Letterpress Reproduction—Information Visualization Design

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Abstract. At present, with the rapid development of society, digital media has become the mainstream of vision. Digital vision makes people form a new reading form of “Super-Attention”. The visual performance of letterpress printing conforms to this new form of visual reading very well. It is different from the tactile feeling of ordinary printing that further packages and shapes the original information and improves the expectation of information interpretation and experience to a high level. At the same time, the manual culture highlighted by letterpress printing is also one of the best means to cushion the tension of inconsistent technology and culture in modern society. We don't know the result of the confrontation between paper and digital media, but letterpress printing in digital society has shown its unique “Paper-Based” feelings. Through detailed analysis of the historical evolution of letterpress printing, the comparison between traditional letterpress printing and modern letterpress printing, this paper presents clearly the development of letterpress printing for readers, so that readers can truly understand this unique traditional process; and then it elaborates on the application of modern letterpress in creative products and the development status quo of modern letterpress at home and abroad. This paper probes into how to popularize the new nirvana letterpress once again, thus providing a set of modern application attempt of letterpress printing - *Rejuvenation of Letterpress* information visualization design, and from practice, looking for letterpress regeneration after integrating new design ideas in the new media era.

1 Introduction

With the rapid development of society, digital media has become the mainstream of vision, and digital vision has formed “super attention”. However, the visual performance of letterpress printing is well adapted to this new form of visual reading, which is quite different from the tactile feeling of ordinary printing, and further packaging and shaping the original information bearing, so as to raise the expectation of information interpretation and experience to a very high level. At the same time, the manual culture of letterpress printing is also one of the best means to buffer the tension between technology and culture in modern society. We don't know the result of the confrontation between paper media and digital media, but letterpress printing in digital society has shown its unique “paper-based” feelings.

2 REVIEW

At present, the society is developing at a high speed, Digital media has become the mainstream of vision. Digital vision makes people form a new reading form of “super attention”. The visual performance of letterpress printing is well adapted to this new form of visual reading, which is quite different from the tactile feeling of ordinary printing. The original information is further packaged and

shaped, and the expectation of information interpretation and experience is raised to a very high level. At the same time, the manual culture of letterpress printing is also one of the best means to buffer the tension between technology and culture in modern society. We don't know the result of the confrontation between paper media and digital media, but letterpress printing in digital society has shown its unique “paper-based” feelings.

Han Xiaoliang, a technical expert of the China Printing Industry Association, said in his article “the resurrection of relief printing equipment, under the effect of printing pressure, there will be a slight raised mark on the back of the paper, the edge of the picture and text is neat, while the printing ink in the center part is lighter. This is the unique feature of relief printing. The solid relief printing has left a good memory for people. After relief printing was gradually replaced by offset printing, the market was extremely shrinking, and relief printing equipment was gradually withdrawn from the market After technological innovation, relief printing has been reborn again. Especially, this printing technology has the characteristics of environmental protection and simple structure, which once again promotes the rebirth of this printing method! “

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3 COMPARISON BETWEEN TRADITIONAL AND MODERN LETTERPRESS PRINTING

3.1 The history of letterpress printing

Letterpress printing is a relief printing method. Relief printing is to make the corresponding protrusions of the printing plate according to the designed characters and graphics, and then make the convex parts of the relief plate evenly colored, and then press the patterns deeply into the surface of the substrate, so that the design words and graphics with clear marks and bright colors appear on the substrate. Generally speaking, letterpress printing is a process of copying files by pressing the inked letterpress onto the paper.

It is most intuitive and comprehensive to trace the development of letterpress printing to the global historical view of printing. Woodblock printing appeared in Tang Dynasty, which is the first printing method known to be applied to paper as medium. The clay movable type printing invented by Bi Sheng of Northern Song Dynasty thousands of years ago is the earliest movable type printing. Wang Zhen, a scientist in Yuan Dynasty, invented wood movable type printing, but it was not widely used. Until the Qing Dynasty, woodblock printing was still widely used in China. Johannes Gutenberg of Germany in the 15th century was the earliest inventor of lead type printing. The production of lead type promoted the development of European publishing industry, and was considered by many people as one of the most important inventions in the past thousand years in western countries. In the early 19th century, the improved lead type manufacturing technology spread to all over the world, and became the most mainstream printing method and the main means of distributing information in the world at that time. Letterpress printing gradually embarked on the road of industrialization. In the middle and late 20th century, due to the rise of computer typesetting and offset printing, which replaced the role of letterpress printing in books and newspapers, letterpress printing was in the door of death. In the early 1980s, professional letterpress practitioners revived the old process by adopting a new manufacturing method, using film negative and photosensitive polymer plates to make raised surface printing plates. Nowadays, letterpress printing is showing a revival of handicraft forms.

3.2 Traditional letterpress printing

In the traditional letterpress printing industry, the standard to test a qualified printer is to transfer the ink clearly from the relief to the light and thin paper, without producing the impression left by the relief on the paper. Letterpress printing is widely used in newspaper and book printing. This is a tedious way of printing, which requires a lot of labor to complete. To print a book, the typesetter manually selects individual types from the type box, places them in the typesetter, where there are several lines on the typesetter, and then transfers them to a larger typesetting library. In this way, typesetters gradually set up page by

page text.

3.3 Revival of modern letterpress printing

Today's revival of letterpress printing is the use of thick cotton paper, by increasing the printing pressure, so that relief on the paper to produce a unique impression, although in the past this impression was considered bad printing. It is a new type of hard and durable printing material. The photosensitive polymer plate making machine and cast aluminum base enable letterpress and designers to obtain text and image plates from digital illustrations, fonts and scanned copies, making letterpress and digital design perfectly matched.

4 RECONSTRUCTION AND RETURN OF LETTERPRESS PRINTING

After the text edit has been completed, the paper is ready for the template. Duplicate the template file by using the Save As command, and use the naming convention prescribed by your conference for the name of your paper. In this newly created file, highlight all of the contents and import your prepared text file. You are now ready to style your paper; use the scroll down window on the left of the MS Word Formatting toolbar.

4.1 Development and Enlightenment of modern letterpress printing at home and abroad

The revival of letterpress printing first appeared in the United States in the late 1990s. Martha Stewart was one of the first to call for its revival. Martha Stewart's *Martha Stewart weddings magazine* has been using letterpress wedding invitation cards since the late 1990s, which has promoted the interest in letterpress printing in the US market. After more than 20 years of development, letterpress printing in the U.S. market has gradually matured, and there are many letterpress printing organizations. *Letterpress common*, established by boxcar press, is the largest letterpress community in the United States, making great contributions to the development of modern letterpress printing. In terms of education, letterpress printing has also entered most American design colleges and universities, and has become a basic course for graphic design majors.

Nowadays, China's letterpress culture is still weak, and traditional skills have not been inherited. However, in the countries with deep influence in western culture, Hongkong, Taiwan and other neighboring countries such as Japan, Malaysia and Singapore, the cultural atmosphere of letterpress printing is growing and maturing. But this also indicates that letterpress has great potential in Chinese mainland. Letterpress printing in various regions and countries will also become a reference and learning object for our own letterpress printing. This is one of the main factors that made more and more people understand and love this retro process and contribute to the development of letterpress in mainland China.

Taking *Xixi Imprint*, the first commercial manual relief printing studio in Beijing, founded in 2009, and the

wonderful paper products studio founded in 2011, we can find that letterpress has experienced a tremendous transformation from ordinary printing to manual printing of art and design performance, and the original printers have become designers, artists and craftsmen. Letterpress printing has gradually changed from being attached to information media to an independent manual printing mode closely related to design and artistic creation, and began to produce unique cultural experience. It is foreseeable that letterpress will become an important way to design. It may enter the professional classroom of Chinese mainland universities someday, and become a systematic curriculum and category.

4.2 Application of modern letterpress printing in cultural and creative design

The difference between letterpress printing and modern printing technology is that it can give the paper a concave convex feeling and give it unique vitality. Letterpress printing is unique. It is different from the modern offset printing. Although the precision and color of modern printing have been well done, the unique touch of paper brought by letterpress printing is beyond the modern printing. Letterpress printing is considered to be a handicraft because its use is done by hand and requires a lot of labor. Nowadays, letterpress printing is showing a revival of handicraft forms.

Fig1. Graphic poster design of letterpress printing information

Graphic poster design (Fig. 1) of letterpress printing information is based on the historical evolution, basic principles and production process of letterpress printing. Combined with practical experience and concise graphic design, the ancient craft is fully reproduced, and the craftsman's feelings are fully expressed. The whole page is divided into four parts. The top part of the page is the title part, the center is the poster name, the left side is the background and introduction of letterpress printing, and the right side is the classic font commonly used in letterpress printing. The layout center is the center of gravity of the whole poster -- Heidelberg letterpress press. The whole printing machine is outlined with yellow lines. From every part to each axle wheel, every detail is carefully outlined, and the shape of Heidelberg letterpress is restored to the largest extent. The left side of the page is the beginning of reading the poster text. The reading

sequence from top to bottom illustrates the history of letterpress printing, the classic models of Heidelberg printing press, and the methods and methods of letterpress printing. On the right side of the page, the text on the left side is introduced in detail, including Heidelberg letterpress press, letterpress tool display and letterpress printing process.

The letterpress printing performance guide (Fig. 2) is a guide to design and application. The guide is divided into four pages, with different sizes and colors. The first three pages are ordinary color printing, and some stamping process is applied, and the last one is printed in the form of live printing. For each page, the first page uses olive green background color, and the text is gilded with rose red. This page is the title page of the guide, which indicates the role of the guide; the second page is made of red background gold characters, with both pictures and texts,

and the left as the text, which is called live printing and what's letterpress. On the right side, Heidelberg type printing machine is outlined by gold line, which makes a comparative description of the text; on the third page, the yellow background gold characters are also divided into left and right. One part of the left text undertakes the above introduction of the typography, the other part is some rules to be followed, such as color difference, overprint, conversion of basic unit of word ruler, etc., and conversion of basic unit of word ruler is also provided with illustration. On the right, the basic unit of the word ruler is also converted with illustration. On the right, the text on the right side is divided into two parts: the It is the official account of the monster workshop and the micro-blog two-dimensional code. The fourth page page is printed with letterpress, and the minimum specification of dot, line and surface and text is explained, while the edge is attached to a ruler. The four pages are different in size, and the binding produces the color and layout style. The punching binding in the upper left corner forms a rotating viewing mode, which is novel and interesting on the one hand and convenient for the use of ruler on page 4.

Fig2. Letterpress performance guide

In letterpress printing (Fig. 3), the combination of tactile and visual sense appears in a form of no violation and close combination. The unique printing effect of letterpress printing is that the imprint of the printed matter can be touched as if it is embedded in the paper, and the dent of different colors can be made into ladder depth, that is, the depth of dent of different colors can be freely controlled and nested with each other.

Fig3. Letterpress creative products

With the development of the times, all kinds of manual printing have disappeared from people's vision. When we thought that letterpress printing was replaced, now we

gradually found that some invitation letters, stationery and greeting cards appeared in the society, giving full play to the characteristics of letterpress printing, showing the vitality of letterpress printing. The combination of paper and graphics selected by designers, combined with hot stamping and other processes, has also begun to appear more and more in the field of printing and design.

5 CONCLUSION

The development of letterpress printing is permeated with the traditional atmosphere of China and the West. As a traditional craft of manual printing, it should not only be put on the shelf as a kind of heritage, but also be inherited and expressed in the times. The return of letterpress printing may be due to people's recognition of the value of this technology, and it can give us a strong feeling of body and mind that are deeply involved in digital media, so that our minds can be slightly liberated from the digital virtual, and feel the real existence from the manual texture. This tactile feeling, which is quite different from the ordinary printing, carries the original information and further shapes the packaging, the expectation of information interpretation and experience is raised to a very high level.

The nirvana of letterpress printing is not entirely dependent on feelings. There is also a huge force behind it, which is to re explore the charm of manual printing, a combination of handicraft and machine, and the participation of ink in daubing and imprinting in deep pressure. It creates new visual experience and miracle through letterpress printing in the virtual era, and redefines the expression form of printing and design again; it is the revival of tradition, but it is also a new creation and pursuit. Nowadays, relief printing is facing the public with a new identity. I believe that it will be mastered and applied by more and more designers, and will be concerned and recognized by more people.

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