

Image

Knowledge

Gestaltung

Newsletter

May 2015

#6

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## Editorial



Sebastian Köthe, a scholarship holder at *Image Knowledge Gestaltung*, presented his research project in the Zoology Theatre on the subject of reclassifying a supermarket's range according to water footprint. (Photo: Jens Kirstein| BWG 2014)

Dear Readers,

One milestone in the ongoing development of the *Interdisciplinary Laboratory* is the fitting out of the so-called 'Experimental Zone', on the fourth floor of Sophienstrasse 22a. Over the next 12 months, 30 scientists attached to the *Cluster* will be working in varying layouts known as *settings*. The aim is to design, try out, observe and analyse interdisciplinary cooperation as performed here. To understand more about this clearly demarcated area and what new types of physical, virtual, organisational and social spaces the participating researchers are getting themselves into, see page 8 under *LunchTalks*.

The work of Marcel Pasternak and Bruno Everling shows that you can found your own company as a newly liberated Master's graduate and also see how the products you have developed serve highly practical functions. The graduates of the Weissensee Academy of Art, Berlin have designed alternative materials as building blocks and interaction tools for sketching, processing and managing typographical material and images in both digital and analogue contexts. On page 19, you can discover what end users think of these innovations.

From the summer semester, Patricia Ribault takes up a position as junior professor in »History and Theory of Gestaltung« at the Excellence Cluster *Image Knowledge*

and at the Department of Cultural History and Theory of the Humboldt-Universität zu Berlin. Read the interview she gave on starting the job on pages 36-37.

Plans, diagrams, sketches, drafts, photographs and digital images; paintings and prints, medical imaging and 3D illustrations, models, films, typographical or sound pictures – as interdisciplinary researchers, we come across all manner of picturisation. The research staff of *Interdisciplinary Laboratory* addressed *The generation of images in the humanities and sciences* in a symposium held in the spring. If you are wondering what makes a study of images and their generation in the context of the *pictorial* or *iconic turn* and the attendant »extended image concept« worthwhile, read their report – beginning on page 48.

We hope you'll be bedazzled by our *Newsletter#6*,  
Best regards,



*Claudia Lamas Cornejo*  
Head of Public Relations & Fund Raising

## Current news

### Master's degree in *Open Design*

#### Hello. Nice to meet you!

The international, non-consecutive, interdisciplinary Master's degree program *Open Design / Diseño Abierto para la Innovación* is a double-degree program organized by the Humboldt-Universität zu Berlin (HU) and the Universidad de Buenos Aires (UBA). The program is organized in four semesters, the first two semesters take place in Buenos Aires at the UBA and the third semester in Berlin at the HU. For the fourth semester, students may choose to work on their Master's thesis in either Buenos Aires or Berlin.

The Master's degree program focuses on the »design turn« in interdisciplinary research. Graduates will acquire skills in a broad spectrum of empirical methodologies that encompass cultural studies and humanities through analysis and historicising, scientific experimentalisation from the natural sciences, and creative synthesis from the design disciplines. Students will be given the opportunity to reflect on complex problems that require input from multiple disciplines. Successful graduates will be awarded a Double Degree by the two universities.

The program prepares students in specific intercultural skills, by examining the differences between disciplines and cultures as well as it reflects on intercultural experience from historical and theoretical perspectives. Through the exchange program between Argentina and Germany, students learn about different cultural practices and acquire local knowledge as productive interculturality.

The main language of the Master's degree program is English. Basic knowledge of Spanish is also required, nevertheless students will have the opportunity to acquire or improve their knowledge of Spanish or German during their studies through language courses.

#### Career prospects

The program prepares students in specific social and intercultural competences, including critical reflection in collaboration with an interdisciplinary team; language skills (English, German, Spanish) and experience in communication between internationally differentiated cultures of knowledge.

- Intercultural and interdisciplinary communication and mediation
- Interdisciplinary problemsolving, development and innovative research
- Conceptual work and project development for the industrial, scientific and social sectors
- Research and research facilitation

#### To be more specific ...

The first three semesters of the Master's degree program each focus on a semester theme which addresses current social, economic and scientific processes. This semester theme is approached through three key theme seminars taking place over the first three semesters.

The core of each of the first three semesters is the laboratory module, which involves a laboratory project and exercise. These complement the seminars and allow students to develop project-oriented research on the corresponding semester theme.

During the fourth semester, students develop and realize their Master's thesis, applying the acquired interdisciplinary skills to develop and solve, theoretically and methodically, a chosen thesis reflecting current scientific research.

**Key Theme I: Spatial Structures**

Students acquire expertise in historical and theoretical description and application of spatial structures within different sciences, thus synthesizing this knowledge into new spatial structures in different disciplines such as physics and architecture, materials research and design.

**Key Theme II: Media Technologies**

Students acquire expertise in the history and theory of media technologies, including the transfer, processing and conservation of data and objects. Students learn about media technologies from a historical perspective and apply their knowledge productively in processes of Gestaltung.

**Key Theme III: Design Strategies**

Students acquire expertise in diverse design strategies within the different disciplines analysing these as comparative processes of Gestaltung. Furthermore, students realize concrete projects in a special nexus of Gestaltung and interdisciplinary knowledge.

**1<sup>st</sup> Semester****Elements**

Based on their acquired knowledge of historical, theoretical and material properties as basic elements of Gestaltung in the different disciplines, students interpret spatial structures and analyse their importance as interdisciplinary distributors of knowledge.

**Laboratory Elements**

On the basis of the foundation elements of Gestaltung and research processes (draft, concept, model, etc.), students gain interdisciplinary project skills and extensive experience of software programs.

**Elective I**

In this module, students study and gain insight into the perspectives and research methods of other disciplines.

**Language Course I**

Students acquire language skills in English, Spanish, and/or German. The course level is defined by the student's previous knowledge of the language.

**2<sup>nd</sup> Semester****Experiments**

Students acquire basic knowledge of experimentation and the development of experimental systems in the distinct disciplines. They study the use of basic media

technologies and analyse the structure of scientific and human experimental systems as well as those concerning Gestaltung.

**Laboratory Experiments**

On the basis of the foundation elements of experimentation and the structure of experimental systems, students master interdisciplinary methods and acquire extensive user experience in media technology, design strategy and the methods, structure and evaluation of experiments.

**Elective II**

In this module students examine other fields of study in order to understand the perspectives and research methods of other disciplines.

**Language Course II**

Students acquire language skills in English, Spanish, and/or German. The course level is defined by the student's previous knowledge of the language.

**3<sup>rd</sup> Semester****Projects**

Students analyse specific interdisciplinary design processes that integrate analytical–historical and experimental procedures in a complex manner. They apply design strategies for the development of innovative projects, thus bringing together the various elements of Gestaltung and empirical methods.

**Laboratory Projects**

The module offers the students course–specific, practical, and subject-oriented research and project work focused on a semester theme. Students solve given problems in interdisciplinary groups, developing project management skills.

**Intercultural and Interdisciplinary Competence**

Students examine the differences between disciplines and cultures and reflect on intercultural experience from historical and theoretical perspectives. Students acquire knowledge on different cultural practices as productive inter-culturality.

**4<sup>th</sup> Semester**

During the fourth semester students work on their Master's thesis either in Buenos Aires or Berlin.

## Partner Institutions

The master's degree program Open Design/Diseño Abierto para la Innovación is organized by the Humboldt-Universität zu Berlin (HU) and the Universidad de Buenos Aires (UBA).

### UBA

Facultad de Arquitectura, Diseño y Urbanismo  
(School of Architecture, Design and Urbanism)  
Facultad de Ciencias Exactas y Naturales  
(School of Natural Sciences)  
Facultad de Ingeniería (School of Engineering)

### HU

Kultur-, Sozial- und Bildungswissenschaftliche Fakultät  
(Faculty of Humanity and Social Sciences);  
Cluster of Excellence »Image Knowledge Gestaltung«;  
Helmholtz-Zentrum für Kulturtechnik.

## Contact

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Valia Carvalho  
International Affairs Assistant

## Fees and requirements

Tuition fees are 1,100 euro per Semester.

Applicants must have completed a university degree earned over no less than four years of study, with an attendance of no less than 2,600 sixty-minute attendance hours. If the applicant has a Bachelor's Degree with less than four years in duration, he/she must submit proof of at least one year's work and/or research experience in their field of study.



Bild

Wissen

Gestaltung

Ein Interdisziplinäres Labor

# SIGNAL STADT

**Eine interdisziplinäre Tagung zu Kulturgeschichte  
& Architekturpraxis des Auditiven**

Freitag 22. + Samstag 23. Mai 2015  
Jacob-und-Wilhelm-Grimm-Zentrum Berlin  
+ Architekturforum AEDES am Pfefferberg

[www.signalstadt.de](http://www.signalstadt.de)

## Seminar *In the Anthropocene – Towards a Neganthropology*

In the final pages of *Tristes tropiques*, Claude Lévi-Strauss in the middle of the 20th century claimed that it would be better for us to speak of entropology, rather than anthropology. Sixty years after this statement, and since the year 2000, we refer now to a new geological period that we call the Anthropocene, about which I shall try to show that what must be thought is how to prepare our escape, into what I propose calling the Neganthropocene. This means, obviously enough, revisiting questions of entropy, negentropy (or negative entropy), open systems, dissipative structures, and so on, and this seminar will introduce, describe and formulate the concepts of general organology, pharmacology and digital studies in order to show:

- that the neganthropos opens the question of another apprehension of entropic and negentropic processes, different from the manner in which this has been

undertaken by thinkers from Carnot to Schrödinger and beyond;

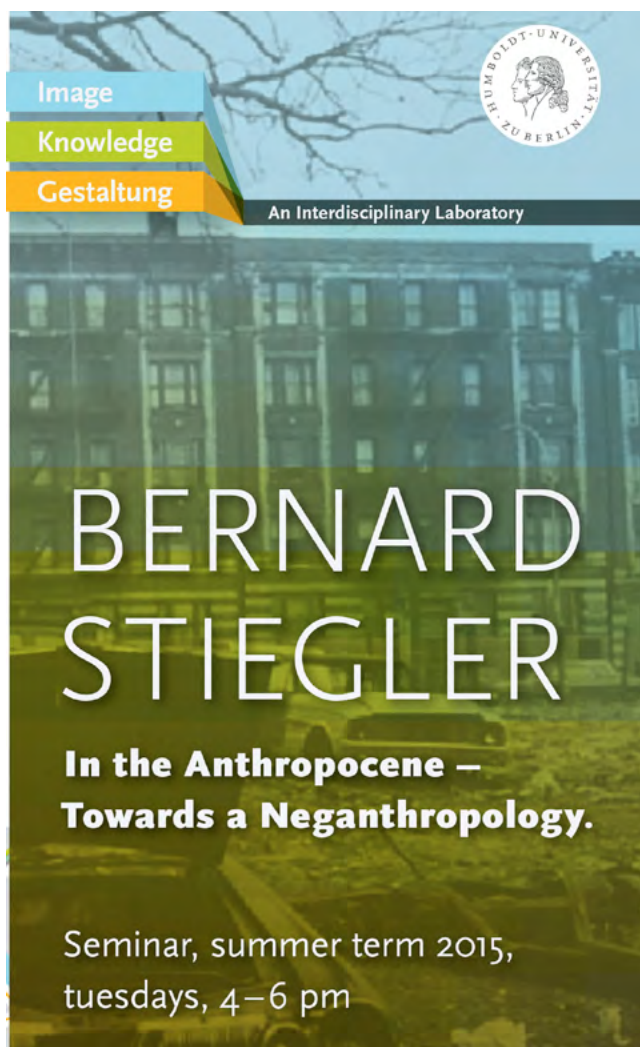
- that the digital age opens the perspective of another economy, one based on negentropy as the new »value of values«, capable of overcoming the coupled pair, use value/exchange value, and based on a practice of automatisisation in order to produce desautomatisation

Hermann von Helmholtz Centre for the Study of Cultural Competencies

Humboldt-Universität zu Berlin

Unter den Linden 6, D 10099 Berlin

Room 3031



**April 28** Introduction into general organology first part  
Introduction by Wolfgang Schäffner

**May 5** Introduction into general organology second part

**May 12** About Lévi-Strauss and his «entropology»

**May 19** Escaping the Anthropocene – towards an economy of negentropy

**May 26** Was ist denken in the Anthropocene ?

**June 9** From anthropology to neguanthropology  
(about Maurice Godeliers's *Les métamorphoses de la parenté*)

**June 16** Knowledge, negentropy and neguanthropology

**June 23** Knowledge, categorisation and organology

**June 30** Contributive categorisation and digital organology of knowledge

**July 7** Digital studies, phenomenology and general organology. Designing the Neganthropocene

## The LunchTalk in the Interdisciplinary Laboratory



The LunchTalk in the Interdisciplinary Laboratory is every Tuesday from 12:30 to 14.00 hours. Non-members may attend on request. (Photo: Claudia Lamas Cornejo | BWG 2014)

*LunchTalk is a permanent fixture in the week of the Interdisciplinary Laboratory. On Tuesdays from 12.30 to 14.00, members of the Excellence Cluster or invited speakers give a talk on relevant topics. This is followed by a discussion in order to identify points of reference, interfaces and differences within the various personal and group projects of the Excellence Cluster. The LunchTalk provides members with an opportunity to exchange ideas informally and discuss issues relative to their research in a protected internal space. They can air theses and findings that are not yet 100% ready for publication and discuss them with researchers in different disciplines. This is why the LunchTalk is not, as a general rule, open to non-members of the Excellence Cluster. If you are interested, please send an enquiry to [bwg.publicrelations@hu-berlin.de](mailto:bwg.publicrelations@hu-berlin.de). Suggestions for contributions by external speakers can also be sent to this address.*



Claudia Lamas Cornejo  
Head of Public Relations & Fund Raising

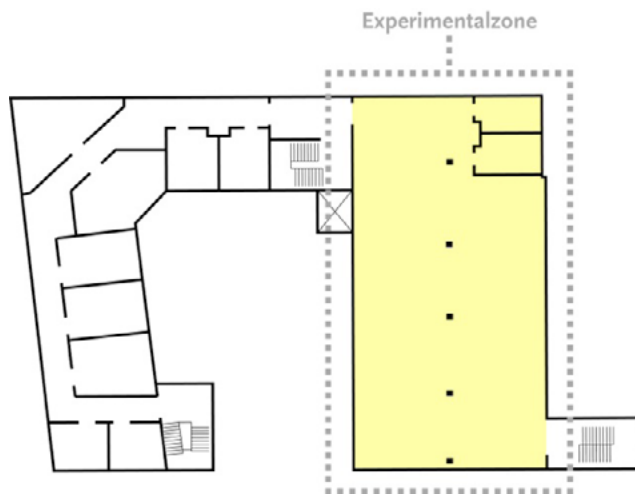


## LunchTalk Reports



### LunchTalk The Experimental Zone

20.01.



Location of the Experimental Zone on the fourth floor  
(Graphic: Henrike Rabe)

#### 1. Introduction

The base project »Architectures of Knowledge« observes, designs and analyses virtual and physical architectures of knowledge in an interactive process. The results of research at the Excellence Cluster are thereby programmatically applied to the *Interdisciplinary Laboratory* itself. The investigation, rethinking and re-applying of research as processes of *Gestaltung* is indeed the essence of our *Interdisciplinary Laboratory*. Such a laboratory is both an adaptive structure and an enormous challenge for the participating disciplines. Now we can see a dream coming true; together, we have long envisioned the interrelation of architecture, *Gestaltung*, information technology and »architectures of knowledge«.

For a long time, the question of spatial situations for the development and cohesion of the *Interdisciplinary Laboratory* went unanswered; where exactly would we be able to pursue our research questions? After we learned that the Excellence Cluster would also have the use of the rooms on the fourth floor in Sophienstrasse 22a, the base project »Architectures of Knowledge« worked on a proposal to superimpose a special *Experimental Zone* over a surface of approximately 335 m<sup>2</sup> in the right wing of the fourth floor. In this demarcated and suitably labelled area, experimental knowledge architectures for interdisciplinary

cooperation will be tried out, monitored and investigated. The lead time culminating on 1 March had a history of its own. From the beginnings of the *Interdisciplinary Laboratory* two years ago, there evolved an intensive period dedicated to precise planning, lengthy deliberations and the structural configuration of data protection. We have now arrived at a hitherto unheard-of standard which represents a completely unique feature.

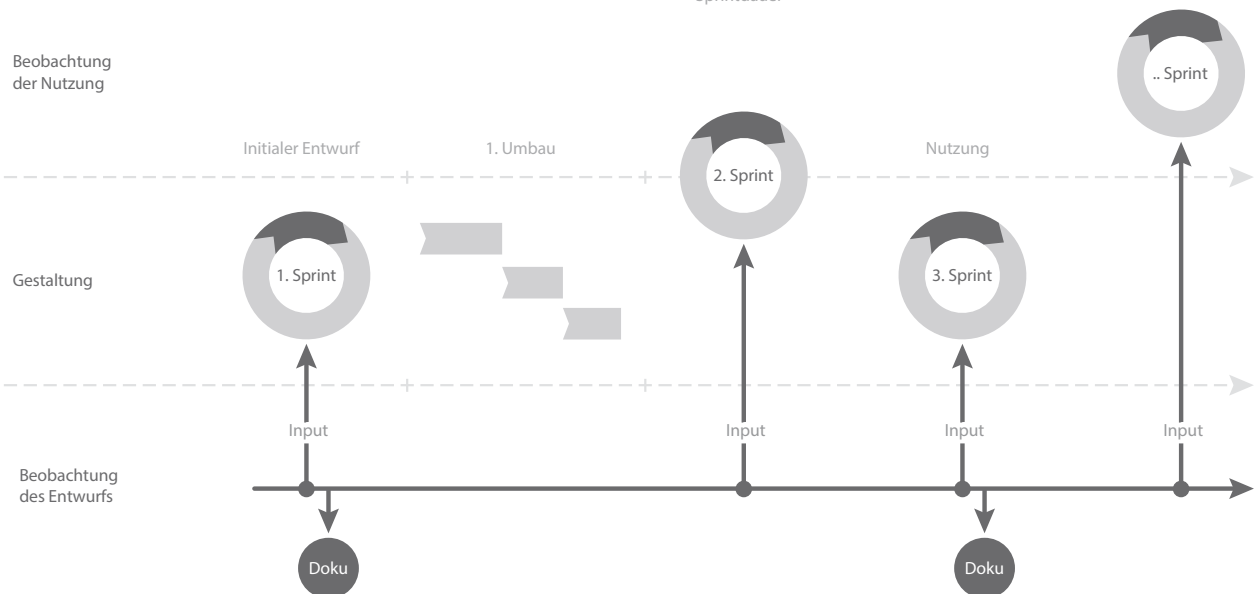
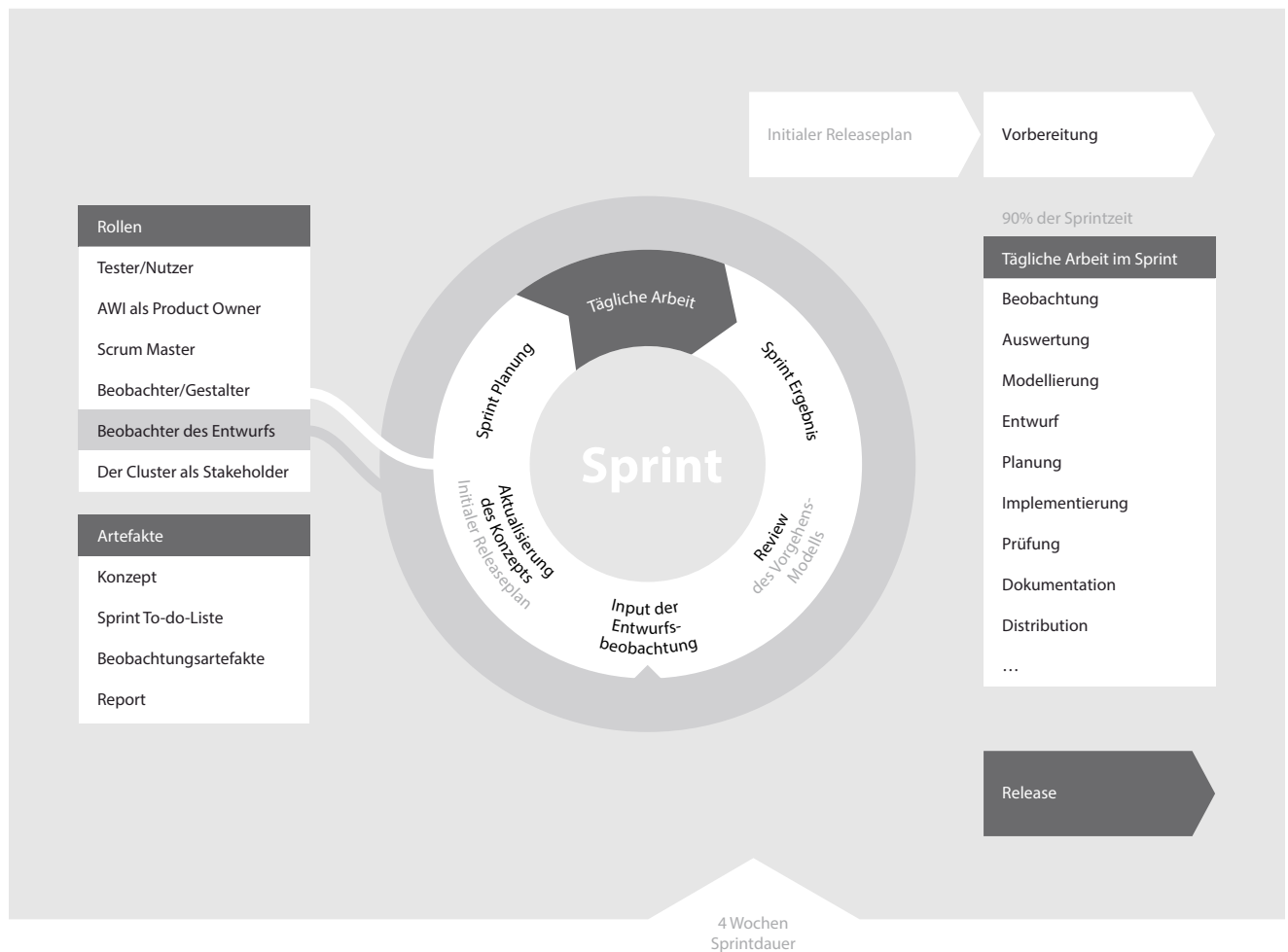
The aim of the *Experimental Zone* is through interaction to design, test, observe and analyse the spaces of interdisciplinary cooperation. In this discrete space, members of the Excellence Cluster will develop new concepts for physical, virtual, organisational and social spaces and together try them out. Experimentation will allow them to explore even counter-intuitive space configurations and thus add to the current status of information on knowledge architectures.

The *Experimental Zone* offers a reconfigurable work area for roughly 30 work stations, which all members of the Excellence Cluster can use freely. In cooperation with other base projects, various experimental formations can be developed and investigated, then put to practical use for a likely period of one month, before giving way to new schemes.

We envisage the *Experimental Zone* as an invitation to everyone to take part in the experiment.

#### 2. Process

At the start of the planning process, there were a few obstacles to be overcome. Both the drawing board and implementation stages of the *Experimental Zone* as well as the ensuing experimental scenarios had to be planned from the point of view of production. At first, aspects relating to planning content, the division of tasks and responsibilities and scheduling were however far from clear. There was an evident problem in that different disciplines operate according to their own familiar methods, which they might be attached to.



Through interdisciplinary cooperation, a proprietary method of working, following agile project models, for the hard-to-predict drawing board and implementation stages as well as for the subsequent experimental scenarios. The entire process of planning the Zone was witnessed by external observers (from sociology, ethnology and psychology fields). (Graphic: Friedrich Schmidgall)

For this reason, we examined a variety of MoWs (methods of working). Conventional planning processes, such as the waterfall model, could not be applied to the *Experimental Zone*.

Finally, interdisciplinary efforts resulted in a proprietary MoW which imitated agile project methods and suited the special multi-disciplinary scientific context of the *Experimental Zone*. One feature of this MoW that distinguishes it from traditional procedural models is that it operates with fixed and invariable intervals of time which govern the tasks to be performed; not the other way round.

The role of the MoW is divided into three elements: observation of use, Gestaltung and observation of design.

The observation role covers all technical and non-technical as well as general and time-limited observation activities in the *Experimental Zone*. The arrangement of study instruments and settings is part of the Gestaltung role, which oversees all further changes to the digital and physical space. Observation and Gestaltung roles are further linked in that observation mostly precedes Gestaltung, on which it is also based.

The entire process of planning the *Experimental Zone* is witnessed by external observers (from sociology, ethnology and psychology fields). The observers are present at all sessions and document them. Because of the new MoW, they are able to draw a first detailed picture of our drafting process.

Together, the team carry out so-called *sprints*. A *sprint* is a phase of work of specific duration which produces a closed function unit. A *sprint* in the *Experimental Zone* lasts four weeks. The aim of the sprint is to ensure completion of the planning and realisation of an experimental setting and, where relevant, its evaluation. In principle, *sprint times* may not be extended, which is one of the peculiarities of this model. This assures both concrete progress and the focus on a central aspect.

Irrespective of the theme, the team meets on at least two mornings per week for 15-minute status updates, thereby ensuring that the *aim of the sprint* is always in focus. To round off a *sprint*, there is a central meeting which assesses whether aims were in fact achieved and what might be improved. Aims are generally laid down just before a sprint, and may not be changed during the course of the *sprint*. The method was tried out in the planning phase before conversion of the rooms. The MoW thus incorporates dynamism, reactivity and structure together in a single model. To date, the **XZteam** have found it to be highly productive and well-suited and are keen to continue using it.

## Raumnutzung



use of space (Graphic: Friedrich Schmidgall)

## Netzwerke



Observation of interdisciplinary networks (Graphic: Friedrich Schmidgall)

### 3. Observation

Methods of observation applied in the *Experimental Zone* include those that are known to work well and deliver important results. Alongside questionnaires, modelling and ongoing documentation, new instruments and methods of observation are being developed for the *Experimental Zone*. Possible

The usage and suitability of the physical aspects of the *Experimental Zone* will be observed through measurement of noise levels and lighting as well as notation of user positions. Furthermore, the *Experimental Zone* should be understood as comprising a digital space. Observation must therefore also take place in the digital sphere. For this purpose, *diary software* has been developed. It will record individual software use as well as other things. Generative visualisation of this recording will provide users with a chance to study their own behavioural patterns. Users may also place their usage statistics at the disposal of the *Experimental Zone* team for further study. Together with information on positions, this data will place further observations in a more detailed context.

Besides the basic study of spatial use, research activity in the *Experimental Zone* is a central object of investigation. By categorising recorded software use in the everyday research sphere, a study can be made of such things as the relationship of production, reception and communication in specific spatial configurations. A personalised profile on the planned internal BWG website will enable insight into the development of the thematic foci and expert opinions which make up the Excellence Cluster. All members of the Excellence Cluster can upload and update bullet points of their work here. Linking such profile data can clarify existing networks within the Excellence Cluster and visualisations, for example, may also indicate the potential for cooperation and convergence.

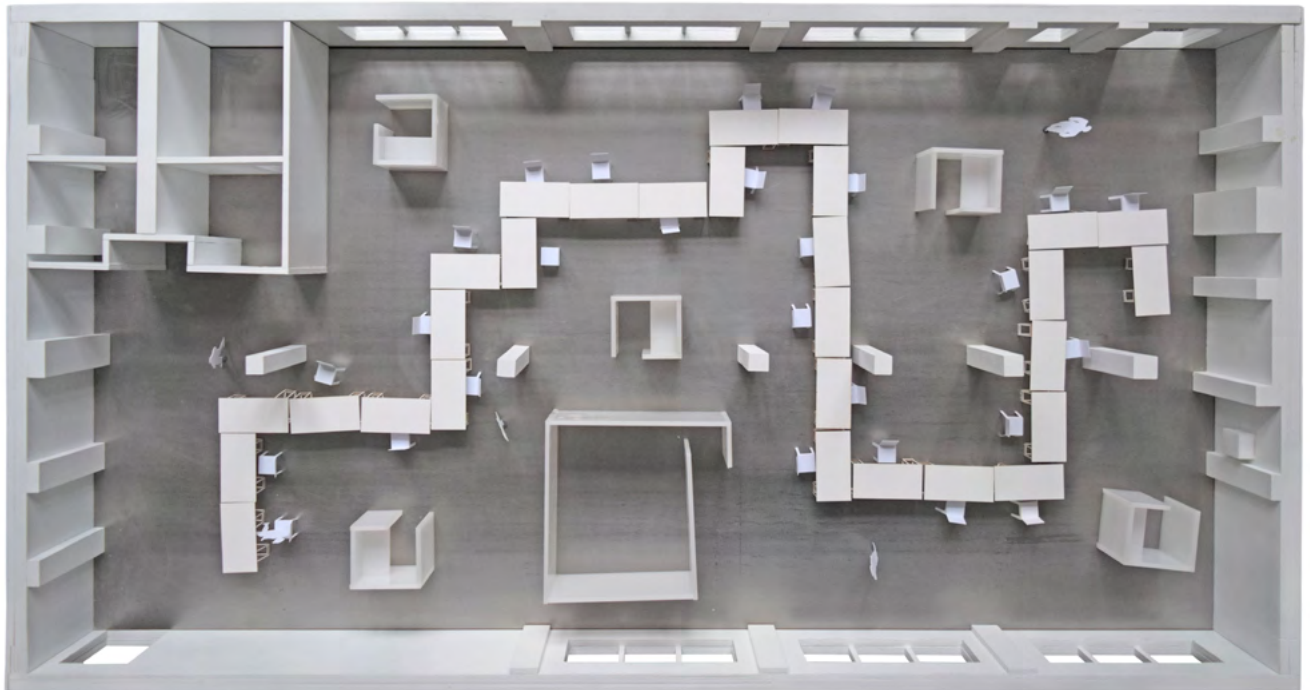
It will be particularly interesting if all such data can be assembled and used to address complex questions. For instance, a linking of position and usage data with personal profiles could show the make-up of an assembled group (even spontaneously) in terms of academic discipline, theme and expertise. Connections between the combination of disciplines, use of methods and transfer of knowledge can thus be investigated, furthering our understanding of interdisciplinary research.

#### 4. »Experimental settings«

The *Experimental Zone* offers work stations for 30 researchers from a range of disciplines. For and with them, spatial configurations will be drawn up, tried out and observed in action, in order to gain understanding of the correlation between space and the processes of interdisciplinary knowledge. The so-called »experimental settings« may take a variety of forms; firstly physical and secondly virtual configurations, thirdly »instructions for use« and fourthly interactive experimental constructions. Only some of the experimental settings will imply physical alteration to the spaces – work stations in the *Experimental Zone* are thus also personal work areas, which will see only sporadic motion.

The opening (1 March 2015) saw the *Experimental Zone* in its basic state: a single space without partitions. This will be the »default setting« for all future departures. There will be a desk system and chair for each Excellence Cluster participant, but the placing of this dedicated workstation is their choice. The modular table is extremely flexible and can for instance be turned into shelving.

In one month, actual experimental settings will begin. Starting at the beginning of the month, we envision that these will run for the period of an entire calendar month. Below are outlined a few examples of experimental settings. The following example of a physical configuration asks: how do room sizes and interdisciplinary research relate to each other? Several experimental settings of varying sizes, from the large open space (default setting) through medium to small spaces and in addition, several spatial delimitations within a single experimental setting. The effects of using a physical or virtual space will be studied through people tracking, questionnaires and the diary. An example of a virtual configuration, on the other hand, asks: how can thematic links be revealed and highlighted through virtual tools? This experimental setting will draw the attention of participants to the intersections of themes of study, for example via the profile on the internal website.



Experimental setting, with an instruction to »Position your desk so that it touches the desk of another participant.« (Photos: Friedrich Schmidgall, Henrike Rabe, Maren Krause; Model construction: Catherine Slusher, Fabian Scholz, Maren Krause, Rasa Weber)



An experimental setting for the study of interactive systems (Image: Friedrich Schmidgall, Henrike Rabe, Maren Krause; Model construction: Catherine Slusher, Fabian Scholz, Maren Krause, Rasa Weber)

People tracking, questionnaires and the diary will be used to ascertain the effects on work of operating in virtual and physical spaces. A research question for an experimental setting with a user instruction might be: What effects do the physical juxtaposition of workstations have on the use of physical and virtual spaces? A user instruction in such a scenario could be: *Position your desk so that it touches the desk of another participant*. How this domino-type experimental setting is deployed will be analysed by means of people tracking, questionnaires and the diary. A fourth type of experimental setting contains interactive constructions. Various systems (such as an interactive table or wall) can be tested for their usability and impact on the space. Further special configurations can be mounted, perhaps as a short-term measure during an event such as the Night of the Sciences.

## 5. Commissioning

The members of the Excellence Cluster moved into the *Experimental Zone* on 31 March 2015; the first »setting is now in place«. There will be more information on ongoing experiments in the next newsletter.



*Henrike Rabe*  
Base project »Architectures of Knowledge«



*Wolfgang Schöffner*  
Spokesperson



*Friedrich Schmidgall*  
Base project »Architectures of Knowledge«



*Christian Stein*  
Base project »Architectures of Knowledge«

## Team 'Experimental Zone'

### Design:

Friedrich Schmidgall  
Christian Stein  
Henrike Rabe  
Julia Blumenthal

### Principal Investigators:

Finn Geipel  
Bernd Mahr  
Wolfgang Schöffner  
Carola Zwick

### Associate researchers:

Anouk Hoffmeister  
Peter Koval  
Fabian Scholz

### Observers:

Claudia Godau  
Christine Schmid  
Stefan Solleder

## Photojournal: Opening of the Experimental Zone



The Experimental Zone on the evening before opening (Photo: Fabian Scholz | Image Knowledge Gestaltung 2015)



Loan monitors and desk lamps wait to be deployed.  
(Photo: Fabian Scholz | Image Knowledge Gestaltung 2015)

The new Experimental Zone on the fourth floor – location of research into the architectures of knowledge, (see CZ#91) – was inaugurated on Tuesday 31 March 2015. The 30 work stations are taken up by 25 full-time and 11 part-time members. The base project »Architectures of Knowledge« thanks everyone who attended for a wonderful beginning to the exercise. Special thanks to the administration offices, the directors of the Excellence Cluster, the workshop and all helpers for their great support.



The table frames were designed by Julia Blumenthal to afford mobility to participants working in the Experimental Zone. (Photo: Fabian Scholz | Image Knowledge Gestaltung 2015)



Ceiling rails provide a flexible system for electricity and light. (Photo: Fabian Scholz | Image Knowledge Gestaltung 2015)



Acoustic curtains in white stage molton absorb sound. (Photo: Fabian Scholz | Image Knowledge Gestaltung 2015)





Participants choose a space and set up their workstation. (Photo: Fabian Scholz | Image Knowledge Gestaltung 2015)



Inaugural breakfast at 9 am. (Photo: Fabian Scholz | Image Knowledge Gestaltung 2015)



Moving in. (Photo: Christian Stein | Image Knowledge Gestaltung 2015)



The Experimental Zone along with »experimental setting« no 01 in operation. (Photo: Henrike Rabe | Image Knowledge Gestaltung 2015)



A personal indicator to show movement and interaction within the zone. (Photo: Henrike Rabe | Image Knowledge Gestaltung 2015)



*Henrike Rabe*

Base project »Architectures of Knowledge«



*Friedrich Schmidgall*

Base project »Architectures of Knowledge«



*Fabian Scholz*

Base project »Architectures of Knowledge«



*Christian Stein*

Base project »Architectures of Knowledge«

## LunchTalk Weißensee digital/physical Master's projects 03.02.



(Photo: Marcel Pasternak | BWG 2014)

On 3 February 2015, I was given the opportunity, as part of the *LunchTalk* series, to present my Master's thesis to an audience from a broad range of disciplines. I carried out the work at the Weissensee Academy of Art, Berlin and was supervised by Professor Carola Zwick. The result is a LEGO-compatible building block, which adds one long-overdue feature to the somewhat rigid building toy: flexibility.

What emerged from the in-depth research on construction toys and building block systems was the social relevance of these play products as well as behavioural patterns with respect to motifs, materials and construction, which are highly representative of an age. If as a designer I want to invent a toy that suits the times, I must study the present day from the three given points of view, and lay down my prognosis for the future. Here, my prognoses call upon the emerging research areas of bionics and materials science. Indeed these are closely woven into my theses and build upon each other. When designing the toy I stress the use of flexible materials – taking inspiration from the natural world – in order to make this option a conceivable one for our future researchers, even at a young age.

I suggest that my »BionicToys« product is not merely a new version of an existing building block system with flexible building blocks. More importantly, it is a sustainable tool for seeing nature as a motif of construction. Budding architects have presented their models on the associated internet site [www.bionic-toys.com](http://www.bionic-toys.com). They are exclusively motifs from the natural world and were made with a programme that can be downloaded free in a special link. My aims in terms of education is to instil in users a type of observation of nature that is unconstrained; and the ability to then simulate what they have observed using the flexible blocks. Over time, the internet platform will host a network of nature-inspired builders, which will be of great interest to innovative companies. For at times, what our strictly schematised design processes need in order to make a breakthrough is a breath of childlike fancifulness. Below are a few organic examples from the website!

## FinRay



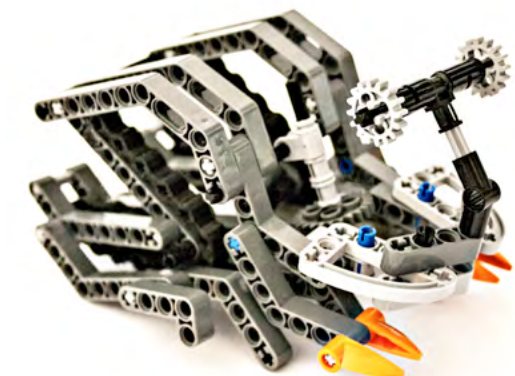
The vertical tail fins of bony fish evolved over time to cope with lateral pressure. The ray-finned structure consisting of two long sides interspersed with connective tissue allows the fin to take on a trowel shape. The »trowel« captures a volume of water and throws it backwards. This propels the fish forwards. This bionic effect as pictured using Bionic Toys has been translated with the flexible »string of beads« as the long side. LEGO technic blocks in combination with cross guards represent the elastic connective tissue.

## Gripper



The gripping device is designed as a hand tool and is triggered by the finger. This causes the two grippers, consisting of FinRay components, to snap together. The FinRay effect allows precise handling and a secure hold, even on very amorphous objects. The inherent tension (due to the material) of a loop-shaped building block pushes the snapping mechanism back to the starting position. If the engineer wants to integrate the gripper in a programmed robot, the handle can be quickly removed and the trigger replaced by a linear actuator.

## Frog



This model of a frog made with »BionicToys«, pays homage to the animal's superlative jumping skills. A flexible building block runs through the entire cannon bone, which is stretched out when the frog is in a squatting position. This form of energy storage in flexible material allows the model to leap when the Z-shaped angled leg is expanded.

(Photos: Marcel Pasternak | BWG 2014)



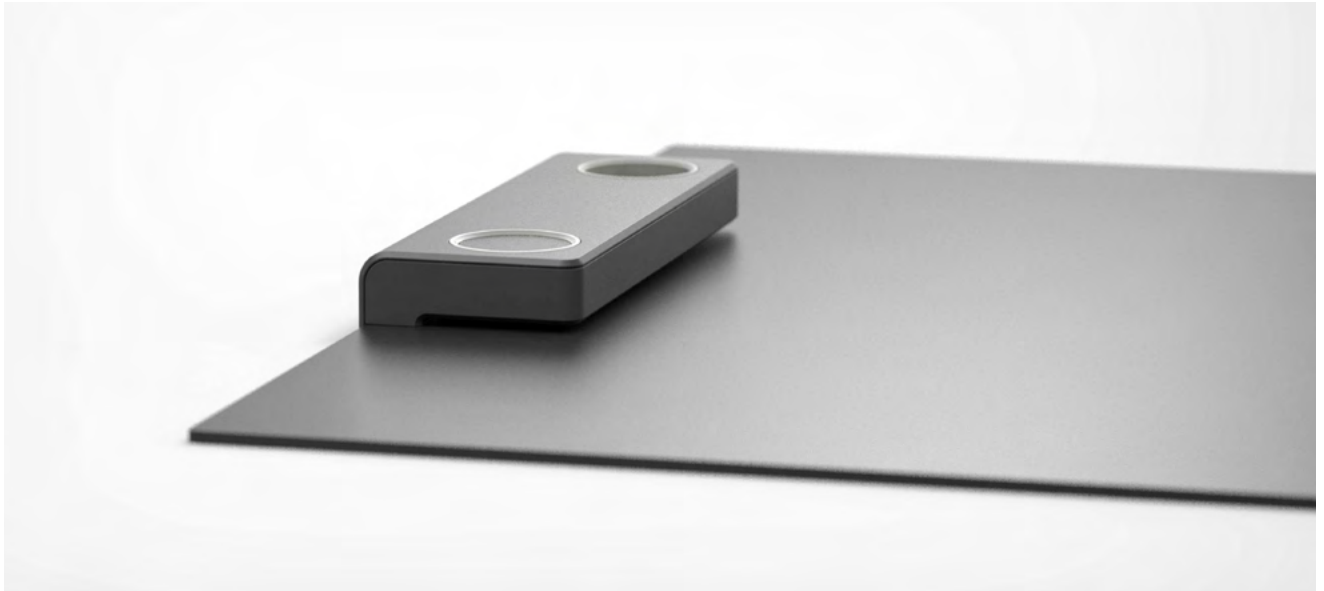
Marcel Pasternak  
SHK BWG-Workshop



(Photos: Bruno Everling | BWG 2015)

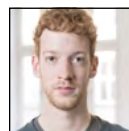
»Twinpage« is an innovative interactive Gestaltung concept which allows the user easily and quickly to compose, process and handle written material and images in digital and analogue contexts.

The system is an extension of the fast, intuitive use of pen and paper – a form that expresses something of the individual – to include the many-sided processing functions of a digital application. The best of both worlds is captured and combined in a harmonious way.



(Photos: Bruno Everling | BWG 2015)

The concept arose as part of Bruno Everling's Master's degree in Product Design at the Weissensee Academy of Art, Berlin, under the supervision of Carola Zwick. Everling's thesis, originally entitled »Neoanalogue work tools 2«, continues the theme of his Bachelor's degree to examine the ever-changing relationship of man with his tools. This relationship is constantly being queried, not least in the age of computers.



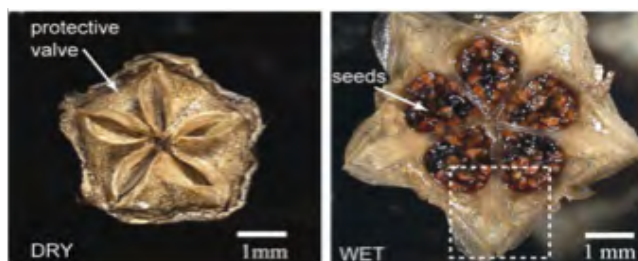
Marcel Pasternak  
SHK BWG-Workshop

## LunchTalk Self-moving Materials!?

10.02.

When I put an arrow into the bow's notch, draw and release it, we can identify two systems in action; the bow and arrow system, and me-myself practicing archery. The latter is a living agent actively and consciously going from A to Z to hit the bull-eye, while the former is a »dead« material system »passively aiming« for the same goal. What do we mean by self-moving material? In one sense, I, the archer, as a whole, am a »self-moving« material system. From whatever happens from the conscious decision making system in my brain, to my posture, eyes, muscles acting upon it, all comprise a complex, multi-scale material system, which is »self-moving«. On the other hand, the elastic energy stored in the bow upon drawing results in the arrow roaring toward the target, which can be observed and analysed as a separate »self-moving« material system with the mechanisms of its own. But where we draw the line of »self« in describing any actuation systems as such, depends more on the perspective of the observer (researcher) and the goal of the observation, than on any concrete pre-agreed-upon definition. In case of a conscious agent actuating a movement in the world (the archer, etc.), the concept of the »self« can be defined at various scales, from chemical activity of the neurons in the brain, the »arm and shoulder« system etc., to the movement of the agent as a whole »self«. As philosopher Daniel Dennett puts it: »if you make your »self« small enough, you can externalize virtually everything.«

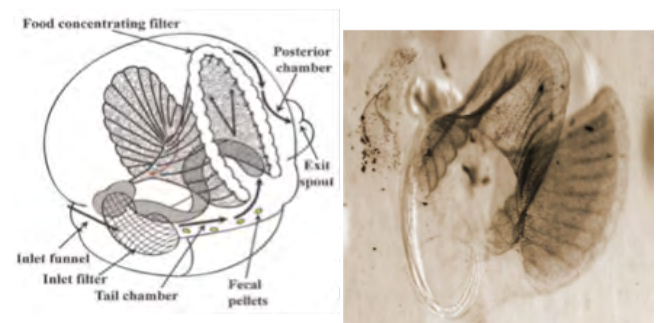
The same can be argued in Material science and engineering in a more concrete, narrower sense; when investigating the mechanism behind various passive hydro-actuated movements in plant kingdom for example (or shooting of an arrow for that matter), the »self« can be defined as a certain system composed of different component with specific material architecture at various length-scale, each passively contributing to the resulting deformation, which can in principle be described in physiochemical, biomechanical... models (e.g. Ice plant seed capsules).



Ice plant image. Copyright: Harrington M. J., K. Razghandi et al. »Nature Communication«, 2011.

Such self-deforming systems are interesting from an engineering, design and architecture perspective, as the information required for a specific deformation are embedded in the material architecture and can get triggered in response to external stimuli.

The subject of our study, the house of the free-swimming Planktonic Tunicate, Appendicularia Oikopleuridae, is an example of such sophisticated architecture. The animal produces and secretes a cellulose containing tissue, which is basically a »pre-designed« filtering house. Through series of complex movement, the Larvacean tunicate enters and inflates the tissue into a functional food concentrating system; by undulatory movements of its tale, the animal can circulate the seawater through different filter sections of the house, and concentrate and direct the agglomerated food particles toward its pharynx.



Tunicate schematic on the left. Copyright: J. Bouquet et al., Journal of Plankton Research, 2009.

Our goal is to take the sophisticated tunicate house as a model system and study the role of the material architecture in the resulting movement and function, while keeping the »model« as the center of the interdisciplinary collaboration between researchers from different fields of material science, biology, architecture...



Khashayar Razghandi  
Basisprojekt »Selbstbewegende Materialien«

## LunchTalk Rhizome laboratory

17.02.

The project »Rhizome laboratory« has grown from a seminar by Christian Stein and Thomas Lilge entitled »Theatre laboratories and stage models – architectures of knowledge between system and entry point«, run by the department of Theatre Studies at Freie Universität Berlin in the 2013/2014 winter semester. Eight students joined forces to take on the central issues of the seminar, such as the question of the »Death of the author« or the concept of »Rhizome making« and to prepare a final dissertation. They quickly arrived at the decision to produce a collective text by way of an experiment that would put the writers in the position of having to take into account, and process, the unforeseen (such as the thoughts of others expressed in words) as part of producing their own words. Alongside this collective text, the particular aim was the creation of a reading experience which would reflect the ways and means by which the text arises. Reading is a non-repeated activity and follows a straight line, yet despite, or rather because of this, it should give the reader the courage to take up positions (nodes) whilst passing through the text. From this came the website [www.rhizomlabor.org](http://www.rhizomlabor.org), which features text fragments of various types and lengths. Visitors to the site find a random sample from a collection of around 100 short entries, which are linked together by means of categories such as »association«, »continuation«, »answer«, »wise-crack«, »commentary«, »example« etc. Readers can (or must) decide after reading a text from which category their following paragraph will be taken. This is a unique, whilst random, self-selected path for the reader through text fragments – which by the way can also be stored and printed out. Further buttons allow one to play with text appreciation and reading behaviours. »superhero« replaces all author names in the text with »superhero«, »Colour text« highlights specific words in a random colour, »Enlarge text« enlarges certain words with each click and »Word frequency« calculates the instances and percentage of words ending in -mus, -tät, -tiv, -ung or -ion. Programming for the Rhizome Laboratory, which like the writing of the collective text was performed by the students themselves, was in three phases. After discussing a broad range of possible programmes (Wordpress, Prezi etc.), a common strategy was adopted for the co-authored website. The first phase required each person to resolve

a sub-task of the overall project. In a further step, all the code fragments were gathered into a single document. This proved more difficult than originally envisaged: because of the scant knowledge lab members had of programming, each worked on their own solution, which of course led to vastly different results. The last phase was a question of together working on the overall code to ensure that all the elements of the website functioned smoothly so that the Rhizome Laboratory could be proudly presented, as intended, to the world. The most radical visual feature was a decision to show only one paragraph at a time, so that the GUI would not permit an overview of the entire, interwoven text.



(Graphic: Rhizome Laboratory | 2015)



Whilst engaged in designing – as during the programming phase – lab members followed the principle of learning by doing and tried out several possibilities with the arrangement of HTML code elements and their formal parsing in the CCS file.

The background, which is also visible through the text field, shows a structure growing from many small elements which seem to sway in undefined surroundings. This seemed to suit the textual structure of the site.

Communication during the project was very intensive and could in fact be called rhizomatic; alongside group conversations there were other levels of dialogue, such as a discussion between individual participants and conversations with external helpers. Besides a number of personal meetings, the Rhizome Laboratory used any and all available media (Skype, Facebook, ICQ etc.) – of which email played a central role. Email traffic became particularly intensive a few weeks before hand-off. Whilst at the start of the project these conversations were businesslike and objective, towards the end, when new problems were cropping up on an almost daily basis and postponing completion, they became somewhat more emotional.

Although the group had relatively few disagreements or conflicts, at times, perhaps through insufficient communication, they experienced chaos. This had to be controlled

and restrained by the group – an obstacle, but one that was surmounted.

Looking back participants state that both as individual authors and as a social clique, they were automatically linked through networks, media mechanisms, software and hardware. As a result of the de-territorialisation of body and mind, which they experienced in a shared effort of writing the text and code, they became indistinguishable and inseparable parts of the rhizome. This led them to think that texts in general may be produced by means of such processes. But does an aggressively rhizomatic manner of writing make it easier to see and experience these processes? Do texts created in this way develop a different performative potential? Another form of agency? Are they emergent - and do they produce something which cannot be explained by the sum of their parts? Questions of this kind exercised and continue to exercise the minds of participants beyond the project. How, and to what degree of 'rooting out' can and must empirical writing be further developed in order to adequately meet the needs of de-description?

*Rhizome Laboratory Assistants*



(Image: Rhizome Laboratory | 2015)

## LunchTalk Historical structural investigations

24.02.

Within the base project »Historical structural investigations«, members from the departments of architecture, materials science, biology and cultural science are working together to uncover past knowledge of biology, and to make it available to modern researchers in materials science. The literature from the period spanning 1870 to 1930 is particularly interesting because it contains detailed morphological descriptions of the kind that is rare in our times. Molecular biology and genetics seem to dominate the area now. The aims of researchers back then were quite different from today. They wanted to examine biological systems from a mechanical viewpoint. Rather than concentrating on a few model organisms, they sought to describe all living things comprehensively. For these reasons, historical literature has exactly the information that can serve our materials scientists as inspiration in their search for illustrative examples of technical principles from the natural world.

The desire to achieve an enormous breadth of descriptive literature around 1900 generated vast amounts of work. One example is the 1872–1876 expedition of H.M.S. Challenger. As many as 4,500 new species were described and recorded in impressive lithographs, including those by the eminent naturalist, Ernst Haeckel. Such artistry was typical of the time; indeed, students of biology were required to be competent artists as well as scientists. We chose two very different works as examples for our project: the written reports of the *Challenger Expedition* and the *Handbook of Zoology*, which appeared from 1923 onwards with detailed descriptions and systematic delineation of animal groups. These choices posed a further challenge. The *Challenger Expedition* lithographs, with their valuable morphological information were scanned copies of inferior quality. We would require re-digitisation of parts of the material.

The content focus would follow the foci of the two works. When categorising movement types in architecture and engineering science, it became apparent that movement in these areas is usually represented by a combination of rigid material with connecting movable joints. Nature, on the other hand, frequently departs from this principle and allows movement in soft matter without any joints. The

potential of such a natural principle for technical applications is considerable, which is why joint-free movement became a core area of our project.

After determining our focal points, a significant question remained: how should the objective of making historical literature available to materials scientists be realised? We opted for a web platform called the *Bio-structures Explorer*. The platform had to be designed to allow the user to enter a technical search term and to be given a choice of texts and images of biological organisms with their various principles of movement. Then we needed to ensure that users could delimit the search at will, according to their own or suggested criteria.

There were now several challenges for the *Bio-structures Explorer*, each implying the need for specific strategies for further progress:

**Knowledge Engineering:** in order for the information in the base (analogue) material to be (1) successfully captured, (2) re-cast in the digital medium and (3) made ready for automatic processing, a digital knowledge engineering model had to be chosen and constructed. The research project uses an ontology-based Knowledge Engineering model because, in contrast to a taxonomy which reflects only hierarchical sub-divisions, the model replicates information in a network of logical relations. It is logical relations which allow conclusions to be drawn from the available data that were previously not discernible.

**Classification systems:** Historical biological literature is classified according to biological criteria and systems which have little in common with the materials science or engineering approaches. Data therefore had to be freed from the biological classification system and transferred to a new system that permitted materials scientists and engineers to grapple with it. The ontology developed for the research project was conceived as a »Bridging ontology« which, based on the historical pool of knowledge, would link current biological-morphological ontologies on the one hand and current materials science and engineering ontologies on the other.

**Multiple media:** The historical literature is composed of texts and images in various formats, each portraying – i.e., selecting and representing – certain information. So a variety of strategies had to be adopted in order to transfer the media-specific knowledge to the digital format of the ontology in question. Whilst text can be automatically captured and processed using *Text Mining Software*, images had to be individually annotated. In addition, the use of automatised image recognition had to be tested using pattern recognition software.

**Terminology:** The base material of texts are formulated in the language of biology; search terms, however, are mostly from the specialist realms of engineering technology and materials sciences. This necessitated a cross-matching of the various specialist idioms and terms. Glossaries were compiled to link biology terms with materials sciences terms. Moreover, techniques of Natural Language Analysis had to be put to the test.

**Dual languages:** The historical texts are partly in German, whilst current research into materials is communicated in English. This means that the English search terms must be translated so that they will bring up the corresponding German terms in the historical corpus; digital dictionaries and special services are therefore employed to provide the necessary language mapping. Manual annotation ensures completeness.

**Historicity:** The age of the base material means that the historical level of knowledge, the interests that drove past research, archaic forms of expression and historic means of representation all have a bearing on content and its linguistic and pictorial representation in various media. Such disparity with current research styles have to be analysed at all levels in order to recognise exactly where historic findings possess the potential for innovation and where they must be augmented by modern materials science and biology.

The central building block of the *Bio-structures Explorer* is the ontology on which the knowledge of movements in the animal kingdom is modelled. In this *AnimalMotionOntology*, all factors relevant to movement are (1) formulated linguistically and (2) organised according to protocol. First, we needed to tease out which forms of movement (running, hopping, slithering, etc.) can be differentiated, in which media organisms move (water, earth, air, wood, etc.), which elements are involved in the movement (wings, legs, muscles, sediments, etc.), from what

material they are made (proteins, sugars, minerals, etc.), what is the nature of this material (rigid, liquid, elastic, etc.) and which structures they or the organism as a whole are characterised by (symmetry, patterns, geometry, etc.). These data are complemented by metadata which record where (in what image, page, volume, etc.) and how (as photograph or drawing, perspective, section or aspect) they are depicted.

The protocol was set up by formulating logical statements for each of these determined factors, using a Resource Description Framework (RDF). In the RDF model, every statement consists of the three units subject, predicate and object, whereby the subject is linked to an object by means of a semantic qualifier, the predicate. In this manner, hierarchies and taxonomies can be presented. Every so-called 'triplet' is a logical statement, which can in turn be linked to other triplets. This allows for instance the following to be expressed: organism 'A' has the ability to swim; swimming – like walking, flying, digging – belongs to the class of locomotion; locomotion in turn belongs to the superordinate class of movement. Based on this ontology, the images in the historic base material can now be annotated. Every image must first be linguistically captured, with information formalised along the lines of the triplet (Fig. 1).

Sprachliche Fassung des Bildes		Ontologiekonforme Klassenzuordnung	Tripel		
			Subjekt	Prädikat	Objekt
Die	Ohrenqualle	"Aurelia aurita" > Species > Genus > FAMILY	Moon jellyfish	belongsToFamily	Ulmaridae
	schwimmt	swim > Motion > FUNCTION	Moon jellyfish	hasAbilityTo	swim
im	Meer	saltWater > LiquidMedium > MEDIUM	Moon jellyfish	movesIn	saltWater
indem sie die	Muskeln	muscle > Bodyelement > ELEMENT muscle > Protein > Organic > MATERIAL	Moon jellyfish muscle	hasBodyelement hasMaterialproperty	muscle resilient
gegen die	Außenhaut	outerSkin > Bodyelement > ELEMENT	Moon jellyfish	hasBodyelement	outerSkin
	kontrahiert	contract > Motion > FUNCTION	muscle	hasAbilityTo	contract
und dadurch den	glockenförmigen	bell-like > Geometry > STRUCTURE	bell	hasGeometry	bell
	Schirm	bell > Bodyelement > ELEMENT	Moon jellyfish	hasBodyelement	bell
	verengt	narrow > Motion > FUNCTION	bell	hasAbilityTo	narrow
und das	Wasser	saltWater > LiquidMedium > MEDIUM	Moon jellyfish	movesIn	saltWater
	herauspumpt	pump > Motion > FUNCTION	Moon jellyfish	hasAbilityTo	pump

Fig. 1

By annotating a large number of images, information on diverse forms of movement in a wide range of organisms can be gathered, linked in a network-like system and made searchable. A very rough description of the types of movement in three organisms, with just a few triplets, demonstrates how a complex network of information results (Fig. 2).

materials, but display similar properties and may therefore be considered for similar applications.

A method of portrayal favoured in technology and an important tool for systematic material selection is the Ashby chart, in which two or more material

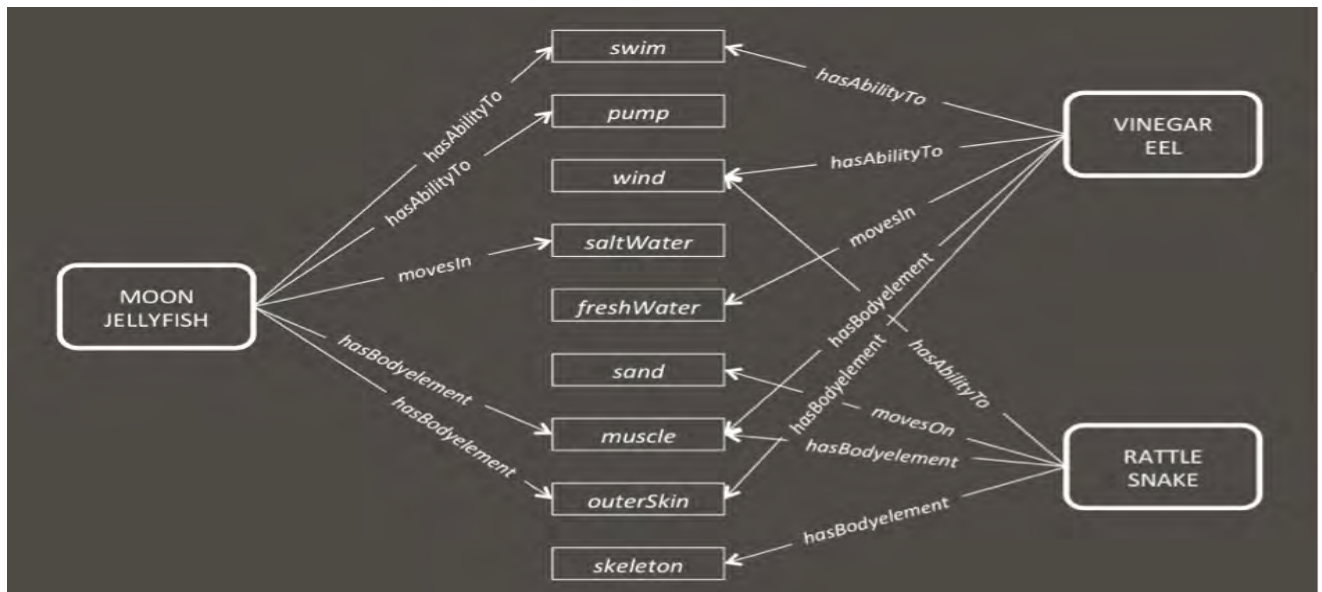


Fig. 2

The information gleaned from the historical literature is augmented by the current status of knowledge in materials science and biology. In order to incorporate data on the material properties of biological material, data sheets belonging to a commercially available tool, the Cambridge Engineering Selector, were used. They contain short descriptions of the materials as well as values for mechanical and chemical properties such as modulus of elasticity, denseness or thermal conductivity. The identification of these material properties allows an extension of the search to organisms that are made of different

properties are plotted. The diagrammatic format permits the swift identification of the highest and lowest values for the properties. Specific values can be assigned to allow materials to be found that best meet the requirement for a certain interrelationship of properties. The principle can be transferred in the manner of *Organism Selection Charts* to biological organisms (Fig. 3).

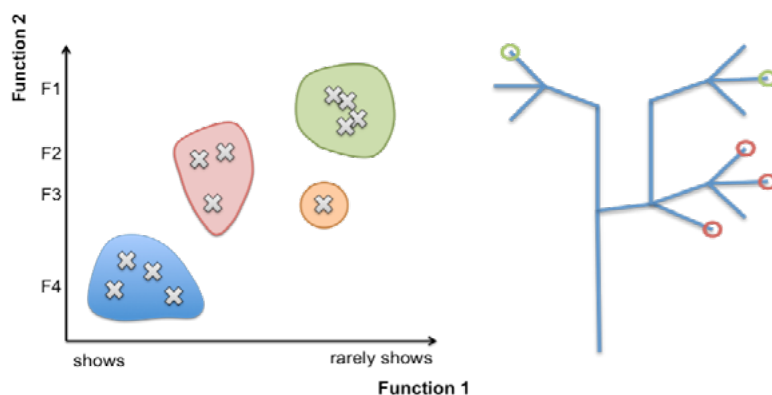


Fig. 3

Fig. 3: Two functions with associated predicates or discrete sub-functions can be presented in the *Organism Selection Chart*. Organisms are grouped according to phylogenetic criteria and also added to a phylogenetic tree. Species that do not appear on the chart despite some related species being traceable can thus be easily identified and more closely examined. Either they have developed other principles than their related species in order to fulfil other functions, or they live under other conditions. A possible explanation can be gaps in the knowledge base; these can be identified.

In the next project phase, we will endeavour to expand the original historical material of texts and images to include objects and historical practices. Objects could be entered into the framework in cooperation with the Museum für Naturkunde. The adding of historic practices will take place with the assistance of restorer and wood craftsman Clemens von Schoeler, with the objective of increased reciprocal benefits for manual skills and research. The focus here is on woodworking and the example of planing will be used to demonstrate the close connection between practical work and research. A study of motion in planing reveals the procedures of the work task and documents them. Interviews with various woodworkers then uncover the (knowledge) preconditions for the task; these appear self-evident in communication but they may be crucial to the work of materials scientists and should therefore be elucidated. Aims, relevant aspects and problematic issues will also be addressed.

In order to further develop the *Bio-structures Explorer* into a multi-faceted tool for materials scientists, the next project phase will, in addition to the elaboration of existing foundations, include a more exact evaluation of usage requirements and the design of the interface.



Michael Dürfeld  
Base project »Historical structural investigations«



Friederike Saxe  
Base project »Historical structural investigations«

## LunchTalk My Bauhaus is better than yours

03.03.



Bayer's prototype »Universal« font as a tattoo.

(Source: <http://followpics.me/harold-hollingsworth-bauhaus-font/>)

»My Bauhaus is better than yours«! This slogan belonging to a Weimar furniture label happens to relate to a central aspect of the research project »Bauhaus brand images«. The Bauhaus exists in multiple guises. It is the banner for furniture shops and architectural offices; but somewhat esoterically, numerous cafés, fashion labels, hairdressers, solar panel manufacturers and even breweries, one investment bank, a rock band and techno party series also feature »Bauhaus« as part of their name. What once began to burgeon from its role signifying an art school into an umbrella brand for state-of-the-art design now extends even to projects and films that at first glance have no recognisable connection to the historic Bauhaus. Nonetheless, most users of the name manage to establish some association with the historic Bauhaus. The photovoltaic system manufacturer feels a link to the art school because of their progressive stance on new technologies; the fashion label with its youthfulness refers to Bauhaus

members; and the band says that they honour the collective method of working. These nomenclatures are entirely possible because of the inherent aesthetic of the Bauhaus, embracing a programme of diversity. Gropius made the Bauhaus a receptacle for personalities and concepts, as is evident from a simple reading of his list of associates. Not only did he bring in the constructivists and the Dutch style, but he also insisted on the continued appointment of painters Oskar Schlemmer and Paul Klee at Bauhaus Dessau, with its increasing focus on industrial production. To take it to the extreme, yoga and esotericism are just as much Bauhaus-related as rationality and not using capitals.

Based on the conclusion that many of the writings and images linked to Bauhaus today are rather tenuously connected to it (for example, the Futura font, which was neither designed nor used at the Bauhaus, but which now graces most Bauhaus catalogues), we undertook to research how specific brand images have emerged in the negotiation between Gestaltung and reception.

Four trademarks were selected on account of their widespread recognition and their suitability as examples of various manners of birth and impact: 1. The Schlemmer head, the official logo of the institution; 2. Triangle, square and circle; 3. The word »Bauhaus« in all its various appearances; and 4. the Bauhaus lamp.

The Schlemmer logo is in fact the only example registered as a design mark. It was designed as a stamp and was used both by the historical movement and subsequently as an emblem and seal of approval, for instance to designate licensed re-editions of Bauhaus products.

Triangle, square and circle on the other hand was not initially used as a logo; rather, it served as a teaching tool within the preparatory class. Only later in the reception was this constellation repeatedly linked to Bauhaus to such an extent that it became a »design mark«. It



T-shirt. Design using the Triangle, square and circle. (Source: <http://178.is/tag/shirt/>)

was of significance even before its use at the Bauhaus. For some it was the original symbol of humanity, representing earth, sky and man. In later years, too, it was used independently of Bauhaus. Our understanding of the combination as a reference to Bauhaus is therefore only one of several possible interpretations. So the context in which it arises determines meaning. Both in its concrete form and as a signifier, this part of the brand image is far more »liquid« than Schlemmer's head logo; thus, it can yield interesting results for our investigation of co-production and shifts of meaning. The same is true of the word mark »Bauhaus«, which appeared in many writings between 1919 and 1933. As part of the reception process, a number of further texts were ascribed to the Bauhaus influence, either through the constant use on catalogue covers – as with »Futura« – or through appellations such as »Bauhaus 93«. Such credits in turn affect our image of the historic Bauhaus. The massive »Bauhaus 93« conveys a completely different impression of Bauhaus than its predecessor, the unassuming »Universal«, with its differentiated and well-proportioned letters. At this point, a position of our project with respect to the questions posed by the

Excellence Cluster becomes clear. We study design marks as artefacts created from a certain knowledge; items that are loaded with meaning, but which themselves create knowledge and which exert a retrospective effect on their designers and audiences.

In connection with historical analysis, we are also engaged in current experimentalisation. One route is through the development of an exhibition installation on the basis of historical analysis results for the Bauhaus exhibition at the Vitra Design Museum at the end of 2015. Another route we would like to follow in cooperation with the graphic artist Stephan Müller (Berlin/Leipzig, <http://lineto.com/>) as Research Fellow, involves testing with respect to conceptual design the word mark »Bauhaus« for its potential for typographical universality in the face of different writing cultures and materialisations. The work will be equally concerned with conceptual solutions and contradictions.

We are most grateful for the discussion, which has given rise to valuable ideas on the concept of the mark and the methodical approach ANT vs. post-ANT.



*Julia Meer*  
Base project »Pictograms«



*Philipp Oswalt*  
Associate Investigator

## LunchTalk Gender & Gestaltung

17 March 2015

### Processes of Demarcation and the Production of Difference in the Natural Sciences and Humanities

»Gender and Gestaltung« takes the aspiration of the cluster seriously to analyse categories of difference – one of which being gender. However, we do not intend to analyse gender in terms of diversity management, but rather to look at it as one category of knowledge production. As such, we make the category of gender fruitful for understanding images, processes of knowledge production and their Gestaltung.

Historically, after a period of women's studies, the generation of *Geschlecht* in terms of gender itself came into focus: The notion of gender pointed to an abstract system of binaries, as well as to an entire complex of relationships with other categories of difference such as race and class. Gender was discovered as a way of providing societies with powerful symbolic models, often referred to within science and humanities. For example, to describe phenomena of science today, scientists often refer to the model of activity and passivity, which is taken from the gender dichotomy of active men and passive women. Scholars pointed out early on that the study of gender would not only add new subject matter but would also force a critical re-examination of the premises and standards of existing scholarly work. This means analysing in context the way any binary opposition operates, reversing and displacing its hierarchical construction, rather than accepting it as real, self-evident or in the nature of things. Therefore we do not analyse the activities of women from the past to the present in our project. But gender is a category of knowledge to us. Even more specifically: Our focus rests on the creative and performative dimension of gender within the production of knowledge, and artefacts. Therefore it is not only relevant to analyse how many men and women were involved in scientific procedures and institutions, but how the knowledge production itself relies on models of gendered binaries, gendered analogies and gendered images.

To push it even further, we assume and want to prove, that gendered binaries create epistemic demarcations and material borders in humanities and the sciences at the same time. We want to know in which ways the symbolic and the material demarcation processes interact. And we ask what kind of evidence these processes may yield, and in which systematically similar ways in the humanities and the natural sciences these processes generate

demarcations. Often the use of gendered semantics produces naturalising effects. We thus study processes of demarcation in their role as epistemic tools in the (experimental) production of evidence, where it is closely related to their visual and mediated constitution in terms of embodiment – in the laboratory as well as in the realm of the political. In these processes, images of the body play a significant and productive role in the generation of knowledge.

The research projects of »Gender and Gestaltung« have different disciplinary backgrounds ranging from history, art history, literature, history of sciences, science and technology studies, to media studies. They work together in a mutually supportive and complementary way, focussing on our shared research questions: the gendered production of epistemic demarcations, the complex interconnections between symbolic and physical bodies, and the multiple ways evidence is produced in arts and sciences. Based on the project members' individual research topics, the overarching investigation of the project spans from the Early Modern Age to the Present. Only through a historical perspective does it become possible to analyse changes and continuities in the processes of demarcation and evidence production.

The studies by Bettina Uppenkamp and Claudia Bruns investigate images of gender in Enlightenment. One example, where the production of borders was literally gendered is the mapping of Europe in Early Modern times, analysed in Claudia Bruns' current research project.



The image of Europe as a Queen (Putsch 1537, Copyright: Library of the convent Strahlov, Prague)



Here the borders of Europe were marked for the very first time by drawing a straight line around the landmass. At the same moment the continent was identified with a female body: A mighty Queen referring to the ancient myth of Europe. The production of new knowledge about the borders of Europe was feminised at the very time of its invention.

Gestaltung is seen here – as well as in the whole project – both as a discursively and materially constructive process. Without the creation of symbolic differences material borders wouldn't have the same relevance (or acceptance) to the people of a certain time. Symbolic and material border-productions are essentially intertwined.

Due to our *longue durée* approach we can observe both, the installation of such demarcations in Enlightenment and modernity as well as their collapsing or migration today.

We may exemplify this along Bettina Bock von Wülfingen's project. She analyses the role of image in the generation of evidence in biology and medicine at the end of the 19th century and today. The studies she investigates examine how conception and heredity work.



Plates of Hertwig's drawings of his vision through Zeiss microscope, 5 (Fig. 7) and 10 (Fig. 10) minutes after conception of an egg of a sea urchin (Hertwig 1875, plate XI)

In the 1870s new techniques in microscopy were able to show that not only the sperm intruded the egg cell, but that their nuclei merged – meaning that both sexes, male and female, brought material into the new embryo and that this material was hereditary material, later called material of inheritance, then DNA.

This research at the end of the 19th century was deeply entangled with the history of the foundation of the German nation and the problem of justice in the family household, an issue debated nationwide due to the attempts to introduce a new national civil law code.

Coming back to the cell, this was the moment the idea was installed that the cellular nucleus lived a separate life from the plasma of the cell and was all alone responsible for inheritance. The same (German speaking) researchers

introduced a division of labour in the cell: they conceptualised the nucleus, bearing the riches of the cell, and ordering it, as male and the plasma, the so called nutritive, as female. Meanwhile, in images of the cell, a clear line appeared around the nucleus, demarcating it from the plasma.

The idea of a strong functional and structural separation between plasma and nucleus reigned throughout most of the 20th century as the dominant concept in biology. It has today recently been challenged, especially by epigenetics, while also the division of labour between the sexes as well as between production and reproduction itself in general is, according to anthropological diagnose (see e.g. Boltanski and Chiapello), crumbling. Kerstin Palm, new associated member of the project »Gender and Gestaltung« yields corresponding results in her work regarding the current biological embodiment of culture. She shows how physiology and epigenetics challenge the border drawing between nature and culture. Both sciences experimentally demonstrate the latter's interaction, which hereupon challenges paradigmatic demarcations between the categories of nature and culture. Mingling biological-cultural processes then demand new forms of representation in the domain of science.

Similarly to Bettina Bock von Wülfingen's historical approach reaching into the present sciences, Wolfgang Schäffner's work, building on studies of the interaction between matter and the symbolic order from Bouvier to Butler and Foucault, shows that the cultural level of symbolic order is inscribed within the bodies, thus generating the supposed fundamental difference postulated in physical and medical notions of sex.

Gender history shows a decisive shift from the one-sex-body (where sexual difference is the effect of folding and unfolding the same organs in or out) to the modern two-sex body, which above all during the 19th and early 20th century suffered radical changes with respect to its physical basis: from the uterus, to the ovaries, to an intermediate state of a total lack of bodily evidence about sex around 1900, to the hormones by Eugen Steinach in the 1910s. Above all, this cascade of changing differences shows also - on the level of sex - more about cultural knowledge of the body than the revelation of a bodily/medical »truth of sex«. »Le vrai sexe«, as Foucault described it, becomes in historical perspective as performative as gender.

Thus the basic notion of inscribing the symbolic into the natural body relies on the idea of a passive body of inscription, where the active, performative symbolic order can be implemented. This fundamental difference for gender

theory, however, reflects a classical idea of passive matter, that only via external forces or symbolic orders is changed, operated or culturally organised: That means that still sometimes in gender theory and its public understanding, challenged latest since the 1980s by Donna Haraway to today's feminist materialism (e.g. Karan Barad or Luciana Parisi), there is a hidden assumption of fundamental difference of active/passive.

Today, in parallel to these studies also materials research is changing just this notion in a fundamental way, by the idea of active matter: Thus, the difference of activity and passivity is a process wherein the same element can be regarded in both ways.

Our basic question now is: How can the notion of the physicality of sex be changed when we take into account the dynamics of active matter? The epistemological shift of active matter thus serves us to challenge the notion of gender. Vice versa, gender theory, helps us, to understand the fundamental change for the relation between the symbolic and natural order when we talk about active matter and folding as a symbolic and material process and of analogue codes.

Thus, sexual difference can be taken as a fact of matter: from reflection and symmetry to folding: this means, as a programme, to reread the medical history about sex as an indicator for active matter.

Contributing a different object of analysis in contrast to these problems in the natural sciences, Marietta Kesting's work again links back to the historical analysis of maps of territorial borders by Claudia Bruns. Her project »visualising borders – images, bodies, and control« conveys a specific example of racialised and gendered bodies protesting against racist border regimes: The image, a black-and-white photograph from 1961, shows the scene of a pass-burning demonstration in Soweto, South Africa. Black South Africans were demonstrating against the apartheid pass laws, which treated them as »foreigners« in their own land. They were obliged to present pass-books in the »white« city Johannesburg even though they were not crossing any international or national borders. The protest is in some ways similar to current protests of refugees who burn their documents before entering the Schengen area and who also demand »Erase our fingerprints«.

The white South African photographer Ian Berry took the photograph: it is composed in such a way that in its very centre a dramatically charcoaled and frayed piece of a pass-book is visible, thereby making this object the main focus of attention for the viewer. The photograph taken with a zoom lens acts as a magnifying glass by focusing on four relevant and problematic issues: First,



A »pass burning« demonstration in Soweto, South Africa (Berry 1961, Copyright: Magnum Photos Archive)

when official identity documents with passport photos are obliterated, racialised subjects render themselves unidentifiable, severing the connection between a body and a material document, which had restricted this body's very movement and opportunities in life. Second, the act of destroying an official photo, which is at the same time a self-portrait, is an affective and a political act. As image theorist W.J.T. Mitchell has argued, images may get imbued with a particular agency »not merely as sentient creatures that can feel pain and pleasure but as responsible and responsive social beings [...]« (Mitchell 2005, 127). Third, it is striking that a privileged white male photographer has captured this image of the marginalised black others while they are in the process of becoming officially invisible or undocumented, highlighting the inherent contradictions in the discourse of in/visibilities and (political) self-representation. The white skin of the photographer also seems to make him immune to apartheid police persecution. Fourth, neither is the photographer female nor are there any other women in front of the lens, which points to a blind spot or missing image, since female black South Africans were equal if not the prime

protagonists in the protests against the pass-laws. As South African historian Patricia Hayes has demonstrated, progressive documentary photography and the discipline of social history or a »History from Below« developed in South Africa hand in hand. Both disciplines naturalised similar conventions: »the one to end silence, and the other to end invisibility« (Hayes 2009). In the current age that is both disillusioned with politics, media and activism and at the same time is seeing the rise of new social movements and protests worldwide. Marietta Kesting analyses and historicises how borders are visualised, how the »political« is evoked with the means of affective (documentary) images today and how images and bodies are linked or this link destroyed, for example in current refugee protests. These questions of contested and precarious visibilities will also be the focus of the base project's workshop »Dark Rooms«. Sophia Kunze shares with Marietta Kesting the interest in strategies of becoming visible. Sophia Kunze analyses the image of bearded women in history. Together, both are planning the workshop on »Dark Rooms« which will take place in June.

The Dark Room, seen as oppositional to the concept of the White Cube, seems to be attributed with concepts of the unseen, the hidden, the illegal, the dangerous or even the perverted. We want to address the question, how visibility and invisibility are manifested through the image. If visibility is a part of claiming social or political power, how do individuals achieve it? On the other hand – as Marietta Kesting's example has shown – invisibility can be necessary to escape for example legal suppression, while at the same time there is a struggle to establish visibility beyond already existing, potentially devaluating image strategies. The workshop will pose questions such as: How does someone and something become visible - which mechanics control the process, which new strategies are established? And as a question embarking the epistemic problem shared in all projects in »Gender and Gestaltung«: Which demarcations produce visibility/invisibility?

Hayes, Patricia (2009): Santu Mofokeng, Photographs: »The Violence is in the Knowing.« in: *History and Theory*, No. 48, S.34-51.

Hertwig, Oscar (1875): Beiträge zur Erkenntnis der Bildung, Befruchtung und Theilung des thierischen Eies, in: *Morphologisches Jahrbuch*, 1, pp. 347–432.

Mitchell, W.J.T. *Offending Images*, in: *What do Pictures Want? The Lives and Loves of Images*. Chicago & London: University of Chicago Press 2005.

Putsch, Johannes (1537): Europa prima pars terrae in forma virginis, in: Bunting, Heinrich: *Itinerarium sacrae scripturae. Das ist ein Reisebuch über die gantze heilige Schrift*, published in 1592 [for the first time in Helmstadt 1582]; source: Bibliothek des Prager Klosters Strahlov.

Berry, Ian (1961) A »pass burning« demonstration in Soweto, SA, source: Magnum Photos Archive, [www.magnumphotos.com](http://www.magnumphotos.com), last access 18.3.2015.



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Associate Investigator



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*Sophia Kunze*  
Base project »Gender & Gestaltung«

## In conversation with...

### Patricia Ribault: *Les génies du travail*

Since March 16<sup>th</sup>, Patricia Ribault is a member of the Cluster of Excellence *Image Knowledge Gestaltung*. She was nominated junior professor by the faculties for cultural, social and educational studies at Humboldt University Berlin. »History and theory of Gestaltung« is the title of her newly created professorship. The Cluster's journal CZ# met Patricia Ribault on her very first days at the *Interdisciplinary Laboratory* and spoke with her about her craftswoman (it is a real word!) background and her future projects in Berlin.

*Claudia Lamas Cornejo: A warm welcome to the Interdisciplinary Laboratory! »History and theory of Gestaltung« is the title of your professorship at the Cluster of Excellence, but let's speak about your background first as everyone in the Cluster is eager to get to know you better...*

Patricia Ribault: Well, I have a zig-zag kind of background: I started studying applied arts and ceramics at ENSAAMA, École nationale supérieure des arts appliqués et des métiers d'art in Paris. But what I really wanted to do was to blow glass, so I moved to England in 1998 and learned various glass blowing techniques at Brierley Hill's International Glass Centre. Then I moved to Venice and worked in Murano as an apprentice for a year, where I started wondering what it meant to be a craftsperson nowadays, if it still made sense to produce by hand like but as if you were a machine, or if it still had some kind of actuality and contemporaneity...

*Claudia Lamas Cornejo: You started the theoretical reflections about the role of craft today in that particular space out of time, Murano, could you specify your experience?*

Patricia Ribault: When I was in Murano, craftsmen were working like in the 16<sup>th</sup> or 17<sup>th</sup> century, with the nostalgia of Venetian glass' golden age. They worshipped tradition and things had to be made one way and not another. They didn't understand why a foreigner – let alone a woman – would want to learn the craft and work there. They made no effort what so ever to transmit the knowledge, to teach me how to blow glass. »You should be at home making children!« would they often say.

*Claudia Lamas Cornejo: Did you get the impression that those craftsmen in Murano rather transmitted – if willing to – knowledge by doing, not by theoretical reflection?*

Patricia Ribault: The elders were repeatedly telling to the apprentices: »Devi rubare con l'occhio« – you have to steal with your own eyes. Knowledge was a question of observing, imprinting and mimicking rather than explaining or even showing things.

*Claudia Lamas Cornejo: After intense observation in Murano, you went back to Paris for theoretical work?*

Patricia Ribault: Yes, I moved back to Paris and studied Applied Arts and Aesthetics at the Université Paris I all the way to a PhD entitled Ontology in craft.

*Claudia Lamas Cornejo: What is the French title?*

Patricia Ribault: »Pour une ontologie du geste. À notre corps défailant«. It is not just about »craft« but it includes craft...

*Claudia Lamas Cornejo: In German we have the notion »Geste«, which means physically the movement of a part of the body and in general a sort of communication, like a human gesture...*

Patricia Ribault: ...exactly, starting at the origin of mankind, related to all the different arts and techniques, which brought me to my thesis. After suspending the practical work in Murano, I went for a couple of years back and forth between Paris and Murano, because I designed pieces and had them made in Murano. I had shifted from a craftswoman to a designer, which includes a change of perspective as well as a new relation with the workers in the furnace. The first statement towards my drawings was always » We can not do it! Impossible to make«. I was astonished that they would tell ME that very same line that they would tell every artist or designer, but I realized that it was their way to participate in the process of conceiving AND making a piece. It led me to wonder if being a craftsperson nowadays was

just a matter of being a craftsperson in the traditional sense of the term or if it implied something else. Throughout my doctoral research, I learned that craft was not only about making, but also about the way of thinking.

*Claudia Lamas Cornejo: Where lies your focus in teaching nowadays?*

Patricia Ribault: At les Beaux Arts in Paris where I also teach, I am free to use all the facilities with my students, so I partly create my classes technically in the studios and partly theoretically with lectures. This mix of theory and practice is always interesting and the students are eager to have them both. I would love to do such a thing here too, and to bridge with one of the art schools in Berlin.

*Claudia Lamas Cornejo: You started with us officially yesterday, what is your personal target or aim or wish for your work at the Interdisciplinary Laboratory?*

Patricia Ribault: Two things: First, the interdisciplinarity, mixing with researchers of various disciplines at the Cluster and the Institute, and getting involved with one of the existing projects. For instance, comparing the evolution of species with the evolution of objects and art is truly fascinating!

Secondly, I would like to develop the research projects I came with, for example one that is called »Work and Genius« (Les génies du travail). It is meant to be a wide study of different forms of work, also in a philosophical sense related with the time and process of thinking through craft. So I would study various figures of work from mythological figures like Daedalus to craftsmen like Stradivari, to contemporary figures like surgeons or nano-technology experts. The aim is to understand what can be identified as genius in various forms of work, craft and techniques.

*Claudia Lamas Cornejo: Thank you very much for your time and have a good start at the Interdisciplinary Laboratory!*

The interview was led by



*Claudia Lamas Cornejo*  
Head of Public Relations & Fund raising



Since March 16th, Patricia Ribault is a member of the Cluster of Excellence *Image Knowledge Gestaltung*. »History and theory of Gestaltung« is the title of her newly created professorship (Photo: private)

## Retrospective

### Report on the symposium *The generation of images in the humanities*

#### Purpose and introductory remarks

As a result of the conclusion that we in the *Interdisciplinary Laboratory* and in other interdisciplinary formats have regularly been »mised« with respect to valuable knowledge about the generation of an image, a decision was made to seek out this implicit knowledge by staging a symposium. In interdisciplinary research, we have to deal with a plethora of types of picturisation, for example: plans and diagrams, sketches and drafts, photographs and digital images, paintings and prints, medical imaging, 3D illustrations, architectural and other types of models, films and typographical or sound pictures. In view of such disparate means of representation, it is appropriate to consider images and their generation in the context of the *pictorial* or *iconic turn* and the »extended concept of the image«, as Böhm described it in 1994<sup>1</sup>.

Multiple modes of presenting images have correspondingly diverse aims. They serve the purposes of illustration, documentation, representation or reproduction; they can be means of artistic impression, or media that meet the requirements of teaching and analysis. Naturally, they can also perform several of the above functions at the same time. Yet each of these aims has one circumstance in common: Images must be made. According to authors Dieter Mersch and Stephan Güntzel in their 2014 publication *Bild. Ein interdisziplinäres Handbuch*<sup>2</sup> (Image. An interdisciplinary handbook), images »do not exist without material, technological, instrumental and economic conditions. Likewise, images cannot exist independently of production processes, contexts of use, manner of use, media, and practices of discourse and perception«<sup>3</sup>. Aspects such as the »formation of styles and discourses« a phrase formulated by knowledge theorist Karin Knorr Cetina<sup>4</sup>, play a role here, as do images in epistemic and communicative processes. Further aspects of the type of knowledge generation that is based on images can be found in a defined association of thinkers and researchers such as the *Interdisciplinary Laboratory* or indeed in a body of political and economic strategists. In such cases, picturisation and efficient knowledge communication as well as potency determine the proactive use of the image, which among other things can help to raise funds for research<sup>5</sup>

Main issues of the symposium were: What research measures and reconstruction options and competences exist in historical disciplines? What conditions, experience and visual practices influence the disciplines engaged in imaging? And with what information can the image be enriched if image generation or processes are made visible? Can the process of visualisation, or actual visualisation as suggested by Heumann and Güntelmann, be interpreted as a »dual relationship of image and act«<sup>6</sup>?



Sabine de Günther  
Base project »Indexing of collections«



Franziska Kunze  
Base project »Attention & Form«

### Concluding remarks on the symposium »Generation of images«

The symposium made it clear that scientific images are not simply there; they have to be made. The lectures illuminated how many operational stages, decisions and interventions are required in order to arrive at images that suggest immediate visibility. The concept »generation of images« was thus purposely chosen by the symposium organisers Sabine de Günther and Franziska Kunze because, more than »representation«, it suggests the many actions and forms of implicit knowledge objects which define what is scientifically demonstrated in the image.

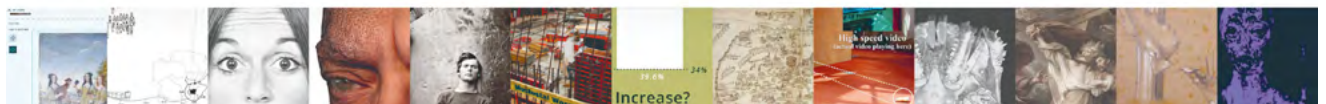
Although the examples given in the lectures were heterogeneous and reflected the interdisciplinary context of the *Interdisciplinary Laboratory*, it was nonetheless clear throughout that the processes of picturisation are less »vertical« in relating to the object »down there« than horizontal in relation to other pictures or other techniques of picturisation. The quality that we call true-to-nature is not a measure that explains the informative nature of empirical images. As Anne Leicht showed in her lecture, the pictorial language of Alessandro Strozzi's map of Rome, dated 1474, can be understood only by relating it other cartographical works of the time. A meaningful reconstruction of the portrait of Melanchthon requires several different portraits of the famous reformer, as Emilia Sleczeck made clear. To what extent the object is subject to its own suitedness for depiction becomes clear most especially with phenomena that become entities only during picturisation. What would we know of such values as income ratios or waste production per head, if they were not brought into a very particular form of existence through graphs? Faten Ahmed's lecture posed this question. Yet pictures correspond to other things besides other pictures. Almost all lecturers gave voice, in their close description of image generation, to the idea that the defining quality of an image is a dense structure made up of institutional conditions, practical knowledge, media-specific requirements and epistemic preparation. But scientific images normally conceal such conditions of their making rather than display the various possible ways of coming into being.

Franziska Kunze showed that for Roland Barthes such a making apparent of the manner of producing the pictures, which illustrated his famous essay »La Chambre Claire« in 1980, would have buried the coherence of his argumentation. For commercial images, keeping the set of operations that goes into their making secret is an economic duty. A knowledge of the image that is founded on the circumstances and possibilities of its creation requires firstly a high degree of interdisciplinary cohesion. This is an important factor within the context of the *Interdisciplinary Laboratory*. In order to be able to reconstruct the generation of the image with respect to computer-aided portraits, there is just as much a need for cultural, medical, sociological and information technological knowledge; this became clear in several of the lectures. It is therefore entirely apposite that the Excellence Cluster asks questions about the generation of images. Secondly, a reconstruction of the generation of the image requires a great deal of instinct on the part of the researcher. He or she must imitate Carlo Ginzburg's trackers who, like Sherlock Holmes, reconstruct the larger picture and related practices from abstruse clues and details, unintentionally left behind.

In few of the lectures did we hear explicitly about the question of how one can approximate pictorial practices and processes of image generation in an analytical or theoretical way. If, as has been emphatically shown and for some time agreed, we can no longer speak of images as singular objects – where should the analytical inroads be made in processes and relations of image production and contemplation?

Where would theoretical reconstruction come into play in this photograph series by a museum visitor in front of the »The Innocent Eye Test« by Mark Tansey, in which observation perspectives are also a theme? Which in the series of observation perspectives would register here and be an retroactive contributor to the process of image generation?

The subtitle of the symposium – »On the practical generation of images and their theoretical reconstruction« – emphasises





A female visitor in front of Tansey, Innocent Eye Test. (Photo: Kathrin Friedrich | Image Knowledge Gestaltung 2015)

with its additive »and« the co-action of both aspects of image generation: the doing and the reflection about the doing, which belongs to a real-life practice. In some lectures, the description of specific practices outweighed the generation of images. In others, the focus was on analytical and historic reconstruction. Yet it became clear that both approaches are always linked. But when images crop up in forms and formats that, due to the nature of the process involved, initially resist analysis – like algorithms and sounds – we must debate how to deal with this »lack of visibility« in a methodical way. When an aesthetic form is transformed into another, questions come to the surface relating to transitions, gaps and remainders which demand an updated and expanded theory of media. Whilst the question of the image and the knowledge that flows into its making was given much attention at the symposium, the concept of Gestaltung, the third major element of our *Interdisciplinary Laboratory*, missed out. If we accept that a theoretical reconstruction itself produces the object under examination – keywords reproduction, image matching – and »impregnates« it with its personal policies of Gestaltung, then the opportunity arises to clarify the concept of Gestaltung.

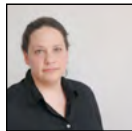
This would seem particularly necessary within the framework of the *Interdisciplinary Laboratory* since here – surprisingly – we seldom properly address the meaning of Gestaltung as a practice or a form of theoretical reflection.

The relation between image and knowledge is a given, we seem to say; Gestaltung would appear to be an implicit part of this. Yet an in-depth discussion on the significance of the concept of Gestaltung is surely required within the *Interdisciplinary Laboratory*.

Perhaps this reticence with respect to questioning Gestaltung has to do with the fact that cultural scientists and iconographers (reflecting on historical practices) have been trained above all to observe others, the things they do and how they do them as well as the way they agree to binding rules, results and processes; this, to put it casually, in favour of doing anything themselves. The idea of entering into a Gestaltung process and seeing oneself as a Gestalter is therefore foreign. Yet it may be precisely this focus on practices and the generation of the image that could legitimise a new persona in the shape of a cultural scientist who is him- or herself a Gestalter, or designer. On the one hand, it is clear that the work of the cultural scientist



was always closely linked to the social and cultural fabric, and impacted on it strongly in both theoretical and practical terms. On the other hand, and far more importantly, a political argument is engendered in this figure of the Gestalter (of images) in the humanities. For, if we can no longer call on the criterion »true to nature« to determine whether an image is »correct« or »false«, then other criteria must be found. A »true« image is such because it relates reflectively to the conditions of its own creation; a »correct« image is such because it rejects racist or sexist pictorial language; and a »beautiful« image is perhaps one that relates in a responsible way to the phenomenon of its object.



*Kathrin Friedrich*  
Base project »Image Guidance«



*Christian Vogel*  
Base project »Mobile Objects«

#### Footnotes

1. Boehm, Gottfried (1994): Was ist ein Bild? Munich: Fink.
2. Günzel, Stephan/ Mersch, Dieter/ Kümmerling, Franziska (2014): Bild: Ein interdisziplinäres Handbuch. Stuttgart. p.
3. Ibid. p. 26.
4. Knorr-Cetina, Karin (2001): »Viskurse« der Physik. Konsensbildung und visuelle Darstellung. In: Heintz, Bettina/ Huber, Jörg (Eds.): Mit dem Auge denken. Strategien der Sichtbarmachung in wissenschaftlichen und virtuellen Welten. Vienna. pp.305-320.
5. Helas, Philine (2007): Bild/Geschichte. Festschrift for Horst Bredekamp. Berlin. p.
6. Heumann, Ina/ Hüntelmann, Axel C. (2013): Bildtatsachen. Visuelle Praktiken der Wissenschaften. In: Berichte zur Wissenschaftsgeschichte 36/4. Weinheim. p.284.

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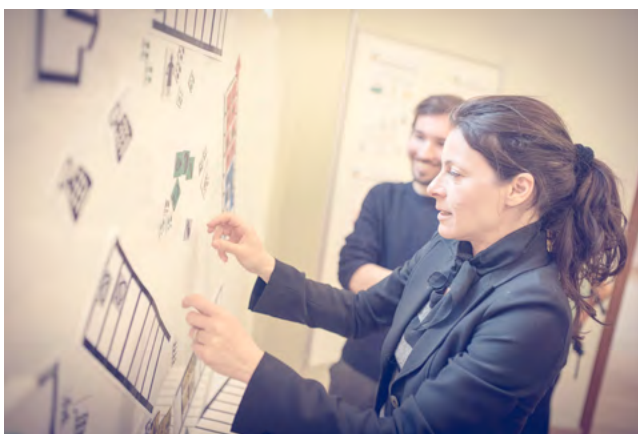
Abstracts for the lectures are available by request. Write c/o bwg.bildgenese@hu-berlin.de.



## Picture series *Presentation of the BWG-scholarship holders*



Luca Kunz explains to visitors his measurements of energy usage in the kitchen. The study included the use of various devices at various times of the day and night and the behaviour of communities, large families and one-person households.



Mariana Bulaty, Friend- and Fundraising HU, took up the challenge of sorting supermarket products according to their water footprint. The re-classification idea was Sebastian Köthe's.



There were plenty of questions for the presenters about their research findings from a packed auditorium in the Zoology Theatre of the Humboldt-Universität zu Berlin.

(Photos: Jens Kirstein | Image Knowledge Gestaltung 2015)



Wolfgang Schäffner opened the concluding presentation of the symposium on Image Knowledge Gestaltung, praising the many opportunities available currently to students in interdisciplinary research.



Philipp Schneider presented his research on fragmentation and talked about the role of historical wax moulages in the contemporary university.

(Photos: Jens Kirstein | Image Knowledge Gestaltung 2015)

## A look ahead

### *Night of the sciences*

13.06

The *Interdisciplinary Laboratory* »Image Knowledge Gestaltung« presents themes of its current research, the scenarios for a »Future city«: visitors can taste insects or dive into virtual worlds and 3D projections.

Linger by the wine stand and talk to the scientists and art students of the *Interdisciplinary Laboratory*.

#### **Insect tasting: a food of the future**

The base project »The Anthropocene Kitchen« researches resources and their use in the kitchen of the future: what and how will we eat? By way of a foretaste, insect chef Frank Ochmann will prepare and plate up various insects. In many Asian cuisines, grasshoppers, beetles and such like are favoured snacks. The World Health Organisation also recommends insects as a source of protein. This is your chance to find out how they taste.

#### **gamelab.berlin: dive into virtual worlds**



The virtual space figures increasingly in our everyday world, changing our perception of reality. Virtuality offers us unimagined possibilities and an unknown terrain. *gamelab.berlin* invites us to step into and explore virtual worlds by means of the Oculus Rift spectacles. In the

seminar »Infinite spaces: understanding and designing virtual worlds« various aspects of physical and digital space were investigated and designed. The results of the seminar are spaces, objects and worlds in which virtual and physical borders are dissolved.

#### **gamelab.berlin: Singleton**

Singleton is a game for improving quality of life. Increasingly we neglect what we really want to do. Whilst efficiency improvements, deadlines and never-ending to-do lists plague our daily lives, Singleton can offer a counterbalance. It is a pastime that uses game design methods and techniques to instil motivation, persistence and long-term success in areas in which they would otherwise retreat into the background. You play Singleton on your own. Each player creates an entirely personal, customised game and continues to develop it round by round.

#### **Workshop »Image Knowledge Gestaltung«: 3D Projection Mapping**

3D Projection Mapping is an excellent technique for making the physical and digital interfaces visible. For instance, it allows two-dimensional information such as images and films to be projected onto three-dimensional physical bodies in a room. Here, the challenge is to arrange the projected images on the physical space such that the overlaying of two media result in a spatial illusion.

#### **The Germany Scholarship theme »Image Knowledge Gestaltung«**

The Interdisciplinary Laboratory is taking in a group of research students who are Germany Scholarship holders. The students are pursuing their research projects aided by the members of the Interdisciplinary Laboratory, and the results on such things as the art of walking, the re-organisation of supermarket goods, energy consumption in the kitchen, medical models, eating habits in a kindergarten and a wooden gramophone record are presented in a poster exhibition.

# Imprint

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