

# CONCRETE ABSTRACT

## EXPLORING TACTILITY IN ABSTRACT ANIMATIONS FROM EARLY AVANT-GARDE FILMS TO CONTEMPORARY ARTWORKS

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## Abstract

After witnessing social chaos and the collapse of values at the beginning of the twentieth century, avant-garde artists insert new thought patterns and progressive aesthetic into the traditional perception of art. Being enthralled by the new film medium, former painters like Viking Eggeling, Walther Ruttmann and Hans Richter start to experiment with light in two-dimensional film formats, they animate lines, stripes, basic shapes, play with the foreground and the background, and, most important of all, they construct a temporality within the visual order of the screen. Viking Eggeling's *Symphonie Diagonale* (1921-24), Walther Ruttmann's *Opus I* (1921) and Hans Richter's *Rhythmus 21* (1921) show such temporality built in, which is caught by the idea of music as their titles suggest. These short abstract animation films attempt to discover the artistic possibilities of the new developing medium, film.

Like the pioneer avant-garde abstract filmmakers, today's artists still seek to stimulate a new perception for a possible embodiment that will activate the sense of touch in the audience. Tactility, enhanced by the material, opens up a new network of spatio-temporal relationships in the viewer's consciousness and subjecthood. This essay aims to bring a historical perspective to the abstract moving images of which the tactile or haptic experience is a defining characteristic. Through a selection of abstract animations, the materiality of the film image and the screening site will be elaborated upon according to the haptic features that are corporally embodied by the viewers. In the light of historical abstract animation, the aim is to dwell upon the dynamics of a continuous tendency to capture tactile instances to help bring forth the spatial resonances as well as visualize and reedify the rhythmic passing of time.

**Keywords:** Abstract, Tactile, Concrete Animation, Vitality, Materiality

In today's digital world, sensuality appears to be more in focus. As things and relationships become more and more digital, the interest in the analogue and the tactile has grown dramatically. Wilhelm Schmid suggests, "the digital desensitization leads to the rediscovery of sensuality away from the devices", whereas tabbing and swiping on lifeless screens evokes the need to touch (Schmid, 9). Similarly, contemporary debates on new visualization technologies and digital imaging draw attention to the question of embodiment and the need to generate the haptic sense. However, the concept of touch and the tactile nature of a work of art is nothing new. In the early years of the twentieth century, when mass media was formed, international avant-garde artists were adapting new tools of culture – radio, film, illustrated magazines, sound recordings – into their production (Staniszewski, 1995, p. 227-242). In their use of mass media – photography, graphics, film, ready-made objects and collages – avant-garde artists from the Bauhaus, as well as other international avant-garde artists like Dadaists, Surrealists and Expressionists, questioned traditional pictorial representations and experimented collaboratively to explore the possibilities of the materials they engaged with. Their inquisitive approach towards materiality led artists to seek new spatial and temporal qualities of the image. Accordingly, avant-garde film practices focused on the depiction of touch by questioning, deconstructing and reassessing the disembodied perception of film (Elsaesser, 2010, p. 120). The short, painterly, musical animation films of the early German avant-garde were the pioneer samples of such material exploration and experimentation. To those painterly filmmakers, abstraction was a set of parameters they could apply to their experiments, where they could point out what was absolute in art.

This essay aims to shed light on a historical perspective of abstract moving images, in which the tactile or haptic experience is a defining characteristic. Accordingly, a selection of contemporary artworks – abstract animations – will be drawn

upon, offering a critical perspective on various concepts and aspirations associated with spatiality and materiality.

In his epochal essay titled 'The work of art in the age of mechanical reproduction', Walter Benjamin states the need for the tactile (Benjamin, 1969 [1936]). Emphasizing the altered perception and consumption of art in modernity, Benjamin claims that this transformation is caused mainly by the techniques of reproduction, when manual printing techniques like etching and lithography were surpassed by photography (Benjamin, 1969 [1936], p. 219). Thus, the eye replaced the hand in reproduction processes in the 20th century, and the eye's dominance in technique began. Consequently, Benjamin brings up the issue that an architectural work is experienced in a two fold manner, by touch and sight. Benjamin states that the collective, inattentive and habitual experience of an architectural work encompasses the tactile aspect. Yet, the optical aspect is more attentive and contemplative. (Benjamin, 1969 [1936], p. 240). Appreciating an architectural site can be fulfilled neither by optical means, nor by contemplation alone; this needs to be "mastered gradually by habit, under the guidance of tactile appropriation" (Benjamin, 1969 [1936], p. 240). As seen in the example of experiencing architectural sites, an environmental awareness that creates a sense of touch is inevitable.

Following his thoughts on tactility, Benjamin further claims that Dadaists assure distractions "by making works of art at the center of scandal" (Benjamin, 1969 [1936], p. 238). He states that the works of Dadaists shock the audience morally and thus generate a tactile impact. A distracting element for cinema is created by the shock effect, with its constantly changing places and focal points, which serves the tactile aspect of the film (Benjamin, 1969 [1936], p. 238). Tactile perception emerges not through attention or contemplation but through habits. Therefore, such perception occurs spontaneously at the threshold between distraction and the readjustment of habits.

## Legacy of tactility in early avant-garde animations

Tactile perception finds its training ground in early avant-garde films. Laszlo Moholy-Nagy in his book *Painting, Photography, Film* highlights the key elements of static and kinetic optical composition. He elaborates on the subject of light spacetime continuum in an account of moving abstract images – or, in his terms, “changing abstract pictorial variations” (Moholy-Nagy, 2019 [1925], pp. 15-16). Moholy-Nagy gives reference to Walter Ruttmann’s abstract forms created on his animation desk, to Viking Eggeling’s discovery of the optical-temporal element and to Hans Richter’s light-spacetime continuity in the synthesis of motion. According to Moholy-Nagy, these animations serve as a continuous light play (*lichtspiel*), which opens new expressional possibilities. Moholy-Nagy develops his artistic practice and film theory in a holistic way. He proposes rethinking new possibilities for the production and perception of art under altered conditions of reproduction techniques in time and, through such an attempt, he gives equal weight to all senses (Elsaesser, 2010, p. 120). Moholy-Nagy suggests that the individual should be adjusted – within redefined spatiotemporal relations – to the consequences of technological, cultural and social modernization. He brings forth Eggeling’s articulation of space, followed by his pupil Hans Richter’s emphasis on the element of time. He states, “the newly emergent element of time and its ever expanding structure produce an increased level of activity in the observer” (Moholy-Nagy, 2019 [1925], p. 18). Given the new positioning of the viewer as an active observer, the viewer is invited to immerse herself in the moving image by two forces: one is controlling and the other is simultaneously participating in the optical events. Concerning tactility, as this approach “focuses more strongly on the receiving subject than on the filmic material”, the aesthetic experience of the viewer becomes more important than the aesthetic object (Elsaesser, 2010, p. 120).

The abstract paintings of the 1910s and 20s (as well as the absolute film) dealt with the pictorial space unconventionally, as a reaction to the specific “outside world” of the time (Brinckmann, 1997, p. 252). Around 1910, many artists were experimenting with abstraction. They were beginning to see the institutional limitations of art and they began to look beyond the limits of the canvas, the painting’s frame (Staniszewski, 1995, p. 206). In the case of the absolute film, the avant-garde filmmakers didn’t align themselves with commercial filmmaking; rather they positioned themselves in the field of visual art, experimenting with light, movement and the temporal space of the frame. At this point, a collaboration between the painter Viking Eggeling – born in Sweden in 1880 – and Hans Richter, also coming from a painterly tradition, merits our attention. It was in Zurich that Eggeling joined the DADA group and was introduced to Hans Richter. Later they moved to Berlin, where they continued their collaborative works and experimentations. Eggeling had been making abstract drawings for a long time, hence he brought basic graphic forms, abstract compositions in particular analogies and polarities onto the two-dimensional film format (Brinckmann, 1997, p. 253). Eggeling’s main work and only surviving film *Symphonie Diagonale* (1924) was created without Richter’s intervention after their collaboration had ended in 1921.

Apart from being one of the earliest experimental films, *Symphonie Diagonale* can be seen as a primary example of vector aesthetics in cinema (Payne, 2018, p. 22). In contrast to the films of his contemporaries, namely Hans Richter, Walter Ruttmann and Oskar Fischinger, who explored dynamic permutations of geometric forms and the relationships of these forms to the filmic space introducing multiple layers, overlappings and off-screen croppings, Eggeling’s *Symphonie Diagonale* stays wholly linear and central in the frame. Eggeling’s abstract forms consist of delicate lines and stripes of various thicknesses, thin curved arcs, fine-toothed combs

like brackets, triangles and rectangles open on one side, sweeping S-shapes, curved arrows and straight, diagonal lines. None of these vector forms move to evolve or transform; instead, they are extended or retracted and are reassembled in different combinations. In this regard, the form of expression in the film involves variation rather than evolution (Payne, 2018, p. 23). By partially covering and uncovering composite shapes, Eggeling creates “the impression of growing and fading, of automatic dismantling and building up of the elements” (Brinckmann, 1997, p. 256). Eggeling’s figures appear and disappear repeatedly, sometimes in different scales and compositions; they seem to wander over the surface; weightless and sparse, in a rhythmic flow, they emerge out of the black background and immerse back into that black void they come from. This absolute void that the figures are attached to exists immaterially. Since all forms in the picture never get close to or move beyond the edges, one can say there is “no filmic off, no illusion of an unlimited space” in which the movements and figures could extend (Brinckmann, 1997, p. 256). The surface itself also remains immaterial, like a total abstraction of a dark stage where every figurative formation emerges and fades away. Repetitions of figures arising from and sinking into the immaterial surface do not only make the pictorial space more abstract but also – while transforming the phases of veiling and unveiling into a rhythmic process – open up a possibility for an abstraction of time itself (Schmidt, 6.7). However, this abstraction works as a solid image; the passing of time is perceivable, this flow of time becomes more concrete, hence the immaterial nature of time becomes more tactile like an hourglass that is repeatedly set for a time display.

Composed of binary oppositions – open / closed, full / empty, heavy / light, large / small, straight / curved, symmetrical / asymmetrical, complete / fragmentary, and, last but not least, horizontal / vertical, diagonal / right-angled – *Symphonie Diagonale* is calculated and handcrafted frame by frame in a clear, disciplined and tamed way (Brinckmann, 1997, p. 258). Through visual polarities and compositional analogies,

it helps the viewer to seize the tactile moment in the threshold between the habitual predictability and the distraction caused by the continuous change in motifs and rhythmic correspondences.

*Symphonie Diagonale* was projected as a silent artwork and there was no provision for musical accompaniment. Eggeling’s animated abstract film was a “visual music”; its relationship to music is not of complementarity or cooperation, rather one of inner kinship (Brinckmann, 1997, p. 259). The lack of actual sound, of any accompanying music, the two-dimensional nature of the film is further emphasized in this visually orchestrated animation, as the flat screen reinforces the contrast of abstract formations. The possibility of extending musical compositions into the realm of “visual music” had also fascinated Oskar Fischinger years later than Eggeling and Ruttmann. Like Ruttmann, Oskar Fischinger experimented with different materials and technical means for producing imagery, including cut-outs, drawings, rotating patterns and layering combinations of images through optical superimpositions (Moritz, 2004, p. 11). Fischinger’s spatial experiments included performances with multiple projectors named “Raumlichtkunst” (Space-light-art) after the Hungarian composer Alexander Laszlo’s term “Farblightmusik” (Color-light-music). Fischinger created color abstractions that were tightly synchronized with music. He experimented with visual music even in concretizing sound by drawing optical waveforms.

Hans Richter’s avant-garde film from 1921, *Rhythmus 21*, is an early experiment in moving image abstraction. The piece, which is derived from geometric abstraction, evolves from the artist’s painting and graphic design practices. Squares, rectangles and stripes of black, white, and grey appear and disappear in various sizes and configurations; these basic cut-out shapes move on the screen by expanding, contracting and mutating (Jennings, 2015, p. 3). Unlike *Symphonie Diagonale*, the geometric abstract shapes of *Rhythmus 21* fill the pictorial space of the screen, cut through the edges

of the filmic frame and give the impression of a continuation of movement off-screen. In this short 3-minute animation, the relationship between background and foreground changes when white figures expand and fill the space, on which black shapes later appear. The interchange of the background creates a liminal experience always on the surface, delaying the sense of depth of field. The depth of field becomes tangible only when the shapes shrink, become contracted in perspective. Richter's *Rhythmus 23* (1923) is further developed and visually enriched. The positioning and interaction of geometric shapes become more detailed. The overlapping of cut-out shapes brings out different shades of light, and hence the transparency created invites a more tactile perception. Light filtered through the cardboard thickness of the cut-out shapes renders the shapes as separate objects rather than abstract layers.

Walter Ruttmann's *Lichtspiel Opus I*, created in 1921, is about ten minutes long and uses colour. Compared to Eggeling's delicate lines and abstract, formal vocabulary, Ruttmann's figures appear much more painterly, plastic and tactile: "Most of them still bear the sensual traces of their genesis: unevenly hard edges as well as occasional remnants of the viscous colour and its manual smudging in the form of a soft, cloudy grain" (Brinckmann, 1997, p. 263). In addition, Ruttmann's creations are also abstract formations, which are partly borrowed from the geometrical inventory of graphic design – circles or spheres, triangles, cones, rhombuses –, partly more of an organic, biomorphic shape and texture of painterly techniques. They already appear more substantial through scale and thinning, take up more space and need more energy to develop, compared to the small figures, ethereal formations, of *Symphonie Diagonale* (Brinckmann, 1997, p. 263). Ruttmann's figures also float in an undefined black void, which could just as well be thought of as a background or as a dark depth. However, the main factor behind the illusion of depth is movement, as was the case in *Rhythmus 21*. Ruttmann's figures come and go in constant action, and their musical rhythm accentuates the tempo. The

contrast between soft and hard outlines also contributes to the illusion of movement, because the hard edges become sharpened in the direction of movement, while the soft ones let the figures fade out at the rear end (Brinckmann, 1977, p. 264). In addition, a play of figures can be observed within the frame: they seem to hit the picture's borders like imaginary walls and bounce off back into the scene. This results in a certain recognition of the spatial and material conditions of the frame, a tentative examination of the third dimension (Brinckmann, 1997, p. 264). The third dimension of the film frame is quite perceptible though, in the distinction between the abstract figures and the dark background, where the contours of the figures are softened and dispersed, creating a soft textured cloud surrounding each moving form.

Regarding the relationship between the figure and background, the space of the film frame in *Opus II* (1923) and *Opus III* (1924) is quite different from the continuous black depth of the pictorial space which characterizes *Opus I* and the *Symphonie Diagonale*. The background of these later animations is formed with color and grain by introducing sand and wax applications on the surface. These textural experiments on the filmic plane create a flickering, which causes change and movement to appear everywhere, canceling out the difference between the acting form and the space surrounding it (Brinckmann, 1997, pp. 269-270). Thus this film abandons the impression of an abstract emptiness in favor of a textured plane on the frame, in which surface and depth can seamlessly merge into various spatial relationships. The painterly figures are no longer subjects of a central perspective of an illusionary depth. On the one hand, *Opus III* is less spatial than *Opus I*, but on the other hand "there is no longer any 'fear of space', no isolation of the figures in the absolute" (Brinckmann, 1997, p. 270). A tactile material characterizes the whole picture. Tactile sensuality transforms the scene into a more concrete and stable plane while radiating more vitality to each part of the frame in a temporary, translucent way. It becomes "more abstract, but again 'abstract' not in the spiritual sense of Eggeling, but in the sense

of non-objective sensuality or abstract reality” (Brinckmann, 1997, p. 270). While Eggeling allows a unifying sense of space in his animation, Ruttmann seeks a lively sensuality and tactility of the forms, which merge with a likewise tactile background (Brinckmann, 1997, p. 272). Experimenting with various materials, such as clay, sand and wax, Ruttmann breaks the idea of two-dimensionality of abstraction and brings life to the material itself, thus introducing an animated matter as well as the form.

In the early twentieth century, abstract painters were idealistic and utopian to the extent that they sought to create a universal language for the modern world. Their depuration of form and use of pictorial space led them to play with the essence of the visual field. This reduction brought their work closer to the essence of painting as a medium, where the materials, such as paint and canvas were most visible. However, these abstract painters failed to construct a universal language for the modern eye; they created a new perception of art which oscillated between the image and the idea. By showing the limits of representation and the material qualities of painting, abstract artists suggested a corporeal appropriation of the visual. Having practiced this liminal experience in painting, pioneer abstract animation filmmakers staged a vital materiality built in the tactile possibilities of the filmic space. In their rhythmic mutations and variations, early abstract animations force their temporal movements onto the borders of the frame in which the spatial relations can be traced haptically. At times these relations are fully bidimensional, other times they become volumetric to the extent of which tactility is highlighted through the elevated materiality.

### Spaces of embodiment

The tactile modality of the abstract image, highlighted by the experimental approach and material sensitivity of the avant-garde filmmakers, are reconsidered in their spatial associations throughout the journey of abstract animation.

George Griffin elaborates on his adapted term “Concrete Animation” (2007), stressing his tendency for materiality and process. He links the term “concrete” to an implication of “actual materials, objects, not just images, and the processes which cause them spring to life” (Griffin, 2007, p. 259). By concrete, he literally suggests the tactile, the tangible, the real.

Taking into account a broad historical view of animation, Griffin classifies concreteness in four different forms:

1. Self-referential animation, in which materiality is emphasized by treating each frame as a material object (scratching, painting, folding, cutting, etc.)
2. Animation screened outside the conventional theatrical venues, installed in galleries, in public spaces, projected onto exterior facades, resulting in architectural, sculptural or performative events.
3. Object animation in which moving objects are arrested
4. Flipbooks, zoetropes and manual devices (Griffin, 2007, p. 262)

Griffin’s classification focuses mainly on how objecthood is raised and kept alive in animations whether in film images or in analogue frame series. Robert Breer’s collage films and flipbooks, which he began to create in the 1950s and 1960s, stand for tangible forms of materiality – object oriented visualizations – in abstract animations. Influenced by Hans Richter’s early abstract films, their play with figure and ground, and by Alexander Calder’s art in motion, Breer conceptualizes space, movement and duration in his collage films (Kuo, 2010). By employing a rapid montage, Breer intends his visual collages to be more dynamic and rhythmic. He overcomes the static image by creating a new perceptual continuity (Johnston, 2021, p. 100). In his generated mutoscopes or handcrafted flipbooks, he leads the viewers to explore their intervals, disruptions, continuities and discontinuities via his manual control of time between successive frames. A fragmentary perception of movement, which

is generated by “ruptures in continuity through either the juxtaposition of discrete images in cinematic temporal progression or a play with technologies of viewing”, alters the attention of viewing; thereby a more corporeal experience of spectatorship is called upon where the habitual modes of perception are overruled (Johnston, 2021, p. 102). Thus one can argue that the interval images become embodied and objectified corporeally by the viewers, where viewers’ experience becomes the expanded image.

Griffin’s self-referential animation category is directed to the film material itself as a self-assured object. Len Lye’s scratch animations from the late 1950s to the 1960s may well be considered self-referential abstract animations. *Free Radicals* (1958, revised 1979) and *Particles in Space* (from the 1960s, revised 1979) are created through a direct animation technique in which Lye scratches into the 16mm film using etching tools. In the small scale of the film frame, Lye draws lines and leaves marks of his bodily gestures on the filmstrip so that the resulting movements of the line can be viewed as registrations of his own kinesis (Johnston, 2021, p. 22). These continuous scratch marks represent a flow of movement, which reorients the senses to the performativity observed throughout the dual layers – scratched / unscratched, transparent / opaque – of the material. Lye’s moving abstractions therefore operate between “reduction of form and explosion of vitality”, and his animated lines no longer bear the ghost of the artist’s kinesis, but rather “become a source of their own vitality and transmission of movement in viewers” (Johnston, 2021, p. 22). Considering the traces of materiality on the filmstrip, which result in abstract animations, we come upon many experimental approaches. Cathy Rogers (*Rosemary Again and Again*, 2013), Karel Doing (*Wilderness Series*, 2016), Emma Hart (*Skin Film*, 2005) and Vicky Smith (*Noisy, Licking, Dribbling and Spitting* 2014) stand out with their approach to the medium as a means of recording traces. These traces, whether organic or inorganic, animate their abstract formations and force a particular vitality into the filmic space.

Griffin’s most spatially connotated classification, animation installation, opens up to the architectural, sculptural and performative field of the image. One of the most often mentioned examples of the tactile transportation of an animated abstraction to space is Anthony McCall’s *Solid Light Films*, which stand in an overlapping field between cinema, sculpture and drawing. Anthony McCall’s simple and elegant installation *Line Describing a Cone* (1973) is a thirty-minute film showing a circle taking form projected onto the wall of a dark room. The beam of light coming from the projector becomes clearly visible with the artificial fog that also features while rendering the volume of the horizontal cone of the light/line when it is fully formed/closed as a circle. In this cinematic installation, light is the basic element that allows the spectators to interact with it – “become a physical part and participant in the work of art” – displaying haptically tangible solid space in which light no longer serves as a transparent medium (Elsaesser, 2010, p. 120-21). Hal Foster claims that the “intimate interaction, which is both private and public, is central to the experience of the solid-light films” (Foster, 2013, p. 377). Drawing on this material experience, Foster says that, “Solid Light” is a beautiful paradox directed at the nature of light (the question of whether it is a particle or a wave). He states that McCall invites the audience to play with this paradox “ – to touch the projections as if they were material even as our hands pass through them with ease, to see the volumes as solids even though they are nothing but light” (Foster, 2013, pp. 366-367). The play we are invited to is sensuous and cognitive. *Line Describing a Cone* prompts us to consider the spatial nature of the artwork and to examine the embodiment of the immaterial moving image. McCall, who started his work on Solid Light Film with *Line Describing a Cone*, opens up the spatial-temporal relationship of the film to interaction with the audience. The physicality of the animation of line drawings is tactilely revealed by the inversion of the spectator’s spatial habits. Thus, the line becomes concrete in the memory of the viewer.

Solid Light Films are simple projections that highlight the sculptural feature of the luminous, volumetric beam, not the image on the screen. In dark spaces filled with fog, projections produce three-dimensional translucent environments based on abstract figures, ellipses and waves that gradually expand and contract, building up temporary walls of light. Resembling a kind of architecture, these reflective scenes change the relationship between the public space and the filmic space, turning the audience into participants. McCall allows the bodies of the spectators and these temporary forms to intersect, touch and transform each other. Since the 2000s the artist uses digital production techniques, instead of 16 mm film, for the works that can be positioned between sculpture and cinema. McCall places body references in vertical versions of pieces such as *Breath I-III* (2004-2005), *Meeting You Halfway* (2009) and *Coupling* (2009) (one central projector is used for all), the engagement of the body is more profound than the cinematic vision (Foster, 380). Foster argues that “the three *Breath* pieces evoke a lung inhaling and exhaling, an evocation of the body less as an image than as an organism” (Foster, 380-81). Corporeal associations in McCall’s vertical pieces, consist “not only of ‘footprint’ for the patterns traced on the floor by the participant viewers, but also of ‘membrane’ for the surfaces of light”, of the ‘spine’ that the standing figure forms in the volume of light (Foster, 2013, p. 381). Vertical pieces produce strong architectural resonances. The corporeality of film and light emerges as the embodiment of a shared tactile temporality. One cannot differentiate the performative space of the viewer from the projected field of light, which conveys the materiality of the film. The animated light announces a direct haptic space in which the body becomes the lock and the key, the site of both revealing and concealing. The body reveals the animation when the viewer decides to participate in the play of light, thus agreeing upon mirroring it by extending the artwork’s space and the viewer’s own space. Adding to it by interaction or concealing it just by denying interaction and therefore freezing the space of the projection from a distance as a mental-image.

Zarah Hussain’s work *Breath* (2020) consists of abstract paintings, an immersive soundscape together with an animation in which mathematical principles and Islamic geometry are applied. Since the nature of Islamic design is based on geometric patterns that expand along with the space and disseminate on the surface, avoiding any kind of representation, it is most suitable for spatial abstraction. Hussain’s delicately crafted and elaborately calculated models of geometric abstraction carry out a non-representational, spiritual approach similar to Eggeling’s absolute film. In *Breath*, paintings and the animation use the same in and out breath count that evokes silent corporeal movement in accordance with the optical movement of colour fields. This geometric abstract animation moving through inhalations and exhalations invites the viewers to contemplate the act of breathing. Viewers are likely to adjust their own breath in accordance with the visually instructed duration of breathing. Different from McCall’s *Breath* work, which covers the viewer’s body in its translucent architectural space, the abstract animation of Hussain’s *Breath* moves along with the body of the viewer, thus uncovering and animating the viewer/participant’s body.

Contemporary experimental video artist Simon Payne focuses on the essence of abstract digital cinema. Following in the footsteps of early avant-garde abstract film artists, he explores every corner of the flat screen space in his abstract animation called *Set Theory I-IV* (2018). He creates illusions of depth while introducing graphic components, geometric planes, dissolving surfaces and finally adding colour fields. Unlike Ruttmann’s figures that play around with choreographic precision, avoiding each other in elegant curves or crouching so that they rarely touch, *Set Theory* collides with different sets of vertical, horizontal, diagonal and curved graphic transitions.

*Waves* (2018), another animation by Payne, is one of a series of videos in which everything happens at the edges of the frame. Invoking the essence of the film’s material base,

the graphic movement of the waves and their fine, meditating repetition are intentionally replaced at the left and right edges of the frame, implying the sprocket holes of the film as graphic elements. The absolute black void covers most of the screen, creating a blind spot or in this case a blind field, which offers a new way of looking at the screen that is directly related both to corporeal perception and tangible absolute space.

In his book *New Philosophy for New Media*, Mark Hansen addresses the issues of embodiment, agency and digitality, and he defines the "digital image" as encompassing the entire process in which information becomes perceptible; the perception of digital image occurs when the body is placed in a privileged position as a tool that filters information to create images (Hansen, 2004). With the idea of constructing the image through a body that processes and filters information, Hansen opposes the prevailing notions of technological transcendence, and thus defends the indispensability of the human body in the digital age. Hansen examines new media art and theory in the light of Henri Bergson's argument, which proposes that affect and memory purify perception (Lenoir, xx). Hansen updates the immateriality argument for the digital age by arguing that "the framing function of the human body" through the senses is to create images, rather than just processing information as images based on pre-existing technical forms (Hansen, 2004, p. 7). This framing function yields what Hansen calls a "digital image" (Hansen, 2004, p. 8). He argues that this new "embodied" state of the framework corresponds directly to the digital revolution. A digitized image is defined by its full flexibility and accessibility, not by a fixed representation of reality (Hansen, 2004, p. 9). The interaction of new media does not just turn audiences into users; the image itself becomes the body's process of perceiving it. Audiences, engaged with new media are "more like computer-vision machines than photo-optical cameras", that is to say that their perception foregrounds an active rendering of data rather than a passive inscribing information (Hansen, 2004, p. 105-106). Embodied framing process

calls for an active construction of perspectival images, a continuous restoration of distortions through the rules internal to our brains. Today's digital images foreground a spatial experience in which tactility is enveloped; these images compel us to see with our bodies. The haptic space created by the digital image entails a certain alienation from our habitual geometric perspective.

Following the discussion of the expanded perspective and the impact of digitization, Victor Burgin describes the traditional Western perspective of optical space as "an infinite motionless continuum in which visible objects appear in terms of 'lines' and 'planes' receding to a vanishing point" (Burgin, 2014, p. 275). Today's computer-generated space is governed by the classical principles of Western perspective deriving from Euclidean geometry via Brunelleschi. Yet, this digital space is accompanied by the routines of non-Euclidean geometries, in which light is absorbed, transmitted and reflected by an infinite variety of surfaces. Computers, however, not only expand pictorial space beyond the traditional perspectival space but also bring the registers of material and psychical representations into closer alignment (Burgin, 2014, p. 275). Burgin suggests that developments in computing allow mutation in perspective; therefore, the reconsideration or redefinition of the relationship between machinic sight and human perception is required in the age of digital light.

Contemporary media artist Refik Anadol explores visual and spatial possibilities of interfacing with the digital information and encoding the digital image, – beyond traditional perspectival space – by creating a hybrid relationship between architecture, film and machine intelligence. Anadol applies multiple timelines of various data images on an overwhelming digital space – as Burgin puts it, a space consisting of "potentially infinite parametric variations" (Burgin, 2014, p. 275).

Recent works exhibited in Refik Anadol's solo exhibition *Machine Memories: Space*, show similar spaces where the

digital information is transmitted onto floating virtual image spaces. The works in the exhibition were created as results of the conceptual and formal analysis of public space data, using machine-learning algorithms. The content, which is prepared as a result of the connections established by artificial intelligence between ready data sets, is transformed into spatially integrated, three-dimensional experiences by the fluid dynamics algorithms that Anadol frequently uses in his works (Kivrak: 2021). In his work titled *Machine Memories v.2* (2021), this is defined as “artificial intelligence cinema” in the dreams section of the exhibition, where the artist presents a narrative pattern in which he brings together the reflections of the past – that is, learned space experience – and the possibilities of exploration – that is, his predictions for the future. With this work, the artist expands the space-themed multidimensional artificial intelligence speculation to a cinematic time-space. Anadol provides the audience with a 15-minute filmic experience filtered through the memory of a machine that remembers and interprets the outer-space memories it has accumulated over the years, by editing artificial intelligence findings into abstract and fluid forms. Anadol visualizes machine open source data as abstract compositions of floating fluids with different densities – spread along the walls and the ceiling by projecting multi-channel parts of the animation – transforming the surface space into a colorful multi-chambered hourglass where different gravities pull and move the accumulated pixels. The converted and/or found data flows throughout the exhibition space. The fluid abstract forms, rendered colour and light transformations take over the habitual geometric perspective of the space and turn the room into a digital flux of virtual infinitude where the viewer is surrounded by the fluctuating digital images generated by computer algorithms. The lack of any fixed position of perception and continuous flow of images compels the viewer to feel the space rather than see. The indiscernible difference of virtual and actual space renders body haptically to perceive a floorless, cornerless, wall-less construction of an architectural image. The viewers are invited to share a collective lucid dreamscape. In this

virtually constructed space bodies are situated to exploit familiar material convergences and to initiate a tactile experience shedding light on memory, multiplicity, and obscurity. Hansen points out such tactility arise from the embodied framing processes. Accordingly this non-representational and unuttered common dream is embodied in the collective past of the audience, also in the individual haptic experience of a constantly floating futuristic space.

## Conclusion

Abstraction defines our age and it is, and has always been, an artistic strategy in moving image artworks (Jennings, 2015, p. 3). The film, video and animation already contain the idea of abstraction in its materiality. These media hold images that are not immediately visible or tangible. As regards historical abstract animation, there is a continuing tendency to capture tactile instances to bring forth the spatial resonances and visualize and reedify the rhythmic passing of time. The playfulness of the avant-garde explorations of the medium – with their experimental take on materiality – provide a solid ground for the coming of age generations to expand upon. It is only through re-visiting such solid grounds that we may find ways to release the undefined and the abstract to make space for the tactile.

Abstract animations, which tend to reinforce materiality and thus tactility, disrupt the hegemony of vision over other senses. They do this by means of short-circuiting the focused and uninterrupted tradition of perception. As a result, reorienting tactile sensuality will enable a new framing of the abstract moving image that expands through the bodies of active viewers and onto the performative field of time and space.

The tactile modality of the haptic can be conceptualized as “seeing with the entire body” (Hansen, 2004, p. 231). The human body becomes the source and the frame of an affective apprehension of the haptic space. The act of entering the

haptic space of the film entails a corporeal correlation to the tactility. The affective body feels the space of the film. The haptic space in abstract animation films is at issue when materiality emerges, and when its spatio-temporal construction is at play to be experimented.

Abstract animations, from the early Avant-garde films to contemporary artworks, engage actively with the relation between visual appearance and materiality and space and tactility. The viewers are allowed a tactile experience as well as a purely visual one. From the early experimentations of materials on film screen to the installed projections of solid light films, from the enhanced traces applied on the filmstrip to the sculptural volumes of flipbooks and from the embodied color schemes of corporeal transference to the flux of virtual computational dreamscapes, abstraction enables an animated space shifting between familiarity and uncertainty. Just like human bodies stand at the threshold of distraction and habitual perception, individuals apprehend and generate tactility through the interaction of liminal experiences between the familiar material world of things and the obscure space of unfolding imagery.

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