

A Study on the Modern Fashion Design Applying Light and Rays – Focused on Italian Futurism and Russian Rayonism –

Yoon-Jeong Park* and Sook-Hee Yang

Dept. of Clothing and Textiles, Sookmyung Women's University

Abstract

This study intends to observe how the essential elements of art have changed Human's sense of beauty extending over the whole lives as well as fashion through the investigation of Light and Rays which have played a important role in giving birth to the new trend of art within the upheaval age of various cultures.

The peculiarities of which Futurism of Italy and Rayonism of Russia including Impressionism have a great role in giving birth to a new trend of art by means of the development of science technology are like these. Impressionists looked for the origin of the subtle harmony in nature within changes of sun-rays. The special feature of Impressionism paintings was to express the line of vision diversely according to changes of light rather than to focus on the line of vision with clear outlines. Henceforth, Neo-Impressionism which developed Impressionism more systematically leaded changes of Light and Rays more systematically and scientifically and maintained Divisionnisme techniques which extends to lead towards color and light through dividing and juxtaposing color. In the early 20th century Futurists tried to express dynamism through the interpenetration of light and revive color and light through the division techniques of color and persist an artificial light like electricity rather than a natural light. Rayonism of Russia which was influenced from Impressionism and Futurism maintained intersection of reflecting rays which emerges from an object of things more deeply.

This pursuit of light and rays also appears as it is in modern fashion. First, it is the fashion which applied sun-rays persisted by Impressionists and expressed colors which show differently according to direction of light. Second, it is the fashion design which re-analyzed what Futurists expressed artificial light and rays. Third, it is the design which expressed Divisionnisme theory persisted by Impressionists and Futurists into fashion as it is and was made of being divided the form of glittering light into small dots. Fourth, it is the fashion design which applied Rayonists' works which applied intersection of reflected rays. Like this, it is aproved that the pursuit of light and rays expresses as it is in modern fashion of the 21st.

Key words : light, rays, impressionism, futurism, rayonism, divisionnisme, reflected rays.

I . Introduction

The essential meaning of Fashion is expressing the ultimate ideal inside a time, society, and culture, and it is based on a human being. The methodological approach to the essential meaning should begin with some assumptions that a fashion is a type of reality that is formed

artistically and it is a particular functional art that includes strong cultural features. This process is the same one with defining and providing the fashions own particularity. Especially, the social and cultural background in 19th or 20th century brought the development in human beings aesthetic consciousness continuously, and developed science and technique in that period provided good tools for expressing the new

*E-mail : k9602015@sookmyung.ac.kr

aesthetic consciousness. Light and rays played an important role in creating a new trend of art in the various periods of rapid cultural changes. Therefore, in this study, light and rays are examined and then the examination of the way how essential elements in art make the aesthetic changes not only in fashion but also in the aesthetic consciousness across the whole field of life will be followed. After analyzing what kind of expressive elements are used in modern fashion, aesthetic consciousness in this 21st fashion will be illuminated in a new way.

II. The Meaning of Light and Rays

The meaning of light is classified into two concepts. First, light as a meaning of the general concept is the condition for all the activities of Human. It is, what activates other things as the absolute existence in order to look at things, the partner to power and heat. The original meaning of light is the metaphor of Truth and is understood as light of reason and the objective principle of beauty in Augustin Thomas Aquinas¹⁾. This metaphysical phenomenon of light appears, in the light of the art history, as the main body which expresses a subject in a work of art.

There are various kinds of the main bodies, in which are a fluorescence light corresponding to an artificial light, including the strong sun, a natural light, and Neon, and so on²⁾. Generally, what is called into light is the designation of what is perceived by eyes among lots of radiated electromagnetic waves. It is called into Visible Light, which indicates the range of about from 380 nm to 780 nm^{3,4)}. Light is defined as not an individual element but a condition of

perception. Light is possible both to reflect on things and subsist in things. Light as a symbolic meaning has often used as a expressing subject of art and has perceived as the new existence which gives rises to life power to everything that occupies time and space surrounding us. Light, the nonmaterial stuff, causes the new visual image unlike a natural thing or an artificial thing.

The nonmaterial, three-dimensional body has made from the homogeneous experiment of Rays. And the nonmaterial art was born by means of Laser-Light in order to create this three-dimensional image. Artists have extended to create works by moving light under the influence on the color organ of the late 19th century, the early photographs, and motion pictures. Futurism of 1920's is one of the fundamentals of this rays movement. Since Futurism, light itself should be perceived as a substance and be dealt with an element of moulding like color or movement. Rays is used as a medium of moulding by artists on the ground that as a form it could give an impact on people's sense a far directly more than traditional materials. Modern artists' effort to seek after the fidelity of the material itself is continuous ceaselessly in the form of art by means of the scientific technology on the ground that industry has an effect on their creative activities. In this way the concern for light and rays, which began as the new visual revolution in the paintings field, got to take its place as the creative origin of art since medieval times, Renaissance to Modern age. Light means deep holiness to theologians of Medieval times. To them, light namely means God. Especially the fact that light subsist in itself and it incre-

¹ P. Arnheim, *Art and Vision-Sensation*, Transtation, C.I. (Seoul: Kirinwon, 1954) 393-394.

² S. M. No, *The Study of object in the motive of light*, (Sook-Myung Women's University, Unpublished Master's Thesis, 1991) 25.

³ nm : a unit, used in wave length. nm(nanometer) = mμ (milli-micron)

1 Å(angstrom) 1nm(1mμ) = 1/10 hundred million m = 1/100 ten thousand m/m

1 Å = 1/10 hundred million cm 1nm = 10 Å

⁴ D. H. Park, 1980. *Practical Color Science*, (Seoul: Samwoo, 1980) 10.

ases into lots of pieces and it influences every movement acts on the symbolic element to them. As well, light alludes or symbolizes the lyric world. With the close of Medieval times, then artists freed themselves from the relation of classing light with god and they compared light with an individual spirit and treated it as Human's internal essence.

In Renaissance age, Giogione, Tiziano, and Vecellio, and so on, who tried to express light effectively for endowing the art of drawing with unity, created the brilliant effect of light by removing the background painting of light and shade. Artists of Baroque age always observed nature with the new eyes and tried to discover and express the continuous harmony of color and light. They seeked after the various effects of light a little more with an individual and systematical method. This paintings view of Baroque age like this got to have an effect on the Impressionists of the 19th century connecting with Eugene Delacroix.

III. The Change of Light and Rays

I. Impressionism and Neo-Impressionism

The significance of painting history in Impressionism is enormous in the light that Impressionism is the new visual revolution of European art and the new excavation of light. Impressionism is the important turnover point of the west art history and is the emerging phenomenon of being freed itself from the medieval system. It became the great changing point of modern art⁵⁾. For the first time Impressionists tried to put into pictures on the subject of nature

under the bright light of outdoor 'directly' and 'perfectly'. They identified the present motive of nature with their eyes and tried to record the visual impression and the moment feeling under ceaselessly changing sun-rays⁶⁾. To the eyes of Impressionism artists, nature is not fixed as it is. To them, it is impossible that nature is a fixed line and a fixed form⁷⁾. What is more, there is not fixed color in nature. They seeked for every phenomenon of nature under ceaselessly changing sun-rays. Accordingly they tried not to draw forms but to represent the effect of light. Whatever gets light and color could be their themes⁸⁾. Then the essential task of Impressionism was linked to pursuing of this rays and artists tried to run to the open air in pursuit of nature rays and face objects directly before their eyes under the bright light of the open air. They tried not to draw a form as it is according to the new visual way but to draw it under the operation of light. By their new visual revolution like this, clear form was expressed and outlines which alluded volume was excluded. As well, clear obscure and intense contrast of light and shade were excluded. To them, everything was nuance and shade was always handled into reflected rays⁹⁾.

It is Neo-Impressionism which succeeded to Impressionism and making it as a stepping-stone, developed it a little more into a systematic and original movement. They led 'the study of rays and color' more systematically and resulted in announcing Divisionnisme techniques, the new visual mixing theory which extends to lead towards color and light through dividing and juxtaposing color¹⁰⁾. "Division" calls the visual

⁵ P. Courthion, *Impressionism*, (New York: H&D. 1979) 14.

⁶ Y. J. Park, *The Influence of French Impressionism on the Formative Characters of Bustle Style*, (Sook-Myung Women's University, Unpublished Master's Thesis. 1993) 9.

⁷ J. H. Kim, *The Study on Impressionism expression of color*, (Hong-Ik University, Unpublished Master's Thesis. 1985) 42.

⁸ M. Grosser, *The Painter's Eyes*. Translation Shin, S.J. (Seoul: Seo-Kwang-Sa. 1983) 118.

⁹ M. Serullaz, *Impressionism*. Translation Choi, H. (Seoul: Youlwha-dong. 1980) 7.

¹⁰ P. Signac, *D'Eugene Delacroix au Neo-Impressionism*, (Paris, Hermann. 1964) 91.

mixing of pure paintings before anything else. It is what the different elements like peculiar colors, lighting colors, the reflections, and so on are divided. Namely they mixed not paints on canvas but light. Henceforth in the early 20th century centering around avant-garde artists of Italy and Russia, they newly extended to accept the pursuit of light and rays as their artistic sense of beauty. Exactly these pursuits are Futurism of Italy and Rayonism of Russia.

2. Futurism

Dynamism of Futurism paintings is feasible after destroying materiality of things and Futurists regarded light and movement as the primary factor of destroying materiality of things¹¹. Then Futurism artists advanced to developing Dynamism art by means of the study of light and movement. Futurists on the main axis of Giacomo Balla, Umberto Boccioni, and Fillippo Tommaio Marinetti tried to express light and movement through excluding outline of objects like Impressionists¹². Namely, disappearing of outlines on Boccioni's paintings could be by means of light and movement reflecting objects. This pictures are supposed to prove Futurism theory which maintain that light and movement is the primary factor of destroying materiality of things. Futurists like the early Impressionists started the pursuit of light and rays from Divisionnisme techniques like Impressionists in the first place. Namely they tried to make a moulding on their dynamism theory through expressing divisionally. Impressionism and Futurism started from the common purpose in point of the pursuit of light and rays. But Divisionnisme techniques of Futurists is different from the scientific method of color analysis by means of



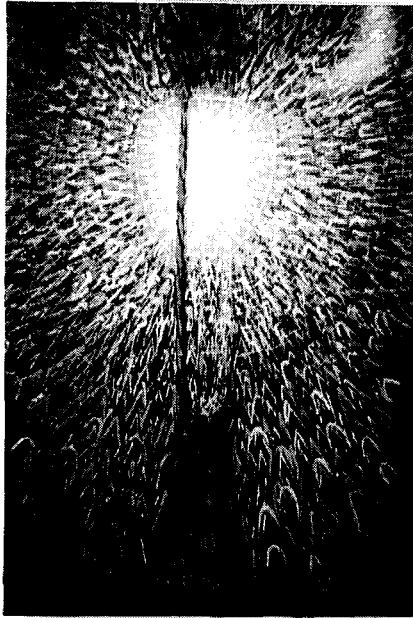
<Fig. 1> George Seurat, Seated Model, 1887.

prism by Georges Seurat and Paul Signac who represented light and color through the division techniques of color and the dots of pure color mixing in visitor's retina. Divisionnisme techniques of Futurists is the art of drawing to actualize the innate complementary that they thought it necessary when they expressed screen continuously.

That is to say, the early Futurists, who tried to express dynamism through the interpenetration of light, tried to revive color and light through the division techniques of color and the dots of pure color mixing in visitor's retina. This Divisionnisme expressing the movement of light, which is grasped intuitively, not to be measured scientifically, pursued the artificial light like electricity rather than the form of natural

¹¹ Umberto Boccioni, Carlo Carra, Luigi Russolo, Giacomo Balla & Gino Severini (1910A), Milan: Poesia. Manifesto of Futurist Painters(1970B) 30.

¹² The process which outlines of objects disappeared came from Impressionism paintings. And Neo-Impressionism exerted itself for the abstract law of color creation rather than nature itself, though it emerged from Impressionism which followed changing nature. But Divisionnisme techniques appeared in Futurism paintings is not surely scientific and systematical like Neo-Impressionism. Futurism brought out the process of demolishing outlines in Impressionism and the method of dividing objects into touch with autonomous color.



<Fig. 2> Giacomo Balla, Street Light, 1909.

light¹³). This division theory of Futurists intended to deliver dynamism of electricity on the basis of the motility of light grasped intuitively like a street light(Fig. 2). This is chosen from the modern attitude of Futurists who praised electricity, the symbol of modern. Namely Impressionistic Divisionnisme is experiential and scientific, but on the other hand Futuristic Divisionnisme is explained as intuitional. It is put into practice like surface as line which alludes light is bigger when light is not dispersed but ga-

thered¹⁴). The new advent, for Futurists as a way of expressing effects of light more systematically, is defined as surface's interpenetration, namely the expressed aspect that solidified light overlapped objects through pellucid side of X-ray. Futurism artists intended to display the new space-sense with the dynamic peculiarity of light by expressing light in this way. Namely, in Futurism paintings, light was used not for placing emphasis on light and darkness of objects, but visualizing surroundings of objects and their circumference successively with destroying materiality of objects. And this light was expressed as artists' dynamic sensation through interaction of form and color. Since that, Futurism changed into Cubo-Futurism and developed in Russia¹⁵. It became combined with Neo-Primitivist who arised among the dynamic harmony of color and line and was accepted as the special style, reviewing Italian Futurism and French Cubism¹⁶. Cubo-Futurism which regarded Kasimir Malevich as the lead, got to have an influence on Rayonism of Russia(Rayonism, Luchism).

3. Rayonism

The Strong line of figurative art developed in Russia side by side and simultaneously with the emergence and powerful upsurge of the nonobjective approach to representation of the world. The first steps in that direction were made by Miklail Larionov. Deriving his idea from impressionism, Larionov built his compositions on

<Table 1> The Comparison of Impressionism with Futurism

Impressionism & Neo-Impressionism	Futurism
* Divisionnisme from Impressionism is represented by experience and science * Natural light : Sun light & rays	* Divisionnisme from Futurism is represented by intuition * Artificial light : Electricity Street lamp Neon, X-rays

¹³ U. Boccioni, *Pittura Scultura Futuriste*, (Milan: Poesia. 1914) 71.

¹⁴ Tisdall Carolin, and Angelo Bozzolla. *Futurism*, (London: Thames and Hudson. 1977) 26.

¹⁵ <http://www.rollins.edu/foreign-Lang/Russian/cubo-futurism.html>

¹⁶ <http://www.rollins.edu/foreign-Lang/Russian/neoprim.html>

<Table 2> The Comparison of Futurism with Rayonism

Futurism	Rayonism
<ul style="list-style-type: none"> * Expressing of light through Divisionnisme techniques * Pursuing of artificial light * Pursuing new space sence by means of dynamic features of light * Affected by Neo- Impressionism 	<ul style="list-style-type: none"> * Expressing refected rays of crossing objects by means of line and color * Pursuing of reflected rays * Creating new space form as rays which is reflected from selected things crossed one another * Affected by Impressionism, Cubism and Futurism

colour "Rays", this trend receiving the name of Luchism in Russian art or Rayonism in West European art¹⁷). Rayonism is the style which had been unique and popular for a short time in the view of all over the world as well as Russia. In 1907, Mikhail Larionov and his wife, N.Goncharova came in touch with Fauvism and pointed to Primitivism which passed over Symbolism and arranged the new turning point in Avant-Garde art which started to appear in the early 1900's. They were disgruntled at other artists who were tainted with Cezannism and organized "Dunkey's tale" with Chagal, Kasimir Malevich, and Vladimir Tatline in 1912. They advocated Rayonism with pursuing abstract space which reflected rays, emitted by things, crossed one another. In the early time, Impressionism and Fauvism had a deep influence on them^{18,19}). Rayonism developed with including past art and present style widely like a nature life since it had been introduced in Target exhibition held in 1913²⁰). The central characteristic of Rayonism is 'traversing of reflected rays arised from various objects'. Most of them were by means of line and color (Fig. 3). In the light of "Rayonism manifesto" which M. Larionov and N. Goncharova announced in Moscow in 1913, they were perceiving the relation between space and object more deeply. The purpose of Rayonism paintings is to create the new space form that



<Fig. 3> Mikhail Larionov, Blue Rayonism, 1912.

reflected rays from variously choosed objects crossed one another and formed. Rays is always supposed to be expressed in the form of line and color. That is to say, the essence of paintings is the unity among the best paints which present intensesness as a whole through the inter-relation among colored parts. In the light of M. Larionov's Rayonism theory, they maintain that artists must abandon various objects of the visual world and present rays which is reflected from objects and crossed complicatedly. Abstract painting by Wassily Kandinsky arised indirectly from Expressionism.

¹⁷ P. Evgenia, Russian Avant-Garde of the 1900s-1920s. (Seoul, Art Center. 1995) 21.

¹⁸ T. M. Choi, Art and Revolution.(Seoul: Jaewon. 1998) 163-168

¹⁹ J. L. Daval, Histoire de la peinture abstraite, (Paris: Fernand Hazan. 1988) 169-179

²⁰ <http://www.rollins.edu/foreign-Lang/Russian/rayonism.html>

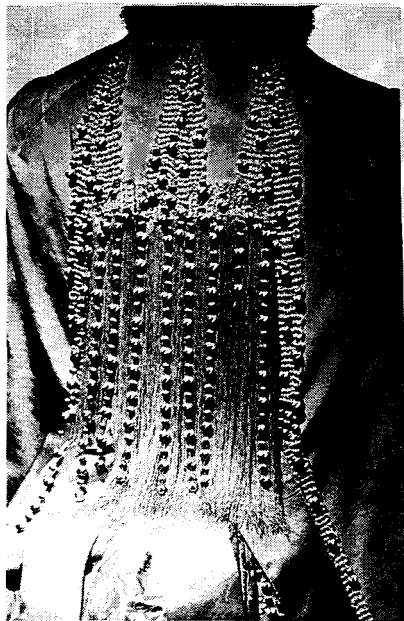
By contraries, Rayonists were affected by Cubism and Futurism and got to have an interest in relation of parallel or convergent color rays in expressing themes. Mikhail Larionov's intense character and insight was inherited by Kasimir Malevich and Vladimir Tatline. Since that, this got to take a big share of enlightening Suprematism and Constructivism.

IV. The Modern Fashion Design Applying Light and Rays

I. Textile Design

The pursuit of light and rays from the 19th century to the early 20th century reflected not only in the art but also in the fashion. The interest in various colors and fabrics that started from the age of impressionism in 1870 suggested a new stage for the modern fashion development. In 1870s, industrial development mass-produced artificial dye and rayon and technological innovations in fabrics happened. Synthetic fiber was improved by Hilaire Chardonnet and

viscose rayon was invented by Cross and Bevan²¹⁾. Since then, natural fibers, especially silk and cotton fabrics, also developed with the development of the synthetic fiber. The popular fashion in that period required many fabrics, so it promoted textile industry, and the elaborated machine after the Industrial Revolution made fabrics to be seen differently under light and rays. These are taffeta, brocade, satin, velvet, damask and silk, and they came to be fashionable (Fig. 4). What textile which had different colors according to rays, got to be popular got to have an impact on Futurism and Rayonism of the 20th century including Impressionism of the 19th century. Especially Fashion textile which was affected by Impressionism was expressed into textile like satin, velvet, damask and silk which glittered even in natural rays (Fig. 5). By Futurism art form, which designed to present Dynamism through the effect of artificial light, textiles like brocade, damask, taffeta, and so on, which glittered by various kinds of artificial rays as well as fluorescent light of utilizing



<Fig. 4> Charles. F. Worth의 Bustle Dress, 1887.



<Fig. 5> Charles. F. Worth의 Bustle Train, 1887.

²¹⁾ Y. J. Park, *op. cit.* 58-61.



<Fig. 6> Donna Karan, 2000s/s, Collezioni. N. Y.



<Fig. 7> Blumarine, 2000s/s, Collezioni, Milano.

electricity had in fashion. Especially Rayonism, which asserted intersection of crossing reflected rays, developed various synthetic textiles that generated gloss like silk through contrasting qualities of different transparency(Fig. 6). The design, expressed with light and rays is still popular in S/S fashion or F/W fashion in 2000 since 1998. In 1998, as aesthetic consciousness about light and rays widely spread socially and culturally, gold or silver colored cosmetics came into fashion in order to add glitter to the body of the human being.

2. Clothing Design

The tendency of Futurism and Rayonism including Impressionism which asserted the importance of light and rays presents as it is in Modern Fashion. Modern Fashion that applied light and rays is classified into four. First, Impressionists who made much of outdoor daylight intended to express bright light like sun-rays. However, the Fashion, that expressed light through handling the surface of textile smoothly, come into fashion as well in Modern Fashion(Fig. 7). Second, it corresponds to what

Futurists intended to present Dynamism through artificial light and rays. It designs to display the dynamic individuality of light and the new space sense by expressing with the method which gets



<Fig. 8> Elie Saab, 1998s/s, Book Mooda.



<Fig. 9> Anna Molinari, 2000s/s.
Collezioni. Milano.

different transparency of line and volume to intercross. The expressing method like this was

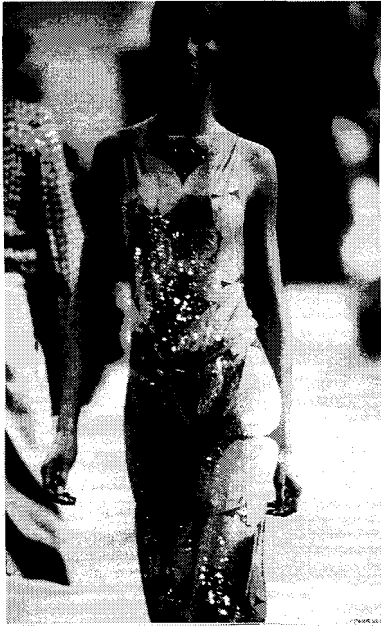


<Fig. 10> Marco Lagattolla, 1998s/s.
Book Moda.

announced by lots of designers like Marco Lagattolla, Viale Stelvio, Donna Karan, Rococo Barocco, Gianni Versace, and so on. Third, it is the design which expressed Divisionnisme theory persisted by Impressionists and Futurists into fashion as it is and was made of being divided the form of glittering light into small dots(Fig. 9). It was presented by Chanel, Anna Molinari, Christian Dior, and so on. It seems that this design presents Divisionnisme theory that the Fashion glitters in the form of small dots with the method which has emphasis on main parts according to the artist's intention rather than as a whole(Fig. 10). Fourth, since Futurists created the new space form that reflected rays of an object which was reflected from a fixed thing intercrossed, they used line and color as their main expressing techniques (Fig. 11). The Fashion, similar atmosphere to works of M. Larionov and N. Goncharova which expressed Rayonism like this, appears as it is in S/S and F/W of 1998 to 2000(Fig. 12). Especially, Louis Vuittons design in S/S fashion in 2000 expresses composition of Larionov light and color in modern ways by putting transparent spangles



<Fig. 11> Gattinoni, 1998s/s, Book Moda.



<Fig. 12> Louis Vuitton, 2000s/s.
Collezione. Paris.

on the geometric forms. Thus, pursuing light and rays has been seen in various works of art since the Renaissance Age in the 16th century, and they still appear in modern fashion design in the 21st century.

V. Conclusion

All this while, this study observed the special feature of Impressionism, Futurism, and Rayonism and how this had an effect on Modern Fashion through the investigation of light and rays which played an important role in giving birth to the new trend of art within the upheaval age of various cultures since the 19th century. As the pursuit of light and rays was the visual revolution appeared especially in the part of paintings, it got to occupy a position as the creative origin of art since the middle ages, from Renaissance, Baroque, Romanticism, Impressionism to Modern times. Especially, Impressionists, who intended to pursue the pure light of nature, expressed pure sun-rays through their artistic intuition and Neo-Impressionists led the

quest for rays and color by means of the power of science more systematically. They got to announce Divisionnisme techniques, the newly visual mixing theory, namely, that they could lead toward color and light through dividing and juxtaposing color. Henceforth, in the early 20th century, centering around avant-garde artists of Italy and Russia, they newly extended to accept the pursuit of light and rays as their artistically aesthetic consciousness. Exactly these pursuits are Futurism of Italy and Rayonism of Russia. The early Futurists started the pursuit of light and rays from Divisionnisme techniques like Impressionists. However they changed into the new form of expressing as Mechanism, which began to appear as a new interest for science and technology since the industrial revolution, changed Human's sensibility artificially. Since that, Russian artists like M. Larionov, N. Goncharova etc. took part in fixing the newly Russian art and developed the concrete and the abstract. In the early time, they made composition of light with various colors with an inspiration by Impressionism. With that, like Futurists' maintenance, they got to announce the new Rayonism manifesto, namely, that light is divided as it spreads out. Rayonism was affected by Cubism and Futurism and since that, this got to take a big share of enlightening Suprematisme and Constructivism. The pursuit of light and rays since the 19th century up to the early 20th century presented in Fashion as it is as well as in art and most of all, the interest on various colors and textiles which started from Impressionism age in 1870 got to be a new turning point of development of Modern Fashion. Artificial dyes and rayon were produced in large quantities and the synthetic textile was improved by Hilaire Chardonnet. By the improvement of machine by aid of the industrial revolution in 1890', textiles which showed different colors according to light and rays like taffeta, brocade, silk, velvet and damask came into fashion. As well in the 2000s since 1998. Fashion design that applied light and rays comes into fashion as it is. First, the Fashion, which expressed diffe-

rent colors according to direction of light, has been in vogue from 1998 to 2000. It was carried out by handling the surface of textile smoothly for expressing light like sun rays. Second, what expressed dynamic effects of light through artificial light and rays by futurists, is found out as it is in designers like Marco Lagattola, Viale Stelvio and Donna Karan, and so on of modern times. Third, that is the design which united Divisionnisme theory maintained by Impressionists and Futurists with Modern Fashion. It was created by means of being divided in the form of glimmering dots. The design was presented by Chanel, Anna Molinari and Christian Dior in 2000. Fourth, what used reflected rays in Modern fashion, persisted by Rayonists, appeared well in Gattinoni's design of 1998. In this way it is proved that the pursuit of light and rays appeared in various art works since Renaissance of the 16th century to modern times and in modern fashion design of the 21st century as it is.

References

- Arnheim, P. 1954. *Art and vision-sensation*. Kim, C. I, trano. Seoul: Kirinwon.
- Carolin, T. and Angelo, B. 1977. *Futurism*. London, Thames and Hudson.
- Choi, T. M. 1998. *Art and revolution*. Seoul: Jaewon.
- Courthion, P. 1979. *Impressionism*. New York.
- Daval, J. L. 1988. *Histoire de la peinture abstraite*. Paris: Fernand Hazan.
- Evegenia, P. 1995. Russian avant-garde of the 1900s-1920s. Seoul: Art Center.
- Grosser, M. 1956. *The painter's eyes*. Translation Shin, S.J. Seoul: Seo-Kwang-Sa.
- Joshua, C. T. 1961. *Futurism*. New York: Museum of Modern Art.
- Kim, J. H. 1985. *The Study on impressionism expression of color*. Unpublished Master's Thesis, Hong-Ik University.
- Lambert, R. 1981. *The twentieth century*. London: Cambrige University Press.
- No, S. M. 1991. *The study of objet in the motive of light*. Unpublished Master's Thesis, SookMyung Women's University.
- Park, Y. J. 1993. *The influence of french impressionism on the formative characters of bustle style*. Unpublished Master's Thesis, Sook-Myung Women's University.
- Park, D. H. 1980. *Practical color science*, Seoul: Samwoo.
- Serullaz, M. 1980. *Impressionism*. H. Choi, trans. Seoul: Youlwha-dong.
- Signac, P. 1964. *D'Eugene delacroix au neo-Impressionism*. Paris: Hermann.
- Umberto Boccioni, Carlo Carra, Luigi Russolo, Giacomo Balla & Gino Severini (1910A). Milan, Poesia. *Manifesto of Futurist Painters (1970B)*
- <http://www.rollins.edu/foreign-Lang/Russian/cubo-futurism.html>
- <http://www.rollins.edu/foreign-Lang/Russian/neoprim.html>
- <http://www.rollins.edu/foreign-Lang/Russian/rayonism.html>