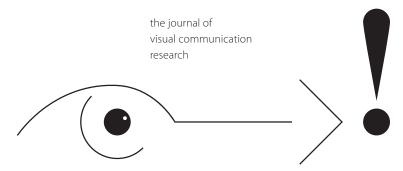




51.3 – 52.1 Visible Language



special issue:

Practice-led Iconic Research

2

Naomi Baron – The American University, Washington, D.C.

Michael Bierut – Pentagram, New York, NY

Charles Bigelow – Type designer

Matthew Carter – Carter & Cone Type, Cambridge, MA

Keith Crutcher – Cincinnati, OH

Mary Dyson – University of Reading, UK

Jorge Frascara – University of Alberta, Canada

Ken Friedman – Swinburne University of Technology, Melbourne, Australia

Michael Golec – School of the Art Institute of Chicago, Chicago, IL

Judith Gregory – *University of California-Irvine, Irvine, CA*

Kevin Larson – Microsoft Advanced Reading Technologies

Aaron Marcus – Aaron Marcus & Associates, Berkeley, CA

Per Mollerup – Swinburne University of Technology, Melbourne, Australia

Tom Ockerse – Rhode Island School of Design, Providence, RI

Sharon Poggenpohl – Estes Park, CO

Michael Renner - The Basel School of Design - Visual Communication Institute,

Academy of Art and Design, HGK FHNW

Stan Ruecker – IIT, Chicago, IL

Katie Salen – DePaul University, Chicago, IL

Peter Storkerson – Champaign, IL

Karl van der Waarde – Avans University, Breda, The Netherlands

Mike Zender – University of Cincinnati, Cincinnati, OH

51.3-52.1 **Visible Language**

Contents

Practice-led Iconic Research: Towards a Research Methodology for Visual Communication

Michael Renner

33

The Practice of Practice-led Iconic Research

Arno Schubbach

55

research into the design process

The Dynamism of the Vertical Strokes of Hangeul and the Flow of Its Lines of Writing

Jinsu Ahn

73 56

Identifying Design Processes in Photography by Analyzing Photographic Strategies

in the Documentation of Public Places: "It's hard to be down when you're up."

Helga Aichmaier

research about an image category:

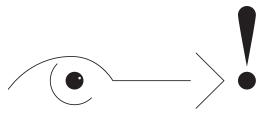
Documentary Image Sequences

3

Susanne Käser

96 123

continued



The Image as Unstable Constellation: Rethinking Darwin's Diagram from the Perspective of Practice-led Iconic Research

Paloma López Grüninger

124 - 147

Premises for Interaction between Images

Claire Reymond

148 - 173

Making Things Visible: Visual Strategies for the Representation of Objects in Collections

Michael Hübner

174 - 201

Book Reviews

Taking a line for a walk: Assignments in design education

Jorge Frascara

202 - 203

Fire Signs, A Semiotic Theory for Graphic Design

Sharon Poggenpohl

204 - 207

Introduction

5

The thematic issue of *Visible Language* on hand introduces 'practice-led iconic research' as a methodology developed over the past decade. 'Iconic Research, an interdisciplinary field of scientific inquiry into all kinds of images, emerged from the description of the 'iconic turn' (Boehm 1994) and the "pictorial turn" (Mitchell 1995) in the mid-1990s within the scope of art history. In reference to the linguistic turn – a term coined in the 1960s in philosophy (Rorty 1967) – the lack of reflection on how images create meaning was pointed out in comparison to the analytical reflection on language starting in antiquity. This lack of a scientific analysis of images is especially significant considering the exponential increase of image production and dissemination caused by digitalization. Based on this argumentation, a number of interdisciplinary research clusters have been established in Europe (cf. page 14 of this issue). Philosophers, art historians, linguists, theoreticians, and historians of science, anthropologists, psychologists, and other disciplines from the humanities and the sciences became involved in the "alphabetization" of images, contributing to the question on how images generate meaning within the context of social exchange. The Swiss National Center of Competence in Iconic Research, eikones, was founded with the support of the Swiss National Science Foundation at the University of Basel in 2005. Considering the tradition of Swiss Graphic Design and Visual Communication, as well as the relevance these fields have in shaping the flood of images in daily life, the Visual Communication Institute, The Basel School of Design HGK FHNW was involved in the project ever since the preparatory phase. The large-scale project, involving around 30 PhD candidates and Post Docs, was initiated by Gottfried Boehm, who had coined the term 'Iconic Turn' in 1994.

Through their co-operation, it became gradually clear, that the visual communication designers involved in the project brought other aspects to the discourse about images through their understanding of the very process of image generation. With the ability to generate visual variations and the interpretation of a field of visual alternatives, the informed communication designer can, in this context, develop a unique approach complementing existing scientific methodologies. This finding led to the development of the methodology we call today 'practice-led iconic research' (Renner 2010). In short, this term means the systematic creation of visual variations as a methodology to describe a specific effect images cause in a beholder. The verbal description is based on the comparative analysis of visual alternatives created beforehand.

We can distinguish two major trajectories within the described methodology. The first trajectory is focusing on the understanding of the image generation processes and differentiates the description of how decisions in processes lead to an unpredictable visual result. The second trajectory is focusing on the understanding of a specific image category or a specific situation we encounter images in, e.g. diagrammatic images, documentary images, ornamental images, typography and image, etc.

The articles published in this issue describe and demonstrate what distinguishes the design of images for communication in a design office from the design of images to contribute to a scientific question related to iconic research. The articles present projects which were developed in the context provided through the co-operation of the Visual Communication Institute, The Basel School of Design HGK FHNW with eikones from 2005 till 2013 as well as research projects which were developed independently at the Visual Communication Institute since the turn of the Millennium until today.

The publication is structured into three parts.

Part 1 consists of two texts framing the methodology of practice-led iconic research applied to the concrete projects described in Parts 2 and 3. Michael Renner's article introduces the concept of practice led-iconic research. It provides a brief background on the relation between 'text and image.' The article introduces practice-led iconic research as an approach starting from the making of images and distinguishes the two trajectories described above. Both trajectories of iconic research aim to provide evidence perceived by the visual sense that augments the evidence provided by language. Arno Schubbach's contribution argues that the opposition of theory and practice is outdated and not adequate to conceive practice lediconic research. That rather, it should be understood as a specific research practice based on the production of images. In order to characterize this kind of practice-led research, Schubbach compares it to a theory-driven approach to images and its use of visual examples as well as to the ways in which the natural sciences and artistic research deal with pictures.

Part 2 presents two inquiries into an image-generation process describing the process of taking a photographic picture and writing the Korean alphabet Hangeul, Jinsu Ahn's contribution investigates the design properties of Hangeul that appear in the process of practical writing. They are in contrast to the first publication of the script in 1446 by King Sejong the Great, which introduced letters based on basic geometric shapes. Basic writing experiments and the analysis of their outcome were performed to find answers to the questions of what formal properties Hangeul strokes have, and what role they play in connecting letters to form a fluid vertical line of text. Helga Aichmaier's article explores, based on her dissertation, how taking pictures within a research context enables the analysis and verbalization of strategies that are employed in photographic design processes. Despite a growing body of knowledge on image creation, little research has been conducted into photographic design processes. Viable contact sheets, sketches, proofs, or notes have not been available yet for proper research. Thus practice-led iconic research is adapted as a method for photography possibilities of photographic practice and its strategies are explored as an instrument of research.

Part 3 presents four articles addressing the image category of the documentary image, the diagrammatic image, the interaction between two pictures, as well as the representation of objects for accessing those objects in an archive. Susanne Käser approaches the question of how a documentary image sequence has to be designed to convey a temporal development. Using the method of practice-led iconic research, aspects such as the

scope of the sequence, temporal distances between the images, gradations between the difference and similarity of the image material, light situation, color palette, and image section are investigated and discussed with the help of practical examples. Paloma López's paper, is based on her PhD thesis, and starts with the observation that the visual process is formed by a broad variety of choices. The knowledge about and the practical experience of these options are at the very core of a particular manner of looking at images. A famous diagram that Charles Darwin drew, is used to show how a different understanding of images can allow us to uncover new insights on the intrinsic meaning of the diagram itself. Claire Reymond's article presents an explorative study using the method of practice-led iconic research to detect the premises that allow connection processes between two images. The analysis documents the relevance of different image features such as. for example, the analogy of the main vectors within the images or the width of the stroke in line drawings. A pilot study using eye-tracking, that was conducted as a subsequent step, strengthens the findings of the practical research. Michael Hübner's contribution presents a practice-led investigation on a diversity of visual strategies to represent objects, and their effects on the perception of the latter. How and what kind of knowledge can be gained from the representation of objects? Series of photographs as well as hand and digital drawings alternate with analytical observations, thus formulating diverse findings and opening up further perspectives not only applicable to the practice of object archives.

We hope that the articles in this issue demonstrate an approach of inquiry and research closely related to the practice of visual communication and representing a relevant contribution to the interdisciplinary field of iconic research. It is our understanding that the basic nature of the research approach presented in this issue is different to applied research, which is oriented towards its direct applicability. Besides, the basic nature of the practice-led methodology presented here is not comparable to a purely theoretical or historical approach. Therefore, we should like to describe the methodology of practice-led iconic research as basic practice-led research in the hope that the outcome of these research activities will help establish a community of communication designers and improve the recognition of design in the research community and in society in the long run.

We should like to thank all the authors contributing to this issue, and all the reviewers of the articles, who have contributed with their constructive criticism to the actual form of this issue. In particular however, we should like to thank the editor of *Visible Language*, Mike Zender, for his outstanding efforts as to the realization of this issue.

The team of guest editors,
Michael Renner, Claire Reymond, Arno Schubbach

Boehm G. (1994). Die Wiederkehr der Bilder, in: Boehm, G. (1994) (ed.). Was ist ein Bild?, München: Wilhelm Fink Verlag, pp. 11 – 38.

Mitchell, W.J.T. (1995). The Pictorial Turn, in: Mitchell, W.J.T. (1995) (ed.). Picture Theory, Chicago: The University of Chicago Press, pp. 11 – 34.

Renner, M. (2010). Practice-led Iconic Research, in: diid, disegno industriale industrial design, 41: pp. 76 – 82.

Rorty, R. ((1967) 1992). The Linguistic Turn; Essays on Linguistic Method. Chicago US: University of Chicago Press.





Making Things Visible:

Visual Strategies for the Representation of Objects in Collections

Michael Hübner

Design collections today collect cultural and aesthetic knowledge embodied in a vast number of objects. Except for exhibitions and collection visits one can only access the objects through reference systems, registries and catalogues. These forms of representation mostly rely on textual description and standardized photography. The hypothesis of this article is, that by this means only a very limited impression of objects of aesthetic value can be conveyed. But their significance arises precisely from the interplay of their formal appearance, materiality, proportions, function, use, context, and history. How to get an idea of, for example, the sensory qualities of a chair without being confronted with it on a physical level? This article presents a practice-led investigation on different visual strategies for representing objects and their effects on the perception of the latter. How and what kind of knowledge can be gained? Series of photographs as well as hand and digital drawings alternate with reflexive observation thus formulating diverse findings and opening up further perspectives not only for the practice of object collection.

keywords

collection cesthetics design objects visual representation perception hand drawing photography digital drawing patterns practice-led iconic research

175



1. Introduction

Collections of objects manifest the intellectual cultures of our society. They are bases for research and societal discourse. In addition, collections of objects document artistic and cultural practices; thus they embody not only knowledge of the natural sciences but also of culture and aesthetics. Today, these collections are generally only partially accessible. On the one hand, a reason for this is often the large number of objects they contain. On the other hand, conservation measures may require exclusion of the public, for example, if the objects need to be protected from light, touch, or theft. Physical access is thus reserved for a small number of specialists. Such objects are only shown to a larger audience in exhibitions and publications.

Therefore, in working with objects in collections, registries and catalogues are used. These reference systems are based on abstract, linguistic classifications. Keywords and textual descriptions are intended to provide us with information about the objects. If images are used for the objects' representation, they are subject to the strict regulation of the textual structure and are rarely able to develop their own logic. In publication formats, pictorial language is likewise severely restricted and is based on standardized schemata.

Especially in the case of collections with an aesthetic focus, the systems of management and presentation that are standard today give meager indication of the sensory qualities of the individual objects. But the significance of design objects, for example, arises precisely from the interplay of their formal appearance, materiality, proportions, function, use, context, and history.

Until this time, there have been insufficient strategies to make objects and collections visually accessible in their various manifestations. It is argued here that certain characteristics of objects and their interaction are inadequately grasped in linguistic form or in standardized object photography; however, they can be reproduced through appropriate iconic strategies. Which representation methods are considered, and what information do they convey about the objects? This question could be asked from a general point of view. However the field of collection – especially of design objects – is chosen as a practical frame for this investigation as it displays the need for visual strategies and their advantages for practical application particularly well. This approach will be pursued in a practice-led examination.

2. State of the Art

2.1 Systems of Reference and Representation in Collections

and Museums

2.1.1 Digitalization

The ongoing development of information technologies has also significantly changed the daily operations of museums and collections. Whereas before digitalization, card catalogues and analog registries served to provide information and assist in the organization of collection objects, current practice relies on digital databases. The significance of digitalization for the accessibility of archives and collections is aptly described by the historian Peter Conway: "It is becoming increasingly clear that if information from analog sources is not readily available in digital form, it simply does not exist from the perspective of the vast majority of potential users." As a specialist for the digitalization and conservation of archives, he is mainly talking about photographs and documents. However, his statement can be transferred to collections of objects. If an object is not adequately documented and the documentation is not available digitally, it cannot be considered in a scholarly context.

It is striking that digital applications, like their analogue precursors, are very strongly informed by categorization systems, classifications,² descriptive texts, and data. Images are integrated but have a marginal function. The possibility to enlarge the representation in an image exists in most systems, but one can rarely view multiple images simultaneously. In addition, there is often no provision for a comparative viewing of objects.

2.1.2 Photography of Objects in Museums and Collections

In his manual on the photography of objects, science historian Michael Markert describes very clearly how objects should be photographed. Statements such as "choose a high f-number (such as 5 or 8) so that the object as much as possible remains in sharp focus at a distance" or "pale objects=>black ground; dark objects=>white ground" allow one to infer the forms of representation that are felt to be ideal: avoidance of shadow, invariance of light effect and perspective, homogenous background, avoidance of reflections on objects, high light/dark contrast between background and object, sharpness of focus at a distance, similar image sizes when objects have different dimensions. Moreover, there are particular image typologies that determine the majority of object photographs: image of the object

¹ Conway, Paul: "Digital transformations and the archival nature of surrogates." In: *Archival Science*. March 2015, Volume 15, Issue 1, Dordrecht 2014. P. 52.

² Künstliche Begriffssysteme zur standardisierten Einordnung von Objekten. Siehe beispielsweise: Trachsler, Walter: Systematik kulturhistorischer Sachguter: eine Klassifikation nach Funktionsgruppen zum Gebrauch in Museen und Sammlungen, Bern/Stuttgart 1981.

extracted from the background without any shadow; image of the object with a homogenous, neutral background and casting a slight shadow; detail image. It is observable that the described image typologies are used for the representation of a large majority of collection objects, no matter what kind. Hence, while Markert is talking about objects for biology instruction, the aesthetic of representation associated with his remarks can likewise be found in the photography of objects from the fields of design and culture.

However, these guidelines greatly restrict the potential of visual representations. The attempt to represent objects in a unified manner is made at the expense of objects' individual qualities. The unique features and characteristics of a single object recede. Moreover, it should be asked in general whether the cited guidelines make sense. For example, shadow can be an effective means to make three-dimensional forms appreciable. Likewise, reflections on the surface of an object are quite revealing with respect to materiality and haptics. Another problem of representation is the communication of dimensions of scale. Since a collection often contains objects that differ quite pronouncedly in size, a small object is represented greatly enlarged and a large object, greatly reduced. However, size is an essential characteristic, and a visual communication of relationships of scale would be highly relevant. These initial assumptions are the starting point for the following examinations.

2.1.3 Publication Formats

The described marginal role of the image as opposed to the text is continued in publication formats. Today, these are mainly divided into printed and digital forms of publication. In online galleries of collections, the images and information presented are generally taken directly from collection databases. Even if only a selected portion of information is made accessible in this way, and the website presentation generally places more weight on representation in images, the mode of working with database systems and the standardized pictorial language nevertheless has a determining influence on most formats. In printed media, too, this aesthetic carries through, although here, often more attention is paid to the selection and juxtaposition of images. Nevertheless, a scholarly understanding prevails that textual information is clearly preferred and value is placed on a supposed "objectivity" of images.

2.2 The Need for Forms of Visual Representation and Interaction

If Conway's implicit claim to substitute the museum object by a medial representation is taken as the starting point, it becomes clear that only certain aspects of objects are reproduced through the systems and forms of representation that are common today. This is particularly apparent in the

Design collections emerged alongside art collections; the two types have developed in tandem for a long time now and have become a focus of public attention. This brings with it the need to question current collection practice and to develop new strategies of visual representation for this field. For industrial design objects, it is also the case that they are often produced in series that are based on one design. Objects of a series are thus inflected not only by their individual characteristics, such as traces of use, but also by a concept that functions in an overarching way. The present examination, therefore, takes the field of the design object as its focus.

2.3 Aesthetic Objects and Their

Perception

Especially with regard to aesthetic objects, descriptions in words can provide only inadequate access. Martin Seel describes them as follows: "Objects are aesthetic that in their manifestation differ more or less radically from their look, sound, or feel as can be determined in words. They are given to us through the senses in an exceptional way; they are grasped by us through the senses in an exceptional way." He accurately describes how we are unable to verbalize certain characteristics. But Seel remains vague in the differentiation of aesthetic and non-aesthetic objects. Elsewhere he remarks that we "react aesthetically to everything that is somehow present to our senses – or else we don't."

It is much more promising to look for this difference in the manner of perception: "To take something in, in its manifestation, for the sake of its manifestation – that is the burning point of aesthetic perception, to which each instance of its execution is directed, however else it may also proceed." Hence, in an object's manifestation, more happens than language can convey since language always functions through a step of generalization. It is only thus that words can be determined that are universally understandable. This is why it is also so difficult to represent an individual object using language. Images, however, can reproduce an object very precisely and directly in its manifestation and can communicate exact information about it.

3	Seel, Martin: Äshetik des Erscheinens, Frankfurt a.M. 2003, p. 43 (translated here).
4	lbid., p. 64.
5	lbid., p. 49.

Findings from image theory and applied image studies show the untapped potential that images possess for the generation and communication of knowledge: for example, with respect to sensory experiences, aesthetic qualities, and impressions of scale relationships or affinities of form.

2.4 Non-Photographic Representations

The potential of non-photographic representations becomes apparent when one examines methods of scientific representation before the nineteenth century. Before the idea of objectivity in science took hold, which remains in effect today, focus was placed on creative "fidelity to nature," as Peter Gallison writes: "Truth to nature was associated with a set of practices - practices involving massive artistic and scientific intervention by a natural philosopher whose genius vouchsafed the validity of the move to idealize and correct the unreliable appearances of the given." If Gallison describes a collapse of the roles of scientist and artist in the natural philosopher, this was often a fruitful though at times also difficult collaboration between the two professions. ⁸ Omar Nasim in *Observing by Hand* discusses the process of familiarization:9 an artist becomes familiar with an object By drawing it repeatedly. Repetition thereby also serves analysis, the reduction of errors in the representation. This approach is pursued in the following experiments. In some cases, this familiarization process also influences the forms of representation of the objects.

3. Questions

Through practice-led iconic research, the potential of images for the documentation and dissemination of objects in collections, particularly in the field of design, will be studied. The objective is to develop visual strategies of representation and to expose their effect with regard to the perception of objects. Which forms of representation prove to be successful with respect to which aspects of the object? Which design decisions seem to affect the object's manifestation in the image?

On a second level, the importance of representation strategies as epistemic practices will be discussed. The project attempts to show that by

- On the logic of the image, see: Gottfried Boehm: Wie Bilder Sinn erzeugen. Die Macht des Zeigens. Berlin 2007; Martina Heßler, Dieter Mensch (eds.): Logik des Bildlichen, Zur Kritik der ikonischen Vernunft, Bielefeld 2009.
- 7 Gallison, Peter: "Judgment against Objectivity," in Jones, Caroline A.; Gallison, Peter (eds.): Picturing Science Producing Art. New York / London 1998. P. 329
- 8 Pamela H. Smith examines the relationship of drawer and scientist. Smith, Pamela H.: *The Body of the Artisan: Art and Experience in the Scientific Revolution,* Chicago: University of Chicago Press 2004.
- Nasim, Omar: "Observing by Hand." In: Rheinsprung 11 Zeitschrift für Bildkritik, Basel 2012. P.66 78.

representing an object, for example by drawing it, one gains knowledge of the object itself. Based on this hypothesis, potentials and possibilities for the practice of collection are discussed in the concluding section.

4. Practical Work

4.1 Method

Since the questions under investigation predominantly concern applied work that serves to represent objects with images in the context of a collection, it is logical to approach the subject through practice-led research. Successive image series of sample visualizations of objects are made and are compared with each other. Reflexive observation accompanies image production and is intertwined with it. Thus, later image series build upon the findings and impressions from earlier image experiments. In this way, practice is interwoven with theoretical reflection. A permeability of implicit and explicit knowledge is the goal with this method. The very nature of practical knowledge is its lack of describability. "we can know more than we can tell." writes the English-Hungarian philosopher Michael Polanyi in his work The Tacit Dimension¹⁰. To be able to build up a reflection based on the mutual influence of practical and theoretical knowledge requires a closeness between the person generating images and the one analyzing them, which can never be fully achieved. The practice-led research and the scrutinizing analysis are thereby carried out by the same person, the author of this contribution. Image viewing and inference thus coincide in this process and therefore are also not strictly separated in the text. A transferability of results can therefore not immediately be assumed; however, this approach provides a view into the design process, which distinguishes itself from an empirical approach to research by its closeness and motivation. Different and more detailed ideas can therefore be expected. To lend an example form Michael Polanyi: It is impossible to replace the practical knowledge of riding a bicycle by a theoretical understanding of the process¹¹. Therefore a cyclist can very likely give a more authentic and detailed discussion of the influence of balance and body movement on course of the bicycle than a person just watching them.

The project was accompanied by a series of presentations and consultations were the different states of the experiments and findings were discussed with a qualified audience. The empirical investigation of the outcome can be the subject a future project but shall not be part of this paper.

10 Polanyi, Michael: *The Tacit Dimension*, Chicago: University of Chicago Press 1966, p. 4.

Polanyi, Michael: *Personal Knowledge. Towards a Post-Critical Philosophy,* New York/Evanston: Harper & Row, p. 49.

The inclusion of design practice in the analysis of the subject locates this examination in the field of applied image studies. Through work with images and objects, knowledge is achieved about how images work and how they generate knowledge. The examination thus also makes a contribution to the discourse on the development of new forms for the manipulation of knowledge, in which word and image, theory and practice engage in a vital dialogue.

In the following, different guidelines/parameters are stated pursuant to which the experiments were carried out. These guidelines are the result of various preliminary examinations and courses of thought. They serve to make the results as plausible as possible, to enable a transferability into the field of application, and to restrict the frame of the examination to a practical scope.

4.2 Selection of Objects for Depiction

The experiment series was carried out on the basis of two example objects from the field of design that seemed the most suitable after initial examinations with multiple objects.

The first object, which will be designated "object A," is a model by Panton at a scale of 1:6. In its completed design, the Panton chair is an icon of the 1960s and is characterized by its curving form. "It was the first chair in design history to have no back legs and be moulded in one piece entirely out of plastic." 12

Size: 86 x 40 x 83 mm

Material: black plastic

Weight: 82 g

The second object presented for comparison is an instance of the Aluflex chair, designed by Armin Wirth for Stollinger and Sons. This object is designated as "object B" in the following. The extremely light and delicate chair was designed so that many could be made to fit in auditoriums and lecture halls. Through a folding mechanism, the seat can be raised to an upright position, minimizing the storage space required for multiple chairs.

Size: 510 x 500 x 833 mm

Material: aluminum and laminated plywood, beech veneer Weight: 3 kg

The selection of objects was made according to particular concerns. The objects needed to be comparable, thus to display various similarities and differences. They are marked by a distinct aesthetic or design quality. The objects are made from different materials with specific characteristics.

The model of the Panton chair poses a representation problem. The

12 See the product description at Vitra's online shop, https://www.vitra.com/en-us/living/product/details/miniatures-collection-panton-chairs-set-of-5.

dimension of the model is difficult to convey in a photograph (as opposed to the original), without relying on aids such as the provision of a scale or comparison objects. In contrast, object B, the Aluflex chair, has dimensions that are normal for a chair. The comparative representability of these two different sizes will be examined.

The form of the objects differs considerably despite the underlying concept of the chair. The amorphous form of object A poses particular challenges for representation methods, whereas with object B, the construction has to be communicated.

The two objects are characterized not primarily through their coloring, but rather through form, materiality, dimension, and function. Color is therefore not observed in the foreground of this experiment series, to limit the experiments to a practicable scale. It should be emphasized, however, that color is indeed an essential factor in the appearance and depiction of objects. It cannot be ignored in practice and is a major area for possible further examinations.

5. Experiment Series

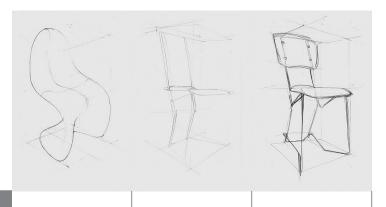
The series of images discussed in the following are a small selection of the depictions that were produced. The experiments were purposely kept simple to examine basic effects.

5.1 Hand Drawings

With hand drawing (using various tools), a classical approach to object representation was to be examined. Hand drawing is one of the most ancient techniques of image production and is characterized by a direct, intuitive interplay of seeing, reflection, representation, and internalization through memory.

5.1.1 Analytical Drawing

After first quick sketches, it was initially attempted to represent both objects in their different aspects as exactly as possible in a pencil drawing (Figures 1.1-1.3). For this purpose, a perspectival framework was drawn first, in which the drawing of the objects was constructed. This type of drawing occurs in alternation between observation and reconstruction, whereby observation primarily serves the comprehension of proportions (object A) and manner of construction (object B). Accordingly, the drawings are reconstructions of the objects in pre-drawn perspectival grids. This can be read from an uncompleted drawing (Figure 1.2). Here the object seems not yet completed, as in an intermediate stage of construction.



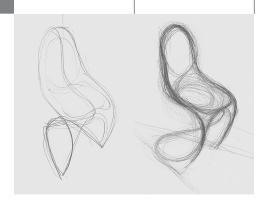
Figures 1.1 - 1.3

Knowledge increases with every attempt at representation. Errors result from a deficiency in observation. Thus Figure 1.3 shows that it was not recognized that the frame of object B is connected at the rear edge of the seat. But this is important for the chair, since (1) the rotating mechanism for folding up the seat is located at this connection and (2) it thereby becomes clear that the frame of the chair consists of two bent aluminum tubes. Later (Figure 4.3), these details were understood and given particular emphasis.

5.1.2 Free Drawing

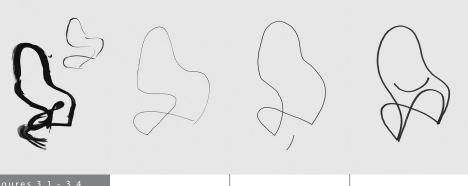
Subsequently, drawings of object A were produced based on the flowing movement of the hand (Figures 2.1, 2.2). The form was approached by means of the repeated drawing of curved lines. This manner of representation was inspired by the object itself. The Panton chair is made from just one single curved surface and thus is difficult to represent comprehensively with an outline. The drawings thus represent the search for a line that best describes the trajectory of the form and the object. The animation in the form becomes especially apparent here. One would not arrive at a comparable representation of the dynamism in the object with the medium of photography.

Figures 2.1 - 2.2



5.1.3

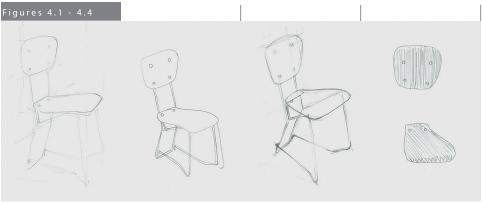
Then followed drawings restricted to one line (Figures 3.1-3.4). They represent the edges of the curved surface of object A, which was thereby aptly



described in its underlying principle. No matter what distortion the line is subject to, the object remains clearly recognizable. Reduction in the course of representation brings forward the object's fundamental formal characteristics. Prerequisite for this representation is the reasoned selection of characteristics to be represented and to be ignored. A comparable reduction is not possible in photography. In this series as well, an advantage of drawing becomes evident.

5.1.4 Drawing from Memory

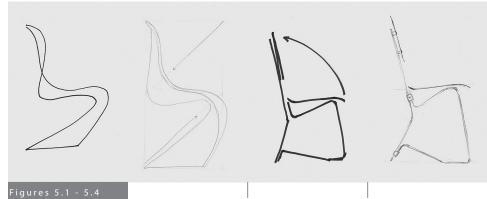
In drawing from memory (Figures 4.1-4.4), the striking elements of the object are reproduced in intensified form. The screw heads of object B were emphasized in each instance. From this, the assumption is made that these elements could have a particular significance for the appearance of the object. The organic forms of the back and seat are particularly striking. In Figure 4.4, the two surfaces suffice to convey an idea of the chair. Here as well, the means of graphic reduction has an effect. In this series, memory takes on the task of selection. Important elements for the appearance of the chair can be read from the representation.



5.1.5 Side View

Then, objects A and B were represented in different views. Figures 5.1-5.4 show side views. In Figures 5.2 and 5.3, arrows were inserted in order to 185

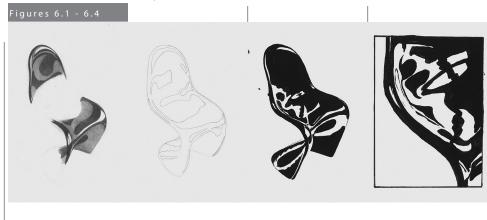
Special Issue: Practice-led Iconic Research



point out tensions in the form. In Figure 5.2, the arrows indicate two basic directions of deformation that characterize object A. In Figure 5.3, the arrow refers to the movement of the seat by means of a folding mechanism. In both cases, the side view is particularly well suited to highlighting formal principles and modes of construction (Figure 5.4). Drawing offers many similar possibilities for making functional relationships evident simply and quickly, for example with arrows, plans, and elevations.

5.1.6 Focus on Surface and Reflections

Object A is characterized above all by its reflective surface. This was to be examined in a series of hand drawings with pencil and brush. First, the attempt was made to represent the object as exactly as possible in its reflections with the pencil (Figure 6.1). This attempt proved to be very labor-intensive and not very successful. Here, photography seems to be a more adequate medium of representation. The subsequent attempt was restricted to bounding areas of light and dark with lines, as zones. However, it is unclear what the drawing conveys. By means of brush and ink, the reflections could be captured and examined better.



5.2 Digital Photography

Next, photography was studied as a representation method. Preliminary studies show that photography has been one of the customary forms within 186



collection practice since the end of the nineteenth century.¹³ The goal of the project, however, is to examine the potential of forms of representation that have experienced little use until now. Therefore, the examinations in the area of photography are kept brief in this project. One area of investigation was the manipulation of documentary photographs. Both objects were photographed under different conditions with a digital camera in the studio and were digitally reworked.

5.2.1 Shadows

A white background and studio lighting were used. Through different light situations, different shadow effects could be evoked. Thus, very long shadows could be generated, or shadows could be suppressed to a minimum. Through manipulation, so-called "extracted" object images could be generated, in which the background and thus the surroundings are erased. The object thus appears separated from any spatial context. This is a favorite means of representation in object photography. Among other functions, it serves to connect the object better with the layout context or to enable adjusting the background color to different requirements.

In comparison of different shadow situations of extracted images, the relevance of shadows for the comprehension of an object becomes evident. In Figure 7.1, the shadow does not connect immediately to the bottom edge of object A. It is thereby shown that the object's edge does not touch the floor entirely. The viewer can conclude from this that the object is not a functional chair. It would wobble and would not be comfortable. In the extracted photograph without shadows (Figure 7.2), this information is missing. In the case of object B, the shadow shows a construction detail from another perspective (Figure 7.3). It likewise shows that the object lies flat on the floor at the front bottom edge of the lower part of the frame. In the further trajectory of the shadow, the connection of the front frame tube to the back tube is again represented. This information is also missing in the extracted depiction (Figure 7.4).

It is conceivable that additional details that are not visible from

¹³ In 1853, Roger Fenton (1819 – 1869) became the first official photographer of the British Museum in London. See Hannavy, John: *Encyclopedia of nineteenth-century photography.* 1 London: Routledge. 2008, p. 528.

52.1



Figures 8 1 - 8

a single perspective can be shown through the casting of shadow. The shadow becomes a picture within a picture. At the same time, through it, a spatial surrounding is demarcated, and a certain lighting is implied. Herein lies an advantage of photography that, however, is ignored in standard object documentation. Often, shadows are suppressed as much as possible, and their informative quality is thereby disregarded.

5.2.2 Light

In Figure 8.1 and Figure 8.2, different light situations were induced. These resulted in different types of reflections on object A. The reflections are clearly bounded and flowing. This indicates a glossy, homogenous surface. In observation, it becomes perceptible how the object must feel. Glossy objects are often associated with a cold surface. The depictions thus also say something about the perceived surface temperature.

In Figure 8.1, the reflections are finer and more segmented, while in Figure 8.2 they are larger and more unified. If one compares the two depictions with one another, a different perception of the object's size becomes evident. In Figure 8.1 the object appears large, like a chair with normal dimensions. In Figure 8.2 the object seems smaller and more compact, which more faithfully reflects its real dimensions. The assumption that we see fewer reflections on smaller objects and more reflections that are more detailed on larger objects is transferred to the photograph.

Light and its reflection have a very substantial influence on the perception of surfaces, form, and dimensions.

5.2.3 Background

The method of extraction allows the background of an image to be adjusted easily through manipulation. An attempt was then made to negate the contrast between object color and background color (Figures 9.1-9.4). Object A shows a unified coloring; the background becomes black. In the case of object B, it was decided to adjust the background to an average tone of the chair's surfaces.

It can be observed that in Figure 9.2, the background merges with object A. The form of the object can no longer be followed. Instead, the reflections come into the foreground. The materiality and the flowing forms are







Figures 9.1 - 9.4

perceived more intensely. In Figure 9.4, the grain of the chair seat and backrest of object B come forward. The screw heads come forward, although the object itself was not manipulated here and only the background was altered.

The materiality of the object is expressed much more strongly than in a standard photographic depiction. The behavior of the surface in the light and haptic impressions are perceived more intensely when the form in general moves into the background.

5.2.4 Size

Both objects were photographed with the same camera position, lighting, and objective setting. In the comparison, the dimensions of the objects are reproduced exactly. One can get a good sense of the size difference. In Figure 10.1, however, it is difficult to recognize object A as such in its form. It is too small, and also the reflections are not placed in such a manner that the form becomes tangible.

Although this representation serves in the comparison of the objects' size, the object itself becomes not comprehensible. The unified lighting and zoom settings prevent a clear recognition of the object.

Photography does not seem to suit this pictorial strategy. Digital drawings, through their reduction, are much more precise and legible when the objective is to highlight relationships of size and function. This impression resulted from the following series.

Figures 10.1 - 10.2

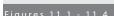




190





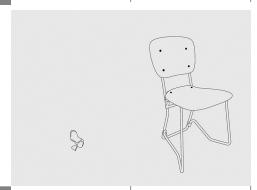








aures 12 1 - 12 4



igures 13.1 - 13.2

Figures 14 1 - 14 3

The forn

5.3 Digital Drawing

The findings from the experiments with hand drawing and photography formed the starting point for the third representation method that was applied. Digital drawings were made by means of graphics software. The experience that was gained in hand drawing contributed to these renderings. Digital drawings have the potential for a very exact depiction of partial aspects. Through reduction, highly legible schematic representations can be produced. The possibility for correction and adjustment makes this form of representation interesting.

Digital vector drawing is based on the fundamental principle of a line defined by vectors that are assigned characteristics such as color and strength or that can be provided with a pattern.

5.3.1 Line Representation – Views

The attempt was begun to represent the objects in different views. It quickly became clear that some views are more useful for the comprehension of the object than others. In a frontal view, the form and design quality of object A is virtually not appreciable at all (Figure 11.1, 11.2). In a side view, the object is described much more precisely (Figure 11.3). Through the reduction in representation, an essential design principle is revealed, namely, the S-shaped sweep of the form (Figure 11.4).

The form is shown much more clearly in the perspectival representation. Where the outer contour still seems to portray an abstract form (Figure 12.1), the demarcation of the object's edges as well as the inscription of the object's concavities can describe the object more accurately. A combination of multiple views conveys the object's form best (12.4).

Digital drawing is well suited for the representation of design principles. Through generalization, the typology of an object is reproduced and not a single object.

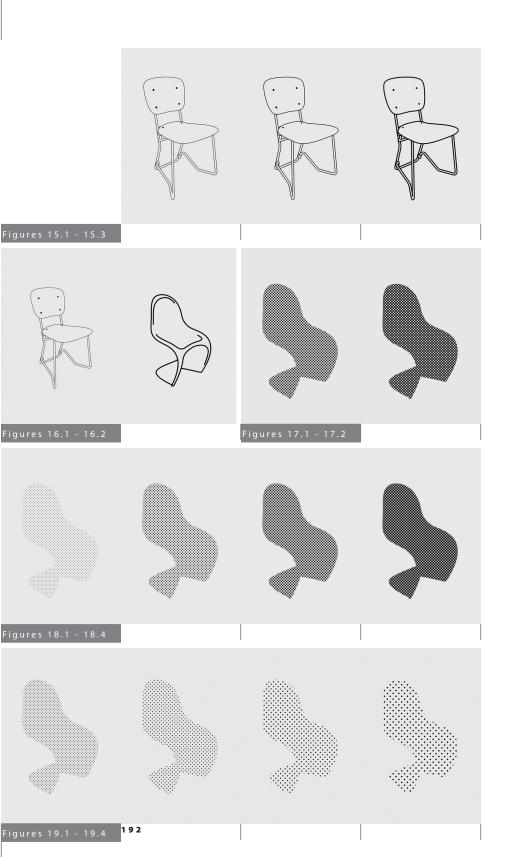
5.3.2 Size

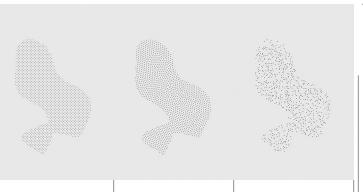
In analogy to the attempt to represent the size relationship of the two objects directly in a photograph, the digital drawings were scaled (Figures 13.1 and 13.2). This attempt proved to be essentially more successful. The line strength of the drawings can be adjusted so that the drawing is appreciable in small representations as well.

5.3.3 Line Representation – Line Strength

After a series of further attempts, the line strength of the representation was varied. Starting from a perspectival view in a hairline rendering, the line strength continuously increases in Figures 14.1-14.3 and Figures 15.1-15.3.

Especially in a comparison of multiple depictions, the perception





Figures 20.1 - 20.3

of the object's size changes. The greater the line strength in the depiction, the smaller the object seems to be. A similar visual differentiation occurs as in the photographic experiments on the type of reflection (Figures 8.1, 8.2). In the juxtaposition of Figures 16.1 and 16.2, the difference in size between the two objects is only represented through line strength. The relationship of scale from object A to object B is approximately 1:6. This effect is palpable; however, object A is emphasized more strongly through the greater line strength.

5.3.4 Filling Methods - Matrix

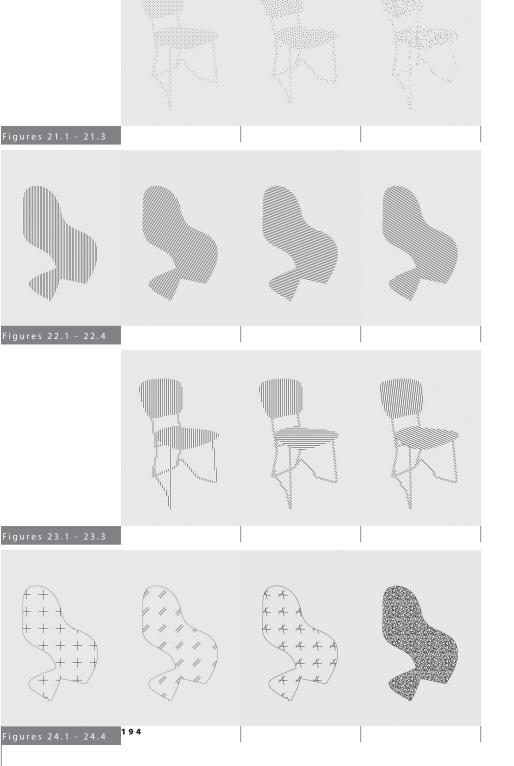
Initially, different matrices were employed. The comparison of Figure 17.1 and Figure 17.2 shows that a background filling and a negative dot matrix are two design elements that influence one another mutually and affect the perception of the object. In Figure 17.1, the object is represented only by the dot matrix. In Figure 17.2, however, the black surface seems to define the object. The effect of the negative matrix is less significant. Therefore, the following experiments were limited to the use of positive matrices without background.

5.3.5 Filling Methods – Dot Matrix

The first series with variations of dot matrices (Figures 18.1-18.4) examines the effect of a dot matrix filling whereby the dot size increases. The matrix grows increasingly dense. The relationship of white space to black surface tips with Figure 18.3. With increasing dot size the impression of a unified surface, and thus of a continuous object, seemingly grows stronger. However, a flatness is apparent.

With a simple scaling of the dot matrix in which the dots but also the space between them expands, this effect is not apparent (Figures 19.1-19.4). The object dissolves. At the same time, however, it moves closer to the viewer. This has the result that one perceives the object in Figure 19.1 as larger than that in Figure 19.4.

Figures 20.1, 20.2, and 20.3 show different modulations of a dot matrix, from the uniform, "organized" arrangement, to a "dynamic" arrangement in which the distribution is random but the spaces between the dots stay as equal as possible, all the way to a completely free "scattered" arrange-



ment of dots. Although the patterning was applied according to simple, non-spatial parameters, different impressions of spatiality are evident. The organized dot arrangement seems flat, as expected. With a "dynamic" arrangement the surface still holds together but permits the interpretation of a concavity. With the scattered arrangement, the surface dissolves; only a feeling of spatiality in the sense of a swarm remains. The transference of the pattern to object B (Figures 21.1-22.3) yields comparable impressions.

5.3.6 Filling Methods – Line Matrix

In the use of a line matrix, a relevant aspect seems to be the rotation with which the matrix is applied. Figures 22.1-22.4 examine these questions. The matrix was continually rotated. In Figure 22.1, the line matrix makes a completely flat impression. However, the perception of a spatial situation increases with increasing rotation. The alignment of this angle with the perspective of the original representation probably gives rise to this effect (Figures 22.3, 22.4).

The combination of different orientations of line patterns was examined using object B. Since this object consists of two different materials, it made sense to mark the boundary between them in this manner. In the comparison of Figure 23.1 to Figure 23.2 and 23.3, it is likewise apparent that the rotation of the matrix supports a perspectival perception.

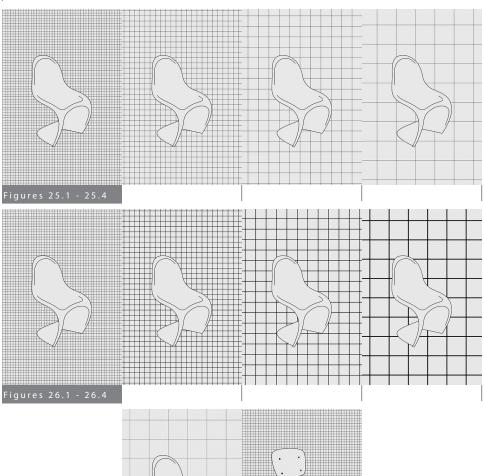
5.3.7 Filling Methods – Various Patternings

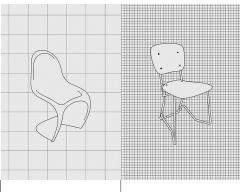
Along with dot and line matrices, other filling methods were also examined. These patterns are based on a basic repeating motif. This basic motif was varied and employed in different aspects. The possibilities for variation in this field are huge. The Figures (Figures 24.1-24.4) only show a very small section of the possibilities. But it becomes evident that the pattern does influence spatial perception. If the basic motif seems highly organized, in other words, if the basic forms are oriented to one another at a single angle or a right angle, a flat impression arises (Figures 24.1, 24.2). If multiple angles, all the way to a random-seeming combination of many angles, are employed, a spatial perception becomes apparent (Figures 24.3, 24.4).

The compatibility with multiple perspectival lines of flight and not only one direction here seems to be the determiner of whether a spatial effect can be interpreted or not. In addition, impressions of surfaces and materiality are generated. In Figures 24.1 and 24.2, an association is made with a smooth surface, whereas Figures 24.3 and 24.4 allow a prickly surface to be assumed.

5.3.8 Background

Finally, the effect of the background in digital drawing was studied (Figures





25.1-27.2). For this purpose, a variable square grid was used, which appeared in the background of a uniform line drawing of the object.

Figures 25.1-25.4 show a grid that grows larger while the line strength remains constant. Here, the impression immediately arises of a changing perception of size. The object seems to get smaller with increasing distance between the lines. This impression intensifies when the line strength of the grid is simultaneously increased – in other words–it is proportionally enlarged (Figures 26.1-26.4). However, here the grid begins to take greater significance than the object. It protrudes into the foreground.

In Figure 27.1 and 27.2, the two objects were placed side by side.

The dimension of the grid was calibrated to the effective scale relationship of the two objects. Object A, in fact, appears smaller than object B.

6. Findings

Findings that emerge from specific design decisions were intentionally included in the preceding observations. It can be stated that the techniques applied are suited to the representation of the objects' different characteristics, on the one hand; however, they also lead to different conclusions.

6.1 Hand Drawing

Hand drawing proved to be a good means for studying the object. Apart from the picture that is created as a result, the person who performs the representation acquires knowledge about the form, the surface, the characteristics, and the details. Here, what Omar Nasim describes as "familiarization" occurs: "The familiarization that takes place at this personal, visceral, and haptic level, therefore, acquaints one (even in the process involved in the making of one sketch) with what is being seen, with how to draw what is being seen, and with an object's known, unknown, and challenging features. But it is also especially the repeated drawing of an object that contributes to an observer's familiarity."¹⁴

In representation by means of hand drawing, errors do not fail to be made. In the course of repetition, an awareness of these errors gradually becomes evident and they are corrected. This process is undoubtedly a part of familiarization. It becomes particularly apparent that, through hand drawing, one acquires a feeling for the salient forms and those that are critical for the manifestation of an object. The drawings from memory and free drawings support these statements.

Through this study of the object by means of drawing, knowledge about the representability of the object is acquired. The drawer repeatedly develops new strategies for representing particular aspects in an appreciable way. This leads to more precise images that communicate clearer impressions of the object to the viewer and allow inferences to be made about important formal characteristics.

6.2 Photography

The previously described development of personal acquaintance with the object through hand drawing does not occur in photography in the same way. One indeed engages with the object, but there are other aspects that

Nasim, Omar W.: Observing by Hand, in: Rheinsprung 11 – Zeitschrift für Bildkritik, eikones 2012, S. 73.



enter the foreground. Thus, it is in the nature of the technique that the light is observed most precisely. The findings about the role and effect of shadow can be afforded a particular quality. On the object itself, it describes surfaces, haptics, and forms. Like a shadow cast on the ground, it can even function as a "picture in a picture" and integrate views of the object from different perspectives into the image.

Nevertheless, we also always perceive the object in a photograph in a certain situation: in a particular surrounding, for example, the photo studio, under specific conditions. But what can be assumed to be a detracting characteristic, however, supports Martin Seel's concept of "manifestation" [Erscheinen]: "What is important here is not the capturing of individual qualities of the object, but rather, their interplay taking place here and now (in this lighting, from this point of view or this change of points of view)." 15 An individual object with its characteristics is always represented. Underlying concepts, such as for the products of industrial design, go into the background. Photography makes it difficult to elucidate relationships of construction or function. Here, the advantage lies with drawing, whether produced by analog or digital means.

6.3 Digital Drawing

Digital drawing is first of all connected with a distance from the object. It lacks the immediacy of hand drawing, since between observation and the generation of a drawing, an additional interpreting entity – the program – is installed. It interprets the drawer's input and converts it into a vector graphic. The digital drawing of an Aluflex chair appears more as a concept ("the" Aluflex chair) than as the representation of a unique object (a particular Aluflex chair). The same thing occurs with the model of the Panton chair. It can be conveyed through contrast that this is a smaller version of the Panton chair, but it is difficult to describe an individual object by means of a digital drawing.

At first sight, this finding seems to contraindicate use in a collection context. Precisely here, it is important that this or that individual object with its characteristics is the focus. In the collection field of design, however, another aspect is also involved. A design object in most cases is an object

of serial production. There is an underlying schema that manifests itself in multiple objects. There is "the" Aluflex chair, whereby not a particular chair is necessarily intended, but rather the model of the chair. Here, digital drawing in its capacity for generalization can communicate the concept of the chair in the representation, as the juxtaposition from Figures 28.1 - 28.4 shows. Figure 28.1 appears incomplete. Is the seat missing? The manipulated photograph (Figure 28.2) also seems strange. Is this an image of a chair with an unusual backrest? Figures 28.3 and 28.4, however, are read automatically as abstracting representations of functional sequences. Meanwhile, Figure 11.4 shows that along with functions, underlying design principles can also be visualized.

A simple line drawing is often denied the ability to convey spatial impressions. However, the experiment series show almost universally that a corporeality can be conveyed using the simplest graphic means, such as a grid, the line trajectory, and line strength.

However, a digital drawing remains reduced and simple. Like letters of the alphabet, it can be strongly scaled and distorted and nevertheless remain legible. This robustness distinguishes it from photographs.

7. Conclusion;

Looking Ahead

These experiments can be regarded as a starting point. On the one hand, it is possible to continue them with other techniques and other objects. On the other hand, it would be interesting to analyze a viewing of the images by disinterested persons.

The findings described here show that photography is not the only method of representation that can be helpful in a collection context in order to convey information about an object. At the same time, it becomes evident that every form of representation has its own advantages. Accordingly, much more about an object can be communicated visually in a combination of techniques. Each technique, in turn, offers a multitude of different design decisions with which particular communicative advantages are associated. There is not either "object photography" as one mode or "drawing" as another. The combination of multiple techniques and images thus yields an exceptional potential. But how this combination could look, and in what medium the representations might come together, is open and could, in turn, become the object of study.

These observations underscore the knowledge acquisition about an object that occurs during its representation. The drawer/photographer acquires knowledge about the object during its representation by acquiring knowledge about the representation of the object. In other words, the

process of the development of knowledge about the object coincides with the development of knowledge about the representability of the object. This results in an invitation to (re-) integrate image-generating practices such as drawing, photographing, or other operation in the range of scientific methods. For the exemplary field of collection practices, one conclusion is that the visual representation should be a much more fundamental part of cataloging, referencing and showing objects than it has been until now. Particular insights would be gained on the question why and how certain elements of an object influence the overall appearance it. This could result in a refined view of the objects by collectors, researchers and subsequently also a broader audience. The generated images would be used as means of access and communication.

While a total collapse of artistic and scholarly practice into a single person is not the intended suggestion here, a close collaboration of designer and collector does promise a fundamental gain in knowledge. This prompt will serve as the closing point of the contribution at the same time as it reveals a new question: what forms of knowledge would result from such a visual collection practice, and how would the spaces look in which such knowledge is negotiated?

References

- Boehm, G. (2007). Wie Bilder Sinn erzeugen. Die Macht des Zeigens. Berlin: Berlin University Press.
- Conway, P. (2014). Digital transformations and the archival nature of surrogates, in: Archival Science, Volume 15, Issue 1 (March 2015), Dordrecht: Springer Science+Business Media.
- Gallison, P. (1998). Judgment against Objectivity, in: Jones, C. A. / Gallison, P. (eds.). (1998) Picturing Science Producing Art. New York / London: Routledge, pp. 327 – 359.
- Hannavy, J. (2005). Encyclopedia of nineteenth-century photography. New York / London: Routledge.
- Heßler, M. / Mersch, D. (eds.). (2009). Logik des Bildlichen, Zur Kritik der ikonischen Vernunft, Bielefeld: transcript.
- Nasim, O. (2012). Observing by Hand In: Rheinsprung 11 Zeitschrift für Bildkritik, Vol. 3, Basel: eikones NFS Bildkritik, pp. 66 – 78.
- Polanyi, M. (1964). Personal Knowledge. Towards a Post-Critical Philosophy, New York / Evanston: Harper & Row.
- Polanyi, M. (1966). The Tacit Dimension, Chicago: University of Chicago Press.

Seel, M. (2003). Äshetik des Erscheinens, Frankfurt a. M.: suhrkamp.

Smith, P. H. (2004). The Body of the Artisan: Art and Experience in the Scientific Revolution, Chicago: University of Chicago Press.

Trachsler, W. (1981). Systematik kulturhistorischer Sachguter: eine Klassifikation nach Funktionsgruppen zum Gebrauch in Museen und Sammlungen, Bern / Stuttgart: Haupt.

Author

Michael Hübner was born in 1983, Leipzig, Germany. He studied Integrated Design at the University of Applied Sciences in Dessau, Germany. After his graduation he gained experience in design agencies in Paris and Berlin. In 2009 he came to Basel, Switzerland obtaining a Master of Arts in the newly established program of Visual Communication and Iconic Research at the Academy of Art and Design HGK FHNW in cooperation with the NCCR Iconic Criticism at the University of Basel. For their graduation project "Displays in Dialogue – The Exhibition and the Book" he and the curator Lena Friedli organized a series of shows with joint publications to discuss the relationship between the publication format and the exhibition space in contemporary art. Until September 2016 he worked as scientific assistant with the Institute of Visual Communication, developing exhibitions, lecture series, research projects and publications. Since 2011 he has continued to work as a graphic designer. With Tina Braun he founded Studio HübnerBraun focusing on graphic design and visual identities.