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# 18

## A Comparative Survey on the Rendering of Shade and Shadow in Painting: Edo Period Japan and Italian Early Renaissance

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### I. Introduction

In painting and other graphic images, the rendering of forms through a contrast between pronounced light and dark areas is called 明暗法 in Japanese, *chiaroscuro* in Italian, *clair-obscur* in French, and *Hell-dunkel* in German. This technique is effective in creating the illusion of three-dimensionality; that is, depth, volume, and space. In Japanese, the dark areas are referred to as 影 or 陰影; in French as *l'ombre*; in Italian as *l'ombra*, and in German as *der Schatten*. Only in English is a distinction made between 'shadow' and 'shade'. Shade refers to the darkened area on the surface of an object and is depicted in order to give the illusion of volume. A shadow, on the other hand, is a dark image cast onto a surface (such as the ground or wall) by an object that intercepts light and indicates the placement of that object in space. In Japanese, the term 投影 or 影法師 is employed to specifically indicate shadow, as opposed to shade; the same function is performed in French by *l'ombre portée* and in Italian by *l'ombra portata*. All denote a shadow that 'accompanies' the object; in English, it is called a cast or projected shadow. Only in cases where the shadow is clearly projected onto the ground or some other surface can the phenomenon be considered a cast shadow. It is shadow in this sense that is the primary object of our investigation.

I will present both a general history of chiaroscuro and particular regional and temporal manifestations. We will look initially at shadow and shade in Italian painting of the 15th century, referring especially to the painting of Piero della Francesca. Then we turn to Edo period Japan and a paper by Associate Professor Masato Naito. The investigation of early Renaissance Italian painting is by Koichi Toyama, as is the compilation of the paper as a whole.

## **II. Cast Shadow in the Italian Early Renaissance**

### **1. The Frescoes by Masaccio: First Systematic Cast Shadow**

The technique of chiaroscuro is commonly understood as having originated in the West during the Renaissance. In order to determine when chiaroscuro and linear perspective were first systematically introduced into painting, we must visit the Brancacci Chapel in Florence (fig.1). Around 1425 the artists Masaccio and Masolino collaborated on the frescoes that decorate the church. Whether it was the innovative painter Masaccio himself or Masolino working under his forceful influence, the scenes are depicted as if illuminated from a real window that is actually located on the rear wall of the chapel. Thus, the work to the left of the window is painted as if light is entering the scene from the right, and that to the right of the window as if receiving illumination from the left-hand side. Here, not only is shade systematically applied, but cast shadows are first introduced. We see that in both *The Tribute Money* (fig.2) and *The Expulsion* painted to the left of the window, for example, the shadows are projected away from the source of illumination, creating the distinct sense of figures standing in a three-dimensional space.

This method of depicting cast shadows follows the principles of shading established by Giotto at the beginning of the 14th century in his paintings at the Chapel of Scrovegni in Padua (fig.3). Cast shadows are not present in Giotto's work, but shading is fairly consistently applied according to an actual light source: a window in the chapel's western façade. We can say, perhaps, that Masaccio added shadows to a system of shading that had been experimented with a hundred years before by Giotto.

Although I have described the light coming from a real window as determining the way shadows are cast in the frescoes by Masaccio and



Fig.1 The Brancacci Chapel Florence



Fig.2 Masaccio *The Tribute Money*, The Brancacci Chapel

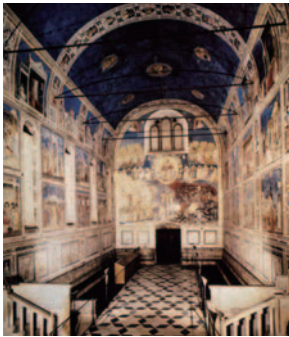


Fig.3 The Scrovegni Chapel, Padua

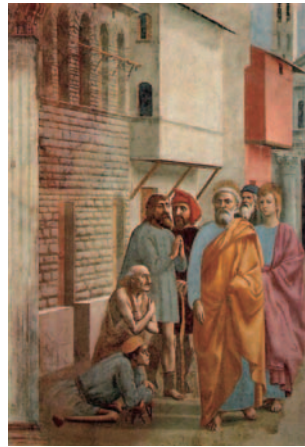


Fig.4 Masaccio *The Shadow Healing*, The Brancacci Chapel

Masolino, the actual situation is different. Light shines into the Brancacci Chapel not only from the window at the back, but from the nave as well. The frescoes painted to the left and right of the window, moreover, receive so little actual light, that they tend to be quite dark. So, the artist's decision to depict the cast shadows as if created by strong light entering from a single real window was primarily a conceptual one.

One of the frescoes in the Brancacci Chapel painted by Masaccio is *The Shadow Healing* (fig.4), depicting St. Peter healing the lame with his shadow—a rare iconography. The scene is located just to the left of the actual window, and the direction of the actual light and that within the painting are consistent. St. Peter is shown walking towards the viewer, his shadow extending into the foreground. As he moves forward, the sick that are touched by his shadow are made well. The miracle of healing is thus depicted as occurring in concert

with the sunlight that illuminates the painting; in other words, it is as if natural light were imbued with religious meaning. In this portrayal of a miracle affected through sacred light and shadow represented as natural phenomena, we can see what constitutes Renaissance “naturalism”. As mentioned above, however, the window does not actually throw much light onto the fresco. The angle at which sunlight enters, in fact, makes illumination impossible. Masaccio’s system is thus a conceptual one, the painted light imitating sunlight that is only *imagined* to shine in from the window.

Chiaroscuro as introduced by Masaccio had a tremendous effect on later artists and came to be considered the norm. It took several decades, however, for painters living outside Florence to begin to apply the technique systematically, and even in Florence itself, there was a time lag before other artists incorporated shadow and shade into their work.

## **2. In the case of Piero della Francesca**

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Let us now take a closer look at Piero della Francesca, who was a mathematician as well as a painter. He trained under Domenico Veneziano in Florence and inherited the rationalism of the early Renaissance as interpreted by Masaccio—in fact, as an artist-cum-mathematician, Piero can be understood as an embodiment of that rationalism. He wrote on subjects such as perspective and the five regular solids as these applied to painting (for example in *De prospectiva pingendi*, *De quinque corporibus regularibus*), and his study of linear perspective appears to have been transmitted even to Leonardo da Vinci through Luca Pacioli, who was a mathematician and Franciscan friar.

Especially relevant here is the masterpiece by Piero painted on the walls of the main chapel of S. Francesco in Arezzo (fig.5). Like Masaccio’s Brancacci Chapel, the chancel here is pierced by a single window at the back. Piero has painted cast shadows according to the direction of the light coming in from that window, but shadows are small and unassertive, extending only a short distance beyond the feet of the figures. In the scene on the rear wall to the left of the window entitled *Torture of the Jew* (fig.6), objects are shaded and shadows cast as if the light were actually entering from the direction opposite the window—the only fresco in which that is the case. The position of the shadows can be related directly to Piero’s absence or presence in Rome far from Arezzo: when the master was absent, it seems that mistakes were made.



Fig.5 Main Chapel, The Francesco Church, Arezzo



Fig.6 Piero della Francesca (assistant) *The Torture of the Jew*, Arezzo



Fig.7 Piero della Francesca *Constantine's Dream*, Arezzo



Fig.8 Piero della Francesca *The Annunciation* from the *Sant Antonio Polyptych*, Perugia

The lower quality of this particular scene may well indicate the hand of an assistant.

The painting *Constantine's Dream* (fig.7) displays a particularly dramatic use of shadows. The tent is illuminated by the light shining from a descending angel, and the depiction of the guards standing against this brightly lit background is quite impressive. Here, Piero has employed light and shadow to the greatest effect, incorporated linear perspective, and using light and color, combined various trends prominent in the early Renaissance. Perhaps it is because *Constantine's Dream* is a night scene that the shadows here are so much bolder than in the other paintings in the chapel.

The form of Piero's *Polyptych of Sant'Antonio*, made for the Church of

Saint Antonio in Perugia, is both complex and unusual, likely because of specific requirements set forth by the patron. The principle scene in the center of the altarpiece displays the Virgin Mary and various saints against a gold background, while *The Annunciation* (fig.8) embellishing the upper section is enclosed in a stepped frame and is against a natural background of sky. In this work, Piero has created a strong sense of spatial depth through the use of linear perspective, and the shadows cast by the columns that line the cloister extending deep into space are given distinct and precisely detailed form. Incidentally, the figures in the foreground representing the Annunciation have almost no cast shadows, in spite of the fact that they are clearly shaded. Perhaps the artist was discriminating between human figures, especially saints, and objects such as columns.

At this point, a re-examination of Piero's early career is in order. We know from documentary evidence that in 1439 the artist was in Florence with Domenico Veneziano, leading to the assumption that Piero's use of light and shadow was influenced by Domenico. How, though, did Domenico himself employ light and shadow? Representative of the artist's work is the central panel of the *Santa Maria dei Magnori Altarpiece* (fig.9). Sunlight streams in from the right at an oblique angle from an opening in the upper part of the structure in which the figures are placed. Nevertheless, its predella panels contain almost nothing that could be interpreted as a cast shadow. We do not know exactly what Piero saw, but in works with decorative backgrounds by Domenico done previous to this altarpiece, there is neither a specific indication of natural light nor a depiction of cast shadows.

Recent research has made it clear that Piero began his artistic career before his visit to Florence—in his birthplace of Sansepolcro, working with a regional artist known as Antonio D'Anghiari. We know this from records relating to the main altar of the church of S. Francisco in Sansepolcro that describe Piero as Antonio D'Anghiari's assistant. Actually, the Sienese painter Sassetta was commissioned in 1437 to do the paintings for this altar. The work has a very complicated configuration, in which paintings cover both the front and back panels. It was the most costly and complexly constructed altarpiece of the 15th century. The work, once completed in Siena, was sent to Sansepolcro in 1444 to be set on the high altar of the church. A night scene on the reverse side of the altarpiece, the *Stigmatization of St. Francis* (fig. 10), displays the most unusual and bold use of the cast shadow known in Sassetta's works.



Fig.9 Domenico Veneziano, *Santa Maria dei Magnori Altarpiece*, Uffizi, Florence



Fig.10 Sassetta *Stigmatization of St. Francis*, National Gallery, London



Fig.11 Piero della Francesca *The Flagellation of Christ*, Galleria Nazionale delle Marche, Urbino

Recent examination of the work in London's National Gallery has revealed, moreover, that Sassetta originally depicted the saint with an even more boldly depicted cast shadow. In the painting today, the size of the cast shadow is reduced. If we look closely at the area just behind the saint, we can see that while Sassetta carefully included the shadows of all the fingers of the left hand except the thumb, the shadow of the saint's head has vanished. The head is encircled by a halo that appears to emit its own light; the artist's hesitation to portray a cast shadow here may well reflect his desire to reveal a religious and symbolic truth.

A representative work by Piero, *The Flagellation of Christ* (fig.11), has

been called an experiment in perspective, so exactly did the artist present space in the painting. Using the laws of perspective, he worked out recession into depth with complete accuracy. The length and position of the cast shadows, moreover, conform perfectly to the actual date of the event. We know that the flagellation took place in March, and Piero has calculated the length of the shadows exactly as they would have appeared on that day and at that specific time, thus recreating the episode with unparalleled precision.

There are, however, illogical passages in the portrayal of light and shadow inside the room where the flogging took place. The three figures standing outside receive light from the left and cast shadows accordingly. However, though the front of the structure is completely open to the air, the light represented in the foreground does not appear to have any effect on the lighting of building's interior. Only the area of the room where Christ is being flogged is illuminated, as if by indirect lighting. There is no rational explanation for this. Perhaps the reason is that it is in this spot that the holiest figure—Christ—stands. This sacred figure, in other words, has such an exalted presence that he emits his own light, and his area of the room constitutes a dimension separate from that in which natural light is reproduced. Indeed, Christ himself said, 'I am the light of the world' (*Ego Lux Mundi*).

As a result, even though Piero was a rationalist, we can almost certainly discern in his portrayal of light and shadow the religious connotation given those natural phenomena in the 15th century. In short, even in the early Renaissance, when naturalism was firmly established, light and shadow were not necessarily introduced into painting just in order to objectively reproduce the visible world.

### III. Cast Shadows in Edo Period Japan

I would like now to leave early Renaissance Italy and examine the use of shade and shadows in Japanese art. The following is a summary of the main points made by Professor Naito about the depiction of shadows in the art of Edo period Japan.

I would like to introduce the topic with the work of a master of the Rimpa school (琳派). Tawaraya Sôtatsu (俵屋宗達) was an artist active during the late Momoyama and early Edo periods, famous for his brilliant works in the Rimpa

Fig.12 宮川長春《四季風俗図巻》出光美術館

Fig.13 小田野直武《不忍池図》秋田県立美術館

style. His ink paintings, in particular, were later highly praised by the court noble Konoe Iehiro (近衛家熙). Iehiro described them as ‘pictures like shadows’, finding profound meaning in these works that appeared to represent only the shadows of objects. He believed that more than the paintings that sought to reproduce form and color precisely, it was these monochrome works that most successfully conveyed form and color through subtle gradations of ink (‘the five colors of ink’, as the saying goes ‘墨に五彩あり’) This was a perception shaped by the belief in the expressive power of ink that has traditionally underlain East Asian painting. That valuing the shadow is an old idea is something to keep in mind during the discussion that follows.

Shadows appear here and there in Edo period art. An example can be found in the work of Miyagawa Chôshun (宮川長春), a famous early 18th century *ukiyo-e* artist, whose oeuvre consists entirely of paintings rather than the more familiar woodblock prints. In his later years, he specialized in genre pictures and created a large number of long handscrolls on that theme. Among them is a work showing Edo customs of the four seasons (fig.12). In the autumn scene, a moon painted with silver pigment floats in the sky, while inside, people

are enjoying a banquet, their shadows cast against the *shoji*. We are seeing a party to celebrate the harvest moon, which occurs in the 8th month according to the lunar calendar and September by today's reckoning. This is a time when the weather is cool and the heat of summer a distant memory. Since the sliding doors are not open, the artist has suggested the presence of the figures inside by depicting their shadows.

At this point in the early 18th century—specifically the years from around 1730 to 1740—the Western-influenced Akita Ranga (秋田蘭画) artists and Shen Nanpin (沈南蘋) and Sô Shiseki (宋紫石) of the Nagasaki school (all of whom will be discussed later) had yet to make an appearance. The period immediately following—during the mid-18th century—saw the first use in Edo Japan of Western-style perspective, learned through Suzhou woodblock prints (蘇州版画) imported from China. The resulting works, which looked to contemporary Japanese as if the objects in the picture were raised above the picture plane, were called *uki-e*, or 'floating pictures'.

Western-style representation took root in Japan in the latter part of the 18th century. Hiraga Gennai 平賀源内 was invited to the Akita *han* in Tohoku as an advisor in 1773, and he introduced Western painting techniques learned from illustrations in European books, and to a lesser extent, from Western paintings themselves, to the clan retainer Odano Naotake 小田野直武 (fig.13). Naotake, in turn, taught Western painting to the daimyo of Akita, Satake Yoshiatsu (Shozan) 佐竹義敦 (号・曙山). The two were interested in Western-style painting because of its connection to the contemporary Rangaku, or 'Dutch studies' movement. These men did not go so far as to produce actual oil paintings, but created an eclectic body of work that combined shading and perspective drawing with traditional Kano school and Nagasaki school elements.

A work that could not have come into being without the development of Western-style art in Japan is a genre painting done in Edo around 1790. It is a horizontal hanging scroll by Katsukawa Shunshō (勝川春章), a popular artist of the time and now best known as Hokusai's teacher. During the latter part of his career, from around 1780 on, Shunshō concentrated on genre pictures featuring *bijin* (beauties) (fig.14). The painting shown here is thought to be set in a garden attached to the Edo residence of the daimyo of Nara, Shunshō's patron. This stroll garden incorporated a pond, and one can see images reflected on the surface of the water. The representation of a reflected

Fig.14 勝川春章《美人鑑賞図》出光美術館

Fig.15 葛飾北斎《くだんうしがふち》

Fig.16 国芳《夏の夜》出光美術館

Fig.17 安藤広重《猿わか町》  
名所江戸百景

image, impossible if not for the kind of Western-style painting that appeared earlier, should be seen as an important issue akin to the introduction of the shadow.

Looking a little at Hokusai 葛飾北斎, we discover a woodblock print in which he experiments with sunlight within the picture as the source of illumination (fig.15). The work was issued sometime around the beginning of the 19th century. The scene is enclosed within a border that indicates the artist's awareness of European picture frames, and the depiction likewise reflects influence from the West. Of particular interest here are the sense of volume given the clouds, which calls to mind oil painting or copperplate engravings, and the shadows of the figures walking up the hill. One can see evidence of techniques learned from the Western-style painting of Shiba Kōkan 司馬江漢, and, like Kōkan's, this work too displays a strong fascination for the exotic.

The actor ukiyo-e painting by Kuniyoshi 国芳 entitled ‘Summer Night’ (夏の夜) uses moonlight as the source of illumination (fig.16). The work portrays the most popular kabuki actors of the time—Danjūrō, Kikugorō, and Hanshirō 団十郎・菊五郎・半四郎—an all-star dream cast. It was likely commissioned by a passionate patron of kabuki. The scene takes place in the area around Ryogoku Bridge and the Sumida River under a full moon, and the actors gathered in the moonlight are portrayed with cast shadows that stretch out into the foreground. From a knowledge of when these men were active, the painting can be dated to the beginning of the Tempō 天保 period, around 1830.

Similar is ‘Night View of Saruwaka City’, a well-known print from the series *100 Famous Views of Edo* (名所江戸百景) by Hiroshige 広重 (fig.17), done late in his career. It is a striking scene, depicting a kabuki theater district in northern Asakusa illuminated by the brilliant light of a full moon. The vanishing point perspective employed in the print is derived from the West, and the kabuki fans—male and female, young and old—walking up and down the long, narrow road are given cast shadows. The dog and fire-fighting bucket included in the scene are treated in a similar fashion. The overall effect is of a lively evening in a bustling city.

From these examples, it is clear that the daytime shadows seen in European painting and in Hokusai’s experiments with light reflect the rational and scientific ideas of the West—which were seized upon by the Japanese as a kind of novelty. Shadows appearing in moonlight, however, were different. They could be used to enhance the atmosphere or picturesque nature of genre scenes, and as such, constitute something of an artistic device. In the majority of these works, the light source is located deep within the picture. The shadows thus extend into the foreground and intensify the emotional impact of the work, lending it a sense of melancholy and loneliness. More than in Western painting, however, the attitude of the Japanese towards shadows also incorporates a sense of “play”, in line with the old children’s game *kagefumi* (影踏み), in which one tries to step on the other’s shadow.

During the Bakumatsu and Meiji periods 幕末明治期, profile portraits were also made of the deceased. These are called *miei* (御影), *ei* 影 being the character 漢字 for ‘shadow’. While the word more often refers to portraits of Shinto and Buddhist deities or likenesses of noblemen, it could also refer to the portrait of a *deceased* court noble—and thus came to generally mean posthumous portraits. Historically, in fact, the word ‘shadow’ itself has been

used to designate a person who has departed this world. Realistic portrayals were traditionally taboo for the emperor and his court, and there are a number of portraits of noblemen in which, for example, the features of the subject are hidden behind a bamboo screen.

#### IV. Conclusion

For a Western art historian like myself, there are several points of interest. First is his statement that before Western-style painting emerged in Japan in the Edo period, shadows were valued as having mysterious and complex connotations. When we look at the examples he provides, it strikes me that this conception of the shadow is subtly different from that of the early Renaissance, in which chiaroscuro is intimately related to naturalism. One does find shade or shadow used in Japanese painting to create an illusion of three-dimensional form in space—the consequence, as one might expect, of the importation of European art, and likely first introduced into Edo painting through Hiraga Gennai. Professor Naito gives numerous examples of *ukiyo-e* that incorporate European techniques learned indirectly from Western-style paintings produced in Japan. Except for those works by Hokusai, most of these examples are night scenes. The effect of shadow images seen through the *shoji* in the handscroll described above relies on a uniquely Japanese structure, in which the doors are made of translucent paper that makes it possible to see into the bright interior of a room from the outside, but I would like to add that this phenomenon is effective only in the night. Any way it is certainly a phenomenon that could have occurred only in Japan.

Professor Naito describes shadows as being used both to enhance the emotional content of a picture and to appeal to love of the playful. The sense of play, which has a profound connection to the development of Edo art as a whole, is basically incompatible with the naturalistic approach of modern Western painting. In that regard, it is significant that it was an Akita Ranga painter—Odano Naotake—who was commissioned to do the illustrations of dissections for the *Kaitai shinsho* (解体新書 1774), the first work of Western Anatomy published in Japan.

In Western art, as I mentioned earlier, it is doubtful that light and shadow were completely free of metaphorical meaning, even in the early Renaissance,

when Naturalism was well established. In traditional Japanese art, this kind of naturalistic approach was diluted, or, rather, denied all together. The use of the word ‘shadow’ to designate a portrait in Japan does not automatically indicate a naturalistic portrayal. While the character for shadow is indeed used to mean ‘portrait’ in the word *miei* 御影, these renderings were not necessarily naturalistic. Rather, in Japan, ‘shadow’ can designate an *un-naturalistic* representation. There is a Japanese idiom that goes ‘e ni kaita mochi’ (絵に描いた餅), meaning literally ‘a picture of a rice cake’. This is not a rice cake that can be actually held in one’s hand and eaten. A shadow, like the picture of the rice cake, is, after all, two-dimensional—and so completely different from the object whose form it takes.

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