Good afternoon,

Before I start my lecture I would like to thank Farida Zaletilo and Asnate Silina from the Mark Rothko Art Centre and also David Anfam who kindly introduce me into this new world.

Summary

From Goethe to Rothko:
new ways of perceiving and creating through color.

Rothko's real genius was that out of color he had created a language of feeling. Motherwell

Goethe's Farbenlehre [(1810) translated by Eastlake as "Doctrine of Color"] is a starting point for dealing with color not only in a physical, but also in a physiological way. The impact of such an approach goes beyond Impressionism and even Abstract Expressionism. Mark Rothko is one the painters in 20th century who really managed to create a new conception of space in painting (heto topos) through color. His influence may be felt in painters throughout the world. Unfortunately this conception is often misread by those who consider color to be a decorative element. Abstraction nowadays is rarely viewed as a spiritual or a subjective experience but rather as an exterior sign, especially after Pop art.

I. Goethe's Farbenlehre or Doctrine of Colors 1810

Let us take as a starting point the Doctrine of Colors by Goethe, a result of his 20 years of intense research. This book was partially translated into Portuguese in my master's thesis conducted in 1993. Although this work was much criticized when published in 1810, it became in the twentieth century increasingly recognized throughout the world. At the end of the nineteenth century, studies in human physiology showed that the color is not just an external and objective physical phenomenon, but also something physiological, i.e., the product of the interaction between our retina and the brain.²

After a trip to Italy in 1786, where he was enchanted by the colorfulness present in Italian painting as well as in the Mediterranean climate, the young Goethe borrowed prisms in order to begin the study of color. The same impulse toward classical world motivated Rothko: in the spring of 1950 he traveled to Italy and was enchanted by classical architecture and Fra Angelico's paintings.³

From ancient times it was believed that white light was indivisible, so that the colors appeared only when light interacted with shadow (Skieron) or absence of light. Newton first challenged this view by demonstrating that white light can be decomposed into rays that are perceived as different colors according to the degree of refraction. Thus, there was a total reversal in the interpretation of colors: what had been thought to be simple (the light) is understood as multiple.

Newton in the Experimentum crucis (1666) demonstrates how color is born from the refraction of white light in a prism. Newton proves that the white light can be decomposed in different chromatic rays. But this experiment could be done only in a dark room: instead of observing the phenomena of nature outdoors, Newton builds an apparatus by which he can control the appearance of the color phenomenon. Although he tried objectively to determine the chromatic phenomenon from its degree of refraction, he never questioned the fact that the colors appear in the eye subjectively. Goethe challenges such physical interpretation of color by looking directly through the prisms. He is therefore against a mechanical interpretation of color.

¹ ELIE. M, Lumière, Couleurs et Nature, Vrin, p. 39
One day, while casually looking towards a white wall through a prism, not seeing any color, immediately Goethe assured himself that Newton's theory was wrong. The idea that white light was composed of darker lights, or even by rays, seemed so absurd that he never questioned the indivisibility of light. He was interested in the necessary conditions for the phenomenon of color to manifest. For him, not just color comes from the light, but it appears in the shade.

Goethe says that the color itself is something "shady" (ein Schattiges). The degree of opacity is indicating the amount of light and shade for each particular color: a darkened yellow light excites the eye, while the darkness when bleached, produces blue. The colors are essentially opposed and contain themselves an action (light) and passion (shadow). The different proportion of light and dark distinguishes one color from another. Blue is the most negative color because it contains more shade; yellow is the most positive, since it is the closest to the color of the light. Goethe states that colors exist only insofar as they are produced by our retina, which plays an active role in the production of color: colors are made on the "eye and for the eye."

Therefore, against Newton, Goethe argued that white light couldn't be decomposed, so that colors appear only when light interacts with shade (Skieron).

Let us now compare Goethe's interpretation with Rothko's use of color:

I use colors that have already been experienced through the light of a day and through the states of mind of the total man. In other words, my colors are not colors that are laboratory tools which are isolated from all accidentals or impurities so that they have a specified identity or purity. 

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4 ROTHKO apud ANFAM, Rothko Catalogue Raisonné, Yale Press, p.81
Rothko's affinities with dark studios, exhibition spaces and paintings is also well known:

- Dore Ashton about his studio in 1959: "He had no lights on, and the great space was dim as a cathedral".

But it is in the darkness that the light really appears: Mehr Licht (more light) says Goethe before dying, or as Rothko once claimed: "It's light that I am after". Any painter whose obsession is light must needs to drawn to shadow.

According to Goethe there are three manifestations of color. Firstly "as it belongs to the eye and depending on the capacity to act and to react. Secondly, "through colored mediums or with their aid. Finally, when we think of them as part of the object. We call the first physiological, the second, physical and the third, chemical. The former are constantly fleeting, the second are transient, of certain permanence. The latter have a long duration. What distinguishes a chromatic phenomenon from another is its permanence in sight.

It is the activity of the retina that distinguishes the chromatic phenomenon. Colors are actions (tat) and passions of light (leiden). If the activity of the retina is larger, there is subjective color (physiological); if it suffers an external stimulus for longer, its action is smaller, and the colors are considered more objective (chemical). The subjective or physiological colors are the most important of the Doctrine and

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1 BRESLIN, James. Mark Rothko, a Biography, Chicago Press, p.3. ASHTON, idem, p.137, 155.-Where there is a plane in his works of 1950s there is a shadow. In each case there would be an underpainting meant to be sensed as shadow, and an oscillating surface meant to be sensed as light. ROTHKO, Idem, 412 Motherwell described Rothko's studio for the Seagram series as a "darkened movie set".-The Rothko's retrospective exhibition at the Whitechapel: paintings have their own light in darkness. Idem, ASHTON, p.188 The dark, he said with unintentional symbolism, is always at the top.ROTHKO apud ANFAM, p.88- Often towards nightfall, there is a feeling in the air of mystery, threat and frustration, all at once. I would like my paintings to have the quality of such moments.
2 Idem, p.86
3 ANFAM, Op.cit, p.87
4 Rothko listed three headings related to color: its objective or subjective, its decorative use, and it's sensuous one. BRESLIN, 1993 588, n.42
the starting point for the analysis and understanding of all the resulting colors:

Impalpable transient colors that we see behind our eyelids when we close our eyes.⁹

The divergence of Goethe against Newton is thus not a trivial dispute; it involves an entire controversy between German idealism and Newtonian physicists. Actually, what was behind this dissent is the clash of two completely different ways of interpreting nature. German idealism refuses the mechanistic viewpoint, since both nature and art derive from the idea of organism, with an internal purpose. But although Newton tried objectively to determine the chromatic phenomenon from its degree of refraction, he never questioned the fact that the colors had a subjective dimension. If this controversy has become irrelevant for physics, it opens a new perspective for the interpretation of colors.

Therefore, the original controversy becomes meaningless since we do not need any more a single criterion for identifying colors: the physical concept of light refraction does not necessarily preclude the interpretation of color as a physiological phenomenon. When judging the color as a physiological phenomenon Goethe was criticized for years by scientists who relied on Newton. However, studies on the physiology of vision, on the rods and cones, evidence the instability of our perception, so that the color as experienced is refers to a sensation, not an object. In 1855, Hermann Helmholtz declared that we never perceive external objects directly; instead, we perceive only their effects on our nervous system.

At that point some painters began to deal with the chromatic

phenomenon as independent of the spatiality constructed by linear perspective. Rothko in his text Generalization since the Renaissance has stated that:

It is not difficult to see why the Florentine artist must have sensed very deeply the inadequacy of pictorial representation with the use of linear perspective alone. It left him without the presence of the sensual element, which he knew from his experience, was a sine qua non for artistic achievement. Now the use of color for its own sensual ends as well as for its structural end had greatly deteriorated since the time of Giotto. Perspective displaced the use of the organic quality of colors, which had previously, in and of themselves, produced the tactile effect of recession and advancement...

As a teacher he says:

The tradition of starting with drawing is an academic notion. We must start with drawing."

Since 1957, several experiments have shown (especially with Edwin Land) "the existence of "illusions" of color as Goethe's viewpoint, illusions demonstrating a neurological truth - that the colors are not "there" in the world, nor (as maintained the classical theory) an automatic correlative of wavelength but are built by the brain. Rothko states:

these researches and laws are well known to everyone by now, and we need not go into the explanation here. (Objective impressionism)

If on the one hand the attempt of Goethe in seeking a single general theory to explain the phenomenon is currently impossible, on the other hand, the poet does not fail to take into account the different practices of color, so that this phenomenon appears to a chemist differently to the painter etc. There isn't effectively a single point of view for the study of color.

Rothko, idem, p. 30, 38, 39
Breslin, idem, p.133

However, the initial divisions between physiological, physical and chemical colors in the Goethe's book allow us to think about different chromatic conceptions throughout history. If in the Impressionism dominates the physiological interpretation of color, the interpretation of physical colors help us to understand how modernist painters began to use color as an autonomous element on the surface of the canvas. Finally, the chemical colors helps us to understand the return to using pure pigments in the work of art of artists like Yves Klein and Hélio Oiticica in the sixties.

Color is a complex phenomenon that occurs in a variety of spatial situations. How much do we really know about the colors: do they not vary according to the way they present themselves in space? In modern (and especially contemporary) art, it is very common that the works of art demand the temporal experience of the observer himself:

> Of all the theories of aesthetics, the one that appealed most to Rothko's imagination was one that insisted on the reciprocity of artist and viewer, of artist and the world — a theory of empathy that had been favoured since the 19th century."

The processes of perception and use of color does not occur in a fixed mode, but bring with them their own marks of different epochs and cultural backgrounds. The color is thus a language, and as such, requires learning and reflection. Color creates a universe of different fields interconnected. The observations that arise from artistic practice cannot be reduced to a school textbook, especially in an era where the transmission of the secrets of the old masters becomes rarefied. However, each artistic language discussed here reveals a choice, an attitude of the artist toward the world, where the use of certain materials gives the color a single direction. It is very difficult to conceive the chromatic phenomena without focusing on the particular practice of each artist. However, the way of using colors is also related to an aesthetic movement of a distinct period.

At the end of the nineteenth century, the introduction of

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ASHTON, idem, p.78, 103.
chemical dyes produced a huge transformation in the painter's palette, which increasingly contains artificial colors. In modern art, the pictorial material becomes significant, and the choice of certain techniques is already an expressive act. The colors applied in painting distance themselves increasingly from perceived things. If there is no longer an exterior measure as mimesis to guide practice, how to find new rules for color?

Color charts are very popular as an introduction to color. In fact, they are fascinating at first sight, but soon after the immediate impact, we feel an emptiness contained behind such beautiful hues. On the one hand, they intend to be "objective" insofar as they are calculated 'scientifically'; on the other hand, they are also sterile. Just compare them with the paintings of Rothko, for example, to note how they are devoid of life. Rothko had a great antipathy for this "Bauhaus approach" and as a teacher never used color charts.13

The search for a more rigorous chromatic composition led some artists to research and practice the chromatic theories such as Goethe's, Chevreul's, Ostwald's. In fact, the early abstract painters have adopted a series of chromatic circles, which allowed them to reflect on the color as a standalone language. The mimetic concept itself cannot be understood any longer as a representation of an external nature, but as a search for certain ideals measures that would reveal a hidden nature, ideal, supreme. Not surprisingly, the use of this language was based on symbolism, and that this language has become so hermetic. Ivan Kleiun, in the Suprematist Manifest of 1919 states: "our chromatic compositions are subject only to chromatic laws and not the laws of nature." The great color masters of the 20th century like Matisse, Albers and Rothko never used charts as an end; color was always achieved with practice. But the idea that space can be created through color and therefore that the form must be as simple as possible: as a

13 ASHTON, idem, p.131. GAGE, op. cit, 251.
primordial structure. That is why Matisse painted the relationship between things and that Rothko considered the measures more important than color. Color as a language of emotions cannot be done alone theoretically, but through practice, creating works of art. In Rothko's paintings "the optical effects of simultaneous contrast are inhibited by the softening of color boundaries or by the introduction of an intermediate buffer between the tones." 

II. Mark Rothko: color and technique and the language of emotions

"It is very difficult to say anything about Rothko's paintings", as Cristopher Rothko says in the introduction of his father's manuscripts, The Artist's Reality:

His works communicates on a level that is explicitly preverbal.
The dramatic and emotional potential of different colored light, degrees of light and dark and the contrast between highlight and deep shadow, evoke a mood before even a word is spoken or any action is introduced."  

Mark Rothko

In my approach to Rothko I will try to show how color for him is a language of emotions precisely insofar as he develops a unique technique for dealing with color.

The interpretation of the color phenomenon is dependent upon a particular practice: besides oil, Rothko uses tempera to ensure the presence of pure pigment, color appears to detach from this fine dust and begins to dwell in the space. A yellow painted with tempera is radically different from the same pigment used in

\[\text{\textquoteleft\textquoteleft Rosalind Krauss says something very interesting about the grid as a structure: 'I do not think it is an exaggeration to say that behind every twentieth century grid there lies - like a trauma that must be repressed - a symbolist window parading in the guise of a treatise on optics. KRAUSS, R. The originality of the avant-garde and other modernist myths, MIT press, 1986, p.17}\\]

\[\text{\textquoteleft\textquoteleft Matisse observed 'I don't paint things, I only paint differences between things' ASHTON, op.cit, p.114}\\]

\[\text{\textquoteleft\textquoteleft GAGE, J. Rothko: Color as subject, National Gallery of Art catalogue. p. 253}\\]

\[\text{\textquoteleft\textquoteleft ROTHKO, Christopher. Introduction to The artist's reality by mark Rothko. Yale Press, ROTHKO, Mark, idem, II p. 35}\\]
encaustic paint or oil. If we do not think about the interplay between colors and their material environment, we run the risk of dealing with color as something mechanical, an abstract relationship, where color "A" relates to color "B". Rothko is worried about technical problems early as a teacher, studying the relationship between medium and technique. In the late forties he was grinding his own pigments.  In an interview with Clay Spohn, Rothko said that a young artist could prepare himself by learning the physical elements of painting, their use and control.

On the other hand, in Rothko's biography, Breslin states that he was very secretive in his working methods. He began with raw, unprimed canvas, to which he applied a glue size (mixed with powdered pigments, so that... even the glue would go in a color (rabbit skin)... He began adding unbound powdered pigment and whole eggs...he thinned his paints to the point that pigment particles were almost dissociated from the paint film.

For the Harvard Murals, Rothko used the pigment lithol fast scarlet, which is extremely fugitive, very sensitive to light. Unfortunately the crimson background of the paintings soon disappeared due to a chemical problem. Thus, we could consider that Rothko in a way was dealing with color as chemical colors in Goethe's interpretation as well as physiological, as the artist notes:

The wall should be painted "considerably off-white with umber and warmed by a little red...if the walls are too white, they are always fighting against the pictures which turn greenish because of the predominance of red in the pictures". The burning quality was heightened deliberately as Rothko mixed raw pigments into the final surfaces of these canvases.... He had wished to hang his work near the Turner.

18 BRESLIN, idem, p.134, 245
19 Idem, p.274
20 Idem, p. 316
21 GAGE, J. Rothko: Color as subject, National Gallery of Art catalogue. p. 249
22 Idem. 411
23 ASHTON, p.155
At the Turner exhibition at the Museum of Modern Art in New York in 1966, Rothko was particularly taken with a painting called Light and Color, Goethe's Theory - The morning after the deluge - Moses writing the book of genesis (1843)\(^24\) Surely Rothko's affinity with Turner, and Turner's affinities with Goethe prompt us to think about a common world-view (weltanshaung).

Mark Rothko knew to create subtle relationships between color areas from his practice in watercolor (used extensively by Goethe as well as Turner). Later on exploring other techniques as oil and tempera he explored variations of chromatic fields, suggesting differences in numerous colors and shades, creating an amazing multiplicity of environments and moods. Paint was applied in thin layers to achieve color brightness. Creating subtle changes, sometimes the paint can be seen in an upward motion across the surface, since the artist sometimes altered the position of the canvas in the final stages of labor. Rothko paints on an unprimed canvas, dying the tissue in order create an identity between surface and hue. Color and structure are inseparable in this case; they are combined to create a unique presence. The forms are created exclusively of color fields, whose translucency establishes a depth that complements and enriches enormously the vertical arrangement of the composition. When using oil paint in contrast with tempera, the painter reaches an effect called film perception, a color layer that appears to hover above the other creating a sense of depth due to color refraction. "The adaptation of the eye to twilight vision, from cones to rods, has, like peripheral view, the effect of transforming the appearance of color from the surface to the film mode"\(^25\)

Variations in saturation, hue and tone evoke an evasive shallow surface, although palpable:

Rothko's thin technique allows darker shapes to read as light and the white to read as a denser substance - some

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\(^{24}\) NOVAK, Barbara, DOHERTY, Brian. Rothko's Dark painting: Tragedy and Void , National Gallery of Art catalogue p. 279
Rothko joked, 'This guy Turner, he learnt a lot from me."
REID, Norman, apud BRESLIN, idem, note 1., Chapter 18

\(^{25}\) KATZ, 1935, apud GAGE, op.cit, p.262

\(^{26}\) ASHTON, idem, p.141
He longed that the scale of his paintings involve the viewer, not a grandiloquent way, but in an intimate and human way. His palette began to darken dramatically from the late 1950s. The artist recalls that this phenomenon started in the paintings that had been ordered but never delivered, for the Four Seasons restaurant. He wanted to provoke the same claustrophobia caused by the enclosed facade of the Laurentian Library in Florence, designed by Michelangelo. He sought an oppressive effect, so he used a "dark palette", darker than anything he had used before. All the paintings had an overlay of red, brown and eventually black that can currently be seen at the Tate Modern in London and at the Kawamura Museum in Chiba. The paintings are meticulously planned for architectural space in order to create an environment that surrounds the viewer.

Subsequently Rothko created a set of canvas for a chapel in Houston, Texas where he used two basic colors, black and red, with their light variations complacent and subtle, which referred the plum color, or Bordeaux, to prevent the composition from seeming random or mechanical. Houston Chapel paintings demand a temporal and physical process. Proportions should indicate a precise scale and rhythm, so as to cause an experience of transcending. Dark colors carry a deep emotion, a black light emanating from these plans.

Matisse's musicality, symbolism and the use of color as means of expression have been a strong influence for Rothko. Like Matisse, Rothko's black is not used for chiaroscuro, but it is considered as color not only as shadow, with its inner light. Rothko insisted that the place should have zenithal light so that the chromatic variations of his paintings could be noted. The daylight enters through the circular opening in the ceiling of the chapel and alters the appearance of the panels. If a cloud passes in the sky, the room darkens, as do the works. The screens begin to absorb the light and fade afterwards. At other times, when the diffused lighting animates the space, the paintings reflect the light rays, and become brighter. There is an oscillation between

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BRESLIN, op.cit 479
planarity of the pictorial surface and the perceived depth in these planes, which modifies the space surrounded by panels with varying brightness. Beginning in 1964 he made the first studies on panels and used variations of black, purple and red in order to create violet purple, scarlet, crimson, cold black, hot black, dark black, velvety black, deep blacks, bright black.

The work started when assistants helped him to stretch the canvas. This was an important task, as any ripples would alter the behavior of light in the final painting. The artist contemplated this white canvas for a long time. He then applied the bottom base, a procedure recommended by the old masters in which heated and melted glue rabbit skin and mixed the dry pigment with a little oil and turpentine, which produces a thin, transparent color layer. His assistants quickly applied dark backgrounds—mainly composed of red, or a plum color created by the mixture of black and red—in order to avoid a monotonous effect. Afterwards, the canvases were arranged in a space that was a replica of the chapel.

In Rothko's earlier manuscript space already appears as something primordial. Space, therefore, is the chief plastic manifestation of the artist's conception of reality.²⁸ His paintings are not about space but about the experience of space.²⁹

Is space one of the urphänomen (the primal phenomena) the contact which, as Goethe thought, submerges a man—once he arrives at perceiving them—in a kind of apprehension that can even reach anguish? Because behind space, so it seems, there is nothing...And before it, there is no possible flight to anything else.³⁰

The artist uses color as expression, as drama, and as a spatializing force, so that the viewer loses an analytical point of view. The painter used a daily emulsion of oil and egg, composed of oil paint, whole eggs, dammar resin and turpentine. His technique of overlapping colors, applied with care, made the

²⁸ ROTHKO, idem, p. 59
²⁹ ASHTON, idem, p.135, 172
³⁰ HEIDEGGER, l'art et l'espace, Erker verlag 1969 apud Ashton, p.191
velvety surface. The proportions of the color fields must have precise scale so as to cause an experience of transcending.

The environment was created to make light flow from one screen to the other without obstacles, without the existence of superfluous details. The paintings pulsate, as if its inner light emerges from the darkness of a pit or abyss: they resist the imminent extinction. In order to describe this sensation Dore Ashton recalls an inscription inside a Chapel in Ravenna: Aut lux nata aut capta hic libera regnat (the light is either born here or, imprisoned, reigns here in freedom). This inscription could be applied to Houston.

When, in the summer of 1959, Rothko visited Pompeii, he claimed a 'deep affinity' between his own murals and those in the House of Mysteries with its Dyonisian theatrical allure - the same feeling, the same broad expanses of somber color. At the end of a long afternoon on which he shows the murals to Ashton, Rothko declared: they are not pictures—

**I have made a place.**

"A place apart, of 'alterity'. It stands as a sanctuary filled with enlightened shadow".

As a matter of fact Rothko rediscovered the hidden meaning of contemplation: a space for observation marked out by the augur who predicts the future analyzing the swallow's flight in front of the temple.

**Contemplate** Con"tem*plate , v. t. [imp. & p. p. {Contemplated} (# or #); p. pr. & vb. n. {Contemplating}.] [L. contemplatus, p. p. of contemplari to contemplate; con- + templum:

31 N RANGEL, Marcela. Article not published, Color Research Group at the University of São Paulo


33 BRESLIN, idem, p.4, ASHTON, idem, p.155

34 ANFAM, OP.CIT, P.96

35 http://en.academic.ru/dic.nsf/cide/38665/Contemplate
Rothko and Brazilian contemporary painting

I intend to discuss how Rothko has influenced and has been interpreted by Brazilian painters from completely different cultural backgrounds. He still is a reference for the new generation, although the commodification of his imagery via Internet and mechanical ways of reproduction sometimes produces a superficial understanding of his work.