Colour in the interval

Charlotte Beaufort

Université de Picardie Jules Verne, France
Email: charlotte.beaufort@u-picardie.fr
http://www.charlottebeaufort.fr

This paper deals with the temporal dimension of the interaction of colour and light in contemporary art, and more specifically with the intervallary nature of the colour-light event. Based on the author's light installations, it examines the question of monochromatic colour and of the interaction of colours in painting as compared with the contemporary use of sequences of coloured light. It shows how the author's installations avoid both unchanging and rapidly changing light in order to focus on interval-enhancing slowness as a factor of the emergence of colour. The paper first describes the 1950s and 1960s breakthroughs of colour-light as both distinct from and similar to the painters' use of pigment. Then it focuses on the questions raised by light works that include temporal evolutions and it insists on the spatial and temporal dimensions of coluor juxtaposition. Based on this notion of juxtaposition, it then develops the author's theory and practice of the interval. It describes how her recent installations focused on duration and slowness so as to expand the experience of the interval, thus provoking sensorial and emotional experiences associated with the intervallary colour-light event.

Received 29 October 2015; revised 14 September 2016; accepted 29 September 2016

Published online: 11 January 2017

Introduction

This paper presents some of the ideas behind the conception of three light installations I exhibited in 2007 and 2008. These light installations which were programmed to evolve in time explored the possibilities of the use of coloured light in enhancing the viewer's experience of colour through the use of a flowing succession of complex coloured stages. In order to better understand what is at stake it is first necessary to briefly describe the basic technical details of these installations.

The first installation, *Study* (2007), as shown in Figure 1 was set in a 11.10 × 6 × 2.60-meter room. A partition divided the room in two, with the visitors on one side and the light chamber with light fixtures on the other. In this partition, an aperture was cut out 1.30 m from the ground that was 20 cm high and 4 m long. Three sets of dimmable quadrichromatic fluorescent tube fixtures were arranged behind the wall to illuminate the light chamber so that three different segments of different and constantly changing colours could be programmed that were allowed to bleed into one another, thus creating very complex colours and an illusion of movement from left to right or from right to left. At times the installation could also be programmed to create the sensation that a coloured film covered the aperture. Coming into the unlit room, the beholder could move around or choose to sit on a bench approximately 6 m from the aperture. He could then watch the unfolding light score, he could also choose to come up close and feel with his hand that this was not a projection on a surface but a dense, vibrant, and almost touchable volume of light, thus transforming his perception of what he was experiencing and launching a much more exploratory process questioning the nature of space and light and of his own perception. The choice of a narrow aperture was made in accordance with the size of the room but also with the intention to avoid a reference to the traditional format of painting and in order to stress the elements of fluidity and linearity that were essential to the project.

Figure 1: Charlotte Beaufort, Study*, 2007.*

Untitled 1 (2008) used the same basic principles (see Figure 2), except that it was based on three 2.90-m vertical apertures in three corners of a vast square 100 sq. meter room, the fourth corner being where the viewers entered the room. The three vertical apertures' separate but coordinated programs compelled the viewer to move from one to the other in succession thus experiencing various points of view on the installation, none being global because of a massive pillar in the center of the room.

Untitled 2 (2008), also used the same principles but in yet another arrangement (see Figure 3). In a similar 10 x 10 m square room, the central pillar became the center of a helicoidally curved 2.90m high partition made of an alternation of plywood panels and voids that diminished away from the entrance in order to curve and extend the sensation of space. Through these slits light could be perceived as forming a homogeneous but evolving mass of light behind the partition. The mass of light was felt to be a globe of light that changed from a warm yellow to a colder shade of greyish misty white as it moved continuously from left to right.

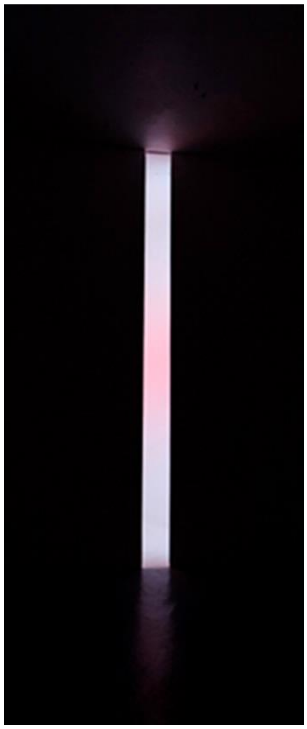

Figure 2 (left): Charlotte Beaufort, Untitled 1*, 2008, partial view.*
Figure 3 (right): Charlotte Beaufort, Untitled 2*, 2008.*

In different ways, as they explored various formal variations of the use of colour-light, these installations were all based on the assumption that the relation between colour and light is not to be dissociated from the movement of perception in our experience of the colour sensation.

In *Study* (2007), *Untitled 1* and *Untitled 2* (2008), the beholder does not stand in a frontal relation to the object, he is engaged in the active and mobile experience of a three-dimensional environment that includes elements of light, touch and sound. Although there is no pre-programmed soundtrack such as music, for instance, a distinctive sound atmosphere is produced by the reverberation of the live sounds in the exhibition space the effects of which are amplified in the beholder's experience by the darkness in the room. Thus the beholder enters a space which predetermines certain conditions for perception.

These installations are site-specific and rely on indirect light effects, which means that the first intervention is scenographic and technical. Partitions are built to reshape the environment and to hide the light sources. The white or coloured light sources are dimmable. The second part of the work consists in programming a light score made of a succession of light « tableaux » or « states » that continuously fade into or out of one another, thus quasi-organically developing into a slow and unbroken concatenation of coloured atmospheres and experiences.

I foreground the organic development and the slowness because light works often tend to be either immobile or excessively agitated. In Ann Veronica Janssens's *Donut* (2003) as shown in Figure 4, for instance, large coloured concentric circles are projected on a wall in a dark room, the circles flash in and out of sight and change colours very rapidly, like a stroboscope, to the sound of a rhythmic and rather loud soundtrack.

This example raises the question of our colour experience and especially of how we experience successive colours. This is what Janssens has to say about it:

> « *Donut acts like a center of diffraction from which, after being exposed to it for several minutes, the beholder mentally moves into a virtual space where he produces an expanding system of moving light and coloured waves somewhat like the waves produced by a pebble that ricochets on water. This is an experience of chromatic and spatial intensity*. »

Figure 4: Ann Veronica Janssens, Donut*, 2003 (Programmed light projection).*

The rapid and intense succession of flashing coloured light seems to aim to amplify the afterimage effect due to the physiology of the eye. The more the beholder will allow himself to be « hypnotized » by these coloured flashes, the more the interfering afterimages will blur and alter his spatial and chromatic references.

My installations are not about immobility or speed but about slowness, and I realise I tend toward ever more slowness. For instance Study is an 8'45" score, while *Untitled 1* and *Untitled 2* last 22'35" and 21'00". But more importantly the transfer time from one state to the other lengthens: the longest in *Study* was 40" while the longest in *Untitled 1* and *Untitled 2* were 1'50" and 2'40".

The choice of *slowness* was not without a reason. It led me to think about colour: about its fluidity first, in *Study*, and then about the moment it appears or its *advent*, in *Untitled 1*. But before I say more about the questions of *slowness* and of the *advent of colour*, let me briefly evoke a few notions concerning my use of coloured light in relation with the use of pigment in painting.

Indeed, choosing to select colour-light as the principal object of one's work leads one to ask a number of preliminary questions. For instance, how does one work with light? How does one keep it in one place or retain it? How does one use it without reducing it to the lighting of surfaces? What are the specificities and benefits of light-colour compared to pigment?

From pigment to light

From the circumscribed form to volume

The first real question is how colour relates to surface and form. If the coloured sensation produced by a surface is light, then how much and how far is it possible to work on this sensation without any surface or circumscribed form?

Bridget Riley, for instance, has come to consider that colour and form cannot be dissociated. Michel Verjux, whose work is more about lighting than about light proper, foregrounds what he calls "monstrating the *dispositive*" and uses the concept of the "lighting act" in which the act of lighting and the act of exhibiting are conjoined (see Figure 5). Using terms Louis Marin applies to the concept of representation, we might say that the work is *transitive* (the lighting illuminates something) but also *reflexive* (in the sense that it presents itself doing so). These indexical works generally come down to one profile spot projecting one white disk of light on one specific architectural element. The projection shows what needs to be seen and shows itself as showing it by the sharp contrast of its neatly circumscribed white shape.

Figure 5: Michel Verjux, Untitled*, 2005.*

In such a case, surface, shape and light are not to be distinguished: the lit surface is perceived like a painted surface. In this respect, one could say that the use and the function of the white, here, is comparable the use of a white pigment and does not make any use of the specific qualities of light colour. However, in this line of thought, another dimension of light colour does appear in many of James Turrell's Projection Pieces. The first works in the series use white light, as in *Casto*, *Juke* and *Alta* (White), 1967 (Figure 6). Turrell later added light colour, as in *Alta* (Pink), *Casto* (Blue) and *Juke* (Blue).

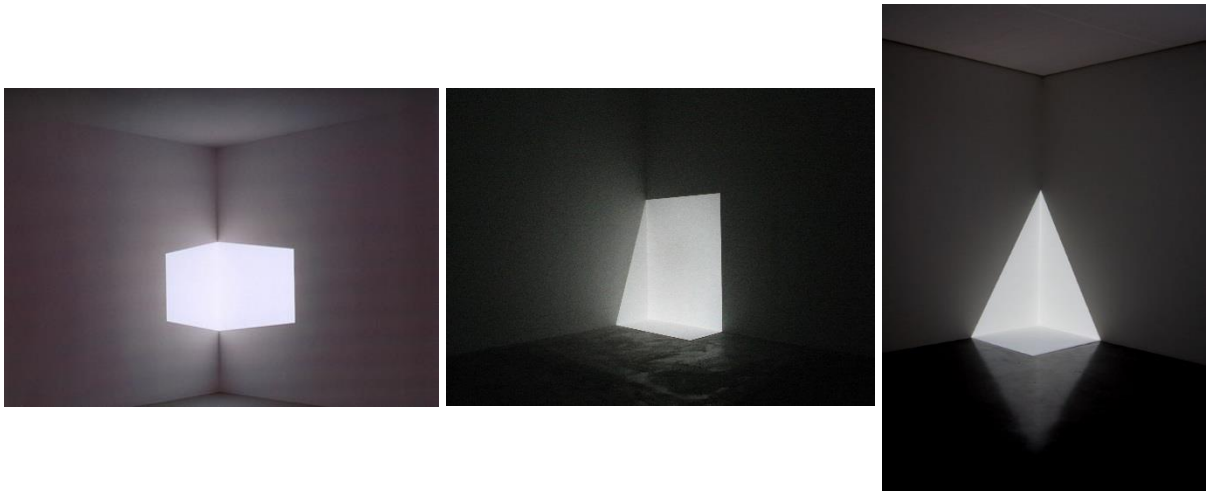

Figure 6: James Turrell, Casto*,* Juke *and* Alta (White)*, 1967.*

When the beholder stands at the right viewpoint, the flat geometrical shape painted on the wall's surface and lit with a profile spot seem to hover before the wall and to float in three-dimensional space like a hologram. In such a case light is fully used as a material. The aim is not to project a sensation on an object but to create a self-contained coloured light sensation that unfolds into space in the form of a virtual geometrical object. Turrell thus explores another plastic dimension of light that eschews the mere transitiveness of lighting—its capacity to inhabit and make visible space rather than mere surfaces.

This defines an object for further research: how colour-light unfolds in space and creates its own volume without relying on any surface or shaped support. In *Study* and *Untitled 1* and *Untitled 2*, as in James Turell's "*Space Divisions*", as opposed to his "Projection Pieces", the installations have no real form or surface but they do have a content and a container. The scenographic work creates a spatial environment but it is also used to contain light, like a frame around the absence of any perceived form and surface. The container retains the coloured light, concentrates it, and the internal surfaces of the partitions that constitute the light chamber are treated in such a manner that they disappear to the eye as surfaces and forms while they reactivate the light in the chamber.

With such examples, questions are raised about the relationships between colour, surfaces and forms that one can trace back to pictorial origins.

Allover, colour field, Ganzfeld: Toward a Coloured Space

With the notion of the *allover* developed by Clement Greenberg in the 1950s comes the idea that all the elements and all the areas that make up a picture may all be equivalent in terms of importance, weight and accent, thus leading to a non-hierarchical conception of the picture plane. The canvas may then be perceived through its own strictly perceptual qualities as giving the impression that it is but a portion of a larger painted surface that virtually extends beyond its own physical limits.

One may easily establish a connection between such pictorial questions and Robert Irwin's and James Turrell's growing interest for light as a material. After spending years dismantling the act of painting, as he put it, Robert Irwin collaborated with Turrell and psychologist Edward Wortz in the years 1967-1971 in an art and science program called the *Art & Technology Project* (Figure 7). This ambitious program that was supported by Maurice Tuchman, then curator of the Los Angeles County Museum of Art (LACMA), meant to stimulate interaction between the artworld and the corporate world of California and gave artists a chance to collaborate with engineers who could answer their queries. Irwin, Turrell and Wortz worked on sensory deprivation, and Wortz, who « specialized in experiments on

visual perceptions of space under highly unusual conditions » had worked on the notion of the ganzfeld — a visual field of a totally homogeneous colour and deprived of any perceptible object, form or visual accident (Figure 8).

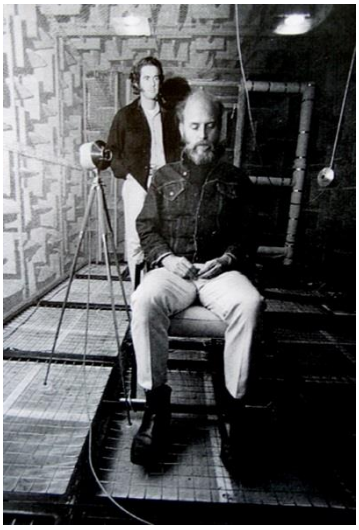

Figure 7 (left): Robert Irwin and James Turrell in an anechoic chamber, 1970.
Figure 8 (right): James Turrell, Robert Irwin and Maurice Tuchman, Garrett Aerospace Corporation, Los Angeles, 1968.

This is the context in which one must perceive some of Turrell's works as the successive steps in a research rather than as self-contained artworks—this is especially the case of the *Perceptual Cells* series, 1989-1993, which directly derives from his collaboration with Irwin and Wortz on the question of sensory deprivation. This shows that these works do not so much focus on colour as on the sensory deprivation of space. Never mind that Turrell's ganzfeld is blue, red or pink, for colour is irrelevant. What counts is the deprivation of space and the ensuing physical and mental disorientation of the beholder (Figure 9).

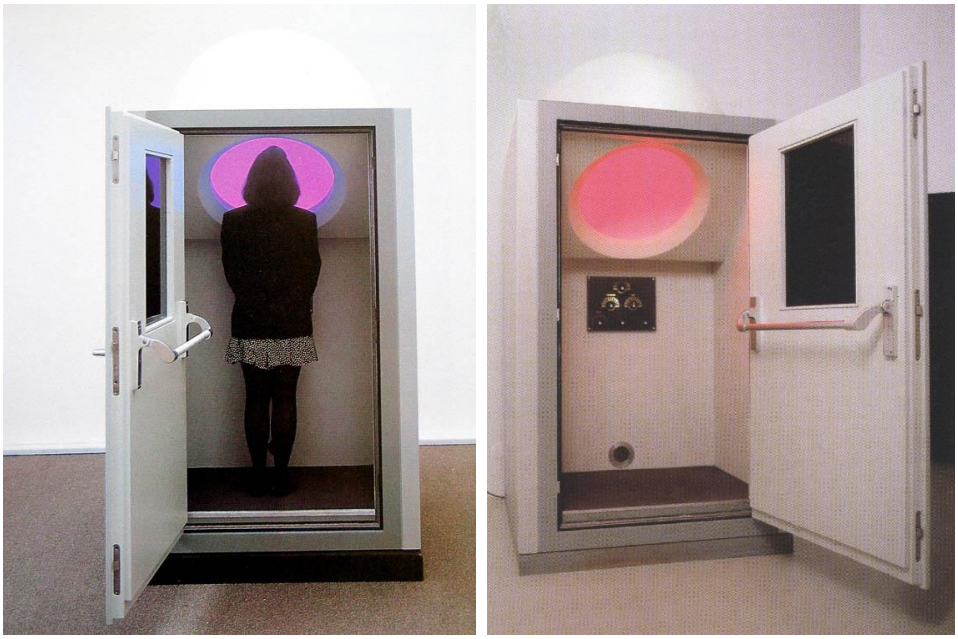

Figure 9: James Turrell, Change in State*, 1990 (left) and* Header*, 1992 (right).*

From « Non-Color » to Colorism

One may thus wonder about the role of colour in the ganzfelds as much as in the monochromes. Are the monochromes of Malevich, Yves Klein or Ad Reinhardt really about colour? And may one really speak of monochromes when the environment counts almost as much as the painting itself? A blue monochrome by Klein in a room whose walls are all painted in the very same IKB blue would provide us with an experience akin to that of an atonal ganzfeld. Indeed, Klein's monochrome acquires its density thanks to the contrast with the white wall on which it is exhibited, and not by the mere force of its IKB blue. « Monochromatism » would thus essentially be « non-color », leading to the absence or the non-perception of colour—the object of the monochrome being always something else than colour. Much as Turrell's *Change* in State provides the experience of a non-relational space that is not a spatial experience, the monochrome ends up presenting the viewer with a non-chromatic—because non-relational—experience. There is no such thing as a "pure" coluor that is not relational. What colour would the world be if it were all the same colour?

In this perspective, Turrell is not a colorist but an architect, he does not deal with colour but with space. In his *Space Divisions*, such as *Present Tense* (1991) as shown in Figure 10, for instance, the colour chosen for each monochrome is unimportant, and the first works in this series begun in 1976, such as *Rayna* (1979) and *Jida* (1983), used no other artificial light source than those already present in the exhibition room (Figure 11). In other words, although his work's power of attraction seems and often is described as mostly due to his large monochromatic volumes of dense and saturated coloured light, light as such really is what it is all about and the colours really are immaterial to the work and devoid of importance.

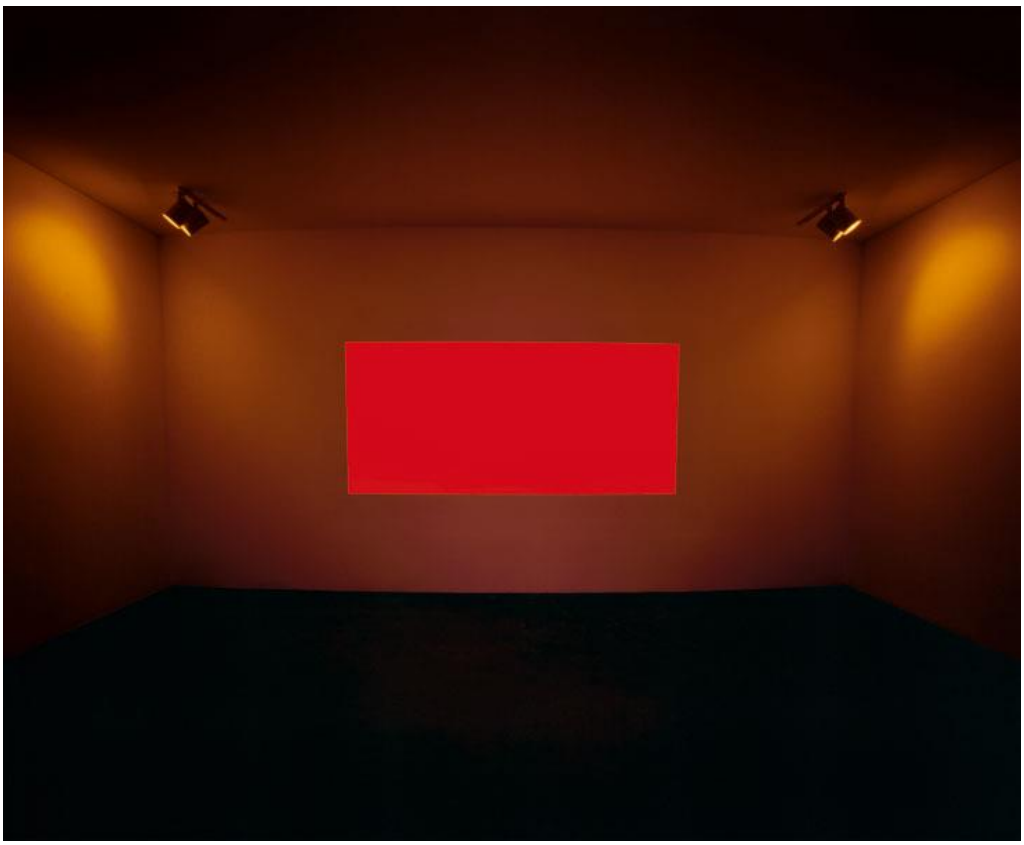

Figure 10: James Turrell, Present Tense*, 1991.*

Figure 11: James Turrell, Rayna*, 1979 (left) and* Jida*, 1983 (right).*

To put it differently Turrell is not more a colorist, i.e. an arranger of colours, than the painters of monochromes. Colour for him is not more than an inessential addition to the principal experience he aims at which is more directly related to designed space. From his early anamorphoses in the Projection Pieces series to a more recent series of holograms, his work is based on the geometric laws of « illusionistic » perspective and of perception. His main interests are the experience of one's perception and the perception of space, and his medium is neither light nor space but perception (« perception is the medium »).

That the experience of colour is to be found neither in painted monochromes nor in monochromatic light installations can be explained by the fact that colour is first and foremost a matter of arrangement, i.e. has to do with the creation of contrast, and contrasts can be arranged through juxtaposition or succession, in a composition or a sequence.

From fixed colour to colour variation

Most of the time, whether in paintings or in installations, when artists arrange colours, there is some illusion of movement involved—and this goes against the experience of monochromes and ganzfelds that neutralise our perception of a measurable space and reduce our visual perception to an intransitive, objectless perception.

In painting, the arrangement and disposition of coluors on the canvas and their interactions—by juxtaposition, superposition, optical colour mixing, etc.—influence, orient and constrain our gaze. The movement of perception may be described either physically or optically. Physically, ocular scanning is influenced by the attractive force of colour, by the varying tension between different gradients of hue, lightness and chroma. Optically, our eye reacts and adapts to complementary colours, optical fusion, and colour contrasts. In my installations, there is no coloured surface and no shape to circumscribe colour—with the only exception of the scenographic form which, like a picture frame, serves as a container—, but the physical and optical movements of colour interaction-related visual perception are the same as in the case of painting.

The main difference, however, is that they are constantly moving rather than immobile works. Contrary to a painting, the installation rhythmically varies and fluctuates in time. As it evolves from one (luminous) state to another, everything hinges on time and change. Variations of light and colour allow to shift focus from space to a questioning of the modes and effects of spacing (or espacement). They also allow to more explicitly introduce in the artwork the notions of interval and duration. Indeed, time is at

the core both of my artistic practice and of my technical skills. But it is also intimately connected to colour. The stretching of duration which I previously called slowness led me to focus on the advent of colour. And one may say that conversely to work on the advent of colour means to work on duration, for the artistic manipulation of colour entails a consideration of it as a subjective colour sensation, and hence consists in the (durational) alteration of light by matter. The colour sensation proper is pure quality, independent of the nature and form of its support. Its appearance is unstable and varies from one viewer to another. As Josef Albers explained,

> *« No color is almost ever seen as it really is—as it is physically. This makes of color the most relative medium of artistic expression. In order to use colors efficiently it is necessary to admit that color always fools the eye. […] One must first learn that one single color may be the object of innumerable perceptions. »*

In this sense, colour may be said to be phenomenological. It exists as a colour only because of our visual organ's motility. Quite surprisingly, it is Edwin Herbert Land, the English scientist who made important research about the biological mechanisms of the eye and especially about how the flux of light transforms itself into either a sensation of clarity or a colour sensation, who writes the following:

> *« The variation of the energy flux is not the determining factor in the vision of colors: the eye has chosen to see the world with stable colors and not to care for the often unforeseeable, changing and irregular lighting conditions […]. »*

Contrary to many extant artistic examples, my research is based neither on *stability* nor on *agitation* (cf. *Donut*), neither on the tensing of the visual organ nor on the present moment. My aim is rather to stretch the instant, to explore the possible plasticity of duration—and of colour.

The experience of fluidity and the interval as the advent of colour

This is the reason why I wish to conclude about these aspects of my work that are intimately related to colour: fluidity and the interval.

One defining feature of Study was to work on fluidity. Light colours spread, bled into one another and intermixed in the light chamber. The diffuse and coloured lights inhabited the volume inside the container, colour seemed suspended in space, but the main idea was to linearly organise this fluidity, either rightward or leftward. The installation allowed to digitally modulate the intensity and hue of three horizontally juxtaposed sections of light sources, thus making it possible to create the illusion of a continuous lateral movement by which volumes of coloured light bled into other volumes of coloured light and creating the sensation of laterally flowing light. Since there was no perceptible object, surface of shadow, what was illusionistically perceived as a constant flux actually was nothing more than colour imperceptibly modified by grain effects resulting form the nature of light and the installation. I was thus able to produce a visual sensation comparable to the diaphanous—which Aristotle describes as a medium activated by light and moved by colour.

There was one spectacular dimension, however, that remained problematic in Study in part because of its superficial spectacularity, and this was the speed of change. Whence the deliberate choice to then focus on slowness and the intervals.

Mark Rothko has expressed regret that beholders were more attracted to his lightly-toned than to his darker canvases, most probably because they were less demanding in terms of visual effort and concentration. The extremely slow evolution of Untitled 1, sometimes on the verge of immobility, demands that the beholder make a comparable effort in focusing his attention on colour and time—much as the effort one needs to make when listening to a complex solo cello piece. But it is thanks to this prolonged attention given to the piece intensified by the experience of expectation and lack that colour is allowed to better appear.

As we have seen, Turrell's monochromatic installations do not focus the beholder's attention on colour. Inversely, the only events in Study and Untitled 1 and Untitled 2 that make a difference are perceived only as colour events. In Untitled 1 transitions were stretched to such an extent that the evolution of coloured light was slower than the beholder's own usual physical slowness of movement, thus compelling him to adapt his pace to the work and to slow down his usual agitated mode of perception, while still experimenting his perception in duration.

Under these circumstances, colour advenes, not when this or that complete luminous state appears as a predetermined stage—or object—in the sequence, but it advenes in and by the movement—and this includes the beholder's movements—, in the intervals between the states, each state becoming an interval in the continuous flux, each and every state being perceptible as the advent of colour only because it becomes an interval in its turn. The same state, presented as such with no change, would not be an interval anymore and would consequently cease to be a colour event.

This advent of colour I try to unfold in the slow folds of duration of these light installations is based on the arrangement in time of what many painters have perceived in space or on the two-dimensioanl picture plane. For instance, when Matisse says about the Vence Chapel that,

> *« One cannot add red to this chapel… And yet this red exists there, it exists by the contrasts of the colors that are there. It exists by the reaction that occurs in the observer's mind. »*

When he declares elsewhere that,

> *« The way I combine red, green and blue allows me to create the equivalent of the spectrum. These three notes react upon one another and create nuances that pure hues do not possess. They must be energetic enough to replace by the action of their contrasts the colors that are absent from our palette. »*

he precisely defines the intervallic nature of the advent of colour. Florence de Mèredieu supports a similar notion when she writes that colours only exist,

> *« based on how they combine. One absent color may be felt as present because it is called for by the other colors to achieve the harmony of the whole. […] A color does not need to be physically or materially present in order to be effectively perceived. […] As in music, what counts is the interval, the void, the relationship and the harmony, as in a chord. Hence it is necessary to compose color in order to foreground its differences. Color is not a matter so much of quantity as of choice and arrangement. »*

This is exactly the reason why I believe that a research on colour—artistic or not—necessarily is a research on composition. It consists in working on juxtapositons. Whether one works with successive layers of colour, as in a glazing, or with a temporal succession of states, juxtaposition exists in movement. As far as I am concerned—but is it different with ôter colorists?—it consists in creating intervals in a light score.

References

1. Albers J (2008), *L'interaction des couleurs*, 1963, Traduit en français par Claude Gilbert, 1974, Paris: Hazan.
2. Janssens AV (2004), *Catalogue d'exposition organisée par le [mac]*, Musée d'Art Contemporain de Marseille (8 novembre 2003 au 8 février 2004), Textes de Nathalie Ergino, Ann veronica Janssens, Anne Pontégnie. Marseille: [mac].
3. Arasse D (2006), La solitude de Mark Rothko. *Anachroniques*, Paris: Gallimard, Coll. Art et Artistes, 83-93.
4. Beaufort C (2006), L'art 'phénoménal' du Light and Space: Pour une phénoménologie de l'évanescence, *Figures de l'Art,* n° 12 ("L'art de l'éphémère"), 133-149.
5. Butterfield J (1993), *The Art of Light + Space*, New York: Abbeville Press.
6. Gage J (2009), *La couleur dans l'art*, (2006), Trad. de l'anglais par Lucie Gourraud-Beyron, Paris: Thames & Hudson, coll. "l'univers de l'art".
7. Lichtenstein J (1989), *La couleur éloquente: Rhétorique et peinture à l'âge classique*, Paris: Flammarion, coll. "champs".
8. Mèredieu F de (1997), *Histoire matérielle et immatérielle de l'art moderne*, Paris: Bordas.
9. Piles R de (1708), *Cours de peinture par principes*, Intro. de Thomas Puttfarken, trad. de l'anglais par Caroline Arnaud, Nîmes: Éditions Jacqueline Chambon, 1990.
10. Swirnoff L (2009), Sequential contrast: a phenomenon of colored light, *Proceedings of the 11th Congress of the International Color Association*, Sydney (Australia).