



An Interdisziplinäres Laboratorium

Cluster of Excellence at Humboldt-Universität zu Berlin

Image

Knowledge

Gestaltung

Newsletter

November 2013

#1

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Editorial



The *Interdisciplinary Laboratory* conducts research into fundamental processes of Gestaltung in the sciences. (Photo: Claudia Lamas Cornejo | BWG 2013)

Dear Readers,

We are delighted to be able to send you today the first issue of the cluster newsletter. The newsletter will be published quarterly and will report on the most important findings of the Cluster of Excellence *Image Knowledge Gestaltung*, an Interdisciplinary Laboratory at the Humboldt-Universität zu Berlin.

The Cluster of Excellence *Image Knowledge Gestaltung* was launched exactly a year ago as a joint venture by over 25 disciplines to undertake research into fundamental processes of Gestaltung in the sciences, to understand Gestaltung itself as a genuine research achievement and to take the research seriously as a process of Gestaltung. On this basis, investigating Gestaltung as the materialisation and realisation of knowledge, the cluster links basic research and its application. In 24 base projects around 126 researchers are examining issues that one discipline alone cannot answer.

The keen interest in this research project, which is unique of its kind in the university's history, has prompted us to go public as soon as possible with our questions, theories, and partial results and to present them for discussion. A fundamental characteristic of the cluster is, indeed, self-observation.

Under which preconditions can scientists collaborate successfully on an interdisciplinary basis? This question has repeatedly been, and will continue to be, a subject of the discussions that follow our weekly *LunchTalks* in the *Interdisciplinary Laboratory*, an occasion on which individual members or invited speakers talk about relevant topics and explain their point of reference to the cluster. The weekly in-house newspaper for members, *CZ#*, has also been an integral part of communication between representatives of very different disciplines. In it, disciplinary issues are discussed, as are problems and suggestions on how to improve interdisciplinary work and research. The Newsletter #1 is now the first medium to leave the protected space of the cluster and to be aimed at a wider public.

We hope you will find it interesting and look forward to your feedback, your queries, and your criticism!



Horst Bredekamp
Director



Wolfgang Schäffner
Director

The LunchTalk



The *LunchTalk* in the *Interdisciplinary Laboratory* is held weekly from 12.30 to 2 pm on Tuesdays. Outsiders may attend on request. (Photo: Claudia Lamas Cornejo | BWG 2013)

LunchTalk in the *Interdisciplinary Laboratory* is a constant in the cluster week. On Tuesdays from 12.30 to 2 pm, members of the cluster or invited speakers give a talk on relevant topics. Cluster members then discuss the lecture in order to identify points of reference, interfaces, or differences from their own work in the cluster. The *LunchTalk* provides members with an opportunity for informal exchange of information and discussion of issues arising from their own research in a protected internal area.

Here they can air these and findings that are not yet 100% ready to go into print for discussion by scientists in different disciplines. That is why the *LunchTalk* is not, in principle, open to external persons. If you are interested you can send an inquiry 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

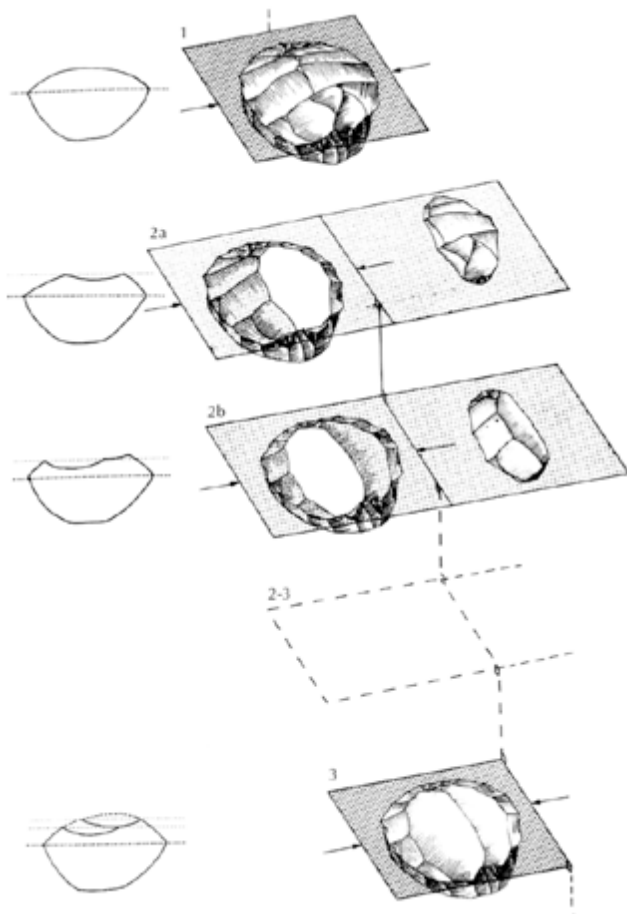
LunchTalk Reports



The Hand Axe

Horst Bredekamp discussed the hand axe, an Ice Age artefact, as an example of the image concept that is of importance for the cluster.

Numerous definitions of what constitutes an image are discussed by cluster members during the concept or design phase and when submitting applications. For the joint research project the image concept defined by Leon Battista Alberti, the inventor of, inter alia, perspective, appeared to be suitable. According to the fundamental image theoretician of the Renaissance the most minimal constitutive human intervention in nature brings about an image. That makes possible a bridge to prehistory, an area of research in which it has repeatedly been assumed that the hand axe is a purely functional object.



How the hand axe is shaped using the Levallois technique.



A hand axe with a fossilised shell inclusion, approx. 200,000 years old, found at West Tofts, Norfolk; Cambridge Museum of Archaeology.

Recently, however, this view has given way to the conviction that a distinction between use and shape or design cannot be drawn. The seemingly not useful form elements were evidently no less essential than the mechanical functions. Latest microscopic investigation of the traces of work on the hand axe has also revealed that fossil inclusions were integrated as a design element into the shape of the hand axe. From this one can conclude that design must not be regarded as something extra but that a link between semantics and function has existed since the beginnings of the humanisation of humankind. Furthermore, early man learnt by distinguishing between hand axes to give natural objects some meaning of their own. Images are shaped by humans and help to shape humans in return. This core statement by the cluster seems to have found in the hand axe its concrete representational expression.



Horst Bredekamp
Director



Urban Development and Mobility

Martin Kasztantowicz developed his lecture on urban planning in Berlin from the Middle Ages to the present day along the idea that planning processes are short-term. As a Bündnis 90/Die Grünen politician he outlined the problem of the struggle for space in the city in terms of a clear conflict of interest between pedestrians, cyclists and motorists, between private transport and local public transport. He described Berlin's typical urban development in terms of the logic of its infrastructure, which over time has adapted to the behaviour of city dwellers subject to what is feasible and to the law. Urban planning in Berlin sought to structure the city by means of road axes to which the provisions of development plans were then added. It was not just land use or zoning plans that laid down the law; so did local building regulations. In spite of the instruments of urban planning the examples cited clearly showed that urban development is permanently unplannable. There is, for example, no clear reason why Berlin has mainly and constantly expanded in a southwesterly direction.

Against this background Martin Kasztantowicz wondered whether urban development can be planned in the long term, concluding that in his view this is a chimera. That led him to call for planning not to make full use of existing open spaces in the city but to leave that to future generations, knowing that processes of evolutionary adaptation will take place.

In the discussion that followed, Horst Bredekamp brought the debate on the evolution of urban development in Berlin to a head with regard to matters of Gestaltung. He contrasted what he saw as Kasztantowicz's compensatory, mediatory, but also passive view with urban visions in history such as Marinetti's futuristic manifesto. Marinetti's writing had a major influence on urban planning because dynamisation and speed were seen as a liberal expression of modernity. Contemporary urban planning can thus also be seen as the reflection of a dilemma of our age. While urban planning today is committed to sustainability and focussed on saving resources and adapting needs, the city as a space for historically effective Gestaltung, a space for possibilities, continues to be on trial.

Martin Kasztantowicz's lecture thus takes its place among current urban debates in Berlin that in the tradition of the IBA (International Building Exhibition) are wrestling over issues relating to the future of large cities.



Sandra Schramke
Associated Investigator



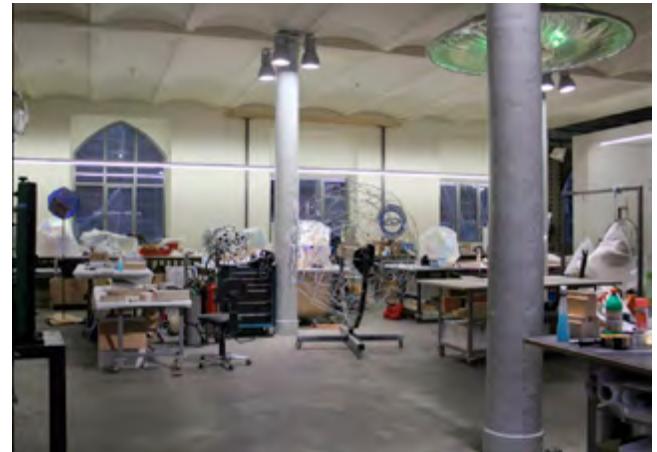
The first railway station in Potsdam. (Photo: Martin Kasztantowicz)



Public transport forecast for 2015 (Photo: Martin Kasztantowicz)



Laboratory Design



What is a laboratory? The group presentation dealt for one with how laboratories are designed today and for another with how the concept of a laboratory is used for different projects in art and science, such as the CERN laboratory or the artist Ólafur Elíasson's laboratory in Berlin. (Photo left: CERN laboratory; ATLAS experiment © CERN; right: Ólafur Elíasson's laboratory. © Ólafur Elíasson)

The term *laboratory* is defined, subject to the context, as a workroom for scientists or scientific experiments or as a room or building for research, teaching and production. These definitions are by no means complete and vary in the course of time. Chemistry laboratories are often presented stereotypically as white, light rooms. Photographers show rooms of this kind with people in white housecoats working on different kinds of apparatus and surrounded by a large number of containers and materials. Physics laboratories in contrast tend more to be associated with workshops. This comparison shows how much scientific laboratories vary depending on their research area.

A number of more recent *laboratories* can hardly be reconciled with the conventional definitions of the concept. Some exhibitions play with the concept of the laboratory, some artists call their studios laboratories and the cluster also describes itself as an interdisciplinary laboratory with a central laboratory room. This observation suggests that our world is increasingly being »laboratorised« [Michael Guggenheim]. The laboratory is becoming fashionable, suggesting an experimental and scientific way of working. The requirements of these rooms in part differ significantly from those of scientific laboratories. In the cluster laboratory or the artist's studio the focus is on mankind and its communication structures; in a scientific laboratory the experiment and its reproducibility play the leading role. Even people's needs are assigned to the background. Nevertheless, or maybe for that very

reason, the *laboratories* first mentioned offer an outstanding opportunity to analyse work and communication structures and to see them as stimuli for the design of scientific laboratories. This approach is intended to help bring people more to the fore and to optimise the work structure, especially in laboratories that are put to interdisciplinary use.

In spite of the priority that is given to functionality in laboratory design, the emergence of an aesthetic norm can be said to have taken place for laboratory buildings built over the past 15 years (primarily in the life sciences). Architecture is cited today as an excellent means of giving scientific locations an exclusive touch. It is not only a matter of a representational gesture, however, but also of an improvement in the effectiveness and achievement potential of science. A *well* designed working environment is said to have a positive effect on the creativity and productivity of scientists, as the Academy of Neuroscience of Architecture, founded in 2003, is trying to demonstrate by means of neuroscientific studies.

Initial *proof* of an ideal working environment for scientists is the Salk Institute for Biological Studies in La Jolla, California. This complex with open labs and a large number of individual offices was devised between 1960 and 1965 by the architect Louis Kahn in collaboration with his client, the immunologist Jonas Salk. The building was intended to be a model of good architecture for scientists and serves to this day as a point of reference for the latest

scientific buildings. Just like Kahn's model of open labs, all examples of laboratory buildings built at American elite universities since 2007 share the following characteristics: large, hall-like laboratories bathed in light that throw open a view of nature and contain several rows of laboratory benches where two to three scientists can work together. The positioning of the laboratory benches at a right angle to a continuous window frontage and their conception as a workplace over which an open construction of shelving towers have developed into a rigid design standard that is even applied to windowless rooms, where it leads to a claustrophobic effect. The dysfunctionality of this normative laboratory is also apparent in light rooms – when the labs have been in use for a few months at the latest. Photographs reveal that due to the restricted space experimenting and evaluating data at one and the same workplace is impossible. Because of the lack of space the shelves that were designed to let light through are so packed to the rafters that the light concept is doomed to abysmal failure.

A look at historical laboratories finally demonstrated the contribution that historicisation can make to the project. Comparing the laboratories of Tycho Brahe and Andreas Libavius in about 1600 revealed that laboratory design is always linked to a specific concept of science. While Brahe's fortress-like building sealed off alchemy as a secret and elite practice, Libavius's chemists' house was aimed at opening up science for the city's citizens. In the nineteenth century Justus Liebig took the aspect of openness a step further than Libavius and designed his laboratory as a living place of research. His laboratory benches stood in the middle of the room and were the centre for the sharing of ideas between the scientists. In this connection it has been suggested that Liebig's laboratory can already be seen as a precursor of today's *open labs*. This was followed by a look at experimental physics in the early years of the twentieth century. It was generally noted that chemistry and biology laboratories differ fundamentally in design from physics labs.



A typical chemistry laboratory?

(Photo: Chris Humphreys. The Roslin Institute Building)

While the life sciences developed at an early stage certain spatial concepts as a kind of corporate identity for laboratories, (historical and contemporary) physics laboratories seem at first glance to be more improvised. This initial observation is to be followed up in the months to come on comparative research journeys.

The discussion that followed this presentation expressed the different views of the laboratory once more. The differences between the requirements of chemistry and physics laboratories were emphasised from a scientific perspective. Horst Bredekamp referred to the role of coincidence and compression as further aspects of laboratory design. He mentioned a Nobel laureate who on being asked what the reason for his success was cited the narrow confines of his working environment (»no space«). Robin Schuldenfrei surmised that laboratory design might also be linked to political structures and that the laboratory must also be considered as a place of representation. Wolfgang Schäffner underscored the aspect of flexibility and wondered how the unforeseen could be generated in a targeted manner in the laboratory. Charlotte Klonk summarised succinctly that designers, historians and architects answered the question »How does innovation take shape?« in entirely different ways. In the further course of the project this question must be taken further by looking at international laboratories and by developing solutions.



Ronald Göbel
Base Project »Designing
Laboratories«



Christina Landbrecht
Base Project »Designing
Laboratories«



Verena Straub
Base Project »Designing
Laboratories«



The Model of Being a Model

The great diversity of phenomena, varieties and ways in which they are used makes it hard to explain a general concept of the model. Any object, such as a glass of water or a sheet of paper, can be a model. To do so it must merely have a connection with the production of a role model or a prototype. An object is a model not merely by virtue of being an object but by being understood as being a model. The subject and context dependence of being a model suggests explaining the concept by means of a model. This is done by the model of being a model and is based on another model – the model of the perception. A model is represented by an object, and specifically by an object, an image or a sign. The identity of the object and that of the object as a model are not the same. Whether the object is a model and in which way it is so is the product of a judgment passed by the subject that perceives the object as a model – a judgment for which there are reasons. [1]

Even if an object has characteristics that make it seem compelling to see it as a model, a judgment on it being a model cannot be based solely on the object. In general, many factors are responsible for such a judgment. We see in models not only descriptions or prescriptions but also means of imposing discipline [2] and even actors that confront us as legislators or experts. For us, models possess authority. [3]

Having been judged to be a model, the object perceived to be a model stands in two characteristic model relationships. On the one hand there is something of which it is a model or on the basis of which it has been selected or made as a model. This something that consists of objects, phenomena, observations, perceptions, ideas, facts, experiences, the unexplained, questioned, prescribed, believed or the like can be called the matrix of the model. On the other hand the object perceived as a model is connected with something of which it is a model and that can be called its applicate. This applicate is something constructed that in its choice or manufacture comes about, inter alia, by means of the model's specifications. This construct is not necessarily a physical object; it can also be a perception that is based on an action, a thought, a judgment, an expectation or a wish.



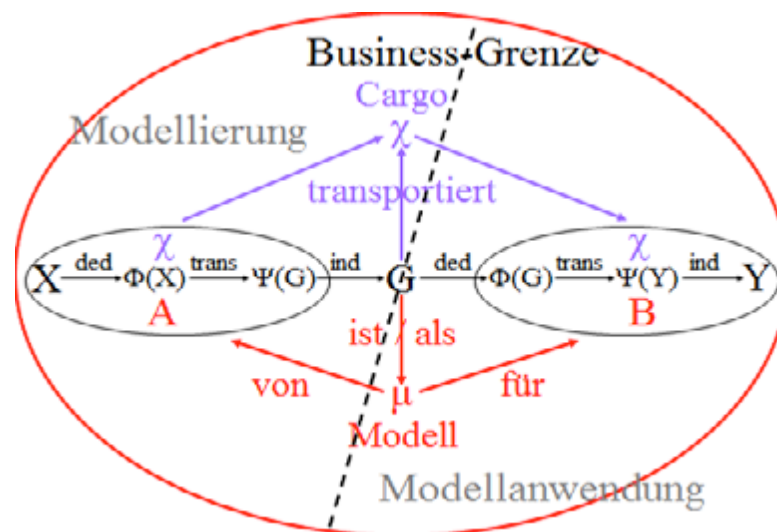
Bern Mahr explained the model of being a model...



... with the aid of a video camera, a laptop, pens and paper.



The modelling of the model was easy to follow on a screen. (Photos: Claudia Lamas Cornejo | BWG 2013)



The two model relationships between the object perceived as a model and its matrix and its applicate are combined into a connection between the matrix and the applicate. The object perceived as a model thereby has a mediatory function that can make the object the embodiment of a »business border«. It is from the special character of this connection that the judgment of it being a model derives its justification. It recognises in the object perceived as a model the carrier of a cargo. The concept of the cargo is linked with the action-related idea that the object as a model has been laden with something that, expressed in simplified terms, is this cargo – as is the case in modeling, and that the object as a model unloads this cargo as something – as is the case in the use of the model. [4] This idea can be explained logically. In a certain sense the cargo of a model thus embodies the model's capacity to transmit and mediate between its matrix and its applicate. Delivering this performance is the function that is typical of models. Their use, however, extends much further.



Bernd Mahr
Associated Investigator

Sources:

- [1] Cf. Bernd Mahr: Modellieren. Beobachtungen und Gedanken zur Geschichte des Modellbegriffs, in: Sybille Krämer/Horst Bredekamp (Ed.): Bild-Schrift-Zahl, Munich: Fink 2004, pp. 59-86; *ibid.*: Ein Modell des Modellseins. Ein Beitrag zur Aufklärung des Modellbegriffs, in: Ulrich Dirks/Eberhard Knobloch (Ed.): Modelle, Frankfurt a. M.: Peter Lang 2008, pp. 187-218; *ibid.*: Die Informatik und die Logik der Modelle, Informatik Spektrum, 32, 3, 2009, pp. 228–249; *ibid.*: On the Epistemology of Models, in: Günter Abel/James Conant (Eds.): Rethinking Epistemology, Berlin, New York: de Gruyter 2012, pp. 249-302.
- [2] Scientific disciplines are often secured by established models; cf. Thomas S. Kuhn: Neue Überlegungen zum Begriff des Paradigma, in: *ibid.*: Die Entstehung des Neuen – Studien zur Struktur der Wissenschaftsgeschichte, Frankfurt a.M.: Suhrkamp 1988.
- [3] Cf. Bernd Mahr/Reinhard Wendler: Modelle als Akteure: Fallstudien, Technische Universität Berlin, KIT-Report 156, Feb. 2009, ISSN 0931-0436; Bernd Mahr: Tragen Modelle Verantwortung? Zur Autorität und Befragbarkeit von Modellen, in: Patrick Grüneberg (Ed.): Das modellierte Individuum. Biologische Modelle und ihre ethischen Implikationen, Bielefeld: transcript 2012, pp. 69-88.
- [4] Similar relationships are also to be found for characters and paintings. Characters are generated and received in, for example, the way a written text is written and read, and by the connection between their production and their reception what they characterise is transferred from their producer to their recipient. In this way fonts can, for instance, communicate something. A comparable transport function is also apparent in paintings that are painted and looked at. In specific situations intuition is all that is required to distinguish between these different transport functions even without a clear definition. In respect of this transport function, however, fonts and images are media, whereas models are contents that must be medially represented as fonts or images or something else; cf. Bernd Mahr: Cargo. Zum Verhältnis von Bild und Modell, in: Ingeborg Reichle/Steffen Siegel/Achim Spelten (Ed.): Visuelle Modelle, Munich: Fink 2008, pp. 17-40.

Review of Events

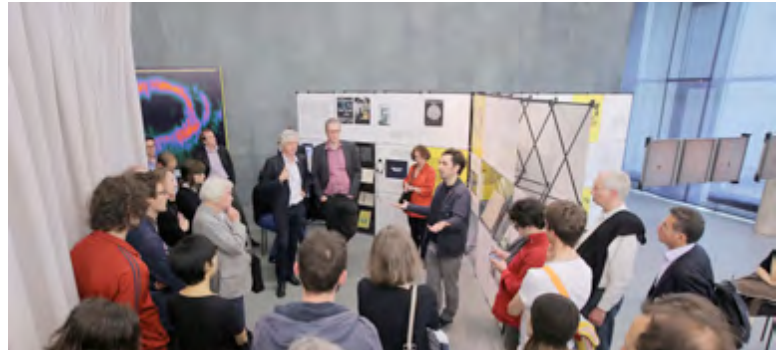
Opening of the Cluster, 01.06.2013



Impressions of the tour of Sophienstraße 22a on 1 June 2013 during which the individual base projects were presented to interested members of the general public for the first time.

The *Interdisciplinary Laboratory* was officially opened on 1 June 2013. To give visitors an insight into the wide-ranging problems and issues with which researchers in the cluster dealt, the base projects presented themselves in workshops and participatory experiments. »How are laboratories designed?«, »How are new pictograms developed?« and »What distinguishes a crab from a shrimp?« were some of the questions discussed and

worked on with visitors on the afternoon of the opening day. Design experiments were undertaken in the model workshop. Using 3D printers, laser cutters, a CNC milling machine and styrocutters, learning and design processes were reproduced and models were built. Guests large and small showed a keen interest in how the equipment in the model workshop worked and followed individual processes with excitement.



The opening ceremony took place after the tour of the »Whole Earth« exhibition. In the course of the ceremony Wolfgang Schäffner presented Bernd Scherer, Director of the Haus der Kulturen der Welt, with his certificate of acceptance by the cluster as an Associated Member.

Another agenda item before the ceremony in the Haus der Kulturen der Welt was a tour of the »Whole Earth: California and the Disappearance of the Outside« exhibition with representatives of the »Anthropocene Kitchen« base project. As part of the Anthropocene project in the Haus der Kulturen der Welt the exhibition and conference on The Whole Earth dealt with the history of the Blue Planet picture that has become of the most influential images in history. The tour guides were Reinhold Leinfelder, Joachim Krause, Philipp Oswald (Base Project »Anthropocene

Kitchen«) and Anselm Franke (curator of The Whole Earth). In the ceremony that followed, directors Horst Bredekamp and Wolfgang Schäffner and other research scientists presented Interdisciplinary Laboratory visions and missions.

At a late hour the *Interdisciplinary Laboratory* celebrated its opening with a barbecue on the terraces of the Haus der Kulturen der Welt to which guests from science, politics, the arts and society and interested members of the public were invited.



Photos: Daniel Lamas 2013

Inaugural Address by Wolfgang Schäffner: Image Knowledge Gestaltung. A Status Assessment



Wolfgang Schäffner spoke at the inaugural ceremony held in the Haus der Kulturen der Welt about the cluster's mission. (Photo: Daniel Lamas 2013)

The opening of the cluster is an occasion for status assessment. What is the challenge that we face with our project today? What are actually doing in establishing this interdisciplinary laboratory? And where do we aim to get with it? In all brevity I want to take these three questions to a head:

1. In recent decades massive changes have happened in our sciences. Natural sciences are undergoing a dramatic change from the mere analysis of nature to the Gestaltung of new things. Our physicists, for example, are undertaking research into organic polymers and making technical semiconductors out of them, combining in the process the work of biologists, chemists, physicists and engineers. Nanotechnology can be described as a revolution of the sciences in the spirit of Gestaltung and as a totally new kind of engineering of matter. Engineers are starting to conduct research into natural things such as wood or slime for their innovative material structures. The humanities too have changed their activities fundamentally. They are attempting, like my discipline, cultural studies, to develop new views of history from the upheavals of the present. We are no longer investigating only historical texts but also objects, spaces and practices and are starting to watch the latest laboratory research in order to develop from it entirely different genealogies into the past and, indeed, into our future.

This increasingly evident change toward Gestaltung is the central challenge our *Interdisciplinary Laboratory* faces. That is why, in the classical academic triad of science, engineering and the humanities, the processes of Gestaltung bring to light a state of affairs that did not use to have a place in the scheme of basic scientific research. And that is why, in our lab, this fourth group of actors, Gestalter, architects and designers plays a role that is as special as it is new. Gestaltung as an act of integration is becoming the central process that enables us interlink the most varied forms of knowledge. We are transferring this key connecting role into our *Interdisciplinary Laboratory* that is to become this integrating venue and actor in order to connect the most varied forms of expertise with each other in order to implement projects.

2. So what are we doing? We are getting together about 150 scientists, postgraduates and students and combining them to form a dense interactive network of multiple actors and groups. How does a group act when different views, cultural experiences and generations relate to one another? How does the cluster think and work, how does it orchestrate its activities and focus them on different problems? Who is it that then thinks and acts when we give thought to things and generate processes like complex moves in a game? We have been building step by step since November 2012 this entire structure of people and techniques, text and images, practices and rooms, emphatic moments and doubts that sets our research processes in motion. These are not the familiar rooms and actors of humanities departments, scientific laboratories or design workshops; they are flexible spatial zones and actors learning to respond fast and differently to different requirements. All of this makes extremely exacting demands on all concerned. That is why we are setting up the so-called cluster, our *Interdisciplinary Laboratory*, in a threefold respect. We are constructing it as a material, architectural structure that leads from the graphical surfaces of paper, the tables and walls or screens and the spatial and temporal arrangement of different practices to the structure of the building itself. If we acknowledge, as David Weinberger puts it, that »the smartest person in the room is the room«, it will become clear that this special attention to the architectures of knowledge in and with which we work is not just a matter of taste but decides exactly how intelligent we can be.

Alongside this material structure we are building the cluster as a digital machine, a virtual work environment that deals with all physical processes digitally in real time and doubles up as a kind of Internet of Things, Processes and Persons. This machine generates other presences and intensities, other forms of collaboration, and develops in a close feedback with the physical architecture. This form of operation involves other institutions and extends to partners all over the world: to Buenos Aires, Bogotá or Tokyo, to name only the most important places where we are setting up similar research institutes.

And, finally, we are building the *organism* of a social structure because all of these elements, the architecture and the furniture, the machines and instruments and the people, all of us and our practices and thoughts form an intensive network of actors that is our new research instrument and laboratory. At the same time we make these processes themselves the subject of our investigations in a kind of laboratory of the laboratory so that we keep an eye on what we are doing in order to correct step by step what is done and built. In all of this we are breaking new ground along with the forms of organisation, work environments and forms of interaction that go with it. Today we may be able to connect thousands of computers via networks, but how do we connect 100 or more scientists into an intensive organism, a shared thinking apparatus and space for action with which we can think and develop things we would never be able to do on our own? Who acts, how do ideas flow, what and how does the cluster learn?

These are questions that confront us in constructing these new research architectures. So our research is also directed at ourselves and renews the forms and contents of our work. All of this is sure to make its mark on a new style of research. This is the new university as we imagine it as being state of the art.

3) In these new and quite ideal circumstances that give individual actors a great deal of freedom research processes become complex processes of *Gestaltung*. They permit us to approach questions in a different way, exemplary questions that today constitute special challenges across both humanities and sciences. The question of where we want to head with the laboratory can be brought to a head in the following, closely related issues.

Horst Bredekamp's research on the picture act meets my analyses of geometrical operations that understand spatial structures not as static but as dynamic and operational.

By means of historically oriented research of this kind that extends back into the depths of ancient history to Euclid we arrive right at the present laboratories of physicists and materials research scientists, biologists and chemists. Seeing this new historical genealogy of picture acts and geometrical operations as analog code processes that are no longer just linear alphanumeric elements but 1-, 2- and 3D spatial and material structures may only now be possible on the basis of a new understanding of materiality. If matter is no longer understood as being a dull, passive vis-à-vis of actors and motors but as an active structure in its own right, space, matter and code can be analysed in accordance with the same principles. That is why a material code analysis leaves the classical trajectories of sequential linear and 2D structures. The materiality of an analog code is more open and dynamic in its spatial 3D structure. These operational structures are not just passive carriers but automatic actor networks.

The processing and storage of information that we have formatted for centuries on the flatness of paper and the limitation to the linear and planar codes of letters, images and numbers, represents against the backdrop of an analog 3D code a radical reduction in complexity and flexibility and, not least, a simple waste of space. Why, we wonder, should we use only this limited space of surfaces for our writing and storage? Even material genetic code was long read only as a linear sequence without understanding the 3D complexity itself to be a code. The leap in complexity from 2D to 3D is enormous, as are the possibilities of a 3D code if spatial structures, physical matter and code interlock and organic and technical elements can be dealt with according to the same principles.

All that will have radical consequences for our knowledge. The focus is increasingly on dynamic structures. In research into intrinsically unorganised proteins, the flexible character of which is growing more and more important: in Jürgen Rabe's physics of graphenes that can lay themselves around objects like a cloth, or in Peter Fratzl's analysis of soft organic materials that make an entirely new soft engineering possible. Softness and folding are basic elements of a new mechanics of proteins, materials and technical provisions. And it is then just as much about materials research as it is about epistemology, about analog code as it is about dynamic structures, about mathematics and mechanics, about image research, morphology or structural mimesis. For issues of this kind small but fundamental shifts of views are necessary. You can then recognise in analysing the old and long-known

geometrical operations of a Euclid or in investigating the structures of seemingly trivial organic materials that they are 3D codes of which the truly radical nature is only now becoming visible. The new materiality and the 3D code are issues that drive us beyond the bounds of our knowledge. These are the kinds of scenario we are dealing with when we set up this laboratory and conduct research into new image techniques as a fundamental redefinition of our knowledge in order to implement Gestaltung in the sense of a new architecture of knowledge and of things themselves.

Nearly a year ago, on 15 June 2012, the emphasis we have placed on this project for nearly four years was at stake – all or nothing – when the decision on the excellence initiative was taken. We now have the great privilege of taking up challenges of this kind together. But we would not, and that was the most important point at the time, have let ourselves be held back if the application had not been approved. These moments of decision are repeatedly the dramatic moments of Gestaltung, moments of profound uncertainty, a kind of zero point in knowledge. There is no proof of whether the new will actually function or whether it can actually happen. But precisely for these unconscionable moments of not knowing when we are all beginners we need new scope for experimenting and Gestaltung in order to be able to unite the entire concentrated intelligence of our different disciplines. All of this is for us an enormous effort, but I believe that we all know we are on the right way. Image, Knowledge, Gestaltung is the new research triad.



Wolfgang Schäffner
Director

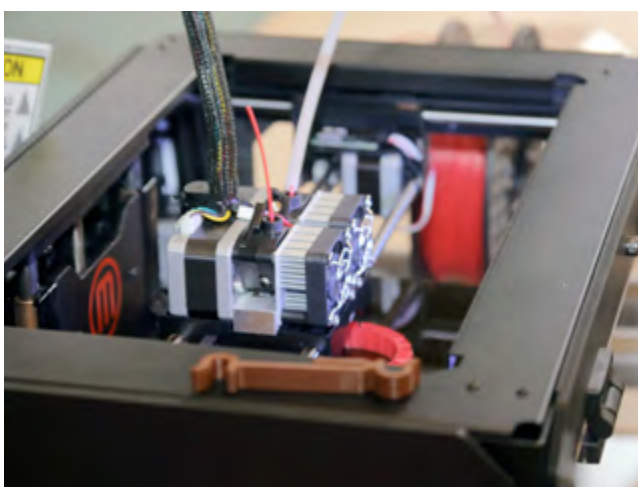
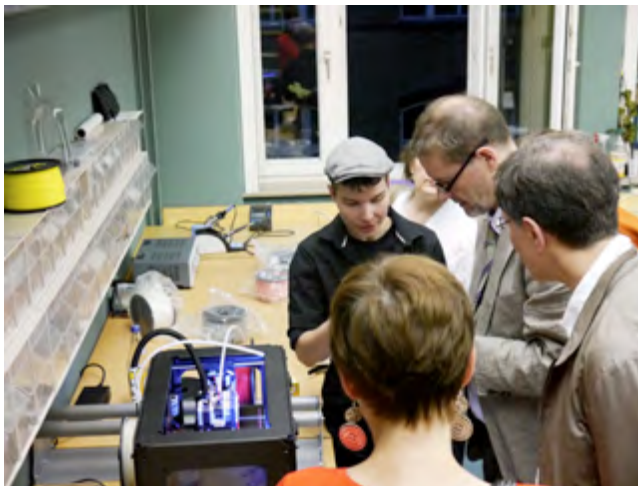
Long Night of the Sciences, 08.06.2013



The Long Night of the Sciences attracted about 300 visitors to the *Interdisciplinary Laboratory*.



The President of the Humboldt-Universität zu Berlin in conversation with representatives of the Base Project »Designing Laboratories«.



In the model workshop both the 3D printer and the CNC milling machine were much in demand with visitors large and small.

(Photos: Claudia Lamas Cornejo | BWG 2013)

Interdisciplinary Children's Summer University, 06.2013



The »Game Developers for a Day« with the products of their own making.

The first *Interdisciplinary Summer University for Children* was held in Sophienstrasse from 15 to 18 July 2013. Ten children aged between 10 and 13 were our guests and learnt in different workshops about the subjects with which the *Interdisciplinary Laboratory* deals.

On the first day of the Children's University, for example, the participants made strawberry ice cream using nitrogen. That experiment took place in the Adlershof chemistry laboratories. In the »Game Developers for a Day« workshop, in contrast, they looked into the cultural history of gaming. The children were then asked to develop and make games of their own in small groups using a number of prescribed materials such as cardboard, Lego, putty and Gaffatape. Another item on their agenda was

a visit to the depot of the Museum of Communication in Berlin-Tempelhof. The »Model Maker for a Day« workshop on Day Three of the Children's University focussed very much on the model building workshop. With the aid of the 3D printer, the laser cutter and the CNC milling machine models the children themselves had thought up were manufactured and assembled. The first step was to get to know the production process and how the machine in question worked in order, in a second step, make their own model from the drawing to finished and assembled model. In the afternoon there was an outing to the Karower Teiche nature reserve where Oskar Neuman of the Berlin Natural History Museum took water samples with the students and explored aquatic animals and birds.



A look at the model-building workshop where the first work took shape using the laser cutter and the CNC milling machine.



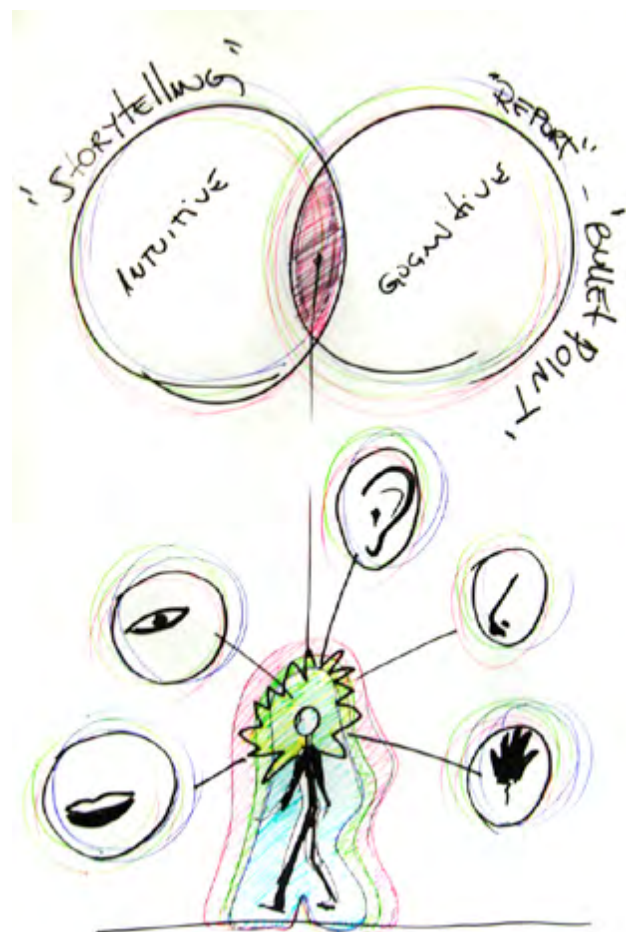
In the depot of the Berlin Museum of Communication the conservator let the Children's Summer University participants take a look behind the scenes at her work.

KOSMOS Summer University 2013 »Modern Walking«



Above: Presentation and demonstration of the echolocation instrument for measuring distances and the electromagnetic near field detector during the final event. Below: Diego Betancourt and Rodrigo Gonzáles explain the »Wisdom of Crowds« group's layer model.

Latin America Goes Berlin – Review and Outlook of the KOSMOS Summer University »Modern Walking. Innovative Urban Mobility«: In an intercultural comparison of São Paulo, Bogotá and Berlin the experts and participants at the KOSMOS Summer University »Modern Walking. Innovative Urban Mobility« spent five days researching pedestrian mobility in urban space. Different case studies were undertaken in the vicinity of the Interdisciplinary Laboratory including the Concepts, Models and Simulations workshop.



Using video and photographic material and 3D models the Orientation group simulated a future redesign of Sophienstrasse as an integrated model that can be scaled up and adapted for the cities of Bogotá und São Paulo.

The four main topics Walking & Acoustics, Walking & Interaction, Walking & Orientation and Walking & Wisdom of Crowds provided the international research groups with an opportunity to investigate the different aspects of walking in São Paulo, Bogotá and Berlin. Different competences from architecture, design, behavioural biology, geography, sociology and many other subjects were involved in developing new solution approaches in an interdisciplinary and intercultural dialogue.

(Photos: Claudia Lamas Cornejo | BWG 2013)



Above: Interactive walk with multimedia devices. Below: Monica Hernandez, Fernando Perez and Nelson Vergara present their concept for the orientation walk around Berlin.

Concept and implementation of the stereobelt for audiovisual interaction of groups in urban space.

(Photos: Claudia Lamas Cornejo | BWG 2013)

Four themed joint walks around Berlin designed along the lines of the groups' core subjects generated synergy effects. The participants, who had got to know each other virtually on the online communication platform iversity in the preparatory phase, were able to get to know each other personally and across the project groups on the walks. The walks were linked to tasks for the respective research focal points and complemented the case studies. The Latin American guests got to know Berlin from the

pedestrian's perspective while the Berliners came to see the surrounding with which they were familiar by means of an intercultural comparison.

The *Interdisciplinary Laboratory's* intensive work phase ended on 20 September 2013 with a public presentation of its findings to members of the Press and specialists. Cooperation with São Paulo and Bogotá is now to be extended and strengthened in follow-up projects.



Nina Mikolaschek

Coordinator KOSMOS Summer University 2013

Public Events November–December 2013

11.11.2013–11.05.2014 | Ausstellung »Von Innen nach Außen. Die Novemberpogrome 1938 in Diplomatenberichten aus Deutschland« (From Inside to Outside. The November 1938 pogroms in diplomats' reports from Germany) | Neue Synagoge | Oranienburgerstr. 28

Seventy-five years after the pogroms the exhibition deals with the reports by foreign diplomats on the November 1938 events. Development of the exhibition's three-dimensional design was undertaken in cooperation with the cluster. The research associate Julia Blumenthal designed a presentation system that can be used for future cluster exhibitions. The exhibition runs until 11 May 2014.

04.12.2013 | 8 pm | Opening of the exhibition »Speaking Images – Speaking of Images« | Jakob- und Wilhelm-Grimm-Zentrum | Geschwister-Scholl-Straße 3

Images shape our perception of the world. They convey knowledge, they bombard us, they open doors to the unknown, they challenge and overtax our senses. In the Interdisciplinary Laboratory scientists conduct research into processes of Gestaltung in the sciences. Thirteen of these scientists – from areas as different as biology, architecture, computer science or drama studies – each chose three motifs from their work that can now be discovered at the exhibition. The show is both an inventory and an experiment. As a walk-in shop window it provides exemplary insights into how the Interdisciplinary Laboratory works and invites you to gain a visual impression of scientific images. The exhibition runs until 5 February 2013.

10.12.2013 | 6 pm | Lecture by Lars Lerup | Trading Zone – Space & Action

In light of the recent government crisis in the US, the importance of Peter Gallison's trading zone is painfully clear. This suggests that the concept may not be confined to science and the laboratory but may have a wider application. I will show that trading zones have both social and spatial applications ranging from the intimacy of the laboratory to the workings of the city. Lars Lerup, designer and writer, is professor of Architecture at Rice School of Architecture (RSA) in Houston (Texas) and he is visiting professor at Hochschule Anhalt in Dessau. He was William Ward Watkin professor and Dean of the RSA from 1993 to 2009. Previously, he taught for many years at the University of California, Berkeley. His work focuses on the intersection of nature and culture in the contemporary American metropolis in general, and in Houston in particular. He is currently finishing up work on a new book, entitled »Toxic Ecology: At the Limit of the Entrepreneurial City« which examines the consequences the city's relentless growth and expansion has had on various natural systems, and further, how those consequences will effect the future of the city.

Impressum

Published by

Bild Wissen Gestaltung. An Interdisciplinary Laboratory at the Humboldt-Universität zu Berlin

Editor in chief:

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Editorial desk:

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Kathrin Bauer, Amaya Steinhilber, Sophia Gräfe

Layout:

Kerstin Kühl

Cover photo:

Model workshop of the *Interdisciplinary Laboratory Image Knowledge Gestaltung*.
Credits: Bild Wissen Gestaltung 2013

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