

Image

Knowledge

Gestaltung

Newsletter #9

December 2015

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Editorial

Dear Readers,

In the last Newsletter# for this year, we have put together some photographs from the second annual conference of the Interdisciplinary Laboratory to show you events from the two days of the conference. As the talks and discussions made clear, the conference marked a new phase in the Cluster's objectives and interdisciplinary collaboration. The four sections of the conference – *Active Matter*, *Architectures of Knowledge*, *Image & Action* and *Form Processes & Modelling* – were an impressive reflection of the new prioritisation of the substance of the Cluster's research.

Manuela Bauche, Mario Schulze and Anna Weymann presented the current status of their work in the base project »Mobile Objects« at a *LunchTalk*. The project is a collaboration between the Museum für Naturkunde (Museum for Natural History, MfN), the Ibero-American Institute (IAI), the collections of the Humboldt-Universität zu Berlin and the Faculty of the History of Science. In parallel to this multi-institutional setting, the researchers are each exploring the phenomenon of mobile objects from different perspectives. You can read their report from page 10.

The Experimental Zone in the Cluster is now regularly reporting on its research settings. In this new section, we will present the settings that have been evaluated (page 14). I spoke with the Cluster's International Fellow Or Ettliger and the science historian Peter Galison. With Or Ettliger, I discussed his research on virtual space theory. Peter Galison explained his view of the power to convince in images, which he presented at the conference »Picturing the body in the laboratory«. You can read these conversations on pages 20 to 23.

Enjoy reading Newsletter#9.

Best regards,



Claudia Lamas Cornejo
Head of Science and Research Communication



The avatar of Christian Stein gives an interview at the Cluster's annual conference in November 2015. The avatar is a jointly developed product that Christian Stein, Friedrich Schmidgall and Michael Pogorzelsky are using to investigate the integrative effect of presence on spatial team collaborations. Presence, so the thinking goes, means interaction, visibility, changing one's own perspective and the option to move into a shared space. In the course of the conceptual work on the product, the original idea of a constantly active video connection during the annual conference was developed into a mobile avatar that can interact with its environment. The avatar is easy to understand and carry. It can draw attention to itself through physical gestures such as waving. The avatar became the active stand-in for Christian Stein, who is currently conducting research in Buenos Aires. The current prototype is being tested and continually developed as part of the Open Design master's programme, which is hosted between Buenos Aires and Berlin. The project does not only pragmatically improve the Cluster's international networking with staff or partners who are working at a distance – the project team have set themselves the objective of researching the possibilities for and limits to the virtualisation of team presence. Photo: Jan Konitzki | Image Knowledge Gestaltung 2015.

Current news *Photo gallery from the 2015 annual conference*

Image & Action



Matthias Bruhn (left), one of the two newly appointed leaders of the priority area Image & Action, introduced the conference section with the same name; Stefan Zachow and Martin Grewe took the audience on a search for traces of freedom of movement and model parameters. John Nyakatura (right), also newly appointed to the leadership team, gave a talk on »Reconstructed motion« and provided insights into image and action, taking biological research in kinetics as an example. Photos: Jan Konitzki | Image Knowledge Gestaltung 2015.



Erika Holter and Susanne Muth presented their research on ancient models of motion and gave a detailed examination of mosaic floors in Roman housing. Maria Keil spoke about her project »The hospital as a mobility machine« in collaboration with the university hospital Charité Berlin. Photos: Jan Konitzki | Image Knowledge Gestaltung 2015.

Form Processes & Modelling



The section »Form Processes & Modelling« was moderated by the leaders of the priority area with the same name, Claudia Blümle and Gerhard Scholtz. The diverse conditions and processes at work in the development and change of form in nature and culture, their perception and the analysis of these processes using modelling are the central issues for this priority area. Thomas Macho (pictured left) gave the first talk in this section on the »sting« and temporality of commands. Photos: Jan Konitzki | Image Knowledge Gestaltung 2015.



Richard Weinkamer then described models of motion, focusing on the question of individual versus collective motion, and explained why these models can be applied in fields well beyond physics. He was followed by Günther Jirikowski, who discussed genetic and genealogical aspects in the development of form as found in crustaceans. In the context of a transdisciplinary theory of form, he drew a comparison between biological transformations of form on the one hand and creative processes and the historical transformation of form in culture. Sabine Thümmeler reported on her research on the development of ornamentation in tandem with botanical knowledge around 1900. Her talk examined botanical representations, focusing on the accuracy of the models and contextualising them. Photos: Jan Konitzki | Image Knowledge Gestaltung 2015.



Thorsten Schubert gave a talk on »Prior knowledge and the categorisation of complex objects« and outlined how professional and everyday prior knowledge influences our perception of form characteristics relevant to categorisation – and how it prompts conclusions as to which category objects belong to in different fields of knowledge. Claudia Blümle moderated the following discussion with the audience. Photos: Jan Konitzki | Image Knowledge Gestaltung 2015.



Karin Krauthausen and Samo Tomšič gave a joint talk titled »Science forgets«. They took as their starting point the psychoanalyst Jacques Lacan's dictum that science has »no memory« – it forgets the difficulties inherent in its existence and its coming into being, thereby denying its historical conditionality. The talk was followed by a discussion with conference guests on whether turning this dictum on its head implies that reflections on the conditions in which science emerges and acts call for a »historical« and »critical« perspective.

Photos: Jan Konitzki | Image Knowledge Gestaltung 2015.

Active Matter



The section »Active Matter« was moderated by the two priority area leaders, Peter Fratzl and Christian Kassung. The core issue for this priority area is the relationship between intrinsic and extrinsic code in the context of so-called active materials that play a key role in materials research today. The objective is to develop a concept of code that describes symbolic operations of an analogue and material character in the context of digital algorithms. Photos: Jan Konitzki | Image Knowledge Gestaltung 2015.



Sebastian Schwesinger discussed in his talk »Filter structure function. On the encoding of sound structures« how material effect as functional meaning is intertwined with symbolic articulation as the analogue form of transmission in the acoustic sphere. Michael Friedmann and Angelika Seppi spoke on »Folds and folding: Between analogue and digital code«. Regine Hengge explained how her research has led her via genetic and material code to macroscopic forms in bacterial biofilms. Photo: Jan Konitzki | Image Knowledge Gestaltung 2015.

Architectures of Knowledge



Henrike Rabe discussed in her talk »Flows, fluids and connections. Designing dynamic processes« the call by architects such as Hiroshi Hara and Kazuhiro Kojima since the end of the 20th century to not only consider formal properties when designing space but to also think about what happens inside it. She asked how these theories might be incorporated into design practice and discussed the relationship between representation and experimentalisation, as well as examining how these might be realised in concrete terms in the Experimental Zone in the Interdisciplinary Laboratory. Photo: Jan Konitzki | Image Knowledge Gestaltung 2015.



The mood during the closing discussion at the annual conference on Saturday, 21 November 2015, was fantastic: on that date, Horst Bredekamp and Wolfgang Schäffner had been the Directors of the Excellence Cluster for exactly 1115 days. Photo: Jan Konitzki | Image Knowledge Gestaltung 2015.

The *LunchTalk* in the *Interdisciplinary Laboratory*



The *LunchTalk* in the *Interdisciplinary Laboratory* is held weekly from 12.30 to 2 p.m. on Tuesdays. External persons may attend on request. (Photo: Claudia Lamas Cornejo | BWG 2014)

The *LunchTalk* is a permanent fixture in the Excellence Cluster week at the *Interdisciplinary Laboratory*. On Tuesdays from 12.30 to 2 p.m., members of the Excellence Cluster or invited speakers give a talk on relevant topics. Excellence Cluster members then discuss the talk in order to identify points of reference, interfaces with or differences to their own work in the Cluster. The *LunchTalk* provides members with an opportunity to exchange ideas informally and discuss issues in their research in a protected internal space. Here they can float ideas, theses and findings that are not yet 100 per cent ready for publication and open them to debate amongst researchers in different disciplines. This is why, as a general rule, the *LunchTalk* is not open to non-members of the Cluster. If you are interested, please send an enquiry to 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 & Fundraising

LunchTalk report November 2015



LunchTalk report »Mobile Objects«



A GDR scuba diver off the coast of Cuba identifying relevant corals for the Zoological Museum in East Berlin in 1967. Photo: MfN, HAS Zool. Mus., BV 654/Wolff.

Movements of objects in museums, exhibitions and libraries

Manuela Bauche, Mario Schulze and Anna Weymann began their work in the Cluster in May 2015; after half a year, they presented the current status of their research in the base project »Mobile Objects« for the first time. The multi-institutional project is a collaboration between the Museum für Naturkunde (Museum for Natural History, MfN), the Ibero-American Institute (IAI), the collections of the Humboldt-Universität zu Berlin and the Faculty of the History of Science. In parallel to this multi-institutional setting, the three researchers are approaching the phenomenon of mobile objects from three different perspectives: Manuela Bauche adopts a historical perspective and focuses on the mobility of objects from a Cuban coral reef in the Museum für Naturkunde in East Berlin. Anna Weymann's perspective is information science. Her work examines the digitised library collections of the Ibero-American Institute. Mario Schulze takes a museological perspective and investigates the movements of objects during the touring exhibition of the finds from the tomb of the ancient Egyptian Pharaoh Tutankhamun.

One central thesis guides all three subprojects: focusing on the mobility of objects can serve as a heuristic technique for making the invisible visible. Natural historical, library and cultural historical objects can be used as examples that demonstrate how to uncover the people and processes that generally remain invisible when examining these objects – starting with those who work on the objects (curators, librarians and even scuba divers) via the legal negotiations on the status of the objects to the kinds of policies and diplomacy that accompany the objects when they are mobilised. This leads into the thesis that exploring the movements of objects enables us to overturn prevalent assumptions about the mode of being of objects. Whereas objects' existence is typically self-evident, and they thereby appear stable and constant, this constancy and stability becomes questionable when they are mobile. The stability and enduring nature of objects require explanation when they become mobile; these characteristics appear to be manufactured, to have come into being rather than being inherent properties, while mobility and instability are normalised. This approach links the base project »Mobile Objects« to a wide field of research on material culture (in particular in the sciences and humanities) since



Scanning a library object.

Photo: Ibero-American Institute.

the 1970s and seeks to expand this work.

In that decade, researchers began to consider how objects and material culture could themselves become the objects of research. This move occurred not just in object-based disciplines such as ethnology and archaeology, but also in literary and cultural studies, science and technology studies, sociology and the history of science. These reflections on objects and material culture made far-reaching statements on culture and society possible. In these enquiries, stable objects with a specific location were – and still are – often treated as distinct from mobile objects: on one side there is the object, stably located to a certain degree in the archive

of a museum, in the recording and categorisation system of a library or as a display object in a presentation context (e.g. a display collection, teaching collection, permanent exhibition or special exhibition). On the other side is the mobile and unstable object in the scientific laboratory. Research in the base project »Mobile Objects« breaks with this opposition of the stable and unstable, and explores both instability and mobility as well as stabilisation and

immobilisation processes.

This is the methodological approach that Manuela Bauche used to examine the history of a coral reef installation that can be seen today in the Museum für Naturkunde in Berlin. In its current presentation, this reef installation does not incite many questions or knowledge; neither does it attract much attention – it is the only exhibition object in the room in question without any kind of written explanation. Visitors generally head towards the other exhibits and turn their backs to the reef installation. The object appears very much self-evident and almost seems to be a piece of room decoration without any need for explanation; this is the starting point for Manuela Bauche's research.

Its self-explanatory presence stands in contrast to the fact that the reef installation's stable presence in the museum was only made possible in the first place by a diverse range of practices and policies that went far beyond what would normally be associated with natural historical work. Manuela Bauche's subproject investigates these practices and policies by retracing the movements of the parts of the installation with an object-biographical approach.

The history of the coral reef installation ›begins‹ with an expedition that took four employees of the Institute for Systematic Zoology and the Zoological Museum of the Humboldt-Universität zu Berlin (as they were known then) and five scuba divers from the GDR to Cuba. The expedition's objective was to cut out a section of a coral reef, transport it to the museum in East Berlin and exhibit it there. The expedition team returned to Berlin with six tonnes of coral. But this material was only exhibited for the first time seven years after the end of the expedition: a coral reef diorama was created in 1974 for an exhibition at the museum to mark the 25th anniversary of the GDR's founding. It was accompanied, amongst other things, by explanations of the material's Cuban origins. The diorama was used again in 1988 in a special exhibition on the ecology of coral reefs. In 2008, almost twenty years after the collapse of the GDR, the installation that can be seen today was created from the material collected in Cuba – for an exhibition on coral reefs and climate change. In 2014, the installation was exhibited again, in the exhibition room where it still stands today and which focuses on preserving techniques.

Manuela Bauche is interested in these diverse actions and conditions that made these constitutions of coral reef objects possible: firstly, the enormous material outlay for the expedition (73 boxes of equipment, several boats and a heavy-goods vehicle). Secondly, the great technical labour and craftsmanship that were manifested in the numerous dives and in the museum in experiments with pigments, film material and lighting. Thirdly, the repeated failure of



View of the construction of the exhibition *Treasures of Tutankhamun* at the Seattle Art Museum, 1978. Photo: Paul Macapia | © Seattle Art Museum

the material – the objective of removing a continuous section of reef could not be achieved, so the corals had to be removed separately; it was impossible to retain their form and colour, so these had to be staged instead. Fourthly, the manner in which the coral material has been presented can be categorised according to political relations with Cuba: relevant before 1989 and irrelevant after 1989. All these processes, actors and policies played a part in the constitution of the current coral reef installation.

Anna Weymann presented the approach that she and her colleagues at the Ibero-American Institute are adopting to explore the mobility of objects from the perspective of digitisation. Her fundamental assumption is that digitised library collections enable objects or the information contained in them to be used independent of time or space, to be connected and contextualised. Previously stable, fixed objects in the library acquire a degree of mobility and visibility, speed and reach. In the subproject »Digital object mobility. Recent technologies and transatlantic exchange of knowledge«, she is interested in the conditions in which digitisation operates as a mobilisation strategy: there is much more digitisation than simply placing media or objects on a scanner. Digitisation in this case is seen as

a value chain consisting of political processes and decisions, one that is influenced by a complex construct of inner-institutional and external conditions. Examining individual elements in this chain will help to analyse digitisation as a mobilisation strategy and to understand its different conditions, influences, processes and, ultimately, its results. This raises the question of whether mobilisation via digitisation succeeds or fails, as well as how digitisation, objects and actors influence each other mutually. The IAI will observe, follow and evaluate its own digitisation processes, strategies and projects with a particular focus on the objects selected and their mobility before and after they are digitised. Some of these objects are visual objects that already possess a high degree of mobility in their analogue form, yet at the same time exhibit a high potential for invisibility and decontextualisation due to their material and media character. On the other hand, the project also examines hybrid objects (such as graphic/text combinations) that cannot be definitively classified and hence often have heterogeneous patterns of movement and elements of (in)visibility in an analogue state. A further research focus will be the IAI's international, cooperative digitisation project. How does such an undertaking function when a number of different frameworks and policies come to-

gether? What opportunities and challenges arise, and to what extent do they influence the process and the result of digitisation? There will also be an exchange of ideas with the Museum für Naturkunde and the collections of the Humboldt-Universität as interesting comparisons can be made here between collection-based institutions in relation to digitisation.

Mario Schulze is examining some examples of object mobility in what is probably one of the most popular international touring exhibitions of all time. For the Tutankhamun exhibition in the 1970s, initially 50 and later 55 precious objects from the burial chamber of the ancient Egyptian boy pharaoh, discovered in 1925, toured the United Kingdom, Soviet Union, United States, Canada and finally the Federal Republic of Germany. The *Tut* show became a pop culture phenomenon and the model for a new genre of exhibition: the blockbuster. The exhibition triggered, as the press reported on many occasions, full-blown »Tut-mania«. All kinds of reproductions flooded shops, both inside and outside the museums. Whilst the exhibition generally can be interpreted as the point of intersection for different perspectives – the aestheticisation of the finds as art, the postmodern commodification of culture, as an example of international relations influenced by imperialism and the negotiation of masculinity and racial identities –, the focus in this subproject is once again object mobility.

The exhibits from the burial chamber were never primarily (let alone exclusively) what they appeared to be in the museum exhibition, namely cultural historical evidence of ancient Egypt and hence art works that transcend time. Rather they were unstable entities that were able to become national representatives and pop stars in the course of the exhibition. The gold mask of Tutankhamun, for instance, acquired diplomatic status not least because the objects' movement was only possible due to the highest levels of diplomacy (balanced between oil import interests and the Palestinian question). The gold mask was transported by the air force, received as if it were a state visit and celebrated in newspapers like a king and a representative of Egyptian state power. Iconographically, it was always presented on an equal footing with leading political figures. The mask was simultaneously idolised like a pop star during the exhibition. A thriving fan culture developed, continually promoted by the popular press. Not only did countless reproductions (from T-shirts to tissue boxes) contribute to this; the marketing activities of the museums themselves also played their part. They deployed a visual strategy by which they sought to infuse the objects with a particular aura. Countless, high-gloss colour images, for instance, appeared in the printed catalogues. These im-

ages generally filled entire pages and staged the objects with light and shade to a mesmerising effect. By enlarging the minutest details and focusing on the skilfulness and special features, but also on the scars, damage and repairs that can be observed on the objects, these images sought to capture something that cannot be reduced to a photograph: the objects' materiality and presence that cannot be reproduced in two-dimensional form. Mario Schulze's thesis is that this visual strategy on the one hand enabled the museums to endorse the mass circulation and reproductions of the objects in order to create the kind of cultural hype typical for a pop star; on the other hand, the museums simultaneously claimed that there was no substitute for visiting the exhibition itself and ascribed an originality to their exhibits of the kind that pop stars are supposed to possess.



Manuela Bauche
Base project »Mobile Objects«

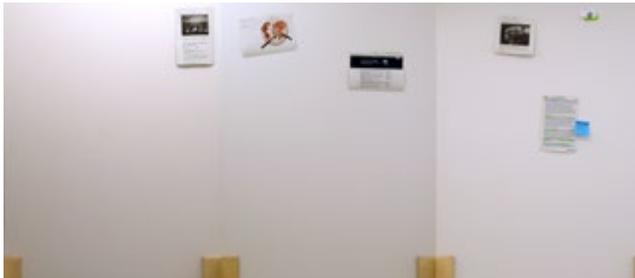


Mario Schulze
Base project »Mobile Objects«

Anna Weymann
Base project »Mobile Objects«

From the Experimental Zone #01

Recap of the first experimental setting



The filled activity wall at the end of experimental setting #01 (Photo: Friedrich Schmidgall | Image Knowledge Gestaltung 2015)

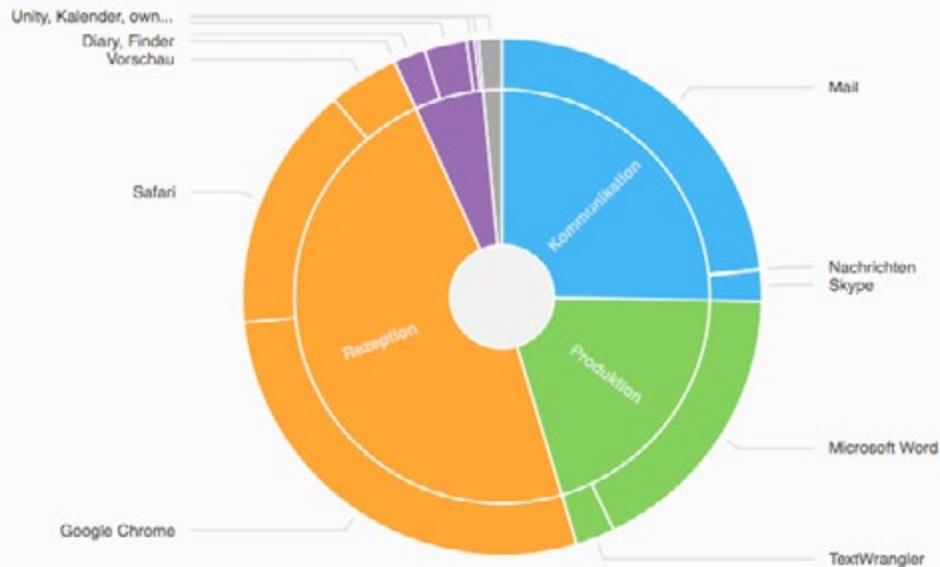
Experimental setting 01 »Activity wall« (May 2015)

Researchers working on very different issues come together in the Experimental Zone, just as they do in the Cluster itself. But what issues are these exactly? Do they perhaps overlap thematically in ways that have not yet been identified? And how can we make this potential visible? These are the questions that interested us in the first experimental setting, »Activity wall«. We provided participants with a 7.5 m² pin wall and asked them to pin on it each week an object of their choice that represented their work in the past week. They were also asked to use strings to show the connections to thematically related objects chosen by other participants.

In this way, a visualisation of a network that spans the objects of participants' research was gradually created during the experimental setting. The activity wall did not just show existing connections but also the opportunities to make new ones.

► [Survey on the experimental setting »Activity wall«](#)

Experimental Zone Current news



Infographic of the Diary software (Image: Christian Stein | Image Knowledge Gestaltung 2015)

Diary software for all Cluster members

The Diary software is now in regular use in the Experimental Zone, and many members are also using the application elsewhere in the Cluster. Diary analyses the user's work behaviour based on the time that programmes are used for – for example, by calculating the relationship between production, reception, communication and tools in particular time frames. The analyses are presented in personal, interactive infographics and enable all users to develop a better understanding of the stages in their own work and their work styles.

As before, every user retains full control over the use of his or her data and can use the software entirely for his or her own purposes without sending the data for analysis. The programme has consciously been designed to be very transparent – after all, we as a Cluster of Excellence want to set an example by acting responsibly in the field of data-

driven research.

We would like to invite all members of the *Interdisciplinary Laboratory* to try out the software and test how useful it is. It goes without saying that we are happy to answer questions on the Diary software at any time – whether they are about installation, functions or the use of data –, and we welcome suggestions.

- ▶ [Description and instructions](#)
- ▶ [Diary on intern.bwg](#)

Experimental Zone New setting from 1 October

The aim of the Experimental Zone is to iteratively design, observe and analyse the spaces used in interdisciplinary collaboration. The experimental settings are intended to address a specific research question or to collect data that is not gathered through continual observation.



The Experimental Zone has been divided into two sections: on one side, there is an open trading zone. The other side houses the Experimental Zone's 30 individual workplaces, arranged close together in five groups of tables. Graphic: Fabian Scholz | Image Knowledge Gestaltung 2015.

Experimental setting 05 »Practices«

The fifth experimental setting is titled »Practices« and was implemented in October. The Experimental Zone has been divided into two sections for this setting: on one side, there is an open area, a trading zone for experimental structures, artefacts, images and tools. On the other side, the Experimental Zone's 30 individual workplaces are located, arranged close together in five groups of tables. The two zones are each intended for different practices. »Spaces of theory« and »spaces of experiment« are the key characteris-

tics of laboratories and design studios as architectures of knowledge, which were the source of inspiration for this setting. In these spaces, knowledge emerges in the interaction and interplay between desk work and experimental practice.

In this and subsequent settings, we are excited to see the kinds of experimental tools and small-scale architectures that can be designed, built, tested and examined in the Experimental Zone.

The Experimental Zone online

► **The Experimental Zone podcast**

on bwg.hu-berlin.de

► **Online documentation**

on intern.bwg.hu-berlin.de

► **The Experimental Zone group**

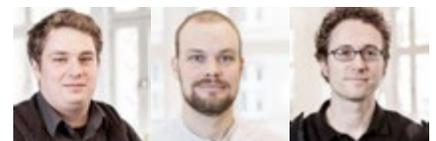
on intern.bwg.hu-berlin.de



Julia
Blumenthal

Sammy
David

Henrike
Rabe



Friedrich
Schmidgall

Fabian
Scholz

Christian
Stein

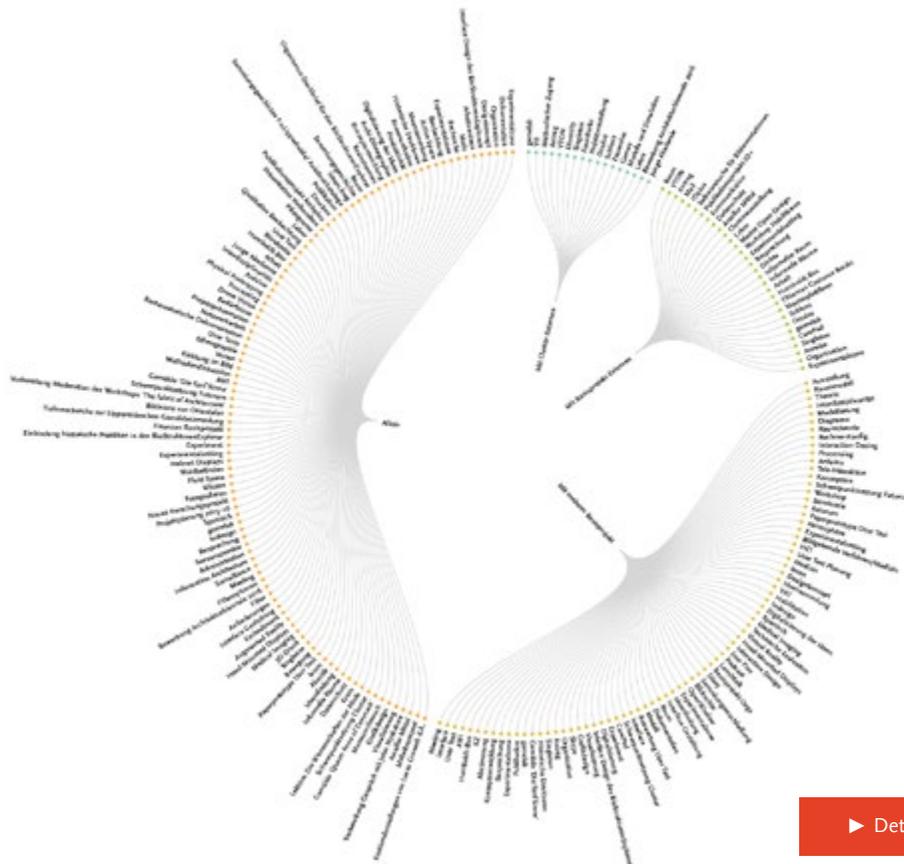


Benjamin
Thomack

For further information or if you are interested in participating, please contact:
bwg.experimentalzone@hu-berlin.de

From the Experimental Zone #02

Recap of the second experimental setting



Visualisation of themes of work grouped by working style (Graphic: Tobias Bleifuß, Friedrich Schmidgall | Image Knowledge Gestaltung 2015)

»Themes of work – Styles of work« (June 2015)

The experimental setting »Themes of work – Styles of work« was implemented in June. For this setting, participants were asked about their current activities. The information was requested twice daily via the Diary software. They were asked what themes and topics they were working on, whether they were working alone or with others, and whether the activity was productive or receptive. An initial analysis of the data collected shows that organisation and logistics are the most time-consuming activities. These are closely followed by visualisations and work on data privacy issues. Discussions, communication and con-

ceptual work were also very time-consuming. This finding can be explained by the fact that larger numbers of people are involved in such activities.

Work on individual research issues showed much fewer overlaps. Most work in the Cluster is conducted alone. The evaluation of the setting has to take many complex issues into account and is still ongoing.

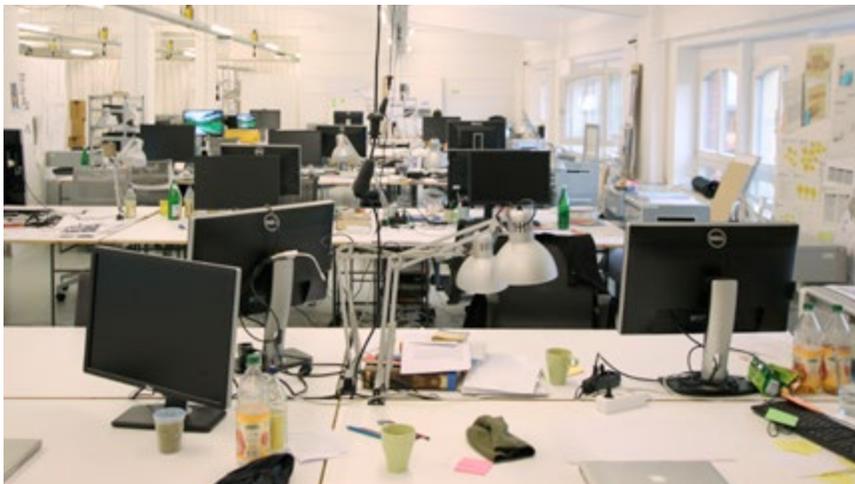
► [Survey on the experimental setting](#)

Experimental Zone Current news



New physical configuration of the Experimental Zone

From 1 October, the Experimental Zone has been divided into two sections, each of which enables different work styles. In the right of this image, the open area that encourages material design work can be seen. To the left of it are the 30 individual workspaces, arranged in five groups of tables.



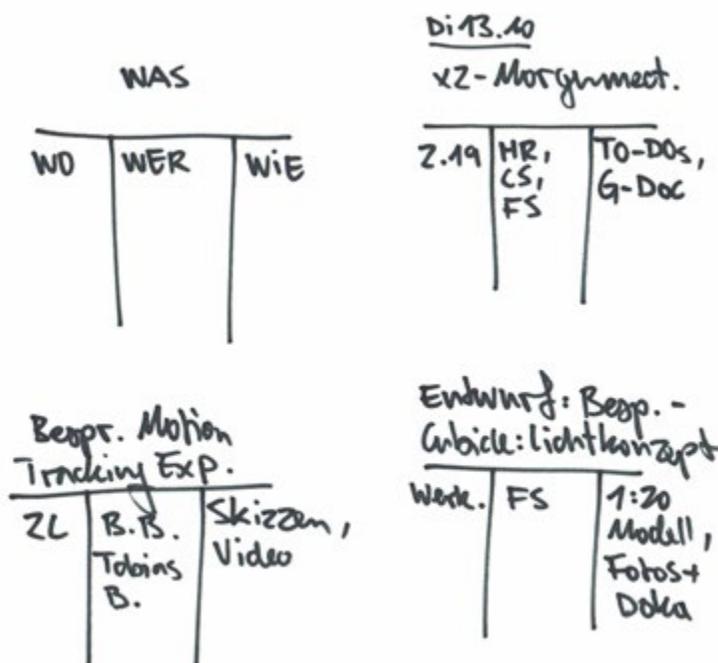
The close proximity of the »spaces of theory« and »spaces of experiment« is inspired by laboratories and design studios. The setting explores the influence that direct interaction and interplay between desk work and experimental practice has on interdisciplinary research.



Physical configuration of the Experimental Zone from October. (Photos: Fabian Scholz | Image Knowledge Gestaltung 2015)

Experimental zone: New setting from 1 November

The aim of the Experimental Zone is to iteratively design, observe and analyse the spaces used in interdisciplinary collaboration. The experimental settings are intended to address a specific research question or to collect data that is not gathered through continual observation.



The participants were asked to keep a simple diary, which might look like the example pictured. (Image: Friedrich Schmidgall | Image Knowledge Gestaltung 2015)

Experimental setting 06 »Diary«

What subjective image do the participants in the Experimental Zone have of their work in the Cluster? Where do they work, what tools and methods do they use and what is their human network like?

These are the questions we want to explore in two stages with the »Diary« setting. Firstly, we will ask Experimental Zone participants to keep a simple diary in November in order to collect the following data: What (was done), Where (did the activity take place),

Who (was involved) and How (what tools and methods were used). We will then hold a workshop and attempt to visualise our diaries together.

The aim of the workshop will be to illustrate how participants picture their own work using mind maps.

The Experimental Zone online

► **The Experimental Zone podcast**

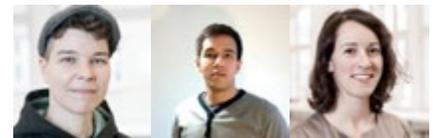
on bwg.hu-berlin.de

► **Online documentation**

on intern.bwg.hu-berlin.de

► **The Experimental Zone group**

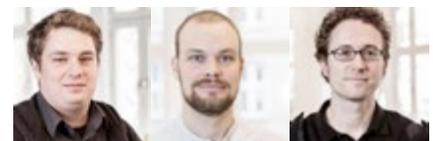
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For further information or if you are interested in having a workspace in the Experimental Zone, please contact:

bwg.experimentalzone@hu-berlin.de

In conversation with ...

Or Ettliger *The Virtual Space Theory*

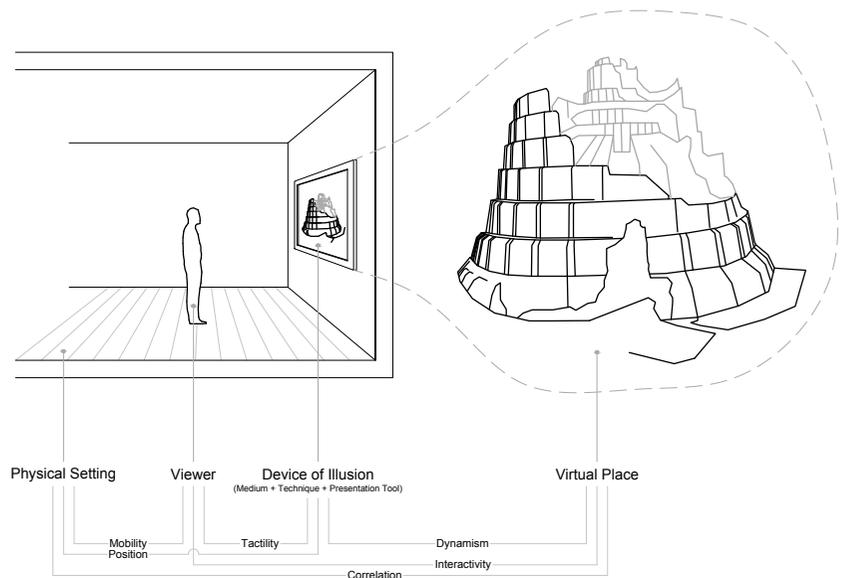
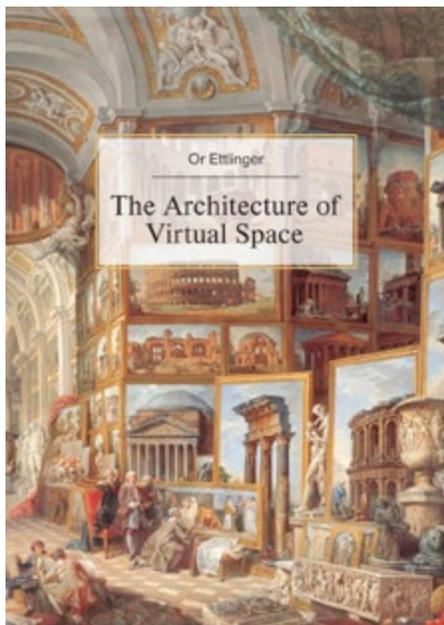


Fig. 1: Cover of the book »The Architecture of Virtual Space«, Fig. 2: Diagram of the elements that form the experience of virtual space.

Or Ettliger is a Professor and Senior Researcher in Media Theory and Virtual Architecture at the Faculty of Architecture of the University of Ljubljana, Slovenia. His exploration of virtual architecture and virtual space has spanned both formal education and professional experience across the multiple disciplines from which these emerging fields derive. We met Or Ettliger, who joined the Interdisciplinary Laboratory as a fellow researcher on 1 October, and we spoke with him about his journey, which has ranged from architecture to computer science, from product design to information design, from classical drawing to digital imaging, and from art history to media theory, and we asked him about his expectations as a Fellow at the Cluster of Excellence.

Claudia Lamas Cornejo: It's very nice to meet you again. Welcome to the Cluster. Let's talk about your research background: which discipline do you come from?

Or Ettliger: My background is in multiple different fields that I've explored over the years and tried to find a connection between them, such as architecture, computer science, art, design and digital media. Their multiple areas of intersection form the territory in which I operate and

which I am exploring. Within it I function simultaneously as someone who is creating, as someone who is trying to understand theoretically what is going on around him and also as an educator who supports others in finding their own way in it. This has also led to particular topics of interest and activity within that wide area.

Claudia Lamas Cornejo: What are your topics of interest? Maybe you can name a few specific projects?

Or Ettliger: One of them is what I call the »Virtual Space Theory«. It came from my interest in the architecture that I found in pictorial mediums – architectural designs that exist in classical paintings or architectural designs that you find today in movies and video games. I saw it as one overall phenomenon and was interested in understanding the type of space that they were created in and are now located in. That led me to the investigation of space in pictorial arts in general, regardless of the media, technology, history, use or so on. This resulted in a comprehensive image theory that can be applied to many other topics as well. Another area of interest is the creative process, both the theory of it as well as how to do it and teach it. I experimented with that in my work with students and estab-



Fig. 3: Creativity Studio's »Architectural Video Games« project.

lished what I call the »Creativity Studio«, where creativity is explored and taught through actual projects that are very imaginary, very unusual, and combine a lot of different fields. For example, at one point we created architectural video games with students of architecture and computer science, and in the following year we added students of fashion design, industrial design, landscape design and sculpture, and together created a vision of what the next »Star Wars« movie might look like. With another team we explored futuristic types of transportation technologies and imaginary scenarios for future architectural styles.

Other topics of interest are architectural theory and the experience of place, the role of art and aesthetics in the human experience, as well as the growing field of information design, data visualisations and interface design, and how it might benefit from these other fields.

Claudia Lamas Cornejo: You are already working a lot in interdisciplinary teams?

Or Ettliger: Yes. I never find myself quite comfortable in one particular limited niche, so I keep moving between them and looking for connections.

Claudia Lamas Cornejo: How did you hear about the Interdisciplinary Laboratory?

Or Ettliger: When my research on virtual space was published, I also started to search online for institutions and researchers dealing with topics that are parallel to mine or might be interested in my work in order to establish a dialogue. I contacted Professor Bredekamp, and he was very appreciative, open and curious to hear more about it.

Claudia Lamas Cornejo: Are there already some specific projects within the Interdisciplinary Laboratory that you are very interested in getting in contact with?

Or Ettliger: At this point, I am open to hearing and finding out about anything. I have come to a point in my professional life where I've done so much research on my own that I feel that I now need to open up and collaborate. I have reached that critical moment in the creative process where it no longer makes sense to just continue to work alone in the studio, so to speak. So I am here to explore what exists out there and see what that brings out of me, as well as to share the results of the work I've been doing in recent years and see what that might bring out of other people. It is about having a dialogue. We will meet and just see what happens.

Claudia Lamas Cornejo: You are here for the next four months. What results would you ideally like to see at the end of this time?

Or Ettliger: The ideal result would be the formation of a fruitful collaboration for the future. I see it as an opportunity to meet, expand and create something long term. Another great result would be to discover unexpected areas in which my own work could be applied and contribute to other people's work and projects. Perhaps new projects could also be born from the exchange of ideas that happens here.

Claudia Lamas Cornejo: Thank you very much and once again, welcome to the Cluster!

Peter Galison *The Conviction of Images*



Peter Galison is a Joseph Pellegrino University Professor of the History of Science and of Physics at Harvard University. With Robb Moss, he directed »Secrecy« (81 minutes), which premiered at Sundance, and, also with Moss, is directing »Containment« (about the need to guard radioactive materials for the 10,000 year future).

Claudia Lamas Cornejo: »The conviction of images« is the title of your lecture for the conference »Picturing the body in the laboratory«. Could you explain this conviction?

Peter Galison: The title »The Conviction of Images« is a word play on the two meanings of conviction. On the one side, the long history of scientific images from the early 19th century to the present that interests me is the history of epistemology; it is a history of how we came to a great deal of scientific knowledge and how we gain the conviction that these images stand for something lasting in our scientific view of the world. But digital images have been convicted in a jurisprudential sense, in so far as our ability to manipulate images – which gives great strength to what we can do – permits us to modify them, to distribute them, to simulate them, and also allows people to bend images in destructive ways. The introduction of Photoshop, for example, has played an increasingly worrisome role for the scientific community concerning the reliability of images that are printed in our scientific journals as well as for images used as evidence in court or the depiction of the human body in the fashion industry. So I am interested in these moments that have happened in the last ten to

twenty years where our ability to manipulate images learns great power epistemologically but also destructive power in the way images are used.

Claudia Lamas Cornejo: So the new forms of digital images require a new and radical position from the observer? What does this new position and role of the observer look like?

Peter Galison: With Lorraine Daston I wrote a book called »Objectivity«, and in it we look at the ways in which the techniques of making scientific images are closely associated with the scientist himself: what the right kind of observer should be. In the 18th century, the scientific observer aimed to be a kind of sage, genius, able to find a reality behind any appearance like Goethe or Albinus. They could see perfection behind the imperfect skeletons, bodies, plants and insects. In the mid-19th century, the scientist aimed to allow nature to write itself on the page with a minimum of intervention. They saw the right kind of observer more as a worker, somebody who did not interfere with the process. In the early 20th century, people begin to think that maybe the right kind of observer is trained, an expert who learns to see the difference between a well-functioning image-making device and a badly functioning one. There is a certain confidence that the early-20th-century image maker had in her or his ability to distinguish the real from the artificial.

Claudia Lamas Cornejo: What about the observer of the 21st century? What will the scientific observer of the future be like, what abilities will be required?

Peter Galison: What I think is happening now: this extremely powerful set of technologies around the digital image which allows us to do things that even the people from the 20th century could not have imagined – we can distribute images to a million people in the cloud, who can help build galaxies; we can make animated images and images that are hybrids between images and simulations. We can even make games out of manipulations of images, so that you get points for rearranging proteins. These are fantastic techniques that allow new discoveries and new forms of analysis. All of these systems of distributions,



manipulations, simulations, gamifications are remarkable, but it has a darker side. It is enormously tempting for all of us to change the images a little bit, change the colour, the contrast, or exchange a face, and this can be very destructive because we still count very much on images. Many scientific journals now have elaborate tactics to detect excessive use of manipulation.

Claudia Lamas Cornejo: So the scientific observer of the future would be a highly trained expert with a strong critical eye? What would your ideal future observer be like?

Peter Galison: It is a very interesting question because in a way you are asking: we have seen the right kind of scientific observer-self as a sage, a worker, a trained expert, and what comes now? In a way, a lot of science nowadays has elements of engineering, of making things, not just reporting things, for example, in nanoscience. Once you are in the world of making, you are actually closer to art and aesthetics. I think at the moment there is a tremendous interest in connections between scientific images and aesthetic images, which we see on both sides, in the arts and science, and this is a much closer relationship than the 19th century witnessed. The image-maker becomes a maker, which is a different way of seeing yourself because you need to construct things at the nanoscale, new forms of genetic or neurological images, etc. The ability to find new forms of visualisation is more self-consciously making and manipulating than might have been the aim of a 19th-century scientist. This is new territory. We try to make rules, but we cannot say: »Do not do anything to the image.« Otherwise many scientific images would stay invisible. Many journals now ask for the raw data in addition to the image that is supposed to be published. They want to judge themselves if someone has exaggerated with a certain manipulation of an image. But this will not leave us without scandals of false images on the covers of highly revered scientific journals in the future. This will remain a very big issue.

Claudia Lamas Cornejo: Speaking of visualisation and another big issue: for your new film, »Containment«, you have chosen a very interesting format, the graphic novel. Could you say a few words on that particular image making?

Peter Galison: Well, film in general can address a wider audience to engage them, but part of it is that I deeply believe that images can give people a visceral, specific, material sense of the problems that otherwise might seem far away and abstract. Containment of nuclear waste is something that we do not see. It is the unimaginable we do not want to think about too much. It is out of sight: it is dangerous. What does it look like? Where is this stuff? Part of the goal of making the film for me is to give us a strong image of what these problems are. With my co-director Robb Moss, we were interested in scenarios and speculative futures. How might people 10,000 years in the future penetrate the place where the nuclear waste is buried? There is a site in the US, but in order to dig there, the Department of Energy had to imagine futures and why people might dig there and how. These scenarios are like little film scripts. What if people dig a tunnel there and did not see the instruction signs? Because these scenarios are sketches, brief glimpses, graphic novels seemed a really good way of visualising that because they are, too, just glimpses. They are not trying to be realistic and depict all of the aspects of life, i.e. how people dress and so on. They are just fragments like flashes in the dark. Graphic novel sequences became the best way of handling those future scenarios for me.

Claudia Lamas Cornejo: Thank you very much for your time and hopefully we can watch your film soon here in the Interdisciplinary Laboratory!



Claudia Lamas Cornejo
Head of Public Relations & Fundraising

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A Look Ahead

Conference: Signs & Symbols

18–21 February 2016



SIGNS AND SYMBOLS. DRESS AT THE INTERSECTION BETWEEN IMAGE AND REALIA

Dress research is a relatively young academic discipline, and its methods are dynamic, drawing from the fields of visual studies, linguistics and cultural studies, and alternating between detailed empirical analysis of material culture and its interpretation. Fashion in images (painting, printmaking, photography, sculpture) and in written works is typically considered through the lens of art history and historical analysis, whereas the research on textiles and clothing tends to favour technology-based methods of investigation. Yet not infrequently, it appears that the various specialised interests are generating independent strands of research – leaving untapped the potential to create synergies and to synthesise diverse research approaches. »Cross-reading«, the juxtaposition of different source texts, requires particular meticulousness and a thorough knowledge of the different research disciplines. Common to all the disciplines engaged in dress research is the question of how to define and delineate the image-dress-fashion triad. In the framework of this multidisciplinary conference,

we want to bring about a reflection on applied methods and, with it, a collective self-positioning of the disciplines with regard to dress.

The overarching aim of the conference is to create synergies in the research on visual objects, dress and accessories by bringing together scholars from a range of disciplines in the humanities and empirical sciences whose research engages themes of dress and fashion. The focus of discussion will be on methodical and methodological questions surrounding the reconstruction of dress and its significance in visual and textual media.

Berlin, 18–21 February 2016

[Further information can be found here >>>](#)

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