete. *The competition for a new urban development of the Potsdammer Platz in Berlin in 1991 made apparent how dogmatic attitudes disable a serious and deep discussion. Two opposite positions were represented by Hans Stimmann, who chaired the jury and some designers, whose opinion was expressed by Rem Koolhaas in his famous letter. Stimmann, who managed to force a conservative scheme to win the competition, was accused by Koolhaas of organising “a massacre of human intelligence”. Libeskind, whose design was dismissed, concluded with a very relevant and eye-opening statement: “You can't separate structural order from the notion of creating creative things”. Can we then suspect, that the separation of this kind makes a relevant evaluation in creative disciplines impossible?*



Creative work is play.
It is free speculation using materials
of one's chosen form.
Stephen Nachmanovitch

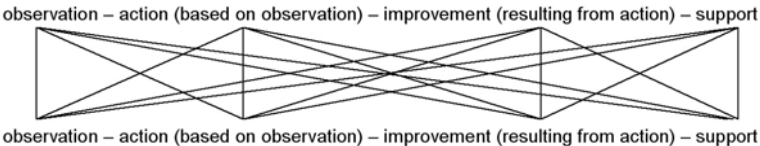
Communicating – Understanding – Sharing – Interaction

Interaction starts, when action begins between at least two actors, or within/between the actor him/herself. It is interesting that both the words “action” and “actor” have the same root. To “act” – seems to be at the center of discussing an issue of interaction. Action, actor, activity, act, active, actual – all concern some dynamic behavior or quality focused on change. To be an actor can be understood as both – to play a role and to become. Let us focus on becoming, as it implies the natural process, which does not pretend to represent some other entity than it is itself. So to act is to take action of becoming, becoming of something or someone. Becoming, then, suggests the process of change, modification, transformation, shaping, development. **Understanding** is not a condition to acting, but it usually appears as a result. According to de Zeeuw (explained by Glanville), action taken by the actor brings improvement. There is no action when there is no improvement. Therefore acting is a form of intervention. *“intervention suggests positive change and active involvement. This does not come about through the inevitability of some internal dynamic. It occurs because actors become involved: it is a willful choice by which actors can create changes in the quality of the conditions on which they base their observations. When we intervene in something, we act. We also change that something” (Glanville, 2001)¹¹.* However action is one of the stages in the sequence of phases, which all together constitute the procedure of constructive evolvement – of both the actor and situation. The sequence is as follows:

observation – action (based on observation) – improvement (resulting from action) – support

Here, high quality observation inspires action, which in turn, by involvement and intervention in what was observed, generates improvement. Improvement, then, changes both what was observed and the actor, who takes action, and those who are helped, by helping them to help themselves. Support, then indispensably involves **communicating**.

Successful interaction brings the synergic effect. Having de Zeeuw’s procedure, we can try to visualize the process of interaction – as a mutual action and **sharing** taken by two actors, at the same time on the same topic. If we can assume that the mutual influence is non-linear, then the procedure of interaction occurs simple, yet multilevel and extremely rich in possible outcomes.



The scheme shows the potential of how interaction - understood as mutual and open influence – highly strengthens the process of constructive development. Surprisingly powerful in its simplicity.

¹¹ Glanville, R. (2001), “Doing the Right Thing: the Problems of... Gerard de Zeeuw, Academic Guerilla”, <http://www.cict.demon.co.uk/Glanville.pdf>



**Art has never been made
while thinking of art.**
Niko Stumpo

Communicating – Understanding – Two-way – Language

Languages (verbal and non-verbal) are terribly important for our **communication** processes. They are usually rooted very deeply in history and our local culture.

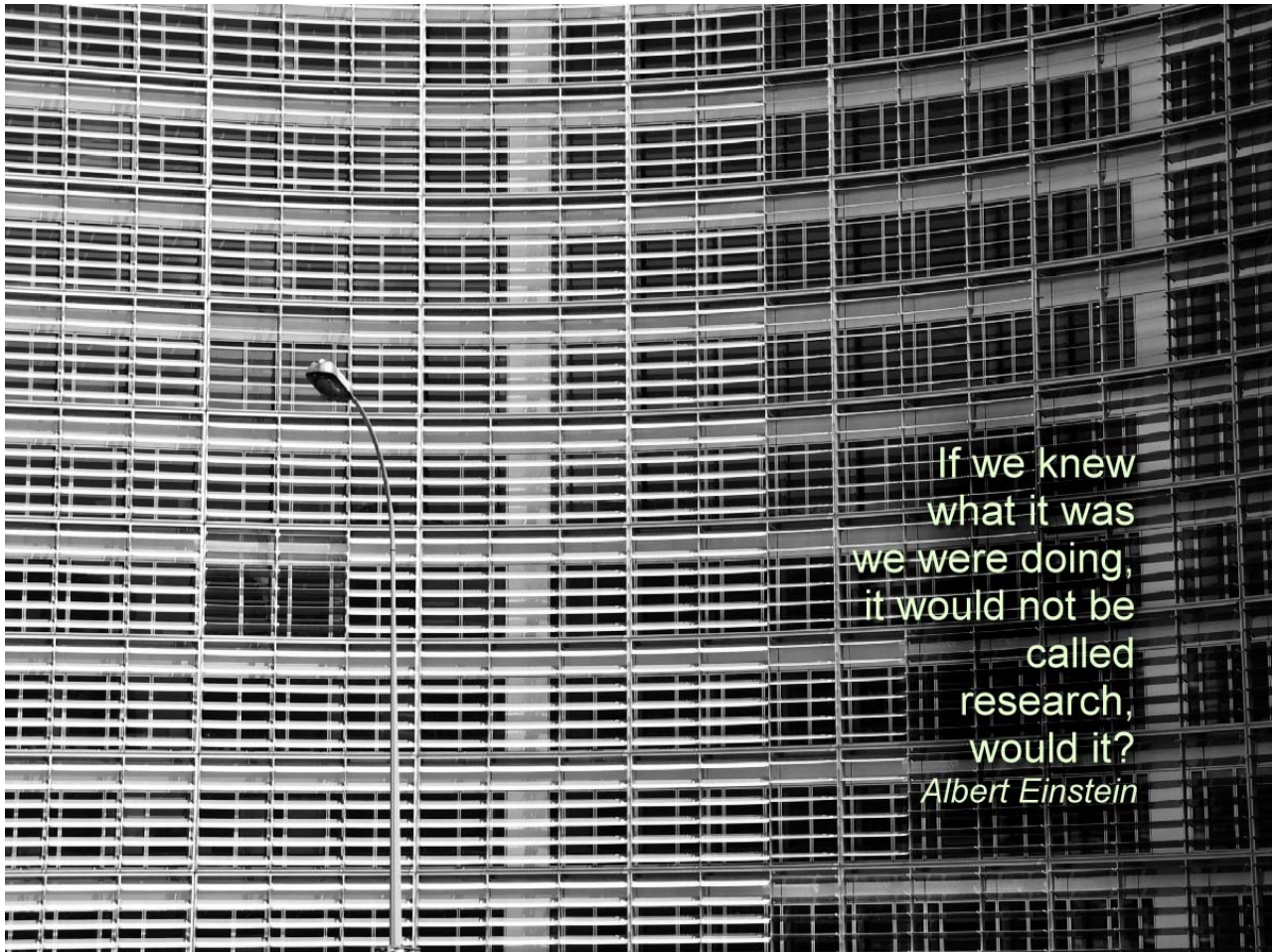
When communicating and trying to understand the messages we capture, it is important to notice that communication is a **two way** process¹². In Information and Communication Theory, a sender transmits a message to a receiver. The receiver not always receives the full message, there probably is some noise on the transmitting channel which makes that part of the message is not fully captured by the receiver. Hence, some redundancy is useful to get the message to the receiver and a language or a common coding is used in order to transmit the message.

In daily life however, it is clear that non-verbal communication and sensuous **understanding** play a very important role. They complement our more formal verbal communication and guaranty a continuous flow of non-verbal information and understanding. These complement the verbal messages and ensure some kind of cross-checking on the quality of the two-way communication. Especially in design communication, the graphical and visual communication is very dominantly present. Plans and sections but also the aesthetics of the project and the material used is of utmost importance. Even acoustics make a space in a wonderful place or a dreadful environment to be.

*The use of the word 'smak' in Ukrainian nicely connects to the word 'smaak' in Dutch/Flemish. It testifies there have been connections between both regions a long time ago. In a similar way, the Chinese characters are deeply rooted in their way of thinking and handling. They influence the reasoning and research language. Sign languages are not mime nor are they a visual rendition of an oral language. They have complex grammars of their own, and can be used to discuss any topic, from the simple and concrete to the lofty and abstract.*¹³

¹² Pask, G. (1975) Conversation Theory, Hutchinson, London.

¹³ http://en.wikipedia.org/wiki/Sign_language [accessed on 26th December 2009].



Communicating – Understanding – Two way – Listening

Communicating processes belong to the most fundamental processes determining both – personal development and a very wide, collective understanding of the world as well as of the development of a given civilization. Not trying to resolve the whole field (which concerns psychology, linguistics, learning, thinking, etc – see also the previous chapter, which mentions Pask's conversation theory), let us try to understand of what makes communication possible in general. ... and be reasonably redundant.

In 1995, a short manifesto concerning understanding (multi-) media in architecture was written (Jakimowicz, Kadysz, 1995). Approaching intuitively the simplest possible pattern of communication, it was stated that:

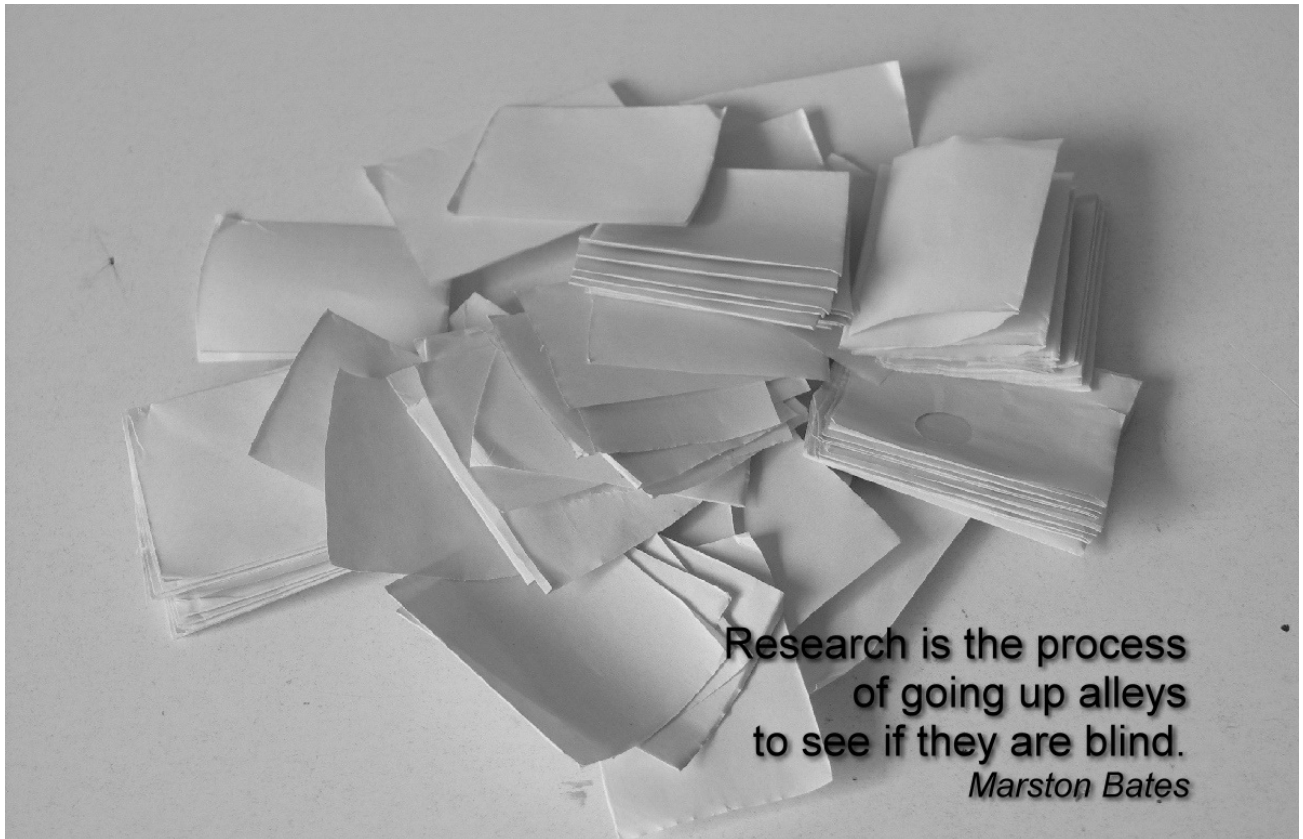
- we can start from the scheme of "transmitting – receiving" as a basic communication pattern;
- the transmitted content does not always occurs the same when it is received;
- the message appears only when it is received – there is NO message without receiving;
- there must be some mediation sphere between the sender and receiver (does this mean that it is not a **two-way** process?);
- the most important mediation takes place on the side of the receiver.

From this point then, we can say that there is no communication without listening – and that it is the process that determines communicating at all. So it is crucial for **understanding**.

*"The present understanding of the medium as a mean of linear transmission, with the primary role of the sender is no longer sufficient, is too simple. The possibility of mutual and multidirectional communication in real time makes the distinction between sender and receiver not so clear. The roles are effacing, but actions, processes are not. Receiver becomes sender, but the process of receiving is always distinct from sending. The importance of the process, the attention must move towards a temporal process of transmitting the message (...) and primary role of receiving."*¹⁴

Listening is the condition of receiving. It constitutes the message. It is active.

¹⁴ Jakimowicz, A., Kadysz, A. (1995) "Architecture of Many Media", in Collajanni, B., ed., Multimedia and Architectural Disciplines, University of Palermo.



Research is the process
of going up alleys
to see if they are blind.
Marston Bates

Communicating – Interpreting - Perspective – Mountains (limit to see more)

Perspective beautifully represents one of the basic secrets of cognition. One has to enlarge the distance between an observer and an object to see more. Consequently, approaching closer limits the field of view, increasing focus. At the same time, having a wider view, does not let us recognize details – so we see less. Opposite – a closer look disables to see the whole. We are so used to this very basic paradox that quite often we cannot “translate” this procedure of coming closer and distancing into other activities. Perhaps it is one of the most powerful procedures in **interpreting** the creative activities into knowing, designing into research. The iteration of widening and narrowing of the view, careful wandering between levels of perception, keeping rigor in changing the “focus” and “lens” – lets us locate the work in the context, at the same time enables to give names to things which are to be defined. Therefore one has to limit him/her-self to see more – but has to be aware of the of depth between foreground and background, and always suspect that something important lies behind the scene. The process of knowing, or better say – of getting to know, is infinite. There always is and will be something to know, something to be discovered or to be invented. Things we think we know well can always let us take the journey to the unknown. So both – creative and critical activities, through the processes of **communicating** – constant conversation with the world, sensitive listening, the use of languages, zooming, framing, defining – are deeply complementary in the cognition of the (non-) objective world.

About ten years ago, I developed a simple idea of abstract modeling – an intuitive use of 3D modeling software to make abstract architectural objects or spaces in the digital space. This let me explore the unstated and hidden potential of the digital medium and use it in a way which was not intended by the software developer and get unexpected design insights by narrowing the perspective of the use. I had to limit my perception from 3- to 2-dimensional representation. “Narrowing” was the only possible way to get “inside” :

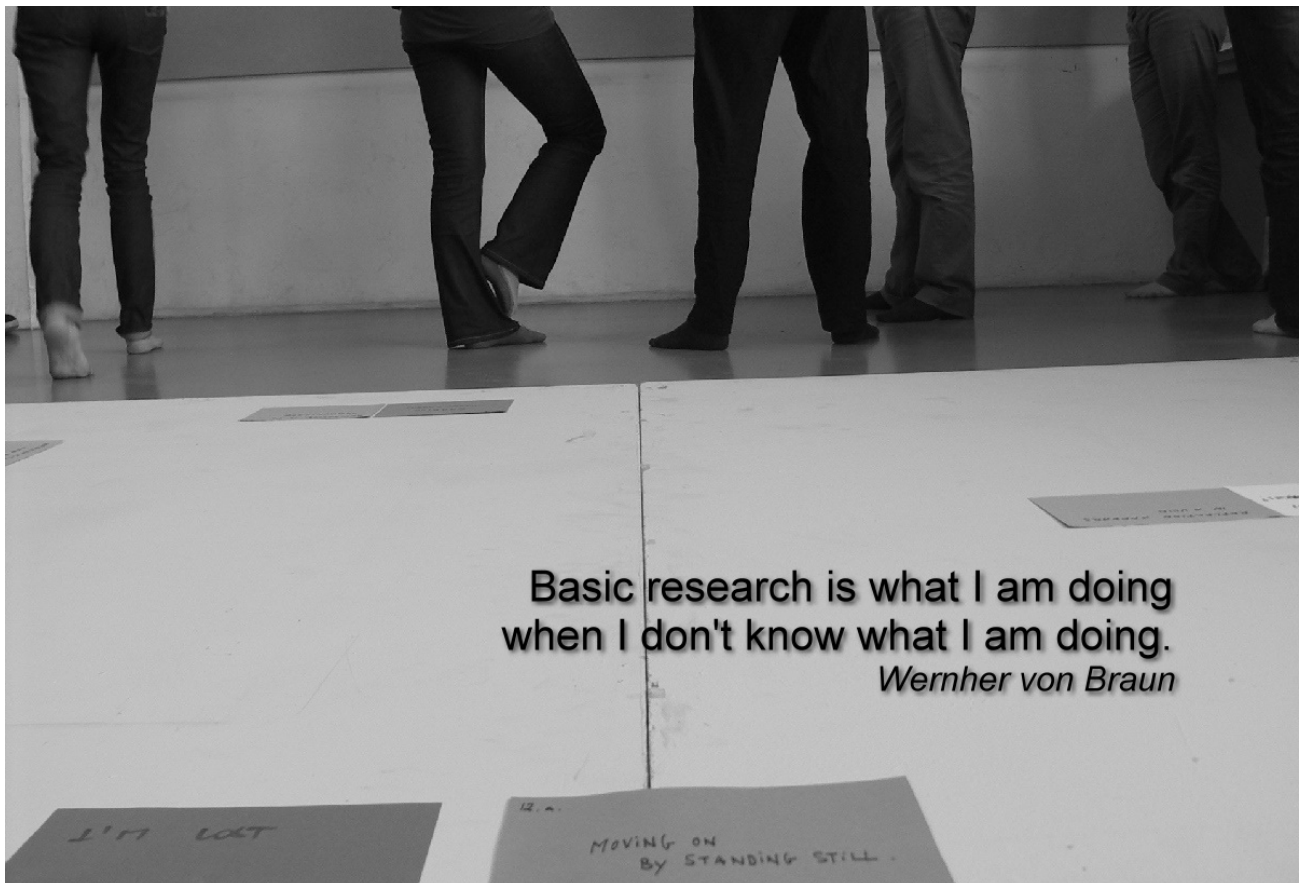
“Flat spaces is a concept derived from the paradox, that some spaces, when generated, have to become flat, transmitted into 2d plane in order to be able to fully appreciate its 3rd dimension. The paradox is even deeper - as it can be really experienced with the simplest devices: dark void, white light and pure plane. In search for ideal environment or media, only one set occurred appropriate. Any dark room.

Scanner

Sheet of paper - this kind of depth - this kind of spatial simplicity - this kind of spatial complexity - this kind of void-substance experience - this kind of light arrays - this kind of purity

--- could never be achieved with more dimensions, but 2, --- could never be achieved by richer media--- could never be seen otherwise”¹⁵ Zooming. Framing. Narrowing. Widening.

¹⁵ <http://www.ex-space.org/jakimowicz/flat-spaces-mixed-media,43.html>



Basic research is what I am doing
when I don't know what I am doing.
Wernher von Braun

Communicating – Interpreting - Perspective – Being Inside – Being Outside

“We cannot both experience and think that we experience”¹⁶. Art and creative activities are about **interpreting** and experiencing. Research is about understanding and knowing. Can experiencing be somehow translated into knowing? Or can they be incorporated? Is it a task for artist or researcher? Or is it an issue for them of becoming a hybrid “creator – knower” to be able to deal with this problem.

Traditional research, with its aim of knowing the objective truth, very clearly states the position of the researcher. He is the observer, armed with observation tools and rigorous methods to analyze and examine the results of observation. As an investigator of truth, he has to be outside, cannot be involved in the observed object. This paradigm brought us a great developments in sciences, letting us know the world better and better. Is it, however, the only and absolute pattern? Science itself brought this position to the limit. Quantum physics proves that at a certain level the process of observation cannot be separated from the natural and deep involvement. We cannot state the basic nature of matter, because the observation tools are of the quantum nature themselves¹⁷.

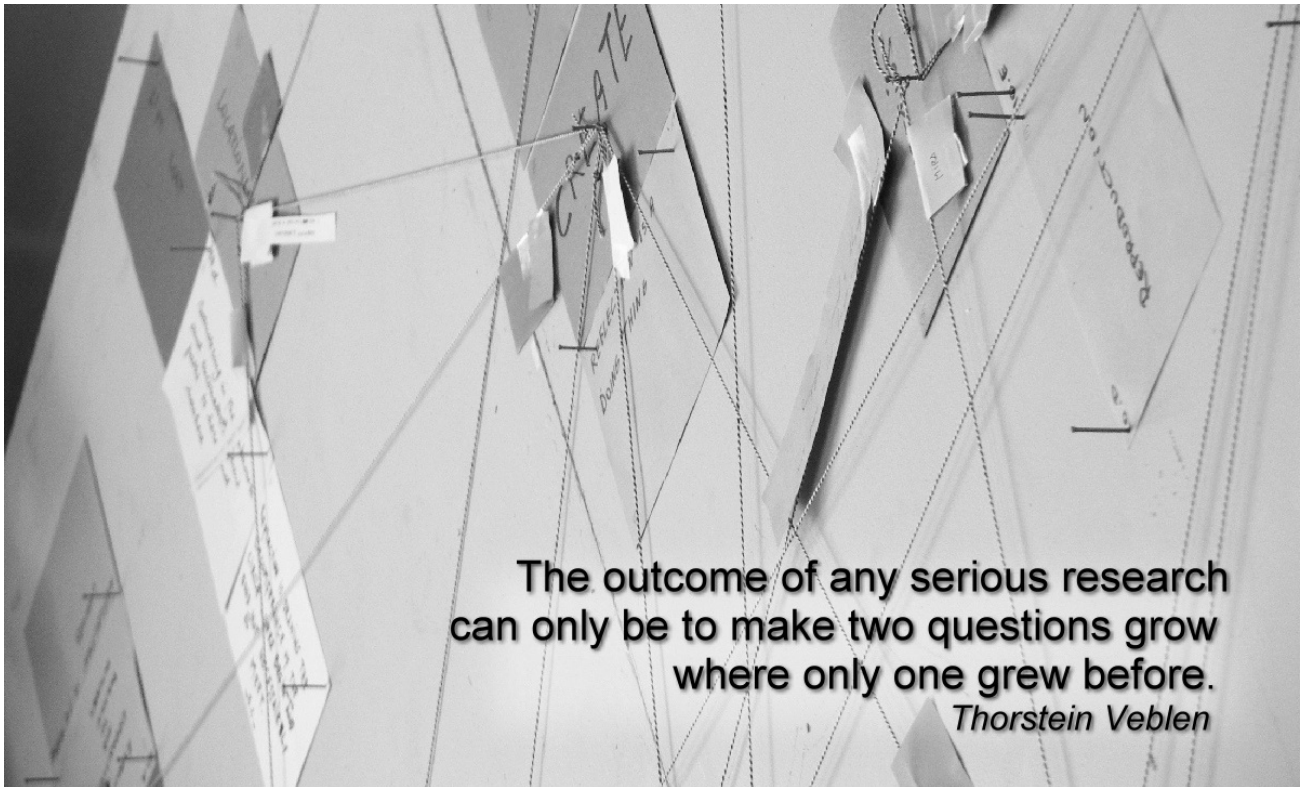
Can we, then, think of defining contexts? ... interconnected, but at the same time autonomous “clouds” of both experience and knowing, where tacit knowledge complements the explicit. By defining the right or even the contradictory **perspectives**, by zooming, framing, careful definition of connections between objects and processes, the creation of new worlds shall become equivalent to the process of getting to know things, by exploration of possibilities.

*In 2002, at the Far Eastern International Digital Architecture Design (FEIDAD), animation competition was won by the short animated movie designed and made by a student. It perfectly shows, how contexts can be contained within wider ones. How each of them constitutes an autonomous world, and how they can be naturally connected or separated. However, one has to experience it in order to understand, and there is no way for **communicating** it without being involved¹⁸.*

¹⁶ Tschumi, B., (1975) 'Architectural Paradox: the Pyramid and the Labirynth', Studio International, October 1975.

¹⁷ Einstein, A., [1950] (1998), “Relativity Theory & Other Essays”, MJF Books.

¹⁸ http://www.youtube.com/watch?v=B_5HeNGkNpU



Communicating – Interpreting - Meaning – Not knowing

Henk Borgdorff¹⁹ states “ (...) For one thing, much artistic research is conducted not with the aim of producing knowledge, but in order to enhance what could be called the artistic universe; as we know, this involves producing new images, narratives, sounds or experiences, and not primarily the production of formal knowledge or validated insights. Although knowledge and understanding may well emerge as byproducts of artistic projects, this is not usually intended from the beginning”.

The above citation, indicates that different and many types of knowing, **meaning**, methods and understanding are present in different domains. Poetics and art require a different way of knowing and **interpreting** of results and outcomes. They require a deep understanding of the field and imply the reader can capture a specific way of **communicating**.

On the other hand, also the way of developing research and knowledge in poetics and art seems to be very different. Instead of analytical processes and the collection of data, the processes are more steered through processes of holistic attitudes, associative thinking and creative processes. It is well known that a blank sheet of paper (or not-knowing and blocking all explicit knowledge) can be very stimulating during designing. The development process, the process of making then play the crucial role in the developments of ideas and the process of searching for the appropriate solution.

During the 'By Design – For Design' session of RTS, objects sometimes communicate a sharper vision than the accompanying text. The object transcends the usual understanding and knowledge and nicely complements written ideas and verbal discussions.

Many years ago, I was working on a mathematical problem. I was completely stuck and did not find any sensible solution. Disappointed I went to watch television and turned off any knowing. After only a couple of minutes watching , the solution suddenly came to my mind. It seems that disconnecting from the knowledge and mental process was the key to develop the solution. As being in a state without knowing and thinking and active knowledge freed the mind to develop the solution.

¹⁹ Borgdorff, H. (2009) Artistic Research within the Fields of Science, in Sensuous Knowledge No. 6, Kunsthøgskolen I Bergen, p. 7.