
UNDERSTANDING HOW
GRAPHIC DESIGN IS
ANIMATED THROUGH USE

**PRINTED INTERACTIVITY
TOWARDS A NEW UNDERSTANDING OF GRAPHIC DESIGN**
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ABSTRACT

Previous definitions of graphic design have not included the notion of time and the extent of the relationship that printed objects establish with their users. The current understanding does not consider a phase after the distribution of these objects, nor the potential interactivity they hold, thereby limiting their study and evaluation to the domain of the strictly visual.

The context in which graphic design operates today is dominated by the influence of digital technologies.

These technologies are inherently interactive, placing the experience of interactivity in closer contact with people. If the design of printed objects can incorporate the same experience of interactivity as a concept, then the work of graphic designers will transform the moment these objects are used.

In order to describe the approach between the two areas, this paper presents a review of the main literature, which explains the beginning of graphic design as an activity dependent on its use. The paper also introduces the concept of interactivity, which is made operational, in order to be understood and distinguished.

Four descriptive and explanatory case studies are presented to demonstrate the similarities between what composes digital creations, i.e., interactivity, user participation and some observable properties in graphic design projects, using print production resources. The examination of these case studies provides evidence of this affinity and makes clear that certain printed objects show concepts that still need to be studied and addressed in our writing of graphic design theory, history and professional practice. The establishment of the relationship between what is a graphic design project and the processes embodied through its conception, with the notion of interactivity, can bring a new understanding of how graphic design activity is influenced by the context of the digital.

Key Words: graphic design, interactivity, user, printed matter

Citation: Marco Neves(2013). Printed Interactivity Towards a new understanding of graphic design, Iridescent: Icoграда Journal of Design Research, 2(2).

FULL PAPER

Introduction

A distinction must initially be made between what is graphic design, here considered as the practice that involves printing or with the purpose of being printed, and other related terms¹. This separation seems important given the obvious differences concerning print and digital media².

Digital production allows a relationship with its users, which extends in time and makes certain features available, allowing the systematic exchange of information and the continuous modification of objects. As

1. William Addison Dwiggins came up with the term “graphic design” for the first time in 1922 (Heller 2004: 367). He meant to gather with a single name the practice of typography, advertising and bookmaking (Meggs 1998), thus referring to activities that at the time were meant for print production.

2. In this way digital creations can have other designations, which can be broad as “communication design” or specific as “multimedia”, “interaction design” or “human-computer interaction”.

these digital interactive processes improve, we must also ensure updating printed objects, which can run the risk of being replaced or simply disappear.

In this sense, the concern of the graphic designer cannot be restricted to the assignment of form and utility, it should rather cover the entire process of the relationship with the user. The path that the object makes, from the moment when the problem is formulated until it reaches its users, does not end with its production. But it is until this stage that graphic designers are used to working. Nevertheless, as Meredith Davis has written:

...the demands on design practice in the twenty-first century, however, are significantly different from those of the past, suggesting that these paradigms may require re-examination. A number of current trends challenge the traditional notions of what we do and, more importantly what we need to know (Davis 2008: 72).

At the same time, digital technologies appear to have potential answers for the development of graphic design activity in this context where the user acquires increasing importance. These technologies can influence our experience of printed matter, without imposing a wholesale transition to an electronic existence.

Today we understand digital interaction in the form of, for example, computing, mp3 players, e-books and smartphones. There is, however, evidence of an interactive capacity in objects that use print production. The study of interactivity, as observed in digital creations, can be recognizable in a graphic design project. There is a potential of use within this notion still far from being fully availed. It seems important, in this way, to explore the concept and identify such behaviour in graphic design. The research methods presented below, to address these behaviours, are drawn from my recently completed PhD research titled “Graphic design and the user: interactivity and participation strategies in printed objects”.

Graphic design

Graphic design, as a term, is complex with little agreement amongst academics and designers to draw any specific conclusions as to what it consists of, how is it presented, what is its scope or what analysis and evaluation is possible regarding its causes and effects. The area we are dealing with is broad and its practices are diverse.

We can, however, use Jorge Frascara’s definition as a starting point: “graphic design is the activity that organizes visual communication in society.” (Frascara 1988: 20).

Hollis, on the other hand, suggests that the designer manipulates every graphic element available to give a meaning to the obtained set and in that way, graphic design turns into “the business of making or choosing marks and arranging them on a surface to convey an idea” (Hollis 1997: 7). In addition, Ann Tyler argues that graphic design is a representation that combines text and image, with defined purposes, due to its use or due to its strategy (Tyler 1992).

There is, somehow, a dual role for graphic design. On the one hand, the designer as a creative subject demonstrates an excessive visual and stylistic concern. But on the other hand, pragmatism and efficiency in various objects are required. Nonetheless, most options for presenting graphic design objects employed today, owe their origins to decisions taken in the past when a professional activity was forming, in historical, cultural and technological contexts very different from the current one (Meggs 1998; Satué 1994).

Between receiving and using

Graphic communication is mass-produced and made available to a mass audience, who, upon receiving it, possesses the skills to interpret the messages (Barthes 1964). Graphic design is in that way connected to a group or a society and the objects conceived and produced exist because they become accessible and are used.

The relationship between printed matter and its users is always established in a certain time frame, whatever the object, whatever the use. Nevertheless, graphic designers still create for a flat surface (Avella 2009). It is common for graphic design to be considered two-dimensional, something intended to continually develop compositions through the expected elements: shape, colour, texture, photography, illustration and text. The variation of the results depends on the variation of the order of these elements or on the predominance of one over the others. But “if design used to be a matter of physical form, its subject matter being the material object, it now increasingly seems to be about the user and her experiences” (Redstrom 2005).

Between process and practice

The experience of the object may clash with the work processes carried out, since these processes have become full of prejudices that are obstacles to the development of graphic design. This is mainly due to largely subjective and abstract considerations about visual composition (Foster 2003)³. In getting used to a certain outcome, the designer systematically lowers the options for creating and interpreting. The possibility of generating new solutions to expand the notions of space and time, are thus limited in professional practice.

Even though design gives the opportunity for matter to perform actions (Kwinter 2000) and to engage in them, this ability has not been used in an altered context in which users act as a participating part in defining objects. In fact, Bonsiepe (1999) notes that design undertook an excessive usage of the terms “form”, “function” and “style”, instead of focusing on a practice that should produce an effective action. For this to happen in graphic design, it is desirable to understand an interactive capacity in print media.

Print vs. digital

Print is necessary for graphic design. As a production technology, it enables material achievements and as a communication medium, it causes cultural changes (McLuhan 2001; 2003). Simultaneously, print distinguishes itself from digital technologies and competes with them.

3. Foster considers that current design is made without content. The material outcome of design is not an object in itself, but rather a formatting.

While printed matter is arranged visually, digital existence is inherently interactive (Bolter and Gromala 2003) and, therefore, a source of the study of interactive features.

The digital experience gets richer with the possibility of accessing several groups of information, which are connected. The hypertext allows multiple readings and distances itself from the linear sequence, traditionally embodied by printed books. Also, since the development of the mouse and the desktop, a direct control of the graphical user interface has been established (Moggridge 2007), enabling a higher degree of interaction from the user. All these strategies of hyperlinking, programming and connectivity, increase the interactivity available in the digital environment when compared to print, since “a digital artifact can be designed to unfold in multiple ways” (Bolter and Gromala 2003: 24). The extended use of digital creations alters the way we act, establishing a very specific context in the design of certain objects. For graphic design, it is possible to identify two situations in which this occurs. In a way, printed objects become victims of this extended use. Some tend to disappear by turning expensive or inappropriate, considering newfound solutions for their end use, such as encyclopaedias (Eco 2003). On the other hand, recent phenomena, such as blogs, microblogs, social networks, e-commerce or crowdsourcing, placed interactivity and user participation as priorities, instead of being simple features.

“Web 2.0”, which describes the use of the Internet as a means of promoting this interactive development, holds a considerable production and publishing of content by users. In a sense, by doing so, all these online places oppose the simple visualization of information in websites. As a consequence, the Web becomes not only informative but also participatory (O’Reilly 2005).

Interactivity stands out as a dominant concept and we should expect it to be adopted in different areas.

Despite that, graphic designers lack a sense of interactivity and “do not have a language with which to discuss the design of rich, dynamic behaviour and changing user interfaces” (Cooper, Reimann and Cronin 2007: xxx). It is therefore convenient to explore the concept, as observed in digital technologies, with regard to printed matter.

Interactivity

Interactivity has been widely used as a term but poorly defined as a concept (Rafaeli 1988; Heeter 2000). However, in the definition proposed by Rafaeli (1988), interactivity is a variable characteristic in the definitions of communication. We may understand it, in a broad sense, as the alternating transmission between two parts of a communication relationship. A message sent is related to a previously received one. It is more a matter of precedence, than time, space or content.

If this relationship takes place between a person and an object, interactivity relates to the behaviour of the object as experienced by the person. As a result, interactivity is a feature present at the moment of use and different from the object’s visual aspect. This centres the interest in planning this use and turns interactivity into “a contextualising facility” (Richards 2006) rather than an end by itself.

Defined as such, this concept may be observed in almost every medium of electronic communication. The spreading of the word in the context of digital media defined the possibility of change that a user had on an object, and also created an exclusive association with that domain. In fact, a part of the design field has made the word “interaction” its own, in order to explain their area of work. But what is meant by “interaction design” (Moggridge 2007, Saffer 2010) is slightly vague. The presented definition (Lowgren 2008) can easily be applied to all objects of design⁴.

In this way the current notion of interactivity is influenced by digital media and deeply focused on producing content for screen display. Heeter (2000) criticizes this constant use of the term: “interactivity is frequently discussed by designers, often meant as a synonym for navigation and sometimes just generally to refer to good web site design” (Heeter 2000: 4). Actually, the concept of interactivity, when understood in human-computer relationship, is a tautology (Manovich 2001), i.e., the most basic and simple description.

However, interactivity should be understood as a method used differently in the relationship between people and objects, even printed ones, since “visual communication design is not just about looks; it is fundamentally about performance” (Frascara 2004: 12).

To better work with the concept of interactivity, we proceeded to an operationalization of the concept, as shown in Table 1, isolating its main attributes with matching definitions. This information is gathered and synthesized from the review of the main literature.

Table 1 Operationalization of the concept of interactivity.

Concept	Attributes	Definition
Interactivity	Alternating	Mutual transmission between two parties in a communication, in which a sent message is related to the previous one.
	Action/Reaction	Possibility presented in the object, waiting for the user. Provides the context of a relationship between user and object.
	Behaviour	The user defines, even if not completely, which will be the following behaviour of the object.

The question to be addressed is: how can we understand this alternating, action-reaction, behaviour-based concept of interactivity in printed matter that stems from the work graphic designers do? These attributes will be used to identify interactivity in printed matter and, in order to do so, a group of case studies is presented.

4. Interactivity is not what really distinguishes Interaction design, but the fact of dealing with computerized products and systems (Hallnas 2004).

Case studies

The use of the case study research method has the purpose of understanding and interpreting. It is made of four objects that follow a project-oriented practice in the area of graphic design. This application of the method was structured from Yin (1994), being adapted to the specific needs of the research. Thus, each individual case is presented by a description and explanation of an undertaken analysis on a diverse set of sources collected in order to consolidate its internal validity. The formulated question intends to identify the previous defined attributes and examine the means and strategies required in the conception and communication of graphic design objects that allow for interactivity. This being a first step in studying the concept with regard to graphic design practice, we will exclude for now which type of interaction these objects have.

Anni Kuan visual identity, Sagmeister Inc.

Anni Kuan is a graphic design project developed by Sagmeister Inc. for fashion designer Anni Kuan. The commission consisted in the design of a set of objects that, besides visual identity, also included direct mail, brochures and promotional material.

The basis of the project is its visual signature, consisting of a logo, which enables its formal separation into several applications, to allow each user to handle objects and complete this identity.

Figure 1 Anni Kuan visual identity.



The design complies with a preview of this separation across the several materials used.

A letterhead and an envelope were produced, dividing the shapes that make up the signature between the two media. The letterhead is something indistinguishable, we do not know what it says; while the envelope, which is printed in transparent paper, comes in the same way. Together they compose a single message, only possible when they are assembled.

Figure 2 Anni Kuan letterhead.

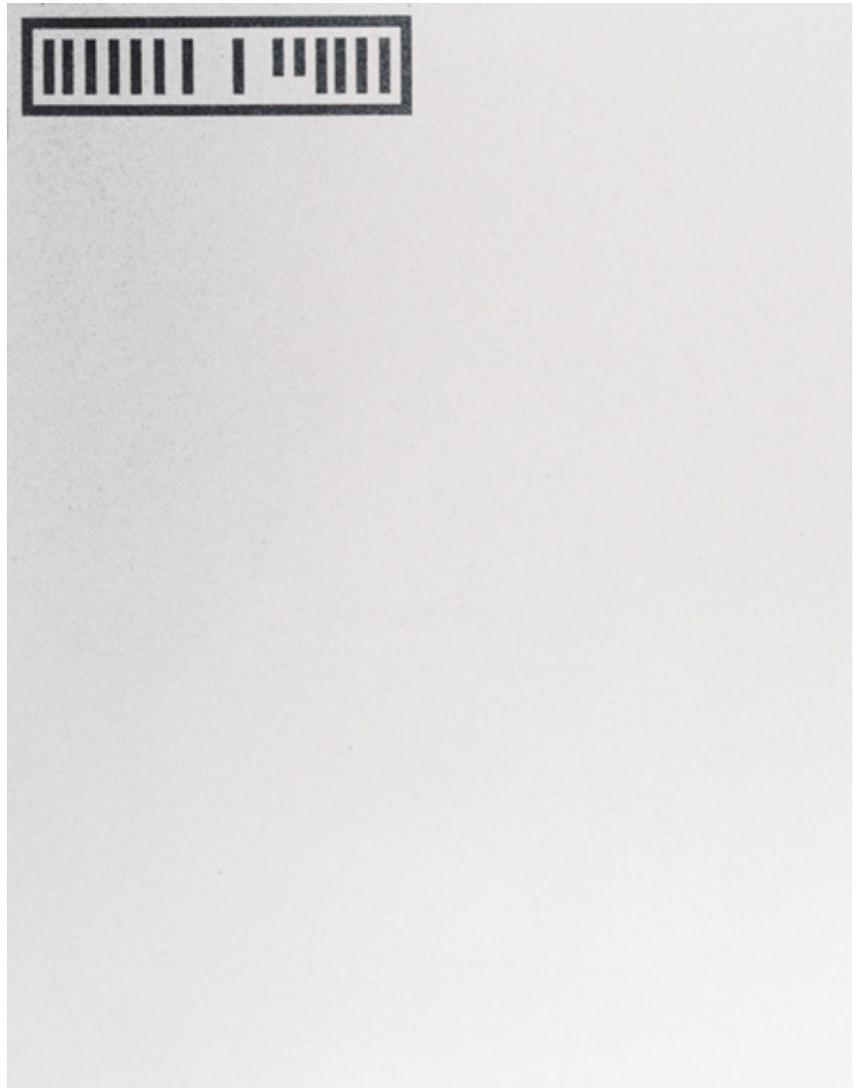


Figure 3 Anni Kuan letterhead and envelope: once folded, the letterhead is placed in the transparent envelope, showing the complete logo.



Figure 4 Anni Kuan business card.



This composition is made by overlapping in both cases and assumes a level of user participation. Indeed, we may identify all three attributes of interactivity, since users, by acting and transforming the object, will decide its behaviour. There is however, a small degree of alternating messages. The outcome is a particularly different achievement, by not repeating the graphic signature that constitutes the company's visual identity, usually monolithic and indivisible. The design places the user at the centre of communication concerns. At the same time, this media was given a visual presence, on which it is no longer possible to evaluate only the form and the graphic composition.

Birth cover, Non-Format

Birth is the cover for Computer Arts magazine issue 163, a project by the design duo Non-Format. The cover is shown in prevailing white, interrupted by small circular elements and some cuts. When the pieces of paper located next to these cuts are lifted, we can get the word “Birth”, the title of this issue. This effect is produced by placing folds in certain areas of the cover and by printing on the back cover an image that fills the entire spread.

Figure 5 and 6 Birth cover: the way it is presented to the user and after being used.



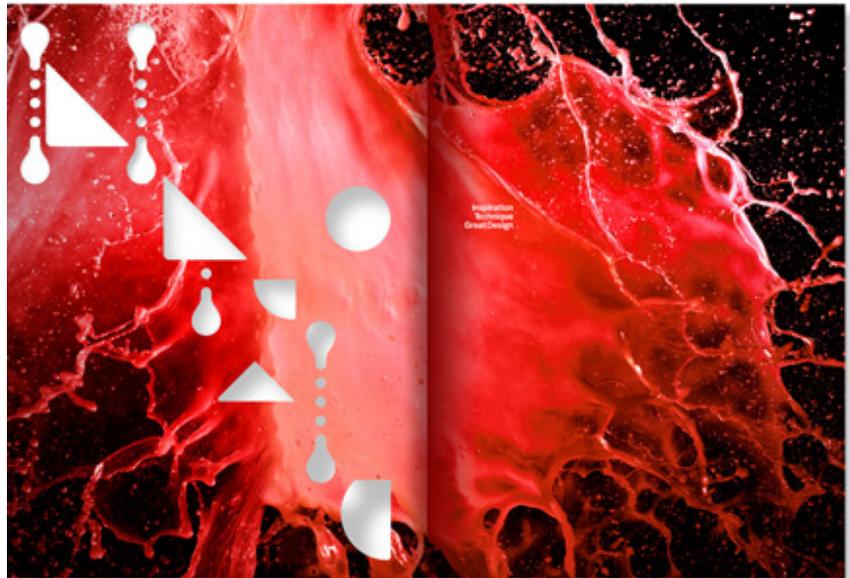
The organization of the cover determines what is essential to communicate first and how other layers of content or meaning can be discovered later. In fact, hierarchy dominates the communication medium, creating an order on which choices that provide a sense of interactivity will take part.

Figure 7 Production detail.



What started out as experiences with forms and finishing techniques, turned out to make sense by the time the designers decided to use the idea

Figure 8 Inside spread.



These options are meant to make the object into something more than it is expected, more expressive and emotional, to connect with people. A number of finishing techniques such as cuts, metallic inks and spot varnish, compose a cover that has become a challenge. And indeed, the design and production elements in this project demonstrate the interactive capacity to be considered in print. The object is designed to incorporate a story that will be told through matter. The object will be seen and touched and therefore, all decisions and details that fit in this understanding will be relevant.

Zeit für die Bombe Book, Agnès Wartner

Zeit für die Bombe is the final graduation project of designer Agnès Wartner, developed at the Basel School of Design. The title comes from the original text written by Susanne Berkenheger in 1997 and it is a hyperfiction for the Web.

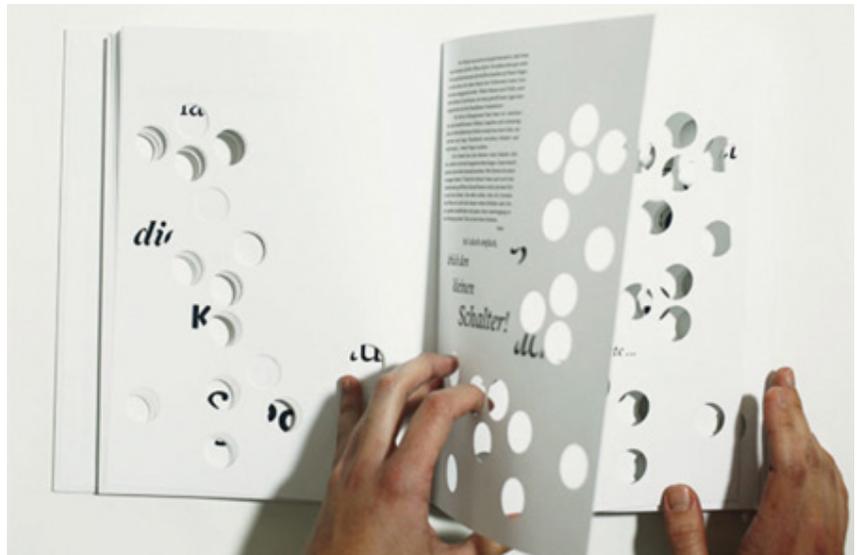
The developed project is a book whose aim is to convert to print form all possible paths and links in online hypertext. This result in a typographic exploration, an object printed only in black and that contains nothing more than text and circular die-cuts.

The 200-page book, with laser-cut finishing and hardcover, has the purpose of achieving a non-linear dimension. This non-sequential order of reading, with several paths, already present in the original text, places an added difficulty when passing to the printed and bounded page. In this way, the entire inside of the book does not comply with the commonly established page order. A navigation system is generated by the circular cuts, through which the user can turn every page. By putting his finger in these cuts, the user chooses what text will follow and what text blocks will he read next. Compelled to use his hands in an active search for a meaningful construction the user relates constantly, not just with the text but also with the object. Therefore, we can identify all three attributes in this object, as we would in digital hypertext.

Figure 9 Zeit für die Bombe cover.



Figure 10 and 11 Inside spreads.



The Night of the Living Dead Pixels interactive folding book, Éditions Volumiques

This is a project that can be classified as a book and as a folding system, with several possibilities for reading, through a group of folds and pages that do not turn necessarily from right to left. It descends from the movie *The Night of the Living Dead* by George Romero, replacing zombies in the original story by QR codes⁵. Through the incidence of these codes, the object presents us with the chance to be complemented with the use of a smartphone, where user choices allow original videos to be displayed.

Figure 12 The Night of the Living Dead Pixels cover.



Figure 13 and 14 Inside spreads.



The starting point for the Éditions Volumiques projects is the desire to join the beauty provided by paper with technological developments. Here, the symbiosis is built using a smartphone to add content and to emphasize the folding of the book. This shows a transition between media and a possibility for each person to participate in two levels: by alternating the order of the pages and by acting on the development of content. This folding book is interactive, as it allows users to demand actions for which several answers are prepared. It is also open for participation, as it makes the final form dependent on users, involving other electronic media as part of the project, in the way. These are valid options to make the use of paper prevail, in a playful manner.

5. QR (Quick Response) Code is a composition of a pattern formed by black squares on a white background, which may contain different information and can be read by camera phones.

Figure 15 Sequence of smartphone use.



Interactivity within graphic design

If digital creations are inherently interactive, when observing the concept of interactivity in printed matter we may question: “is interaction with a static object different from interaction with a dynamic system?” (Dubberly, Haque and Pangaro 2009). Regardless of the answer perhaps we should not consider printed objects as static ones. It seems as:

...graphic design is becoming more interactive, and not only in the field of multimedia. Printed matter can also suggest new forms of communication and seek an active reaction from the public. These are examples of how design media become a process of mutual participation between the producer and the user. Design awaits your reaction (Prat & Sakamoto 2003: 41).

That appears to be what these cases are precisely doing. Their observation led us to recognize certain attributes that correspond to interactivity in a digital existence. As a consequence we can assume graphic design should relate to interactivity and a presence of this concept in graphic design could enhance the use of all materials involved. The use of any element would not occur exclusively on the flat surface of a paper sheet, but in handling and in the time frame of the relationship

between user and printed object. As information is discovered and built, the object changes.

Conclusion

One of the main considerations that should be present in the understanding of graphic design is its use.

If we fail to incorporate in graphic design something that relates to people, it will most definitely become distant from a user's personal life and in that way, diminishing its importance. The notion of interactivity, as noted in digital creations, by intersecting a project practice mainly concerned with the visual composition of the object, makes way for changes. These may just be experimental, but they predict new relationships with people who use printed matter, and perhaps more importantly, different project assumptions.

The selected cases used in this paper were intended to provide examples of ways in which interactivity has worked effectively. These projects indicate an approach between print and what we consider today as belonging to the digital environment. With this analysis we achieved two new understandings: firstly, in a way, it is possible to connect graphic design with the concept of interactivity and recognizing it in several situations. And secondly, we were able to identify certain attributes that may be applied in a graphic design project.

Interactivity in printed matter seems achievable, at least to a minimum degree, by exploring possibilities that arise from print production. Importantly such consideration needs to take place at the beginning stages of the conceptual/design process. These folds, die-cuts and material overlaps increase the dependence of the printed object from its user. The graphic composition, by taking advantage of time and space, possible with this production, develops an interactive capacity. These strategies work simultaneously in a close resemblance of digital programming, in stimulating an intervention or as an anticipation of what will occur. In that way, we can envision an existence for the printed object, not captive of its visual aspects, but one where we can appreciate a material relationship in which we engage to complete the provided information.

Acknowledgements

The Author would like to thank the support of the Foundation for Science and Technology of the Ministry of Science, Technology and Higher Education of Portugal. A special thanks to Joe Shouldice at Sagmeister Inc., to Kjell Ekhorn and Jon Forss at Non-Format, to Étienne Mineur at Éditions Volumiques and to Agnes Wartner for the permission to use their projects.

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