

# How the Traditional Chinese Idea of Time and Space Can Be Applied through Digital Moving Images

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## Abstract

In this paper, I argue that traditional Chinese thinking and its manner of approaching art can be successfully expanded onto a different platform: digital media art. My research (both in theory and practice) shows how this transformation expands the notions of time and space and forges new interdisciplinary correlations by addressing traditional Chinese culture in four different but interrelated manifestations: the philosophy of Dao, calligraphy, painting and sculpture. As a result, I claim that digital media can shift the notions of time and space from traditional Chinese thinking into contemporary digital art. Conversely, the digital concept of time and space can be interpreted by an analysis of the traditional Chinese philosophy of Dao, as well as a new understanding of 'scroll format' and Chinese digital art has been introduced through my own practice.

## Introduction

My digital media artwork series *Dao Gives Birth to One* (2009-2012) will serve here as a case study and practical experimentation project furthering the analysis of how the traditional Chinese concepts of time and space can be applied through digital moving images in a long scroll format (see Figure 1). In this work I attempted to demonstrate that (1) The concept of *Dao*, (2) the function of the scroll as a form. This thesis aims, both theoretically and practically, at providing the reader with a new experience – the perception of the notions of time and space inherent in traditional Chinese thinking – by combining these concepts with digital technology.



Fig 1. Title: *Dao Gives Birth to One (version III)*; Video format: Digital; Full HD 1080 x 1920; Exhibition format: (6-12 monitors / projection version); Length: 20 mins looping; Sound: Stereo x 12 channels; Venue: the Hong Kong Museum of Art; Hong Kong, 2010.

## The Concept of Dao

My artwork aims to visualize the *cycle* of vigour and vitality<sup>1</sup> of *Dao* in the universe with the assistance of digital media technology – a topic that has not been broached before in relation to the idea of 'play-appreciation' and digital media.

In addressing this issue I first explored the concepts of *sheng* (生 'gives birth') and *yi* (一 'one') as used in Chapter 42 of *Dao De Jing* and the question how they could be visualized through digital media technology. With reference to the research materials, translations made by different scholars generally reflect their different linguistic perspectives. Thus there are actually different interpretations of *sheng* (生 'gives birth'), including 'to create', 'to give birth'<sup>2</sup>, and 'to generate'<sup>3</sup>. In fact, the concept of *sheng* tends to be even more abstract, spiritual and philosophical than any available translations. This led me to question how *sheng* could be reinterpreted and extended through visual representation in this digital era. To answer this question, I referred back to *Dao De Jing* and the ancient Chinese dictionary *Shuowen Jiezi*. According to *Dao De Jing*, *yi* (一 'one') reflects a philosophy of how the universe was created, namely through *yi* (一 'one') and *Dao*. Secondly, the most interesting issue that drew my attention was the

<sup>1</sup> *Dao* is regarded as the 'primordial natural force' in nature and it contains unlimited 'potentiality' (潛藏力) and power of creation. But there will be an end, inasmuch as life is growing. However, 'the end' suggests the advent of another new life (Chen 2007, p.63).

<sup>2</sup> "The *Dao* (道) gives birth to One. One gives birth to Two. Two gives birth to Three. Three gives birth to all things. All things have their backs to the female and stand facing the male. When male and female combine, all things achieve harmony" (Mitchell, 1988, p. 48).

<sup>3</sup> "The *Dao* generated One; One generated Two; Two generated Three; Three generated the ten thousand things. The ten thousand things, carrying yin and embracing yang, used the empty vapour to achieve harmony" (Huang 2003, p.76). Huang's version is based on the Silk Texts A and B unearthed from the Han tombs near Changsha, Hunan Province in China in 1973.

Chinese character 一. This is placed as the first word in the first chapter of *Shuowen Jiezi*, which states that the 一 originally created heaven and earth and then generated the whole universe<sup>4</sup>. *yi* (一 'one') thus represents the 'unity' of the universe. And this unity, according to *Dao De Jing*, generates ten thousand things which form their tracks in the universe. Everything (ten thousand things) grows in the beginning and will disappear in the end. This approach has not yet been considered as a visual representation platform using digital media.

## The Concept of Long Scroll

I aimed to apply 12 story lines into 12 screens as a storyboarding sequence in order to enact the process in which 'one' could be created / generated into 'ten thousands things' through interaction with human beings as expressed in the texts of Chapter 42 of *Dao De Jing* quoted above. In this endeavour, I first created 12 white digital screens and then inserted my custom-made 'Flying Animated Chinese Character' (FACC), composed from my animated brush strokes. The basic narrative sequence is as follows: The scene in 'screen 1' represents the beginning of the universe. I animated the three-dimensional 'one' as a 'FACC' flying alone in the universe (white virtual space) after serving as a function to divide the universe into heaven and earth (see Figure 2 & 3).

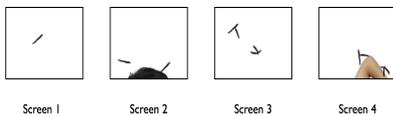


Fig 2. The first three scenes from screen 1 – 4 which indicate how the concept of 'one' is generated to 'two' and 'four' through its interaction with the human. Screen scenario of *Dao Gives Birth to One* (version II); Hong Kong, 2009 (visualization by the author).

How, then, was 'two' (二, *er*) created? The answer is that once human beings appeared in this universe, the form of the characters ('form imitation' [象形 *xiang xing*]) was expanded and created through their interaction. Thus 'screen 2' shows how, whenever any part of a human being (such as limb, nose, head) interacts with the 'FACC' 一 (*yi*, 'one'), this 一 will generate another and become 二, because (Chinese) linguistic characters are meaningless without human

involvement<sup>5</sup>. Furthermore, in 'screen 3' and later screens, numerous 'FACC' are generated in such a way that they become brush stocks.

Even though there are a large number of 'flying animated Chinese characters' in the last screen, they move on their own track with a certain system, which simulates our human activities in the chaos of the universe. The last few seconds of 'screen 12' (the last scene of this long scroll) is about everything returning to white (void) again with only one Chinese brush stock left, which implies the system of our human life cycle in this universe.

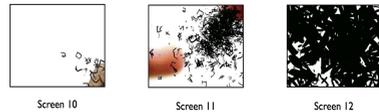


Fig 3. The last three scenes from screen 10 – 12 which indicate how the concept of 'a thousand things in the universe' suggested by *Dao* is transformed through digital visual representation. Screen scenario of *Dao Gives Birth to One* (version II); Hong Kong, 2009 (visualization by the author).

Furthermore, in *Dao Gives Birth to One* I attempted to transform the 2D plane surface to a 4D virtual space by reinterpreting the concept of void through digital technology, transforming the concept of empty space into a concept of virtual space. Traditionally, the white colour in the pictorial space of Chinese rice paper has been regarded as a *void*<sup>6</sup> — an empty space rather than a colour. Although paper is physically a two-dimensional plane, it is regarded as an infinite space with endless time. When these Chinese characters fly about in that virtual space, one almost has the impression of real beings racing back and forth in the universe. This virtual experience has a 4D sense to it.

I also sought to open a new approach for video and interactive art. I questioned whether a long scroll format video installation could suggest a new direction for digital art in relation to the 'Yellow Box' concept. The result might help solve the problem raised by Professor Boris Groys, who has observed that viewers find it hard to appreciate video work in the exhibition space. In Groys' view

*The images go on moving – but the audience also continues to move. One does not remain sitting or standing for any length of time in an exhibition space; rather one retraces one's steps through the space again and again, remains*

<sup>4</sup> The ancient Chinese dictionary *Shuowen Jiezi* 'Explaining Simple and Analysing Compound Characters', defines 'one' thus: "Unity (一): It is, that starts the Great Begin of the Way is based upon Unity. It divides Heaven and Earth and forms the ten thousand creations" [sic] (*Shuowen Jiezi* 2008).

<sup>5</sup> According to *Shuowen Jiezi*, one of the processes of creating Chinese characters can rest on the features of our bodies or on perceptions of objects from afar.

<sup>6</sup> The concept of *void* in traditional rice paper suggests not only a sense of endless time, but a sense of infinite space as well.

*standing in front of a picture for while, moves closer or away from it, looks at it from different perspectives, and so on. (Groys 2008, p. 87)*

Groys further argues that the viewer's movement in such an exhibition space cannot be arbitrarily stopped because it is constitutive of the way perception functions within the art system: "An attempt to force a visitor to watch all of the videos or films in the context of a larger exhibition from beginning to end would be doomed to failure from the start – the duration of the average exhibition visit is simply not long enough" (Groys 2008, pp. 87-88). He sees this not as a problem of the length of the video, but of the expectations of the audience: the expectations of the visitor in relation to a video in the exhibition space are totally different from those relevant to the cinema/movie theatre. The visitor to a video installation basically no longer knows what to do. Should he stop and watch the images moving before his eyes as in a movie theatre, or, as in a museum, continue on in the confidence that over time, the moving images will not change as much as seems likely? (Groys 2008, p. 88). We (as artist and viewer) face both problems. In order to solve them in an innovative manner I first created and combined 12 digital video screens together to create a long scroll format. Each video screen displays different kinds of interactive and animated Chinese characters. The detailed method of the video installation is as follows:

I first invited different people to come to my studio to interact with my flying Chinese characters in front of my artwork. In the studio I could shift my focus to different parts of their bodies for the shooting. I then edited all the footage into different lengths and set all of these into the 12 videos as a long scroll screening format, creating 12 video screens with 12 different lengths of running time (see Figure 4).

In fact, the nature of the 12 screens that are indeed not at all seamless as in the format of the traditional long scroll. Those 12 screen do not seep into each other but rather retain their equidistance. Each screen shows how flying Chinese characters interact with humans. The first video lasts 3 minutes; the second lasts 8 minutes; the eighth lasts 21 minutes; and the last video lasts 5 minutes. Because the loop length of each video is different, various narrative combinations are automatically created. Viewers need not worry about the time restriction of the video work, or which part of the videos they have missed, because the video loops run in overlapping phases anyway. In other words, people can come and go freely. They are encouraged to perceive this long scroll video installation from different perspectives, viewing the screens one by one closely or from a long distance; the most important point is that every one has his/her own time to observe and take in the video narration. The free and relaxed atmosphere encourages viewers to enter into the spirit of this video work and merge their minds in the exhibition space as a whole (see Figure 5).



Fig 4. (Details) 12 videos screen with 12 different running times. Screen scenario of *Dao Gives Birth to One (version III)*; Hong Kong, 2010 (visualization by the author).



Fig 5. Visitors sit freely at the exhibition space of *Dao Gives Birth to One (version III)*; Venue: the Hong Kong Museum of Art; Hong Kong, 2010.

## Chinese-character Writing as a 3D and 4D Experience

### *Time in Character Writing*

The 'Dao' project used digital technology to simulate the reality of Chinese calligraphic characters in terms of *time* and *space*. The first step sought to give viewers a temporal experience by having them visualize the entire process of creating these animated characters as a flying sequence. Traditionally, calligraphy has been a completed work of art that gives the viewer neither a physical nor a temporal experience. In general, therefore, viewers who face a work of calligraphy should try to imagine the process underlying the creation of the characters: for example the characteristics of the first brush stroke, the sequence of brush strokes, and the flow of movement connecting one character to another; this will enhance their appreciation of the work. However, my new approach for the digital era was to invite viewers to 'witness' and 'experience' the whole process of character writing through digital animation sequences.

To better understand this process, let's take a simplified Chinese character, 'horse' (马, *ma*), as an example. I not only animated the motion of the form of 马, but also visualized the character's underlying process of 'writing through sequenced images' (see Figure 6). In other words, the viewer can see how this character was created from the first brush stroke to the final stroke in real time. At this point, the appreciation of Chinese calligraphy is no longer centred on a completed work of art; instead, comprehensive appreciation includes the concept of time, creating a sense of growth and duration, a temporal experience.

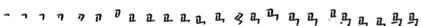


Fig 6. Animation sequence of the writing process from one brush stroke to the final Chinese character 马 (visualization by the author).

### Space in Character Writing

The second method that I used to engender a 4D experience of my artwork in viewers involved creating Chinese brush strokes (and characters) through digital technology. In this endeavour I revisualized the characters' three-dimensional forms by using such digital technologies as 3D modelling, interactive programming and video making. I contend that Chinese-character writing contains the seeds of 3D and 4D experience, which become manifest only when a traditional calligrapher controls the volume of ink and the pressure of brushes on a 2-dimensional writing platform<sup>7</sup>. Here, I took the Chinese character for 'mouth' (口, *kou*) as an example of how a flying Chinese character could be visualized through a 360° view (see Figure 7). I designed the flying sequence of this character as a shape that, while in motion, flips from left to right. When the viewer watches this character zooming around in virtual space (void), the character's motion suggests a three-dimensional form, rather than a flattened, 2-dimensional image. When the characters 'mouth' (口, *kou*) and 'horse' (马, *ma*) are flying together, a distinct sense of spatiotemporal experience is engendered.



Fig 7. Animation sequence of a Chinese character 口 as visualized through a 360° view (visualization by the author).

### Critique and Comparison

Apart from my own 'animated flying Chinese characters', a number of different styles of digital text artwork have surfaced around the world in the last two decades. Several contemporary artists, such as Camille Utterback (1970- ), Romy Achituv (1958- ) and Lee Lee Nam (1969- ) have applied motion to a text; but this—as opposed to creating a 3D temporal aspect—does not

<sup>7</sup> According to a visual analysis by the Koiso Design Institute, Nippon Design Center, standard script in the early Tang Dynasty was characterized by the Wan Xizhi movement's emphasis on vertical lift, which was regarded as the most significant aesthetic model in history (*Hidden Principles of East Asian Character Universe* 2006). For example, the character *shu* (書, 'brush writing') shows how the shape of Chinese characters has evolved since the Tang Dynasty from a dynamic flow to a subtle and balanced visual presentation (*ibid.*). These analyses show that in the early Tang Dynasty some Chinese characters were originally treated as three-dimensional rather than flattened forms. I argue that such three-dimensional forms can be revisualized through digital technology.

typically evoke a spatiotemporal experience. I saw Text Rain (1999) at Utterback's studio in San Francisco in 2006 and Lee's *Korean 8-fold Screen* (2007) at HKART Fair10, Hong Kong, in 2010 (see Figure 7-9).

*Text Rain* is an interactive installation with falling English letters forming lines of a poem about bodies and language. Participants and viewers can play with those falling letters by gesturing with their bodies. *Korean 8-fold Screen* is a digital video installation with 8 different LCD displays arranged vertically to simulate the appearance of traditional Asian folding screens. These 8 videos show Korean and Chinese textual elements flying from left to right on the screen. However, although the textual elements (whether English, Chinese, or Korean) in these two works of art are animated, they lack literal depth; in other words, the animated textual elements are in motion but their shapes remain flat, on a 2D plane (see Figure 10). This indicates that the artists did not consider connecting the textual elements to viewers' spatiotemporal experience.

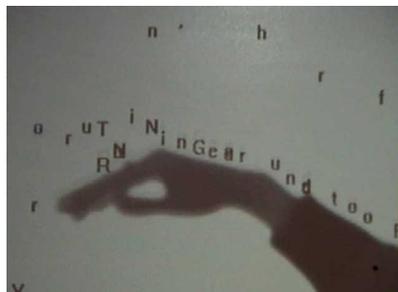


Fig 8. (Video clip) *Text Rain* (1999) by Camille Utterback & Romy Achituv (United States) (see video: <http://camilleutterback.com/projects/text-rain/>).



Fig 9. (Video clip) *Korean 8-fold Screen* (2007) by Lee Lee Nam (Korea) (see video: <http://thecreatorsproject.com/blog/tradition-and-technology-the-korean-folding-screen-goes-high-tech>).

In contrast, Chinese characters always have a dimension of *time* and *space*. The perspective of *zi* (字, Chinese characters'), but this seems to be missing from the work of such contemporary artists. In this sense, my 'animated flying Chinese characters' in the '*Dao*' projects show a new approach to viewing time and space

in character writing, with 3D Chinese characters that enable viewers to have an interactive spatiotemporal experience as well.

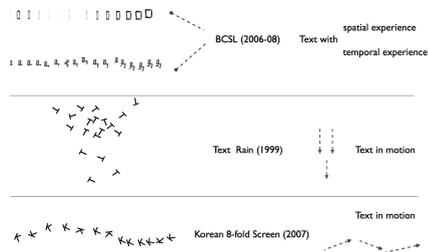


Fig 10. Comparison of 'BCSL' (2006-2008) / 'Dao' project (2009-2012), *Text Rain* (1999), and *Korean 8-fold Screen* (2007) (visualization by the author).

### Conclusion

The analysis undertaken in this chapter reflects the limitations of using and exploring *Shu hua* in both 2D and 4D practice today. The practice centres on the format of the scroll as commonly applied in both Chinese *shu* 'brush writing' (calligraphy) and *hua* 'painting'. My paper suggested a new approach to combining *Shu hua* in a long scroll format as a visual representation platform. So I embarked on the project *Dao Gives Birth to One* in order to demonstrate how the traditional concept of handling *time* and *space* could be represented through an interactive video sequence in a long scroll format. The role of the viewer has been shifted from observation (passive role) to participation (active role) or has even assumed part of the artist's role, from where it has become truly interactive. My research has, therefore, demonstrated how the traditional concept of *time* and *space* was applied, and shown a broad spectrum of connections between Chinese art and digital media. The result may open a new way of perceiving concepts of *time* and *space* through shifting the role of the viewer from passivity to activity, and from there to interactivity.

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