

A study on the Interactive Expression of Human Emotions in Typography

Sooyeon Lim

Prof., Dept. of Fine Arts, Kyungpook University, Korea
sylim@knu.ac.kr

Abstract

In modern times, text has become an image, and typography is a style that is a combination of image and text that can be easily encountered in everyday life. It is developing not only for the purpose of conveying meaningful communication, but also to bring joy and beauty to our lives as a medium with aesthetic format. This study shows through case analysis that typography is a tool for expressing human emotions, and investigates its characteristics that change along with the media. In particular, interactive communication tools and methods used by interactive typography to express viewers' emotions are described in detail. We created interactive typography using the inputted text, the selected music by the viewer and the viewer's movement. As a result of applying it to the exhibition, we could confirm that interactive typography can function as an effective communication medium that shows the utility of both the iconography of letter signs and the cognitive function when combined with the audience's intentional motion.

Keywords: *Emotion Expression, Interactive Expression, Human Emotion, Typography*

1. INTRODUCTION

Among the three functions of human information transmission, a medium with an interesting new function has emerged by combining the functions of information transmission as text and information transmission as images. Typography is an area that combines art and technology with letters as the subject. Typography includes all states and processes related to letters, such as letters with meaning, shape, layout, and arrangement of letters, and is a work of mixing images with letters according to various media formats. Typography conveys information through letters. In the past, print media was used as a medium for conveying meaning, but various multimedia media are being used recently. Previously, the focus was on aesthetic concepts that emphasized beauty rather than letters for reading, but modern typography focuses on delivering accurate information and attracting viewers' attention. Kinetic typography emerged from this aspect.

Today is a world where texts that need to be read are transformed into images that can be seen and felt. Kinetic typography is to improve the expression and transmission effect of information and emotions through text by adding movement to static text. It is especially widely used in fields such as media art, music video, and advertisement that require effective expression and delivery of text. Kinetic typography, which combines text and movement, is developing into a synesthetic medium by combining with a new temporality in space beyond the imaged text expressed in digital typography. In addition, kinetic typography is positioning as a

Manuscript received: February 2, 2022 / revised: March 1, 2022 / accepted: March 8, 2022

Corresponding Author: sylim@knu.ac.kr

Tel: +82-53-950-5684

Professor, Dept. of Fine Arts, Kyungpook Univ., Korea

Copyright©2022 by The International Promotion Agency of Culture Technology. This is an Open Access article distributed under the terms of the Creative Commons Attribution Non-Commercial License (<http://creativecommons.org/licenses/by-nc/4.0>)

more powerful and dynamic communication tool in the new digital environment in the role of information exchange of the existing print media.

The mixing of art genres according to the development of digital media is changing the form of human communication into an immediate and interactive form, enabling the viewer to take an active role in creating change by directly participating in the work. For the purpose of communication, interactive typography is a technique in which the viewer interacts with the text added with the element of movement. It is the addition of human interaction to kinetic typography, a technology that dynamically changes the color, size, and position of characters over time.

Interactive typography uses image technology and computer algorithms to provide a communication environment rather than a simple digital environment. In the multimedia space of interactive typography, letters are shaped through dynamic and interactive motion and instant communication. In other words, interactive typography has the characteristics of exchanging emotions with users by delivering information in real time with aesthetics and originality. Interactive typography is a language that simultaneously satisfies the effects of message delivery through images of video language and information delivery unique to typefaces. It performs the function of a more direct visual language by using the symbolic image and type suitable for the content to be conveyed, and the direction and speed of movement.

This study intends to discuss the following research topics. First, we examine the expression characteristics of typography that change with the development of media. Second, the investigation of various methods used by typography to express human emotions is compared and analyzed through use cases. And we will look into the method and significance of interactive typography combined with motion to function as an effective communication medium.

2. BACKGROUNDS

2.1 Semiotics of Typography in New Media

In the 21st century, the age of images based on digital technology, texts transcend the concepts of time and space based on digital technology and require infinite openness and interaction. Letters constantly play the functional role of visual signs or visual images in multiple spaces. Letters are performing a hybrid function that is an intermediate role between image and language, and in the era of digital images, the visual characteristics of letters are being emphasized more. In the digital age, where various information and images are accessed through media such as computers and mobile devices, the use of text marketing to effectively deliver concise and clear messages to consumers is increasing. Each company develops its own font and applies its own font to products, services, and advertisements. They are conducting iconography-based marketing in an effort to imprint on consumers by building a firm identity for the company using consistent fonts. Various studies and experiments have proven that it is effective in expressing corporate identity and enhancing brand image through marketing that combines the intrinsic iconography of letter symbols and playful elements.

As shown in Figure 1, SSG.com drew attention with an advertisement that imaged the letter ‘ㄸ(SSG)’ in 2016. The company demonstrated the iconography of letter symbols and the utility of cognitive functions while conducting the 'Make Your ㄸ CF' campaign, which involved creating follow-up advertisements with customers. When a customer directly uploads a word with various meanings that can be made from the initial sig of SSG, 'ㅅㅅㅅ', on the SSG.com website, five quirky and creative words are selected from among them to produce five follow-up advertisements for 'ㄸ'.



Figure 1. 2016년 SSG닷컴의 '씩(SSG)' 광고 SSG.com's '씩(SSG)' advertisement in 2016

The concept of this video advertisement is to continuously discover new linguistic amusements based on the originality and ambiguity of '씩', and create a cheap and luxurious brand image by arousing familiarity and interest to viewers through the simplification and differentiation of the image [1].

Media façades that express the intrinsic iconography and cognitive functions of letter signs are also increasing on the media façade. As an event for Hangeul Day in 2012, a project video composed entirely of Hangeul was screened on the Seoul Square Media Canvas to arouse people's interest.



Figure 2. A view of the 2012 Seoul square media canvas exhibition

2.2 Text as Image

For hundreds of years people have understood that images are subordinate to text. However, after the artistic avant-garde in the early 20th century, a view that tried to grasp them as an equal relationship in the coexistence and opposition between images and texts emerged. Deconstruction, first discussed by the French philosopher Jacques Derrida in the late 1960s, shook up the basic propositions of structuralism. It is to deconstruct and analyze the meaning of a certain sign, and to reconstruct these deconstructed objects to create new meanings [2].

Typography is a field that has been greatly influenced by deconstructionism. In deconstructive typography, various expression methods such as destruction, overlapping, decomposition, and deletion were attempted on typographic elements such as type, spacing, blank space, and images. In modern typography, the deconstructive nature of images and texts is particularly prominent. Modern typography gives a new formativeness visually by mixing and reconstructing the method of expression and arrangement of texts to produce plural meanings. In particular, in the recent typography trend, the role of images is gradually increasing while texts are gradually decreasing or dismantled. The overlapping and dismantling of images make it seem like various visual elements are floating around freely, but it makes the viewer feel the spatial depth of typography and provides visual pleasure to induce the viewer to actively participate in the artwork.

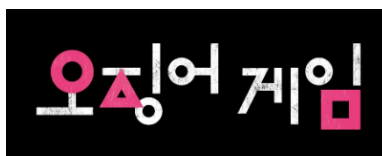


Figure 3. The title of Netflix's Korean drama 'Squid Game' in 2021

In the title of Netflix's Korean drama 'Squid Game' in 2021, the keywords of this drama compose independent information through the process of deconstructing and integrating letters into complex symbol mixtures. '○□△' used in the font of the poster title is an important keyword to represent the drama, and it is engraved on the helmets of the agents in the drama. The figures are read as Wonbanggak (圓方角). It means heaven and earth, and the spirit and mind of human, and contains the idea of achieving human perfection by acquiring heavenly values and virtues in harmony with nature and spiritual exchange. In this title, the letters presented together with the Wonbanggak image can produce a new meaning that includes the idea of heaven, earth, and humanity in addition to the original meaning of the text. It reveals the spirit of heaven, earth and human that unites all nature and human beings as one through the method of combining image signs with text information.

2.3 Representation of Kinetic Typography

The word 'kinetic' is derived from the Greek word 'kineticos' meaning movement. Kinetic typography is the art of designing texts with images for the purpose of communication. Kinetic typography became possible after the invention and popularization of cinema. On the screen of the film, the letters move around to convey emotions and have rhythm, changing the viewer's point of view and changing the passive visual flow actively and selectively. In the movie genre, kinetic typography is classified into main title, credit title and ending title, and plays an important role in inducing the immersion of the viewer.

The advent of media that can utilize time made possible the movement of letters that was unimaginable. As the media developed, the letters that were trapped in paper began to move out of the rectangular frame through movies and videos. In addition, with the advent of interactive media, the movement of letters does not induce a unilateral flow of vision, but allows the user to arbitrarily select the movement. As the letters move and are fed back, the letters transmit a message more easily. The actively changed letters have developed as a medium that can control all emotions using the five senses that can be perceived as well as human vision.

In digital art, which is characterized by non-linearity, multi-media, and interactivity by the aesthetic tool of hypertext, the active participation of the viewer acts as an important component of the artwork. Romy Achituv and Camille Utterback's 'Text Rain' and Camille Utterback's 'Written Forms' brought the standardized text that were only made with paper and text media onto the screen of the digital realm. These artworks are variable and interactive, and simultaneously reconstruct the act of reading and seeing the text within the human cognitive space [3-5].

3. EXPRESSIONS OF HUMAN EMOTION IN TYPOGRAPHY

With the recent development of communication media, typography has also undergone morphological and functional changes to suit new media, and based on this, efforts are being made to present an effective way to express emotions. Art trends generated by technological development and social background influenced the morphological change of typography and promoted its development, and the expression of emotions in typography has been influenced by various art trends.

3.1 Emotion Expression in Expressive Typography

Expressive typography in the early 20th century, influenced by Cubism and Futurism, attempted to express emotions through visual elements. Expressive typography writers argued that typography itself is a medium that conveys meaning, and that the meaning of text can be expressed through visual expression of letters. They

thought that typography is what people look at words rather than look through words, and that visualizing the content of text with typography is the unifying of typography and language. Guillaume Apollinaire (1880 - 1919) and Filippo Tommaso Marinetti (1876 - 1944) are representative expressive typographers. Expressive typography writers have laid out texts in various ways to effectively express emotions, so that viewers can enjoy visual pleasure and reinforce emotions. They tried new forms of poetry, used free typography elements, and showed a dynamic layout. By showing continuous movement and still form at the same time, movement and speed were expressed and emotions were heightened.

In the early 20th century, French poet and Cubist painter G. Apollinaire was the first to use the term 'Calligraphy' and pioneered the visual effect of typography virtuosity. As he wrote his work, he shaped sentences to fit the theme and changed the direction of the writing. Apollinaire arranged the alphabet vertically to bring out the lyrical and sad emotions of his poetry. This means that he focused on 'showing' rather than 'reading' [6]. F. T. Marinetti was the first to use the term 'Simultaneity' in the field of visual arts to present multiple viewpoints in one work and express simultaneous existence or events. He also visualized language acoustically, aiming for effects from 'read' to 'see' and from 'see' to 'hear'. F. T. Marinetti praised war in his work 'Zang Tumb Tumb' and expressed noises such as gunshots and explosions with dynamic arrangement, heavy fonts, and slowly changing font sizes [7].

3.2 Emotion Expression in Kinetic Typography

In the early 20th century, the typography pursued by poets, including the Futurists, began to be expressed more actively through movement. The digital medium with the addition of time strengthened the transmission ability of such typography and enriched the expression of language. C. Chao created a programming tool for kinetic typography called 'Kinetext'. It is a programming sketchbook environment for animated text design [8]. Johnny C. Lee implemented a powerful system that can apply animation to various types of text. The engine supports a relatively small set of components, giving users the ability to link them together to create different representations. It also provides new techniques for automation effects used in traditional cartoon animation, and provides specific functions for manipulating typography. The figure 4 is an example of this system showing two different expressions for the same word. It is the same words, but conveys different emotional expressions according to typeface, rapid rhythmic motions, changes of scale, and rotation [9].

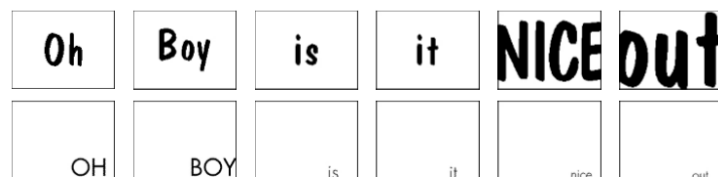


Figure 4. Expressing different emotional tones, for the same text

3.3 Emotion Expression in Interactive Typography

Interactive typography delivers a new visual play and a stronger message of typography through interaction with users and interactive movements. John Maeda's interactive typography 'Flying Letters' is an artwork that manipulates typography by changing the size, color, layout, and motion of text immediately and fluidly according to the published coordinates of the mouse [10]. Golan Levin's 'Re:MARK' in Figure 5 is an artwork that visualizes the viewer's speech using typography and shapes. When a viewer says something in front of a speaker, the computer converts it into clever animated letters or shapes using voice analysis technology, motion

sensing, and real-time computer animation technology. Viewers can also manipulate these using their own shadows. If the viewer's speech is clearly recognized, characters are displayed on the screen, otherwise an abstract shape is created. That is, the visualization element is determined according to the tone of the speaker. So, Viewers can experience playful illusion in which viewers become actors in a shadow world of reactive cartoon language [11].

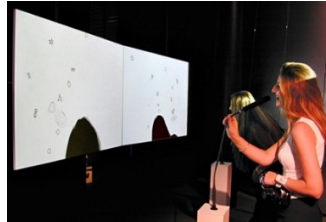


Figure 5. Re:MARK, Golan Levin, 2002

4. INTERACTIVE EXPRESSION IN TYPOGRAPHY

4.1 Analysis of Interactive Typography Characteristics

Among the overflowing information, textual information without attention and originality has significantly reduced vitality in conveying meaning. Typography, an artwork with letters, adds additional meaning to the meaning of letters by changing the basic properties of letters, and creates new meanings by adding additional graphic effects such as shapes and colors. Therefore, in addition to the primary purpose of information delivery, interactive typography, in which interaction with viewers is added to existing typography, forms a differentiated additional meaning for each individual, immersing the viewer and delivering information with a unique meaning. The Figure 6 shows the characteristics of interactive typography, a concept extended from existing typography.

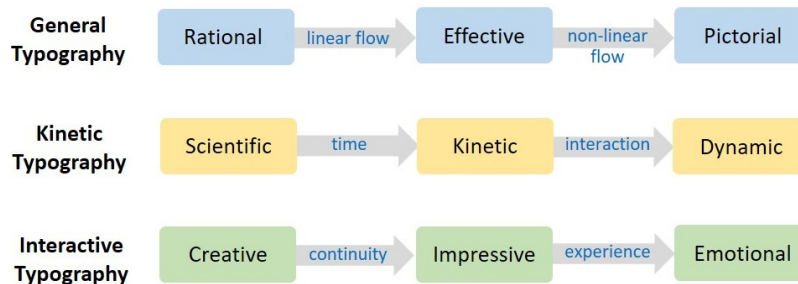


Figure 6. The characteristics of interactive typography

(1) Pictorialization

A representative example of the fusion of the visual system of art and the linguistic system of language is typography, which is in the form of text drawings. Kinetic typography, which includes morphological temporality in typography, shows a single linear result that communicates in one direction. Therefore, the movement of kinetic typography is precisely and meticulously designed and provided by the artist in advance. In comparison, interactive typography produces a variety of results with non-linear communication. In particular, interactive typography with the added interaction of the viewer reveals the result in an unpredictable shape. According to the feedback of the viewer, the typography is developed in a completely different way. Therefore, compared to conventional typography, interactive typography is more advantageous to attract

viewers' interest and increase immersion in the artwork. In other words, interactive typography has a pictorial characteristic to enhance information delivery, thereby increasing the accuracy and attention of the meaning to be conveyed. This means that graphic artworks that extend the properties of letters pictorially and formatively can visually expand the linguistic meaning of letters and induce the viewer's imagination.

(2) Dynamization

Many artists of the 20th century have made ceaseless efforts with deep interest in expressing movement in the graphic space made up of print media. The media change of graphic space caused by the spread of computers and especially the development of the Internet enabled typography, which expressed movement in a static space, to express movement in a dynamic space. Kinetic typography with movement added to general typography expressed as a still screen delivers information to viewers in a more active way. In addition to the improved expressive power of kinetic typography, interactive typography has the added feature of continuously creating new meanings dynamically according to the relationship between text and images through real-time interaction with viewers. Of course, the additional meaning generated by interactive typography varies depending on the viewer's environment or emotional state. The newly created meanings interact with each other, and infinite variation in meaning creation can be expected.

(3) Emotionalization

Viewers who feel the real feeling are moved by the artwork. Interactive typography chose the tool of interaction to become a living artwork. Interactive typography can convey emotional states such as excitement and sadness that are difficult to convey with static typography through the direct movement and speed of the typography shown on the screen. The various results resulting from the non-linear communication of interactive typography make the interaction with the viewer more emotional. Viewers who are faced with interactive typography are immersed in the play by checking the result that responds to their body motion. Through the playfulness of this interaction, the viewer remembers the object or environment experienced in the public art space for a long time and creates a memory of a pleasant living space. In order to maximize the playfulness of typography that interacts with the viewer, it is necessary to control the elements that can be transmitted visually and aurally, such as color, size, and movement.

The playfulness of interactive typography is proportional to the level of immersion in the artwork. Whereas existing typography ended its role by appreciating the artwork produced by the artist, interactive typography creates conditions for repeatedly enjoying pleasure by operating and adjusting the work through free activities. Overcoming spatial limitations is probably the biggest reason for immersion. Interactive properties are also facilitators of play activities. The use of interactivity in interactive typography stimulates immersion in the artwork by placing the viewer in the position of a collaborator by causing direct and fluid communication in the appreciation area. Through communication and collaboration with other viewers, new pleasures can be felt, and through such experiences, playful communication that shares each other's emotions is possible, thereby enhancing playfulness.

4.2 Interactive Typography Creation

In this study, a method of expressing the viewer's emotions was presented by implementing interactive typography that uses the viewer's text, music and movement as input information [12]. Interactive typography, the result of this study, was used for the exhibition as shown in Figure 7.



Figure 7. Viewers interacting with interactive typography

5. CONCLUSIONS

Typography, a visual art, has emerged as a new subject of visual art by accepting postmodern discourse and deconstruction theories, and its structure has changed a lot. This change developed into kinetic typography by combining it with movement and appeared as interactive typography with the participation of the viewer. Now, interactive typography has developed not only a static element with only linguistic information, but also a complex element with visual and auditory elements as an active visual formative language. Interactive typography, which has various forms such as text, image, and sound, is expanding its expression domain as an image due to its combination with digital media that interacts with viewers. It is faithfully fulfilling its role as a tool to visualize the human sensibility of ‘hearing, seeing, and feeling’.

The most important characteristic of typography is that it is free to create and can be transformed and interpreted in various ways. In particular, this study showed that interactive typography represents changes in human emotions by changing various elements such as shape, color, and speed through various cases and creation of artworks. Interactive typography develops one step further from the existing communication function of text, allowing us to experience the state of transplantation embodied in the human body and senses, that is, the transplantation stage. Therefore, in the future, additional research to classify and analyze typography change elements according to established standards should be conducted.

ACKNOWLEDGEMENT

This research was supported by Kyungpook National University Research Fund, 2021.

REFERENCES

- [1] K. S. Kim and K. B. Kim, “Analysis on the play on words of SSG and video advertisement and image concept,” *Journal of Digital Art Engineering & Multimedia*, Vol. 7, No.4, pp. 315-326, 2020. DOI: <https://doi.org/10.29056/jdaem.2020.12.02>
- [2] J. Sallis, ed. *Deconstruction and philosophy: The texts of Jacques Derrida*. University of Chicago Press, 1987.
- [3] Text Rain, <http://camilleutterback.com/projects/text-rain>, accessed Sep. 01, 2021.
- [4] Written Forms, <http://camilleutterback.com/projects/written-forms>, accessed Sep. 01, 2021.
- [5] S. Lim, “3D Spatial Interaction Method using Visual Dynamics and Meaning Production of Character,”

- The International Journal of Advanced Smart Convergence*, Vol. 7, No. 3, pp. 130-139, 2018. DOI: <https://doi.org/10.7236/IJASC.2018.7.3.130>
- [6] L. Marks, "Calligraphic Animation: Documenting the Invisible," *Animation*, Vol. 6, No. 2, pp. 307-323, 2011. DOI: <https://doi.org/10.1177/1746847711417930>
- [7] R. Brain, "Genealogy of "ZANG TUMB TUMB": Experimental Phonetics, Vers Libre, and Modernist Sound Art," *Grey Room*. Vol. 43, No. 8, pp. 88-117, 2011. DOI: https://doi.org/10.1162/GREY_a_00026
- [8] C. M. Chao, *Kinetext: concrete-programming paradigm for animated typography*, Diss. Massachusetts Institute of Technology, 1998. URI: <http://hdl.handle.net/1721.1/29139>
- [9] J. C. Lee, J. Forlizzi, and S. E. Hudson, "The kinetic typography engine: an extensible system for animating expressive text," In *Proceedings of the 15th annual ACM symposium on User interface software and technology*, pp. 81-90, 2002. DOI: <https://doi.org/10.1145/571985.571997>
- [10] John Maeda, *Flying Letters*, <https://www.sfmoma.org/read/flying-letters>, accessed Feb. 02, 2022.
- [11] Levin's website, <http://www.flong.com/archive/projects/remark/index.html>, accessed Feb. 02, 2022.
- [12] S. Lim, "Implementation of Dynamic Character Art using Image Association," *The International Promotion Agency of Culture Technology*, Vol. 7, No. 3, pp. 52-57, 2019. DOI: <https://doi.org/10.17703/IJACT.2019.7.3.52>