

Pulsations

Theory



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Psychological forces, rhythm and creative motion.
Expression and impression of dynamism in immobile artworks.

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Introduction

Drawings. Points, lines and surfaces. Thrown on a support. Immobile on immobile.

Yet, the pictures live, flow, pulsate. To describe a work of art, we often speak about movement and forces or about dynamics, rhythm. Where do those impressions come from? Which elements make us perceive and feel dynamism in unmoving artworks? How do we even define it in this context?¹

Plenty of paths are possible to address these questions, dynamism being a concept that is part of numerous domains and practices. Painting, performance art, photography, kinetic art, but also music, dance or poetry are intimately linked to the notion of time and motion and thus, dynamism. This theme is not often the main subject in literature or art criticism but appears as a secondary subject, together with the terms of rhythm, tension and musical vocabulary. Those themes are also associated with specific artists like Paul Klee, Piet Mondrian, Frank Kupka or Robert Delauney and appear in monographies and secondary literatures. They are also touched upon in exhibition catalogues which are dedicated to them. The approaches are manifold and touch on domains as varied as physics, anatomy, philosophy or psychology.

Trying to break down the psychological mechanisms behind the perception and the visual forces of works of art, Rudolf Arnheim's book, *Art and visual perception*,

dedicates two separate chapters to movement and dynamic. In the same vein, there is also the book, *Kunst-Psychologie – wodurch Kunstwerke wirken*, written by Martin Schuster and Horst Beisl. As primary resources, artists like Vassily Kandinsky and Klee also tried to decipher and define the primary elements of drawing and painting.

This bachelor theoretical work addresses dynamism from three different approaches. The first chapter will cover the inherent forces of the constitutive elements of drawing. We will approach their individual characteristics, allowing us to have a better understanding of the smallest units of a piece of art. The second chapter will go a step further and look at how they act as an ensemble, in relation to each other and draw a parallel with music and sound. The third chapter is dedicated to the creative motion, the perception of its energy signature and the reconstruction of movement.

¹ I will use the term *dynamism* and not *movement* to talk about the energy and the feeling of motion. The term *rhythm*, strongly affiliated to music and the perception of an ensemble, or the term *tension*, used by Vassily Kandinsky and Rudolf Arnheim, are highly specialised and will be used specifically.

The Constitutive Elements of Drawing.

Point and Line, Rest and Movement.

The interest in the fundamental elements of an artwork emerged at the turn of the 20th century. This arose in parallel with the beginning of the deconstruction of the reality and the shift to abstraction. Before, the subject of the work or the figurative scenes pictured had the tendency to overshadow the constitutive elements.¹ Philosophers, psychologists but also artists and art historians began to develop various theories on their qualities, expressivity and effect.² Slowly, they began to observe and question the different forms, to define what they meant, what they had to offer. The point, the line and the more complex forms gained characteristics like energy, tone, direction, colors or temporality. They became elementary expression tools. Synesthetic, the vocabulary used to describe them is often borrowed from other art forms. Rhythm and motion are notions which relate closely to our inner perception of time. Therefore, I will focus my attention on the temporal qualities of the forms.

“Rhythmus weist offenbar auf den Zeitsinn in uns selbst, der komplexe rhythmische Beziehung eher realisiert als konstatiert, ein Hinweis darauf, dass wir von Erfahrung nur sprechen können, wenn wir sie vollziehen, ihre zeitliche Dimension durchlaufen.”³

More felt than ascertained, we can only talk about our perception as an experience, as there is no wavelength or measure that permits us to define it precisely, as it would be possible for a color or the tempo of a music piece.⁴ The perception of dynamism is a sensation, an interaction between picture and observer.

1 Koschatzky 1999, 185.

2 Bonnefoit 2013, 87.

3 Boehm 1987, 4.

4 Arnheim 1975, 16.

Temporality or optical movement in visual art is a concept that took time to develop. Painting was considered a static medium, only able to express moving elements in the representation of one time frame.⁵ Painting was reduced to unfolding itself on a surface and in space, whereas music, on the other hand, always encompassed the dimension of time.⁶

The destruction of the uniform space, the fragmentation of the subject, the emancipation of the colors, forms and surfaces are processes which enabled the visual arts to open themselves to temporality. These processes took place between 1908 and 1914 in the form of Cubism, Futurism, Orphism or Synchromism.⁷

Let us see what potential, individual forms encompass in terms of space and temporality before we address the ensemble.

The point is a concept hard to define and hard to grasp. Geometrically, it is described as an immaterial entity. In texts it is a respiration or an end, whereas in drawing, it is the beginning, the first meeting between the background and the tool, a meaningful decision.⁸ Its form itself cannot be reduced to an ideally small and round circle. Its outline can fluctuate from round to sharp-edged, the form still being interpreted as a point (ill. 1). It can rapidly shift to surface, its definition a matter of proportion.⁹ Although its visual appearance may vary and offer different interpretations, its dynamic characteristics still share the same essence.

5 Maur 1985, 10.

6 Kandinsky 1928, 28.

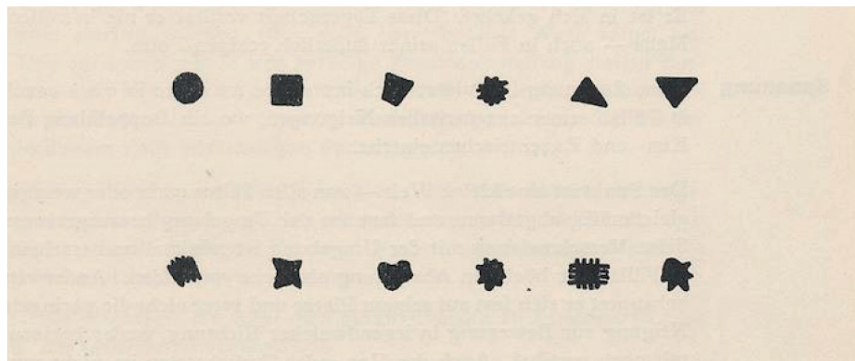
7 Maur 1985, 10-11.

8 Koschatzky 1999, 186.

9 Kandinsky 1928, 23-24-25.

*"Der Punkt ist die zeitlich knappste Form."*¹⁰

Kandinsky defines the point as the shortest incidence of an affirmation, and thus, imparts a characteristic of temporality to it. It is quick, incisive and straightforward. The point comes directly to the eyes, perceived in one glance. If temporality is relevant to rhythm, so is space. The point defines its place strongly and does not show any intention to move, in whatever direction.¹¹ The absence of movement reduces the perception's duration to its shortest, to the limit of making the point timeless.¹² Even if its presence is thin, it is loaded with energy. Its tension is concentric, directed in itself. The point rests, but not without pulsation.



1 Vassily Kandinsky, *Beispiele der Punktformen*, Graphic in: "Punkt und Linie zu Fläche", 1926.

¹⁰ Kandinsky 1928, 29.

¹¹ Kandinsky 1928, 26.

¹² Kandinsky 1928, 28

If the point is immobility, the line is motion.

The line is created by movement, by the destruction of the resolute calm of the point. From static to dynamic.¹³ The line conquers the space, it crosses, joins and cuts through.¹⁴ Klee goes even further in the definition. He describes the active line as going freely. It wanders without goal, the agent being the point.¹⁵ He declares this movement as the genesis of all other forms.¹⁶ The dead point comes alive by the will of the creator tracing a line, itself destined to become a drawing.¹⁷

The line can be horizon, bridge, but also boundary. Open, it has a character of infinite flow; closed, it outlines spaces, creating passive surfaces.¹⁸ Line and linearity are, by definition, strongly attached to drawing. They are what differentiates drawing from painting.¹⁹ The line can be a continuous strip or can be broken into small individual marks, perceived as a sequence.²⁰ In comparison to the point, which holds a similar energy even when changing outlines, the visual variations of the lines are more impactful on their vibration, generating completely different atmospheres and feelings. They can be violent or calm, smooth or hard, flowing or hesitating.²¹ Three principle characteristics influence the dynamics of the lines: form, orientation and variation of width.

¹³ Kandinsky 1928, 51.

¹⁴ De Zegher 2010, 42.

¹⁵ Klee 1925, 6.

¹⁶ Friedwald 2013, 109.

¹⁷ Bonnefoit 2013, 37.

¹⁸ Klee 1925, 11.

¹⁹ Koschatzky 1999, 194.

²⁰ De Zegher 2010, 22.

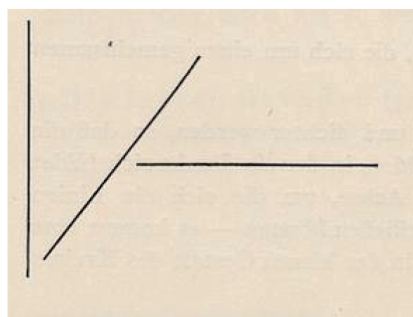
²¹ Osterwold 2005, 25.

The orientation separates the lines into three main categories (ill. 2).

The first one, horizontal, contains a notion of stability and flatness that makes its dynamic quite calm. It is associated with a passive earthly force.²² The second one, vertical, can be seen as a link between the bottom and the top with a notion of height. It is an active force, often affiliated with growth. The final one, diagonal, takes a bit of each preceding type and has a crossing force combined to a sentiment of rise or fall.

To define orientation more precisely, you can specify if a vertical goes up or down, or a horizontal left or right.²³

It is hard to determine if these impressions come from the forms themselves in a raw psychological perception or from the more philosophical associations we have with them, as the horizontal can induce the idea of laying and the vertical the one of standing. These associations are often mixed in the argumentation and descriptions of the different forms.



2 Vassily Kandinsky, *Grundtypen der geometrischen Geraden*, Graphic in: "Punkt und Linie zu Fläche", 1926.

²² Koschatzky 1999, 198.

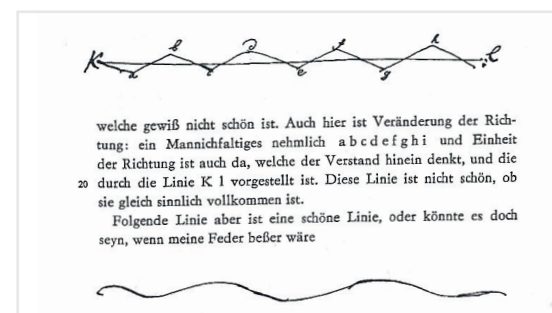
²³ Kandinsky 1928, 52.

The next relevant characteristic is the form of the line. We can distinguish three main categories: the straight, the curved and the angular line.

The straight line is considered the less dynamic of all three as it is the one which uses the least of its tension potential. It is also a line that is cold in that it does not contain any fluctuation. It is constant.

When two straight lines combine, we obtain an angular one, a collision between directions and forces. The zigzagging line is a controlled line, each breaking point a decision of the maker, an impulse of movement. It gives an impression of sharpness and nervousness. The sentiment of a broken flow.²⁴

The curved line stands as the opposite of the angular one (ill. 3). It unfolds itself effortlessly after the first impulse. It is an organic and free action with no perceivable breaking point. In the wavy line, the convex and concave parts alternate flawlessly, and we are unable to tell precisely where the curves change. Walter Koschatzky sees in the "frei gezogene Linie" the biggest dynamic potential.



3 Friedrich Schiller, Extract of a letter addressed to Christian Gottfried Körner, 1793.

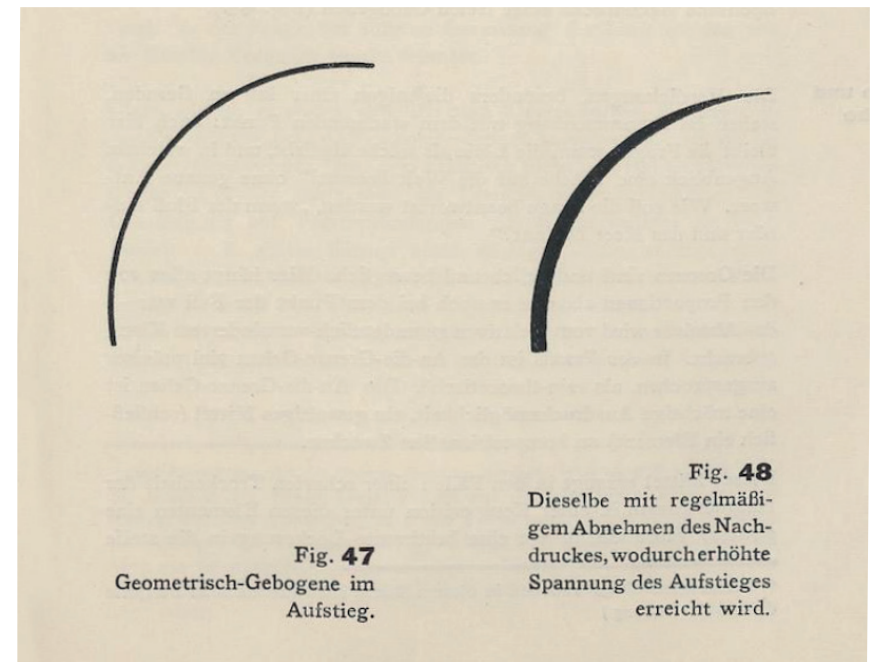
²⁴ Bonnefoit 2005, 50-51.

By breaking the geometrical and the controlled straight lines, freedom is gained and thence, expressiveness.²⁵ The tension lays in the upward and downward forces of the line.

The line does not always keep a uniform width during its whole length. An active or passive pression on the tool can make it vary and offers new flow. Kandinsky shows us a comparison of a uniform line and one where the width fluctuates regularly from thin to thick. (ill. 4) He, who always tried to explain and to argument his assertions gave up this time and let the example speak for itself, any explanation dispensable.²⁶

In this chapter we could see the complexity that lays in individual points and lines. I could go on with the surfaces, which can also be considered as a constitutive element, but I think we now already have a good idea of what visual changes influence the perception of dynamics.

Although we can theoretically isolate a form, that does not correspond to the reality of our perception mechanism. Seeing something means that we contextualize it in its environment, we give it a location in space, a value in the scale of size, luminosity or distance.²⁷



4: Vassily Kandinsky, Gebogene Linien, Graphic in: "Punkt und Linie zu Fläche", 1926.

²⁵ Koschatzky 1999, 200-201.

²⁶ Kandinsky 1928, 83.

²⁷ Arnheim 1975, 11.

Rhythm as an Ensemble.

System and Rupture.

Isolated forms are not described in terms of rhythm but of very close notions of temporality and space. On the contrary, rhythm appears spontaneously when we have to describe an arrangement of forms.

Rhythm is a term that can be found in all European languages. Rhythmos, in its Greek original meaning could be translated as “une manière particulière de fluer” or “la forme de ce qui n’a pas de consistance organique”. It was then specified by Plato, who affiliated the concept of measure and number to it. This durably associated the term with music, dance and poetry.²⁸ A piece of music possesses a regular system where occurrences can unfold and express themselves, sometimes respecting the beats, sometimes consciously playing around them. If we resume music as a sequence and association of notes, rhythm would define the time relation between them.

What seems to be the main characteristic of rhythm is this idea of system. Having a system induces elements associated with one another and forming a structure. This is a criterion we can easily assert in painting or drawing. An artwork can be defined as an ensemble, each element a brick of a bigger construction.

“Any line drawn on a sheet of paper, the simplest form modeled from a piece of clay, is like a rock thrown into a pond. It upsets repose, it mobilizes space. Seeing is the perception of action.”²⁹

Each addition to a work impacts the whole ensemble, creating new forces and interaction, consolidating or disrupting balance. It reconfigures perception and influences the artist in their next step. Images are created and perceived

²⁸ Schmitt 2015, 11.

²⁹ Arnheim 1975, 16.

as structured sequences of patterns.³⁰ Each fragment projects discrete indications of quantity which enable a comparison and thus, a relation.³¹ The analysis of the interaction between the whole picture and its units reveals a completely new potential of image as a medium, an aspect which was difficult to discover in representative, mimetic, or illustrative pieces of art.³² The liberation of the century-old tradition of figurative art allowed the notion of visual rhythm to reveal and expand itself at the beginning of the 20th century. It was not as if it was totally ignored before, but rather it was not the main drive of painting at this time. On the contrary, abstract art can be seen as essentially rhythmic. The titles of the works and the numerous theoretical writings or manifests testify to this growing interest.³³

Klee was the first artist and teacher to explain that the structure found in a surface full of forms possesses *Takt*, structural rhythms, and an underlying strophic breathing which can be felt exactly like music. He declares that melodic lines or counterpoints reside not only in musical compositions, but in all created forms.³⁴ The perceiver can feel pushes and pulls in a visual pattern as a real characteristic of the object, as they would color or size.³⁵ In drawing, this rhythm unfolds in space, rather than time. The perception relies on simultaneity, rather than sequences that fade one after the other.

³⁰ Kepes 1965, iv.

³¹ Boehm 1987, 7.

³² Boehm 1987, 10–11.

³³ Schmitt 2015, 12.

³⁴ Kepes 1965, iv.

³⁵ Arnheim 1975, 17.

"Le rythme n'est pas qu'une forme du mouvement, il produit le mouvement, il fait advenir le réel." ³⁶

Let us take for example the last painting made by Piet Mondrian in 1942, *Broadway Boogie-Woogie* (ill. 5). The square canvas is crossed by several horizontal and vertical yellow stripes. They sometimes pass through the whole canvas and sometimes stop when they meet another line, forming a complex grid. All the lines are straight and have exactly the same width. Small white, red and blue squares are spread in the lines and at their intersections. The background is white, the negative space between the lines creating defined squares. Some rectangles are placed sporadically in an irregular pattern.

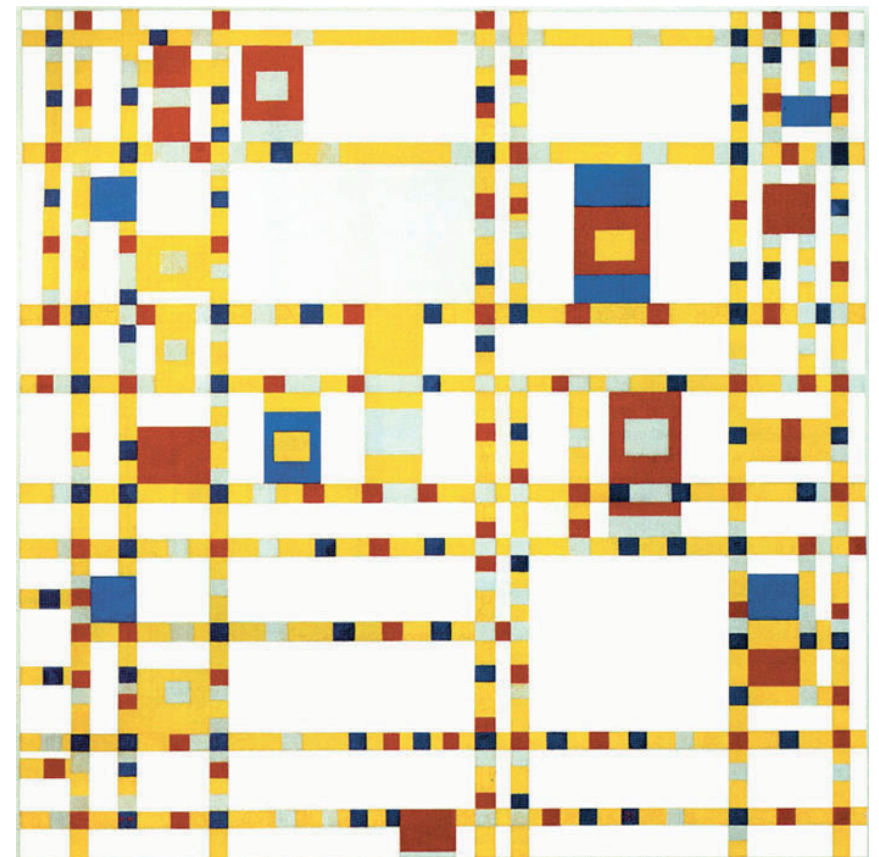
In this work, even if it is impossible to describe the placement of all elements precisely, a sentiment of structure is perceivable. The eye can build relations between all the elements and feel the dynamic rhythm of the piece. In an interview, Piet Mondrian describes *Boogie-Woogie* as a homologue of its painting practice. The destruction of the melody finds an echo in his restructuration of the natural appearances or structures, in this case the map of New York, and both achieve the construction of a dynamic rhythm through pure elements.³⁷

Rhythm has its own dynamic properties. These repose on two main features: Repetition and Rupture.³⁸ Repetition instantly creates a sentiment of structure, giving us something like the „tempo“ of an artwork. The viewer can then perceive which element „respects the rules“ and brings stability and which one marks a contrast and disrupts the flow.

³⁶ Schmitt 2015, 13.

³⁷ Maur 1985, 177.

³⁸ Schmitt 2015, 15.



5 Piet Mondrian, *Broadway Boogie-Woogie*, 1942-43, Oil on Canvas, 127 x 127 cm, New York, Museum of Modern Art.

*"Die Wiederholung ist ein mächtiges Mittel zur Steigerung der inneren Erschütterung und gleichzeitig ein Mittel zum primitiven Rhythmus, welcher wieder ein Mittel zur Erziehung der primitiven Harmonie in jeder Kunst ist."*³⁹

In addition to setting a frame, repetition is a way to enhance an effect. Primitive Rhythm is a term used by both Kandinsky and Klee to describe the regular repetition of the same form. If all the elements are the same, there is no rupture, only a sense of perfect harmony.

There is no need for an exact similitude, if the individual qualities of elements match, they add up and gain greater impact. It may not create a primitive Harmonie but merge flows of energy.

Gestalt psychology defines several conditions under which several correlations of forms are created. They are based on the idea that the mind tries to interpret what it sees as simply as possible and thus reduces visual vibration by grouping information together.⁴⁰ Similitudes of forms, proximity, shared direction and continuity are some of the conditions that link forms together, creating a new network of tensions across the artwork.⁴¹

The more regularity there is, the stronger a rupture will feel. A slightly off-centered point in a square gives the same feeling of misalignment as an off-beat note in a melody.⁴² We are programmed to react to change in our environment. Our eyes are almost always attracted to contrast. Sometimes it is the divergence that makes us conscious of the system.⁴³

³⁹ Kandinsky 1928, 32.

⁴⁰ Arnheim, 1975, 410.

⁴¹ Beisl/Schuster 1978, 28-29.

⁴² Arnheim, 1975, 12.

⁴³ Gibson 1965, 67.

Now that we have an idea of the inherent forces of graphic forms taken individually and as an ensemble, let us approach the question of dynamism in a slightly different manner.

Creative Movement and Corporal Empathy

Each drawn stroke or point is the result of a movement. It is an external gesture loaded with inner thoughts and impulse, the drawing brought to the surface with each encounter between tool and surface.⁴⁴

*"Die Linie ist eine Kraft, die ähnlich wie alle elementaren Kräfte tätig ist; [...] Sie entlehnt ihre Kraft der Energie dessen, der sie gezogen hat."*⁴⁵

In addition to their own dynamic qualities, forms are also thought to embody the tension of the movement which created them. It is like a transfer, like a part of the creator and his creative process finding themselves integrated in the line. We mentioned before that the visual variation of width had an influence on the dynamic flow of a line. One way to explain this impression is that we can feel the weight of the body in the pressure that created those fluctuations. This is particularly visible in the specific qualities of handwriting.

If these energy traces can be found in drawing, they also express themselves in nature. Motion, contraction, expansion or growth manifest themselves in the natural object. The branches and trunk of a tree not also retain, but constantly live under the motion of growth. The structure of a flower or the shell of a snail are testimonies of precise processes of generation.⁴⁶

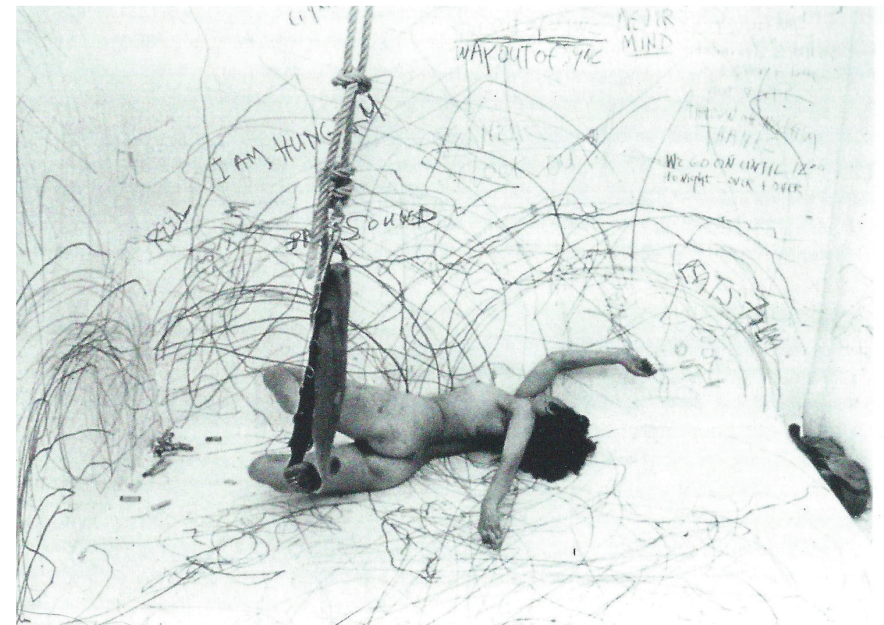
Historically, the apparition of creative marks in art works began during and continued after the Renaissance when the work of art starts to be appreciated as a product of individual creation. Brush strokes or hand marks in clay became legitimately part of the work. Drawings and sketches began to be collected

⁴⁴ De Zegher 2010, 22.

⁴⁵ Van de Velde 1902, 188.

⁴⁶ Arnheim, 1975, 417.

as works of art in their own right.⁴⁷ Artists now used motor factors in static composition as vectors of meanings. Time shows that their presence fluctuates through time, changing depending on the art movement, and each time used to express something else. On one side, we have the twisted application of Vincent Van Gogh and the impressionists, or the concentric feeling and movement of body that remain in Carole Schneemann's drawings which she realized being suspended (ill. 6). We can also mention Jackson Pollock's composition of paint thrown or dripped in big thrusts. On the other side we have the almost



6 Carole Schneemann, *Up To And Including Her Limits*, 1973-76, performance, crayon on paper, rope and harness suspended from ceiling.

⁴⁷ Arnheim, 1975, 418.

mechanical vibration and nervousness of Pointillism, or Constructivism, with its forms carefully drawn with instruments, all creation marks carefully hidden, the artists wanting to align their creations with engineering or technical drawing, erasing their physical presence to let the form speak. ⁴⁸

We can see that artists are conscious of the power of motion and match their action with what they want to convey. In the aforementioned art piece of Piet Mondrian, the colors are drawn without traces of the brush, the lines drawn geometrically. He erases his presence and lets the forms speak for themselves and create their own dynamism.



7: Hans Hartung, study and final work, capture of the documentary: "Hans Hartung, la fureur de peindre".

⁴⁸ Arnheim, 1975, 418.

On the other side we can mention Hans Hartung, who was one of the pioneers of gestural painting. Through linear gestures, he projected his whole humanity in his painting.

"La peinture gestuelle, l'abstraction informelle, c'est d'abord ça : c'est enregistrer sur la toile, une action, un mouvement. Ce n'est pas simplement l'enregistrement d'un geste réflexe, qui tient à un seul moment particulier, c'est toute une vie qui est sur la toile. C'est toute une intériorité qui a été travaillée par un vécu, qui a été travaillée par une expérience." ⁴⁹

His process changed through time. At first, he made sketches and tryouts he then enlarged for his final piece (ill. 7). It was a fabricated gesture, not a passionate or compulsive one. He slowly abandoned the sketches to work directly on the canvas. In addition to the form's own psychological power, we can then also perceive the presence of the artist. ⁵⁰

In addition to this first idea of drawings encompassing motor energy, another one exists: the re-enactment of a movement, or motion empathy. If the first theory attributes the dynamic properties to the immobile object, the theory of motion empathy attributes it to the viewer. ⁵¹

In figurative art, many people attest to feeling the movement of a figure in their own body, the medium being paintings, drawings, sculptures or pictures. ⁵² The viewer can associate the representation of an athlete in action with his own memory of a similar movement. This recreation of a kinetic sensation can go beyond figuration. Our brains can reconstruct the action by recognizing the

⁴⁹ Schlessler 2020, 01:06.

⁵⁰ Schlessler 2020, 02:40.

⁵¹ Arnheim, 1975, 413.

⁵² Freedberg/Gallese 2007, 197.

graphic outcome of an action. The viewer experiences a bodily involvement with the movements implied in brush strokes, dripped paint, or for example the slashed open canvas of Luciano Fontana (Ill. 8).⁵³

It is still debated as to whether those dynamic forces are inherent to the forms, and thus that the body has a sole, passive-receptive role, or whether the sensation of dynamism is attributed to the forms, by the viewer who associates them with past memories or experiences. Wilhelm Worringer, when he described the differences between the curved and the zigzag line, based his argumentation on the feeling we have when we draw them. Free and light motion for the curve, controlled and abrupt for the zigzag. He says that we project those sensations when we see such lines. He would then agree with the notion of personal experience and association.⁵⁴

Kandinsky and Arnheim, on the other hand, defend the argument that the forms possess inherent dynamic forces that are not only a reconstruction of motor act by the brain.



8 Luciano Fontana, *Concetto spaziale 'Attesa'*, 1960, canvas, 116,1 × 98,2 × 8,6 cm (framed), London, Tate.

⁵³ Freedberg/Gallese 2007, 197.

⁵⁴ Bonnefoit 2005, 50-51.

Conclusion

*"Visual experience is dynamic. [...] What a person or animal perceives is not only an arrangement of objects, of colors and shape, of movement and sizes. It is, perhaps first of all, an interplay of directed tensions."*⁵⁵

Motion and rhythm in immobile artworks were and are still debated, sometimes described as completely metaphorical. However, we have seen that even if there is no real physical movement, art works can give a great impression of dynamism. This sensation expresses itself in very different ways and is spoken of using different terminologies. Its origin changes depending on the theories.

Firstly, we saw that each constitutive element has specific dynamic properties attributed to it. Kandinsky describes the inner forces of an element with the term *Spannung*. The way they unfold in space and their different temporal associations allow us to define something like a visual lexicon and to determine how criteria such as outline, orientation or direction influence the perception of dynamism. Secondly, we addressed the associations of elements in an artwork with musical rhythm. This term finds a legitimate echo in the description of planar artworks. The arrangement of elements in space is something we can recognize as rhythmic and reposes on a sensation of an ensemble englobing both repetition and rupture. Finally, motion can be recognized in artworks, either in the form of a figural representation of an action, or in the marks of the creative motion.

It is still really hard to define exactly how those perceptions are created. Is it through association, intuition? Or is it a characteristic residing in the form itself, like color or size? Arnheim brings a little peace by affirming that it is not relevant to define what generates them. What is important is to recognize and accept them as essential parts of what we see.

⁵⁵ Arnheim 1975, 11.

*« Whether or not we choose to call these perceptual forces "illusions" matters little so long as we acknowledge them as genuine components of everything seen. The artist, for example, need not worry about the fact that these forces are not contained in the pigments on the canvas. What he creates with physical materials are experiences. The perceived image, not the paint, is the work of art. »*⁵⁶

The interest in movement, flow, energy, dynamism and corporal gesture originates from my own artistic practice. These aspects are integrated into my works without having been consciously addressed. This bachelor thesis enabled me to engage with these themes and to explore them in a practical and theoretical way. Both are intimately intertwined and influence each other. The practical part oriented my interest. At first, I was very confused about my perception of the dynamism in immobile objects and described them as movement. But this seemed contradictory and never felt right. I questioned my own perception, which resulted in a psychological approach of the topic. What I learned in the theory sharpened the way I observe the world. It reassured me in my approach of nature as dynamic and rhythmic and changed the way I perceive my own work. Through this research, I was able to ascertain my intuitions. In a practical way, it made me conscious of what can be used to bring dynamism and rhythm into my drawings. How forms, gesture, composition or materials influence the result. It helped to organize my experimentation and to clarify my intentions.

When I began, I did not foresee the complexity and variety of the subject. There is a lot more that I would love to explore in more depth, especially synesthesia and the relation between visual art and music or the influence of color.

⁵⁶ Arnheim 1975, 17.

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