The Elusive Made Present:

Art and the Incipiency of Images

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Abstract

The Elusive Made Present:

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In *The Elusive Made Present: Art and the Incipiency of Images*, I offer a new conception of images by exploring the relations between sensation and composition through the prism of new media, film, video, and painting. Examining Paul Sharits' flicker films, John F. Simon Jr.'s internet art, Wood Vasulka's metamorphic videos, and the resonate paintings of Piet Mondrian and Robert Irwin, I proposes that all images, regardless of medium, emerge through the shared encounter between viewers and artworks. Acknowledging the significance and influence that Deleuze's thought has had in the areas of art, cinema and visual studies, *The Elusive Made Present* works from a "Deleuzian" perspective, arguing that images are not preexisting, static representations or simply a transition from one fixed state of experience to another. Instead, I suggest that images are intimately entangled with experience and undergo a continuous process of emergence and change, which I call the incipiency of images. These changes may not be dramatic or even visible, but, as I contend, they are felt as an intensity that unfolds through the activity of seeing. From this

idea of intensity, which is central to the incipiency of images, I develop a concept of compositional force that demonstrates how images do not exist in the materials of artworks or within the minds of viewers; rather, they reside in a dynamic perceptual field that both viewers and artworks experientially share.

For my loving wife Erin

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and the Becoming-Image," appeared in *Cinematic Folds: The Furling and Unfurling of Images*, ed. Firoza Elavia (Toronto: Pleasure Dome, 2008). Finally, an early version of Chapter Five's final section on Robert Irwin's "Disc" paintings was presented at *Derrida Today Conference* held at the British Academy in London, England (July 2010).

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Prelude

Five Parables on How Images Make Themselves Felt

Parable One – The Never-Ending Incipiency of Images

It is the late 1980s and John F. Simon Jr., an artist with computer savvy, disputes the postmodern notion that the world is running out of images. In response he devises a work for a new medium called "the Internet" that will sequentially generate one-hundred different images a second for the next billion, billion years. Simon launches his artistic rebuttal on January 27, 1997 at 9:42 AM.[1]

Parable Two – A Grid Begins to Dance

It is the spring of 2009 in Ottawa, Canada, a visitor of the National Gallery of Canada stands in front of Piet Mondrian's painting *Composition No. 12 with Blue* (1936-42). As he looks at the grid of black perpendicular lines that divide the white background into smaller rectangles, he notices a flash in one of the intersections of

the black lines. Then he suddenly notices several other intersections are also flickering. As his eyes start darting around the canvas trying to see all of these sparkling points, the grid begins to dance in the seeing.[2]

Parable Three – The Strange Occurrence

While watching one of Paul Sharits' early flickers films that were made in the late 1960s, a film studies professor experiences a truly strange occurrence. Unlike most films that he has seen, which appear to fit precisely within the confines of the film screen, this film pulses beyond the edges of the screen and floats ambiguously in the space between the screen and himself. Not only does he see this strange occurrence but he also feels it quivering inside his body.[3]

Parable Four – Daring to Stay Still

There is a group of people watching Woody Vasulka's video *Artifact* (1980). During the video Vasulka tells these viewers, through voiceover, how the images they see are being created. The screen is suddenly filled with visual noise. Eventually, viewers come to see a series of concentric circles in the noise. It is at this point the artist dares his viewers to pause the video. They do and

the circles they just saw have disappeared into a sea of black and white pixels, generating something new to see.[4]

Parable Five – Having Seen Nothing

A couple walks into a gallery in the Philadelphia Museum of Art that is displaying one of Robert Irwin's "Dot" paintings (1964-66). As they come upon this white, seemingly monochromatic painting, they briefly look at it – a few seconds at the most – and immediately dismiss it. A sigh of scornful vexation is made by one of them. The other nods, silently approving of this assessment of Irwin's work. They move on feeling they have seen nothing.[5]

Introduction

Opening Up Experience for the Seeing:

Art as a Conduit to Incipiency

The aesthetic power of feeling…seems on the verge of occupying a privileged position within the collective assemblages of enunciation of our era.

– Félix Guattari, *Chaosmosis: An Ethico-Aesthetic Paradigm*[6]

To see is to actively participate in the incipiency of images. It is to engage in a process with the about to become visible, encountering the not yet seen. The incipiency here is conceived as a fluid and generative activity that unceasingly shifts and changes, making it impossible for images that are seen to actually remain static. This is because images are always in the making. They are perpetually emerging as a series of becoming occurrences. Even when a particular image appears to be still, incipiency is taking place in the form of minute adjustments that are constantly being made during the activity of seeing. These subtle modifications, or sensations, may not register perceptually and in all likelihood will not actually be seen when encountering a particular "still" image. This is because the adjustments to an image may be too quick, too faint, or in some cases too abundant to register above the threshold of visibility.

Although these subtle sensations are for the most part imperceptible, they are a key component of the seeing experience and are necessary in order for

images to actually be perceived. As sensations are experienced, they begin emerging into visibility through the incipiency of images. This incipient process occurs prior to the actual seeing of images, yet is experienced as though it takes place in the present. By the time images are actually seen, the sensations that have been experienced will have changed or dissipated, giving way to new sensations that are about to become visible. Because new sensations are constantly entering, changing, or disappearing in the midst of experience, physicist Ogden Rood states that, "there is always something more to see" (1879: 277).

Incipiency enables a seeing in which viewers are constantly encountering images that cannot be known prior to their being experienced. "Incipiency opens up experience to the unknowable" (Manning 2009b: 7). It is the activity occurring among these invisible sensations that drives the coming into themselves of images. This seemingly imperceptible, yet active, process of incipiency, which generates the images that come to be seen, is the focus of *The Elusive Made Present: Art and the Incipiency of Images*. Always on the edge of seeing, the following will explore how images emerge into perception, how the activity occurring among the imperceptible sensations is experienced, how this incipient activity that occurs below the threshold of visibility is able to generate seen images, and how the felt experience of emergent images exceeds actual perception in the midst of incipiency. Art is the conduit through which *The Elusive Made Present* explores these inquiries into the incipiency of images. This is

because many artworks enable viewers to perceive the incipient process, opening their perception momentarily to the plethora of sensations they actually experience in the midst of the seeing moment.

According to Robert Irwin, "we always begin somewhere *in the middle of everything*" (1977: 24; original emphasis). To begin in the middle may seem like a paradox because if images are somewhere in the middle, then how can they also be beginning? Or for that matter, how do they come to an end? For this reason the middle is where *The Elusive Made Present*, like images themselves, proposes to emerge from. For the purposes of this project, the middle should not be considered as an equidistant centre between two points, or as an average, but rather more akin to Gilles Deleuze and Félix Guattari's notion of the intermezzo. For them, the intermezzo does not designate a specific position between two "banks". It is not what lies between two dichotomies. Rather it is a transversal movement that sweeps in various directions within nonlocalizable relations (Deleuze and Guattari 1987: 25, 293). The middle is neither a place nor a space, but instead is a transversal movement that extends across and between relations. It is a movement generated in the excesses of seeing that occurs in the midst of relations, which drives the incipiency of images.

"Look only at movements," suggest Deleuze and Guattari (1987: 282). This is because it is within movement that perception resides and images emerge. Perception is not found in a specific delimited place between relations but rather it emerges within the middling movements of relations. For Brian

Massumi, "perception lies *between* the perceiver and the perceived" (2002: 90). Together viewers and the artworks co-generate perception as a perceptual field that exceeds both of them. This perceptual field is dynamic and emerges in the midst of relations as opposed to being predetermined as a singular static state. Images are what arise from within this dynamic perceptual field in the midst of this shared viewer-artwork experience. The images viewers see are not simply experienced as a transition from one fixed state of experience to another, but as a continuous process of incipiency in which both viewers and artworks are intimately entangled within their shared encounter.

Images that viewers encounter are the compositions of sensations that emerge in the midst of this shared experience with art within a perceptual field. This makes images more than just the material on the canvas, the projections of celluloid, or the flutter of pixels on a digital monitor. Images dynamically exceed what viewers actual perceive, going beyond the impressions and representations viewers think they see. Viewers come to realize that the dynamism, or compositional forces, that they feel flowing within the perceptual field and relentless incipiency of the images that they experience are both always in the making. As William James reminds us: "Our fields of experience have no more definite boundaries than have our fields of view. Both are fringed by a *more* that continuously develops, and that continuously supersedes them as life proceeds" (2003: 37; original emphasis).

Regardless of the specific medium employed, the works of art discussed throughout *The Elusive Made Present* all have a tendency to foreground the compositional forces felt in seeing, making the fleeting sensations that exceed visibility momentarily perceptible. As viewers engage with these artworks, they experience a seeing in which the forceful dynamism of the incorporeal and the ephemeral is felt through the incipient actions occurring within the work as such. All of these discussed artworks generate a seeing in which "*the elusive is made present*" (Riley 2009: 273; emphasis added).

Chapter One examines how John F. Simon Jr.'s internet artwork *Every Icon* (1997) proposes to create every icon within a black and white thirty-two by thirty-two grid. In order to generate the seemingly uncountable number of images that his proposition puts forward, he uses techniques that are usually intended for a scientific practice for the purposes of art. As these scientific techniques are deployed for an artistic outcome, they undergo a process of transduction that enables them to exceed themselves scientifically. Rather than producing scientific results that necessitate a closure to the process the techniques initiate, the scientific techniques Simon employs in *Every Icon* are transformed in order to remain open to change, thus allowing the techniques to go beyond their intended scientific use. It is through this process of transduction occurring in the overlap between what Deleuze and Guattari call the scientific plane of reference and the artistic plane of composition that enables the mathematically arranged black and white squares of *Every Icon* to transform into

what Whitehead calls "lures for feelings", which are sensational attractors that draw the attention of viewers. As lures for feeling, the black and white grid in *Every Icon* enables the incipiency of images to occur.

Chapter Two begins by stating that the paintings of Piet Mondrian are not the static gridded images that many believe them to be. Instead, Mondrian's paintings co-generate a dynamism with those viewers who encounter them, which is felt in through the activity of seeing. Focusing on two paintings that were produced at the end of his career, *Composition No. 12 with Blue* (1936-42) and *Broadway Boogie Woogie* (1942-43), this chapter shows how these works enable a seeing in which the grids they display exceed themselves by generating two conflicting compositional forces that are felt in the midst of their encounter. The first compositional force spirals centrifugally outward, going beyond the form of the grid that these works depict. The second compositional force moves centripetally inward, drawing the attention of viewers towards the work. Working with Mondrian's own conception of movement, dynamism and relation and Gins and Arakawa's notions of landing sites and critical holders, this chapter shows how Mondrian's works emerge from their seemingly motionlessness into dynamic images that exceed themselves in the seeing.

Centered around Paul Sharits' flicker film *N:O:T:H:I:N:G* (1968), Chapter Three investigates how the rapidly changing colour-fields in this film generates a seeing that emerges from below the threshold of visibility. Building on Benjamin Libet's research into how sensations are experiences that occur too quickly to

actually be perceived, this chapter looks into how this discrepancy between sensations and perception impacts the incipiency of images. This discrepancy is of particular importance in Paul Sharits' film because the majority of the colour-fields appear for only one film frame, or one twenty-fourth of a second, which is too quick to actually be seen. Because the colour-fields change so rapidly, there is the potential for thousands of colours to be felt in experience but not necessarily perceived when encountering *N:O:T:H:I:N:G*. Arguing that these imperceptible, or "unseen", colours in Sharits' film play a significant role in the incipiency of images by elaborating on Deleuze's notions of microperceptions and folding, this chapter shows that unseen colours are sensations that can only be felt through their relations and that also have the potential to emerge into perception. As new colour-fields are experienced, the images viewers see when watching Sharits' film undergo a process of constant formation.

Chapter Four focuses on Woody Vasulka's pioneering video works from the 1970s and early 1980s. Using various analog and digital video signal processors, the images that emerged from Vasulka's videos were constantly being altered and manipulated. When viewers would encounter works such as *C-Trend* (1974) or *Artifacts* (1980), they would experience images that were never static but instead were always in a state of continual metamorphosis. Because the images emerging from these video works were endlessly changing, Vasulka felt that they could not be understood by the two dominant imaging model of the time – linear perspective and the cinematic paradigm. As this chapter shows,

Vasulka then proceeded to conceive of a new vocabulary for his work that centered around his notion of time/energy objects. This concept of time/energy objects is then further developed through Massumi's understanding of topological figures and Greg Lynn's spline model used in topological architecture design in order to demonstrate, first, how compositional forces emerge in both analog and digital video and, second, how these forces then generate the ever-changing incipiency of images viewers encounter.

The fifth and final chapter of *The Elusive Made Present* explores the paintings of Robert Irwin, focusing on the period of the 1960s in which he produced three radically different series of works – the "Lines" series (1960-64), the "Dot" series (1964-66), and the "Disc" Series (1966-69). With each of these series Irwin had one specific problem that motivated their production; he wanted to develop a set of condition that would enable viewers to not focus on the depictions a painting offers for the seeing, but rather point their attention towards perceiving the intensive forces a painting's marks and gestures generate in the seeing as they act upon and affect each other. He wanted viewers to only experience the incipient action the paintings generated in the shared viewer-artwork encounter, rather than focus on any sort of representational imagery or psychological meaning. As this chapter shows, in order for Irwin to find the set of conditions he needed to solve his problem he proceeded through a process that saw him, first, remove anything that could be easily identified by viewers (the "Lines" series), then take away any visible gestures (the "Dot" series), and

finally eliminate the frame from painting (the “Disc” series). Through these three series of paintings, Irwin slowly dismantled all the conditions that commonly activate painting. With the removal of the frame in the final “Disc” series, he ultimately produced works that transformed the entire gallery environment into a resonating field of colour, making the incipiency of image not only perceptible but also environmental.

Chapter One

From Representation to Sensation:

The Transduction of Images in John F. Simon Jr.'s *Every Icon*

Perhaps the peculiarity of art is to pass through the finite in order to rediscover, to restore the infinite.

- Gilles Deleuze and Félix Guattari, *What is Philosophy?*[7]

Science and Art

When encountering John F. Simon Jr.'s software artwork *Every Icon* (1997) on his website, it can be difficult for viewers to know whether they are seeing the visual execution of a mathematical theorem or experiencing a work of artistic expression.[8] This is because they are presented with a stark white and black thirty-two by thirty-two square grid on the right side of the website and three statements that read like a mathematical theorem on the left side. They state:

> Given: An icon described by a 32 X 32 grid.
>
> Allowed: Any element of the grid to be coloured black or white.
>
> Shown: Every icon (Simon 1997b).[9]

But before viewers even take notices of these three statements, their attention is immediately drawn towards the upper left corner of the grid where a rapid flicker is occurring.

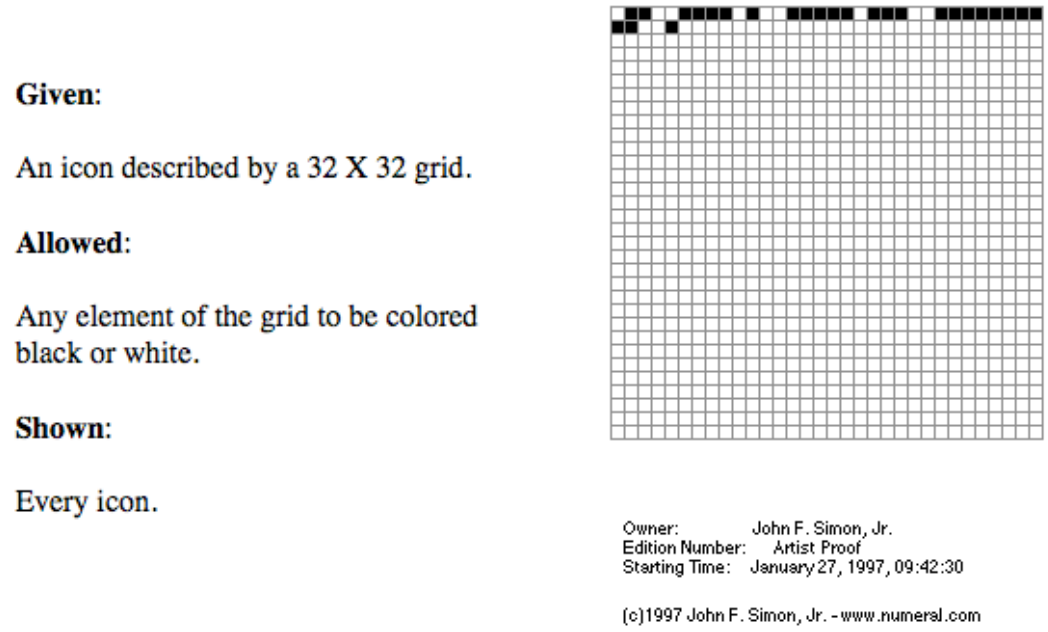

Figure 1.1. John F. Simon Jr., *Every Icon* (1997). Website screen shot. URL: http://www.numeral.com/appletsoftware/eicon.html.

Once the grid's flickering corner has captured the viewers' gaze, they notice that a series of black squares emerge from this flicker, moving across the top row of the grid towards its right side. These black squares continue shifting to the right, column by column, away from the flicker until the leading black square stops moving. Then all the squares in between this now static black square and the flicker gradually change from white to black. Once all of the squares from the static black square to the flicker are black, the static black square then moves to the right, occupying the square in the next column and all the squares to its left suddenly change to white. At this point, another series of black squares emerges from the flickering left corner, which move towards the static black square.

If viewers continue watching *Every Icon* for a few more minutes, they will notice that the flicker occupies only the first five squares on the left side of the top row. Although these five squares seem quite chaotic, the orderly change of the squares from white to black is generated from this intense flickering. Viewers also experience a movement that seems to only be taking place in the top row of the grid. Change appears to not be occurring elsewhere in *Every Icon*. The squares in the lower thirty rows, which are all white, look to be completely static. The second row from the top has a few black squares on the left side, while the other squares in the row are white.[10] Like the lower thirty rows, the second row from the top also appear to be motionless.

Despite the fact that the top row of the grid tends to draw much of the viewers' attention because of the flickering that is generated by squares oscillating between white and black in the left corner, it is not the only thing presented on the website for *Every Icon*. There are also the three statements on the left side. When viewers read these statements, the actions occurring on grid begin to make some sense. The first two statements set out the parameters for what is taking place on the right side of the website. The first statement mathematically describes the size of the grid as measuring thirty-two by thirty-two.[11] The second statement establishes which colours will be found within each square on this grid: white and black. The final statement is a proposition that states this grid will present every possible every icon using the parameters set out in the first two statements.

These three statements complicate how the grid is to be understood and perceived because these statements can be interpreted both mathematically and aesthetically. It becomes difficult to know whether viewers are looking at the visual execution of a mathematical theorem or the emergence of a work of art. Are viewers watching a sophisticated abacus as it slowly and successively counts out every permutation available to it? Or are viewers watching a rapidly changing abstract animation? Does *Every Icon* propose to visually represent a demonstration of a numeric theorem? Or does it propose an aesthetic experience? Simply put, when viewers encounter *Every Icon*, are they perceiving images that emerge from the work of science or, as Simon presents it, the work of art?

Gilles Deleuze and Félix Guattari state that when one discipline begins to interfere within the realm of another, the methods and techniques of that interfering discipline need to be followed. For them, "the rule is that the interfering discipline must proceed with its own methods" (Deleuze and Guattari 1994: 217). The methods and techniques that are used in one realm cannot be transposed onto the other. Accordingly, when art begins edging into the realm of science, it must proceed aesthetically. Deleuze and Guattari give an example stating that when discussing the beauty of a geometrical figure, like a square or a triangle, "so long as this beauty is defined by criteria taken from science, like proportion, symmetry, dissymmetry, projection, or transformation, then there is nothing aesthetic about it" (1994: 217). Any scientific operation or

technique used in or for the production of an artwork must be approached from the purview of art. "There are indeed technical problems in art, and science may contribute toward their solution, but they are posed only as a function of aesthetic problems of composition that concern compounds of sensations" (Deleuze and Guattari 1994: 196). If a particular work of art tries to proceed by scientific analysis, then the artwork risks being disregarded as art and instead could be deemed the work of science. Conversely, if an artwork is the object of scientific study or experiment, then it cannot be analyzed aesthetically. Science must operate under its own standards and with its own methods and techniques, otherwise it could potentially be condemned as art.

There is a potential risk that the images viewers experience in the encounter with artworks that use or incorporate cutting edge technologies and work with scientific theories will be dismissed as the visual results of a scientific experiment, rather than producing something of artistic merit. Yet, without science, many innovative works of art may not have been able to generate the images that viewers experience today. Consider painter and architect Leon Battista Alberti's development of linear perspective in painting during the early Renaissance, which used geometry as its foundation; the pointillist painting technique developed by George Seurat during the 1880s, which was influenced by the optical and colour theories of chemist Michel Eugène Chevreul and physicist Ogden Rood; or finally, Woody Vasulka's metamorphic video works from the 1970s and 1980s, which used some of the earliest digital imaging

technologies (some of which Vasulka invented himself).[12] When viewers encounter these past works or more contemporary artworks categorized as digital, internet, software, or under the ubiquitous rubric "new media art," such as Simon's *Every Icon*, it is often the case that the images that are perceived cannot be clearly differentiated as emerging from a scientific experiment or an artistic practice.

A Question of Technique

In order to make any possible differentiations between science and art in artworks like *Every Icon,* the techniques of these two realms need to be further addressed. This is because what constitutes a scientific experiment or an artistic practice is a question of technique. According to Erin Manning, techniques "are processes that work with the relational potential of that which is already underway" (2009a: 99). Techniques enable latent relations to arise for the experiencing as that experience is taking place. They do not create relations out of or from nothing. Rather, techniques are *compositional* processes that utilize the potential immediately available to them for the gathering and emergence of relations. For Bruno Latour, what is interesting about composition is "that it underlies that things have to be put together (Latin *componere*) while retaining their heterogeneity" (2010: 473-474). Techniques enable that which is available for experiencing to generate relations and compositionally emerge into a novel encounter in the midst of that experiencing moment.

For science, there is a need for techniques to become tools for the production of reliable and repeatable results. A scientific experiment is circumscribed to a definitive outcome that judges its consistency by the repeatability of the very outcome it generates. The particular techniques it uses manifest themselves through their reliability to produce the same relational compositions every time they are called upon. The techniques science uses become specific scientific tools when there is a sense of predictability attributed to them as they repetitively generate dependable outcomes. Science would not use a particular technique if the outcomes did not have some form of anticipated accuracy to an intended outcome.

For instance, the technique of addition is scientific because when two or more quantities are combined, their relational composition generates the sum of these quantities, producing a result that can be repeatedly obtained. The repeatability of the technique then creates an expectation that the outcome will always be the same. If two plus two did not consistently generate a sum that equals four, but some other value like five, ten, or a billion, then the technique of addition would be deemed too unreliable for scientific use because of its inability to reliably repeat the same result. Without this consistency, the technique of addition would be of no use for science. Similarly, in optical colour theory, when two complementary colours, such as green and magenta, are either combined or come within close proximity, they produce the colour white.[13] This technique of combining complementary colours would not hold scientifically if they did not

repeatedly produce the same outcome. The ability of a technique to reproduce the same results every time it is used gives it the consistency that science necessitates.

Science's need to focus on repeatable outcomes requires that some form of closure occurs in order to limit the activity of the techniques it uses. If these limitations were not put in place, then the process these techniques activate could potentially never end, making it difficult for science to assess a particular technique's ability to generate a repeated outcome. For Brian Massumi: "Science generates results by imposing controls designed to close its contents as much as possible" (2002: 235). The technique of addition, for example, could continue adding more quantities together, infinitely creating ever-larger sums. Likewise, the technique of combining optical colours could proceed to engage in an endless practice of colour fusion, infinitely generating every possible hue available to vision. At some point science requires that the process of activation must either be momentarily paused or completely stopped so that an evaluation of the results a particular technique has yielded can be conducted. Science needs to set restrictions to a technique's process of activation because stopping or limiting the process a specific technique activates enables science to assess a technique's consistency and repeatability. Without this closure, there would be no possible way for science to repeat a particular technique's process of activation in order to verify its consistency.

The techniques that activate art differ from those used in science. The aim of art is not to follow science in producing repeatable, consistent results drawn from the relations these techniques enable; instead, art focuses on generating an experience that leaves the outcomes it manifests open to ongoing relational encounters. The specific techniques that art uses draw relations to the forefront of attention by composing a novel experience for perception, while leaving this novel experience open to allow further relational encounters to emerge. This is why it is not unusual to experience a new flicker of colour when gazing at a painting or a digital image, or another layer of sound when listening to a musical composition. Encounters with art tend to generate new experiences for perception because the techniques it utilizes allow for changes to emerge in the midst of that encounter. A technique's compositional process of gathering relations in art continues after the work emerges, enabling the potential for new relations to emerge and affecting how the emergent artwork is experienced and ultimately perceived.

In art, different techniques can potentially yield similar experiences. For example, in order for viewers to perceive a particular colour when they encounter an artwork, such as blue or red, artists do not need to use the same technique to generate these colours. There are several different techniques available that can activate a particular colour perception. Heinrich Wölfflin points to two techniques for activating colour that have been used throughout painting's history, which he calls the linear and painterly styles. The linear

technique renders depictions through the use of lines, which distinguish and separate each depicted object and their details. The perceived colour is then filled between these lines. In contrast, a painting composed in the painterly style is only constituted by colour itself. There are no lines bounding colour to a specific detail or object that is depicted. Instead, the relations that occur among the colours within a painting activate it as such.

When using the linear style of painting, each of the depicted objects is coloured using a mixture of pigments based on the local colour of that specific object. Wölfflin gives an example stating that a "painted blue cloak obtains its effect by means of the same material colour as the cloak had or might have in reality" (1950: 51). If there are areas of the blue cloak that appear lighter or darker, possibly from casts of either sunlight or shadows, then the painter will mix the blue pigment chosen to represent the cloak with either a brighter colour like white or a darker colour like black. It is from these distinctly rendered and locally coloured objects that the linear technique activates the painting. The fine, clearly rendered details of this technique further enable the potential for new relations to emerge with each encounter, generating something new to see.

Painters who use the painterly technique emphasize the relations among the colours, blurring the distinctions between any fine details. This is because the painterly technique "aims at that movement which passes over the sum of things" (Wölfflin 1950: 19). By using relations of colour, the painterly technique attempts to capture an overall impression of the depicted scene, instead of

activating a painting from clearly rendered details found in the linear style. Wölfflin gives an example, stating that when a red cloak is painted using the painterly style, "the essential thing is not the red of the natural colour, but the way in which the colour, as it were, changes under the eye of the spectator" (1950: 52). Brighter and darker areas of the red cloak in the painterly style may contain a variety of other colours that are not actually found locally, such as blue or yellow. This is because, when using the painterly technique, pigments do not need to be blended to imitate the local colour of the objects being depicted. Rather, pigments are mixed together in order to give the appearance of a particular colour. As long as the painting activates a seeing in which the colours emerging from it parallel those of the actual things being depicted, it does not necessarily matter what coloured pigments are used to achieve this. As well, because emergent colours activated by the painterly technique can use a variety of coloured pigments to achieve the visible outcome, there is the potential for other unintended colours to emerge from the same use of this technique. There is no definitive result that this technique activates.

Both the linear and painterly techniques used in painting are capable of activating experiences of colour that appear to be similar. Although these two techniques go about generating this experiential activity differently, they both can achieve similar outcomes that are open to further relational encounters. Examples of more contemporary techniques used in art, which are more closely aligned to Simon's *Every Icon*, are the vector imaging technique and the raster or

bitmapping technique, which activate digital artworks. Like the linear and painterly techniques in painting, both the raster and vector techniques in digital art are capable of generating an encounter that yields similar outcomes, while simultaneously remaining open for new relations to gather as an encounter is occurring.

The vector imaging technique activates a digital artwork through the relations that gather from data that "is recorded mathematically in terms of geometric shapes, points and lines called primitives" (Reed 2006). The relations occurring among these mathematically generated points and lines activated by this vector technique enable images to emerge by differentiating and dividing a particular space. Similar to the linear technique in painting, objects and their details are rendered with a series of lines that produce shapes, which are then coloured to the intended hue. Because the vector technique is based within a mathematical structure of lines and points, the encountered images that emerge from this technique have the ability to be activated at a variety of sizes without any visible degradation. A digital image activated by the vector technique can easily be made ten times as large without any perceptible loss of detail by making a proportional calculation among the points and lines. If a red rectangle is rendered measuring four centimeters wide and three millimeters high, then when this rectangle is made ten times larger, it will still be proportionally the same. The width to length ratio will still be four to three. The red rectangle will simply be forty centimeters long and thirty centimeters high. This means that

there is no particular outcome that is generated when a digital artwork is activated by the vector technique, leaving the work open to potential new relations.

The other technique used in digital artworks, raster imaging, activates relations with a grid comprised of squares, or pixels,[14] and "assigns data to all of the squares in the grid based on their color and location" (Reed: 2006).[15] Encountered images emerge from this technique through the relations that occur among the pixels, unlike the vector technique that activates artworks through a series of lines and points. The data that is assigned to each pixel activates a specific colour within it. This data is based on a sampling of the primary additive colours red, green and blue. The colour of each pixel is always comprised of a proportion of these three colours.[16] Once the colours of the pixels is established, they then begin to gather into relations, affecting each other like the colours of the pigments used in paintings activated by the painterly technique. As these coloured pixels interact, there is the potential for new colours to emerge from their activity. These new emergent colours are what viewers come to see as the images generated in the encounter with the digital artwork. The relations among the coloured pixels continue affecting each other as the image continues to be encountered, enabling minute fluctuations to emerge in the seeing. The seen image persists in remaining open to the emergence of subtle nuances of colour activated by the raster technique.

A Composite Practice

The raster and vector techniques are particularly interesting because the data that these two techniques use to activate digital artworks comes from the realm of science. These two techniques use scientific methods for artistic outcomes. On the one hand, the vector technique enables relations to gather among the measurements of points and lines that the scientific techniques of mathematics and geometry activate. On the other hand, the raster technique gives the means for relations to come together among colours in each pixel of its grid. Precise proportions of red, green and blue that the scientific technique of primary additive colours determines generate these colours encountered within the pixels. These precisely measured colours are then positioned within a set of mathematical coordinates that is the grid. These two techniques used in digital artworks produce an overlap that slides between the realms of art and science because the artworks emerge from the relations occurring among data, which in turn is produced by scientific techniques.

The overlap of art and science that emerges when encountering many digital artworks such as photographs, videos and websites also occurs with *Every Icon*. This is because Simon's work is activated by the raster technique. Viewers can easily discern the grid and black and white square pixels that the raster technique uses in order to activate this artwork, generating the images they come to see. As well, Simon proclaims his use of the raster technique in the first two statements presented on the left side of *Every Icon*'s website, stating the actual

size of the grid and the colours to be found within that grid. The use of the raster technique in digital art is not particularly unique. It is the most widely used imaging technique in digital image. This is because, according to Stacy Reed, this technique is "easier to manipulate, and can record data of photos [as well as videos and websites] with more accuracy than vector can, capturing subtle shifts in hues and values" (Reed 2006). But what specifically differentiates *Every Icon* from the many artworks that use the raster technique is that it directly engages in the overlap of science and art. The scientific techniques informing *Every Icon*'s raster technique appear to be the content of the work itself. This overlap of science and art in *Every Icon* is so subtle, Deleuze and Guattari would state "that we find ourselves on complex planes that are difficult to qualify" (1994: 217).

When looking more closely at how science is involved in the activation of *Every Icon*, it is clear that this work's use of the raster technique as well as new technologies (for its time), such as java applet software to generate the seen imagery and the internet as a distribution and exhibition platform,[17] are not what solely generate it as such. Rather, *Every Icon* is activated by a composite of scientific and artistic techniques, which is in keeping with how most of the world is actually encountered. Deleuze explains that, "things are mixed together in reality; in fact, experience itself offers us nothing but *composites*" (1988a: 22; emphasis added). Simon's very method for activating *Every Icon* is to take scientific and artistic techniques as composites that enable the images that viewers encounter to emerge. As Guattari notes:

> I don't think that scientific and technological progress must necessarily bring about a 'schiz' in relation to desire and creativity. On the contrary, I think that machines must be used – and all kinds of machines, whether concrete or abstract, technical scientific or artistic. Machines do more than revolutionize the world: they completely recreate it (2009: 74).

Simon's artistic practice involves the creation of a machine that interfolds the techniques and technologies of science with art for the activation of an artwork. This machine is *Every Icon* itself. As soon as science and its activating techniques become the composites for *Every Icon*, science is no longer strictly scientific; instead, it becomes a contributing composite for activating Simon's artwork. Yet as a composite for the activation of *Every Icon*, scientific techniques do not transform into artistic ones. Rather, science co-activates Simon's artwork with other artistic techniques.

What Simon is doing with scientific techniques and data is not what science does with them. It is not Simon's goal to become a scientist or to produce a strictly scientific work. Rather with *Every Icon*, he is making science do the work of art by tuning science towards generating an artistic outcome, rather than a scientific one. He has an interest in scientific techniques but it is strictly for a singular artistic purpose, to activate *Every Icon*. If *Every Icon* strictly did the work of science, it would generate a specific and repeatable result that would stop relations from continually gathering. Remember that science will stop or halt

new relations from emerging in order to test the accuracy and consistency of its techniques to generate repeatable outcomes. However, the data that the scientific techniques produce for *Every Icon* – the size of the grid and the black and white colours within that grid – is not being used to generate a result that is closed to new relational encounters. Though *Every Icon*'s use of scientific techniques, the work demonstrates how impossible it is for science to actually stop relations from emerging. According to Massumi, "the results of [science's] own methods, the very effects its closures enables it to produce, flow back around to create a qualitative global situation that makes reopening ingress into, and interferes with, its every contextual exercise" (2002: 235). No matter how consistent a scientific technique is in producing repeatable results, there will always be the potential for new relations to gather. These relations then begin affecting the very consistency that a scientific technique is supposed to produce because they enable the intended repeatable outcome to transform into a singular event. This inability of science to completely prevent new relations from emerging is what generates the composite overlap between science and art that activates *Every Icon*.

The Transduction of Images

When viewers encounter the overlapping composite of science and art in *Every Icon*, they do not actually see a series of techniques from these two realms activating the work. What viewers experience is the work as a whole, not the

techniques as such. Viewers come to see what the confluence of science and art is working towards, which for *Every Icon* is the emergence of flickering black and white images

The images that emerge from the overlapping of science and art in *Every Icon* might be understood as a set of representations because the third statement on the left side of Simon's website explicitly proposes that every icon will be shown within the black and white grid. Yet despite this unequivocal proposition to show all the icons within the confines of a thirty-two by thirty-two grid, *Every Icon* actually generates something much more dynamic. Simon explains that his work "posits a representational system where computational promise is intricately linked to extraordinary duration and momentary sensation" (Simon 1996). Viewers do not actually see a series of visual results in the form of fixed representations activated by scientific techniques; rather, they perceive images emerging from the dynamism that is generated by the overlapping of science and art. The black and white squares on the grid exceed their mathematical coordinates and optical colour combinations, producing a movement that can only be felt in the seeing.

The overlap of science and art in *Every Icon* generates a dynamic movement that exceeds both realms as such, while still being intrinsically connected to them both. This dynamism for Latour is compositional. Recall that Latour's understanding of composition involves elements that enter into relations in order to produce something new, while simultaneously retaining

their singularity in the midst of the act of composing. The techniques that activate the black and white squares within *Every Icon*'s grid come together and begin composing an experience that enables the emergence of seen images and felt dynamism. The black and white squares and the grid itself are not only singular pieces of data generated by scientific techniques but should also be considered as *compositional elements*. They become compositional as they proceed to enter into relations that overlap into the realm of art, activating what viewers come to see when encountering *Every Icon*.

Because the grid and the black and white squares are compositional elements that gather into relations, the experience viewers have in their encounter with *Every Icon* cannot be predetermined by data the scientific techniques produce. As compositional elements, the grid and black and white squares become more than just data that take the form of fixed repeatable scientific results. The scientific data is transformed into compositional elements through a process of *transduction* that generates a dynamism viewers feel as they encounter *Every Icon*. According to Manning, transduction "is a shifting between planes that requires a simultaneous shift in process" (2008a: 330). In *Every Icon*, transduction is not a process of translating scientific techniques into artistic ones, but instead is a transformation that produces movement felt as the compositional elements proceed to overlap between science and art. The process of transduction alters how the scientific data that activates *Every Icon* is encountered by enabling it to remain compositionally open to new relational encounters,

breaking with the scientific procedure of closure. This openness gives each of black and white squares within the grid the means to begin entering into relations, making them elements that compositionally participate in the encounter with viewers.

Despite the fact that there is a dynamic movement that is felt as the black and white squares within *Every Icon*'s grid are transduced in the composite overlap between science and art, this process of transduction is not actually visible. Viewers who encounter Simon's work do not see the transductive process in action. They do not perceive the compositional elements entering into new relations. Instead, they see the *effects* that emerge from the dynamism this process generates as it moves through the interval between the realms of science and art. These effects are perceived by viewers as the images they experience in their encounter with Simon's work. Manning explains:

> The image we see is the activation of an incipient movement transducing an interval into form—a transduction of movement into mattering-form. Movement becomes matter in the taking hold of the now that is the event of perception. This is a taking hold not of the image as such, but of its relational coming into appearance (2008a: 337).

The transduction of movement across the science and art overlap in *Every Icon* is what enables the incipiency of images to occur. In this transductive moment of movement, the emergent effects become the images viewers come to see on the

right side of Simon's website in the form of the grid with it flickering left corner. These images viewers perceive emerging in their encounter with *Every Icon* display more than just the results produced by the commingled techniques of science and art. They are not a series of representations. Rather, these images are a dynamic effect that emerges from the process of transduction and have no existence outside of the encountering moment shared between viewer and Simon's work.

By proposing to show every icon, as Simon's third statement expresses, an inextricable relationship between science and art is forged. Through the process of transduction a dynamic movement is generated that enables a complex system of scientific coordinates to emerge into an aesthetic composition. From the perspective of science, *Every Icon*'s proposition only puts forward a mathematical system of coordinates that visually represents the calculations of all the possible permutations found on the grid. Yet according to Manning: "Propositions never attend solely to the datum" (2009b: 226). *Every Icon*'s proposition activates more than just a variable display of black and white squares on a grid. It generates "enabling constraints for the opening of a relational process" (Manning 2009b: 227).[18] These enabling constraints in *Every Icon* are the grid and the two colours – black and white - within the grid. As will be explained towards the end of this chapter, these enabling constraints lure the viewers' attention by gathering potential sensations into sets of relations, which then proceed through a process of transduction that drives the incipiency of images.

In order to follow *Every Icon*'s transductive movement from a scientific representational system to the incipiency of flickering images, the work's scientific foundation needs to be examined. For the remainder of the chapter, a journey shall be taken that starts on the scientific plane of reference and ends at the artistic plane of composition.[19] The primary guides for this adventure in transduction will be Deleuze and Guattari. The journey will begin on the plane of reference, which resides within the realm of science and is populated by "functives" and "functions." These functives and functions assist in demarcating the limits and boundaries and set up a system that coordinates scientific data on the plane of reference. The journey will end by reaching the plane of composition, which is within the realm of art and is populated by sensations.

Although this journey begins on the plane of reference and ends on the plane of composition, like the realms of science and art, these two planes overlap in *Every Icon*. They do not generate strict dichotomies in any absolute sense because there is no clear boundary between these two planes. The plane of reference is not in opposition to the plane of composition. Rather, these two planes generate a complex continuum that enables transduction to occur. The move from the realm of science to the realm of art inconspicuously occurs through a zone of indiscernibility. When in this zone, it is impossible to know whether the plane of reference has been completely left behind or whether the plane of composition has even been entered. It is a space "between two forms, one of which is no longer, and the other, not yet" (Deleuze 2003: 126-7). This

indiscernible zone is where the shaping of materials and the creation of techniques occurs. It is where the process of transduction occurs. This place is called the "plane of technical composition" and it is a territory that edges into both the realm of science and the realm of art.

The plane of technical composition should not to be confused with the plane of composition as such. Despite sharing the word "composition," they are not the same plane. Deleuze and Guattari differentiate between the plane of technical composition, which straddles both science and art, and the plane of composition, which is the exclusive concern of art.

> [C]omposition is the sole definition of art. Composition is aesthetic, and what is not composed is not a work of art. However, technical composition, the work of the material that often calls on science (mathematics, physics, chemistry, anatomy), is not to be confused with aesthetic composition, which is the work of sensation. Only the latter fully deserves the name *composition* (Deleuze and Guattari 1994: 191-2; original emphasis).

The plane of technical composition involves science but it is not scientific; it is also not art because it is not yet doing the work of sensation. It is concerned with the materials that allow for these sensations to occur. On *Every Icon*'s plane of technical composition the techniques of science are activated so that art can emerge.

The transductive path Simon lays out with his proposition of showing every icon will be followed, beginning with the conditions that have been stated in advance, which are the first two statements stated on Simon's webpage. The description of the size of the grid (32 x 32) and the colours (black and white) that occupy this grid set the conditions that enable a plane of reference to be developed. Once the place of reference for *Every Icon* is established, the process of transduction takes flight through the indiscernible zone of the plane of technical composition. From this transductive line of flight, the plane of composition can emerge, activating the incipiency of images viewers experience when encountering *Every Icon*.

The Plane of Reference

In *Every Icon*'s first statement, Simon asserts that an icon will be a grid measuring thirty-two by thirty-two. This is both a description and a demarcation of a space. It not only delimits a territory on which all subsequent statements and operations will play out, but it also works to slow down the actions of chaos in order to make these actions perceptible. The grid seeks to order experience. It is the form the order takes. Chaos should not be understood as pure disorder, but rather as a force of infinite speed within a field of infinite size. Deleuze and Guattari state that chaos "is not a void that is not a nothingness but a *virtual*, containing all possible particles and drawing out all possible forms, which spring up only to disappear immediately, without consistency or reference, without

consequence" (1994: 118; original emphasis). Chaos is a virtual field that cannot be perceived but it can potentially be experienced through the effects it generates. The virtual, according to Brian Massumi, "appears only in the potentials it drives and the possibilities that unfold from their driving" (2002: 136). Viewers cannot directly experience the virtual through their senses but they can encounter its incipiency in the effects that emerge from its actualization.

Take gravity for example. When an apple famously hit Newton on the head, he did not perceive gravity directly. "Newton did not see gravity. He felt its effect: a pain in the head" (Massumi 2002: 160). Newton's perceived pain is the effect that gravity had on the apple's potential to fall, as gravity emerged from the virtual field of chaos. If someone witnessed the apple hitting Newton's head, then the perception they had in seeing the apple fall towards Newton is the visible effect of gravity's actualization. This witness did not see gravity as such; rather, in seeing the apple fall, they experienced an effect generated in gravity's emergence from the potential of the virtual. The virtual can only be perceived through the effects that arise from its actualization. These actualized effects are what is visible or painful, not the virtual itself.

Because chaos is a virtual field of potential and contains all possible particles and forms moving at an infinite speed, as Deleuze and Guattari noted above, what is actually perceived through the grid's ordering principles is always a subtraction and a deceleration from this field. There is always more to see, smell, taste, touch, or hear because perception can never completely grasp

everything that is made available to it. And once something is actually grasped by perception, it slips back into the virtual field of potential just as quickly as it emerged. This makes the moment of actualization quite ephemeral. What is actually perceived is a less-than that is always rapidly exceeded by the more-than of the virtual. In order to limit the potential for perception to exceed itself, and thus quickly return to the virtual field, science proceeds to establish a plane of reference. According to Deleuze and Guattari, the plane of reference is "constituted by all the limits or borders through which it confronts chaos" (1994: 119). It is where thresholds are determined and matter obtains position within a scientific system. It is where potential from the virtual field is actualized into referential configurations.

The delimiting and territorializing actions of the grid in *Every Icon* assist in establishing the plane of reference. This is because the grid emerges as a mode of activity that touches on compositional processes even while it is committed to constructing the plane of reference. *Every Icon*'s grid generates a controlled space that assists in the slowing of the infinitely fast movements of the virtual occurring within the field of potential. It is a space that encourages perception to emerge from the virtual field of potential, while simultaneously trying to prevent its return to that same field. The grid acts like a net that is cast into the virtual field in order to capture and position the potential that resides within it into actualized configurations and forms. Once caught, these newly actualized forms gain a reference within the grid's system of coordinates.

These referential configurations and forms that shape the plane of reference are what Deleuze and Guattari call *functives* (1994: 118). They explain that there are two types of functives. The first type, which are called "endoreferential" functives, comprise of limits or variables that pervade science, which establish a threshold that cannot be surpassed. Examples of some of these unsurpassable limits are the speed of light (299,796 kilometers per second), which is the fastest speed matter can move; absolute zero (273.15 degrees Centigrade), which is the temperature at which matter stops moving; or the Big Bang, which is the beginning of time for the present universe. As well, thresholds considered to be endoreferential functives can be established by creating a set of variables, such as all rational numbers between one and nine. The endoreferential functive in *Every Icon* is based on a set of variables, the two colours black and white that are mentioned in the second statement.

Both limits and variables carry out a form of counting. Deleuze and Guattari state that it is these "limits that constitute slowing down in the chaos of the threshold of suspension of the infinite, which serve as endoreference and carry out a counting" (1994: 119). Limits are the point where counting begins or ends. Variables are countable things found within a set. When a limit or a set of variables is determined, the process of counting begins. Having to count either each step as a limit is approached or every variable within a set slows an actualized configuration's return to the virtual field of chaos. What cannot be counted thus remains as potential within the virtual field of chaos and outside

the purview of the plane of reference. This means that in *Every Icon* any colour that falls outside the set of black and white colours will not be actualized in this work, persisting within the virtual field of chaos as potential.

The second type of functive, which is called "exoreferential", demarcates the space where the variables or limits are placed. It is an external framing device, such as a mathematical system of coordinates. Anything that is slowed by the limits and variables is also caught within the web of a coordinate system. Deleuze and Guattari give an example: "A particle will have a position, an energy, a mass, and a spin value but on the condition that is receives a physical existence or actuality, or that it 'touches down' in trajectories that can be grasped by systems of coordinates" (Deleuze and Guattari 1994: 119). Simply put, the grid as described in the first statement of *Every Icon* is an exoreferential functive. The grid can track or place with some exactitude where a limit is demarcated or where variables are positioned. It situates and differentiates on the plane of reference what has been actualized from the virtual field of chaos.

When an endoreferential functive and an exoreferential functive are established and situated on a plane of reference, they enter into a relationship from which a third variable is determined. This new variable is called a *function* and it cannot exist without two or more functives connecting in some manner. According to Deleuze and Guattari, a function "is a complex variable that depends on a relation between at least two independent variables" (1994: 122). For a function to be established one or more limits or sets of variables must be

situated within a delimited space or system of coordinates. Once established, a function becomes an object of science that accounts for the state of affairs on the plane of reference. This state of affairs is presented as a scientific proposition (Deleuze and Guattari 1994: 122). In other words, when at least two functives enter into a relationship, a function is produced. This function constitutes a state of affairs situated on the plane of reference, which is expressed as a scientific proposition.

From the three statements that appear on *Every Icon*'s website, it can be established that there are two functives, a function, and a scientific proposition presented. The two functives are presented in the first and second statements. As stated above, the first statement presents an exoreferential functive that indicates the size of the grid, which measures thirty-two by thirty-two. The second statement presents an endoreferential functive that indicates a set containing two coloured variables will be allowed within the grid, which are black and white. With these two functives, *Every Icon* generates a plane of reference that clearly demarcates a territory and declares what will be found within that territory. By establishing this plane of reference, *Every Icon* is able to capture the colours white and black in the netting of the grid, wrestling them away from the virtual field of chaos.

These two functives not only establish a plane of reference for *Every Icon* but they also enter into a relationship and produce a function. This function is the result of a mathematical state of affairs in which all the combinations of the

two variables are allowed to occur in every element found within the designated space. These elements, according to Massumi, "can be used as the basis for comparative judgment in any context, independent of situation" (2002: 165). They are general abstract entities that can be "seen anytime in principle, but nowhere in particular" (Massumi 2002: 165). This is because elements that are found on the plane of reference are relative to the standards or limits established by functives. Since the grid in *Every Icon* measures thirty-two by thirty-two, the number of elements can be determined simply by multiplying these two numbers. This results in one thousand twenty-four distinct elements established on the plane of reference. From here, each of these elements can be one of two possible colours, either white or black. Specifically, *Every Icon*'s functives establish one thousand twenty-four black and one thousand twenty-four white elements. Each element found within the grid is only differentiated by the colour that it keeps.

This means that in order to determine that number of possible combinations of elements on the grid, and thus *Every Icon*'s function, a multiplication of the number two must be repeated one thousand twenty-four times. The result is two to the one thousand twenty-fourth power. This can be expressed mathematically as 2^{1024}, or it can be expressed by the power of ten as the approximate numeric value of 1.8×10^{308}, which is Simon's preferred way of expressing this function (Simon 1996; Mirapual 1997; Baumgärtel 1999).[20] In order to comprehend this number, imagine a one then an eight followed by

three-hundred and seven zeros. If pressed to describe the number of combinations possible in *Every Icon* with only words, it could be said that there are approximately three googol images generated in this work, with a googol being ten to the one-hundredth power (10^{100}).

Things

Every Icon's function, 1.8×10^{308}, appears to present a well-defined system of coordinates and offers a state of affairs that reflects Simon's proposition to show every icon, as stated in the work's third statement. The function clearly indicates the number of icons that are to be shown. As well, the excessive potential of the chaos seems to be captured by the limitations of the two variables, white and black, and contained by the grid's system of coordinates on the plane of reference. Chaos has been slowed down enough for forms to be actualized from the potential that resides within the virtual field by a process of counting that is generated by the combined efforts of the endoreferential functive (the colours) and the exoreferential functive (the grid).

However, Deleuze and Guattari point out that "the most closed system still has a thread that rises towards the virtual" (1994: 122). Even with the soundest function on the plane of reference, there is the potential for any actualizations created on this plane to exceed themselves. Like a dam holding a large amount of water, there is always the prospect of leaks appearing within the plane of reference, which exceed its capacity to limit potentiality. When

actualized forms begin exceeding the limits established by the function on the plane of reference, it is because these actualizations are applying pressure to these limits, causing cracks to develop in the plane's construction. This pressure that is being applied to the plane of reference is not physical pressure. Rather, it is the actualized forms becoming *more than* what the limits can actually handle. In order to plug the leaks generated by the ability of actualized forms to exceed themselves, either new functions must be added to supplement those already present or the present function must be completely changed. If any actualized forms completely surpass the limits established by *Every Icon*'s function, then the plane of reference constructed for *Every Icon*, like a faulty dam, will be need to be dismantled and rebuilt.

Any function that has been laid out on the plane of reference will eventually form cracks or bifurcations, which introduce the potential for different variables not originally included to alter the forms that have been actualized. These new variables can affect the operation of the established system by causing it to branch out into different directions, generating openings into what appears to be a unified whole. "Science does not carry out any unification of the Referent but produces all kinds of bifurcations on a plane of reference that do not preexist its detours or its layout" (Deleuze and Guattari 1994: 123). Bifurcations will always appear on the plane of reference, enabling actualized forms to exceed their own actualization. This shows that any system produced on the plane of reference is never fully closed or completely unified. When

bifurcations surface on the plane of reference, in order to recapture and re-actualize forms, either new functions are added to the system or the system is altered. These additions to the system create a more complex entity on the plane of reference.

As a function's state of affairs bifurcates and can no longer contain the excesses particular actualized forms generate, the addition of another function can curb an actualized form's ability to go beyond its own actualization. This new function is formed when the older function acts in concert with one or more new functives. The older function becomes a variable used in this new function. It is transformed into one of the functives for the new function. Because there are two functions working together on the plane of reference, according to Deleuze and Guattari, a *thing* forms. "When we go from a state of affairs to the *thing* itself, we see that a thing is always related to several axes at once according to variables that are functions of each other, even if the internal unity remains undetermined" (Deleuze and Guattari 1994: 122; original emphasis). A "thing" comes into being when one function is reliant on a new function to stop it from bifurcating and conversely when a new function is dependant on an older function for its inception. This new "thing" works with the registers of both functions, meaning that it interacts with the state of affairs of both functions on the plane of reference. For example, a "thing" may be comprised of a function that calculates space and another that calculates time. Both functions work on different registers, one with space and the other with time, but when they interact with

each other a "thing" appears. When a new function is added and a "thing" emerges on the plane of reference, the bifurcation that appeared in the older function is then stopped and the exceeding actualized forms are re-contained and re-actualized once again.

Simon's proposition indirectly reveals how actualized forms exceed the limits established by the function in *Every Icon* by specifically indicating that all icons are to be shown. To display all of these icons and demonstrate every possible permutation on the grid, it requires more than just a single mathematical function. Time is needed to show all the icons, which is something *Every Icon*'s function, 1.8×10^{308}, does not take into consideration. This single mathematical function presents a state of affairs that can only express how many possible black and white icons can be presented on the thirty-two by thirty-two grid. Yet, in order for this function to fully express itself and show every possible icon, it needs to proceed with a process of counting. This counting process takes time, which is something that exceeds the limits of this particular function. It is unable to calculate how long it will take to show and count all of *Every Icon*'s icons.

It appears that the new variable of time has emerged as the bifurcation that exceeds the limits the state of affairs of *Every Icon*'s function can express, which starts to unravel the present system on the plane of reference. As soon as the grid is laid out on the plane of reference and *Every Icon*'s first icon is accounted for, some amount of time must pass before the second icon is counted.

Simon chose to begin *Every Icon* with all the one thousand twenty-four elements in the grid coloured white, forming a completely white icon. The second icon is all white except for the element that is in the upper left corner, which is black. The third icon is all white except for the square in the second column to the left in the first row. The process of counting all the icons can only continue if the bifurcation opened up by time can be plugged. If the system is to be sustained on the plane of reference, this new variable needs to be captured before it unfolds with infinite speed into the depths of chaos. This requires the addition of a new function, which will prevent time from enabling the already established actualizations from exceeding the function that is currently on the plane of reference.

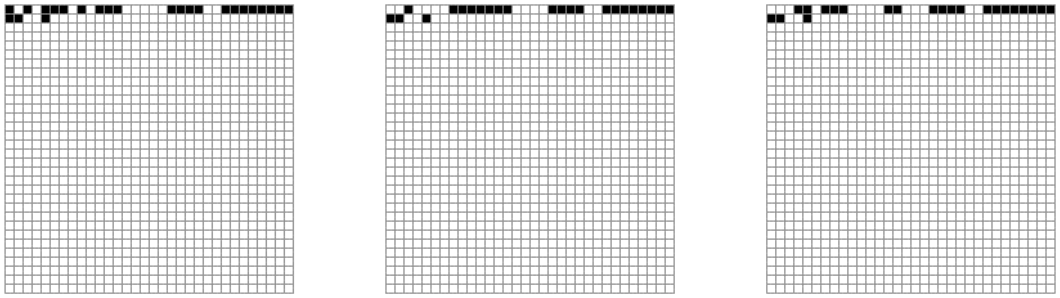

Figure 1.2. John F. Simon Jr., *Every Icon* (1997) (detail). Three different icons presented within the span of approximately thirty seconds. Website screen shot. URL: http://www.numeral.com/appletsoftware/eicon.html.

In order to calculate how long it will take for *Every Icon* to count all of the icons on the thirty-two by thirty-two grid, new endoreferential and exoreferential functives need to be revealed to determine *Every Icon*'s function for time. The new endoreferential functive – the limit or set of variables – is the number of icons that will be made visible. The already determined function, 1.8×10^{308}, becomes this new function's endoreferential functive. The new exoreferential functive is the rate at which these icons are shown. This functive will state how fast the icons are to be counted. Simon explains that this rate of change depends on the speed of the computer's processor that runs the software for *Every Icon*. He states that, "at a rate of one hundred icons per second (on a typical desktop computer) [in 1997], it will take only 1.36 years to display all variations of the first line of the grid" (Simon 1996). Simon did not arbitrarily choose this rate of one hundred icons per second. It is the actual rate of change that *Every Icon* is displayed at on his website.[21] The rate of one hundred icons per second becomes the new exoreferential functive.

It should be noted that at this rate of one hundred icons per second, it will take approximately six billion years for *Every Icon* to show all the possible combinations of white and black in just the first two lines (Simon 1996; Baumgärtel 1999). Nearly six billion years will be required for all the squares in the top two rows to go from displaying the colour white to all of them displaying the colour black. In order to situate how long the six billion years it will take for the first two lines to appear completely black actually is, consider that the Earth

is estimated to be a little more than four and a half billion years old.[22] It will take longer than the present age of the Earth for just the first two lines to show all the possible permutations! This means that by the time the first two lines in *Every Icon* appear completely black, all the species of life presently on Earth will likely either be extinct or will have evolved into other species many times over, including humans.

When this new exoreferential functive of one hundred icons per second enters into a relationship with the new endoreferential functive, which is the older function of 1.8×10^{308} icons, a new function is determined. This new function establishes the time it will take for *Every Icon* to show all of its icons. It will also determine when the final icon will be reached. When this new function is expressed mathematically, it indicates that it will take 1.8×10^{306} seconds, or approximate 5.7×10^{298} years, for *Every Icon* to display every icon. This equation, 5.7×10^{298}, becomes the new function that gives *Every Icon* its reference in time.

This means that there are now two functions on the plane of reference, one function that establishes the number of icons and the space the icons occupy, and a second function that determines the rate at which these icons are counted and the total time it will take to count them all. As was discussed above, the new function depends on the older function for its existence and, conversely, the older function relies on the new function to stop bifurcations that appear. In *Every Icon*, the new function that expresses time is dependant on the older function, which expresses space, for its existence. Simultaneously, the older

function needs the new one to close the bifurcation that appeared on the plane of reference. This bifurcation surfaced when it is revealed that the older function did not take into consideration the variable of time in *Every Icon*.

Because the relationship between the two functions is mutually dependent, it creates an internal unity on the plane of reference that enables a "thing" to be actualized. From the correlation between the two functions' state of affairs, space and time, the "thing" emerges as *Every Icon*'s many icon. As a "thing", the icon expresses a more complex system than any one function can alone. This is because the "thing" coordinates both space and time, whereas a function can only coordinate one of these systems. Neither space nor time can now be easily removed from the plane of reference without destroying the icon or the plane of reference itself. To do so would impinge on *Every Icon*'s ability to fulfill its proposition of showing every icon and return any actualizations this work creates to the virtual field of chaos.

Bodies

Despite the fact that all of *Every Icon*'s variables and limits have been clearly delineated and the icon in *Every Icon* can now be defined as a "thing," Simon's proposition is not yet completely expressed. So far this chapter has outlined how much space the icon occupies, how many combinations of white and black *Every Icon* can produce, how much time it will take to show all of these combinations, and how all of these limits and variables are coordinated within a

unified "thing." The problem now is that the icon, as a "thing", cannot express the manifestation of every combination available to it on the plane of reference. This means that a new variable, *difference*, needs to be addressed. Since the icon itself cannot express difference, a new bifurcation opens up on the plane of reference, again allowing established actualized forms to begin exceeding the system's capacity to keep them from returning to the virtual field of chaos. Unlike a "thing", the addition of a new function cannot mitigate this new bifurcation. If the difference between each distinct permutation of the icon can be demonstrated, then the bifurcation can be sealed and the proposition of having every icon shown can be fulfilled. But this requires the formation of yet another more complex system, one that builds from the foundation of the icon itself.

Deleuze and Guattari call this new system a "body." They explain that a "body" appears on the plane of reference "when the thing itself undergoes changes in coordinates…and instead of the function taking the limit and the variable as reference, it takes an invariant and a group of transformations" (Deleuze and Guattari 1994: 122). A "body" is a "thing", but a "thing" that is subject to difference. It is a "thing" that is capable of changing itself. A "body" "proceeds by a cascade of actualizations" (Deleuze and Guattari 1994: 123). In order for change to occur, one element on the plane of reference must remain unaltered. This element is an *invariant*, which becomes the foundation of the "body" within the plane of reference. No matter how many permutations a body undergoes, the invariant persists. Because of the enduring nature of this

invariant, a "body" can manifest a number of transformations on the plane of reference without creating bifurcations that that would otherwise enable this actualized "body" to exceed its own actualization.

In order to show all the permutations that the icon can undergo in *Every Icon*, an invariant must be chosen so that a "body" can to take shape on the plane of reference. The invariant will allow the "thing" – the icon – to undergo the enormous number of changes that was originally calculated as the first function, 1.8×10^{308}. This invariant is the grid itself and not the measurement of it, as expressed by the equation 32 x 32. This is because no matter how the colours white and black are arranged within the elements of the grid, the grid itself remains constant. The lines of the grid are like steel lattices that hold firm, while the numerous combinations of white and black manifest in the spaces in between. The invariance of the grid enables changes to occur within the space and over the time, which is all coordinated on the plane of reference

By establishing the invariant, a stream of difference can manifest in *Every Icon*. The invariant produces an opening to difference because it enables the elements within the grid to fluctuate between the colours white and black. The gird remains constant in contrast to the cascade of actualized icons occurring one hundred times per second. Recall that Simon starts this stream of actualization with all the elements in the grid coloured white. Changes in the grid begin one-hundredth of a second later when the element in the upper left corner immediately turns black. Following this, that upper left element returns to white

and the element to its immediate right turns black. *Every Icon* continues in this manner moving through every possible combination of white and black in the first row of elements. After all the elements in the first row become black, they all return to being white and the first element on the left in the second row changes from white to black. As Simon mentioned above, for the elements in the first row to become entirely black takes 1.36 years. The first element in the second row will not become white again until all the elements in the first row become black for a second time. This process will continue until all the elements appear black and the last icon is shown.

The grid and all of the possible combinations of white and black, from the all-white icon to the all-black icon, constitute the "body" of *Every Icon*. The invariant grid's stable presence provides the skeleton that enables the elements within it to take on the unimaginable number of differentiated forms actualized on the plane of reference. Without the different combinations of white and black successively manifesting themselves within the invariant grid, there would not be a "body" on *Every Icon*'s plane of reference. Without this "body" to stop the bifurcation that was created when the variable of difference appeared, the potential extracted from the virtual field would not be actualized into a cascade of differentiated icons and *Every Icon* would have proceeded to unravel with infinite speed.

With a constituted "body" on the plane of reference, *Every Icon* can now be represented graphically. Simon's proposition can now be demonstrated. It is

possible to show every icon, as illustrated on the right side of *Every Icon*'s website. This is because the infinite speed of chaos has been slowed down enough by the plane of reference so that forms can be actualized from the virtual field of chaos. The plane of reference restricts the movements of chaos within the lattice of the invariant grid so that it can be shaped by limits and variables, by the functives and functions, in order to actualize the icons of *Every Icon*. As each icon is successively actualized (at a rate of one hundred per second) on the plane of reference, viewers see the fulfillment of Simon's proposition. By proposing to show every icon, *Every Icon* constructs a series of functives, functions, "things," and a "body" in order to actualize potential from the virtual field. Each actualized icon displayed on the invariant grid with its unique configuration of white and black is one step towards *Every Icon*'s return to the virtual field of chaos. Recall that the virtual field of chaos can never be directly experienced as such but can only be felt the effects that are actualized. Simon's proposition, from the perspective of science, lays a path that at every turn – from functions to "things" to "bodies" – that attempts to restrain chaos' infinite speed and prevent any actualized forms from exceeding their own actualization on the plane of reference.

Lures for Feelings

If viewers look at all the elements that comprise *Every Icon*'s plane of reference, they will notice that these elements appear to be quite similar to those

situated on the plane of technical composition. The plane of reference and the plane of technical composition can seem somewhat indiscernible because the plane of technical composition involves the arrangement of elements – which can be both material and immaterial – in a particular manner using a specific set of techniques. Deleuze and Guattari indicate that the plane of technical composition is populated by a variety of techniques that, "include many things that are individualized according to each artist and work: words and syntax in literature; not only the canvas but its preparation in painting, pigments, their mixtures, and methods of perspective; or the twelve tones of Western music, instruments, scales, and pitch" (1994: 192). In digital art, the plane of technical composition involves both hardware and software, which can include computers, processors, monitors, digital cameras, and the internet, and also encompasses spatial and tonal resolution, algorithms, systems of coordinates, and binary code. Many of these materials and techniques found in digital art are also found in *Every Icon*; but *Every Icon*'s plane of technical composition also contains the functives and functions that constitute the "body" produced on the plane of reference, which include the thirty-two by thirty-two grid, the colours white and black, the one hundred icons per second display rate, and the displaying of each icon successively beginning with the all-white icon. The mutual use of the functives and functions is what makes the indiscernibility between the plane of reference and the plane of technical composition possible. These planes overlap because they share the same compositional elements in *Every Icon*.

These shared elements between the plane of reference and the plane of technical composition also makes it difficult for viewers to clearly determine whether *Every Icon* is a scientific representation or an aesthetic composition. As Deleuze and Guattari would say, "we find ourselves on complex planes that are difficult to qualify" (1994: 217). Nevertheless, if *Every Icon* is to transductively make the leap from scientific representation to aesthetic composition, then distinctions needs to be made between the plane of reference and the plane of technical composition. Sensations need to be foregrounded. "We paint, sculpt, compose, and write with sensations" (Deleuze and Guattari 1994: 166). The viewers' attention cannot solely be focused on the workings of *Every Icon*'s "body" found on the plane of reference. Focus needs to shift towards the emergence of sensations in order for Simon's work to pass from the plane of reference to the plane of technical composition and then onto to the plane of aesthetic composition, or, as noted above, what Deleuze and Guattari simply call the plane of composition.

If the functives and functions laid out as a "body" on *Every Icon's* plane of reference are to be understood from the perspective of art, then they can no longer be viewed as that which changes within an invariant system of coordinates, representing the calculations of all the possible permutations found within the icon. As the elements and techniques for the plane of technical composition, the functives and functions can no longer act as variables that impede the emerging excesses of that which is actualized. Instead, they need to

be understood as activating parameters, or what Manning and Massumi call "enabling constraints," which incite potential sensations to gather together in order to grab the viewers' attention. "Enabling constraints are not rules as much as active parameters carving out an atmosphere for the event's potential realization" (Manning 2008b: 9). Recall the first two statements on *Every Icon*'s website, which state that the grid is to measure thirty-two by thirty-two and that all the elements on that grid are to be white or black. When approached from the perspective of art, these two statements do not use the grid and the colours to establish limits and variables in order to calculate and count the number of possible permutations. Rather, as enabling constraints, the grid and the colours activate a *perceptual field* for white and black sensations to metamorphosize into visible images.

When the functives and functions of *Every Icon* are transduced into compositional elements and techniques for the plane of technical composition, the plane of reference can no longer continue to prevent the actualizations it generates from exceeding themselves, opening themselves up to the virtual field. Instead, the compositional elements and techniques, as enabling constraints, modulate *Every Icon*'s ability to go beyond its own actualization so that it can emerge from the plane of technical composition as the sensations viewers feel on the plane of composition. What viewers encounter in their experience with *Every Icon* is not able to fully exceed its own actualization on either of these planes, but it is allowed to flow at an accelerated pace. More importantly, viewers can

literally feel this acceleration as they watch the movement of the squares in *Every Icon* changing from white to black that emerge from the intense flickering in the upper left corner on the top row of the grid displayed on Simon's website. The moment viewers feel this acceleration in the grid and perceive the movement of the squares in *Every Icon*, they have moved from the plane of technical composition to the plane of composition itself. It is at that point that the elements and techniques pass into sensation (Deleuze and Guattari 1994: 193).

Once sensations begin emerging for *Every Icon*, the "body" coordinated by the invariant grid on the plane of reference is transformed into a perceptual field where these felt sensations generate the flickering image viewers see emerging from the plane of composition. For Anna Munster: "It is as if images can no longer be located as distinct sets of coordinates upon a grid providing them with place and context in a system. They are now laid out on a plane, to be organized principally by directions and speeds in time" (2006: 174). When viewers watch *Every Icon*, they do not actually see the succession of clear and distinct representational icons that the invariant grid organizes on the plane of reference; instead, they feel the accelerations of black and white sensations that generate the visible metamorphosis of a seen flickering image within a perceptual field on the plane of composition. Steven Shaviro explains: "In metamorphosis, it is not the thing itself that attracts [viewers], over and above its qualities; it is rather the very unsteadiness of the thing that draws [viewers] onward, as it ripples and shifts in a kind of protean wavering" (2010b: 8). Neither the invariant grid nor

the icons themselves lure the viewers' attention; rather, it is the felt black and white sensations that generate the flickering image that draws the viewers' gaze. The invariant grid and the innumerable icons are backgrounded from perception in favour of the image generated by the oscillations of black and white. By proposing to show every icon, Simon's work has taken mathematical functives and functions and transduced them into what Alfred North Whitehead calls "lures for feelings" (1929/1978: 25, 184). The functives and functions become Whitehead's lures, or sensational attractors, that instigate the incipiency of images.

Simon's proposition to show viewers every icon begins on the plane of reference. As stated above, *Every Icon* posited a 'computational promise,' which creates a "body" capable of counting all the permutations of black and white icons on an invariant thirty-two by thirty-two grid. Once this system of mathematical representations is displayed – as seen on the right side of *Every Icon*'s website – this "body" can no longer be contained within the plane of reference. As the process of counting gives way to "momentary sensation," as Simon stated, the functives and functions of the referential "body" undergo a process of transduction in which they become "lures for feeling" or sensational attractors. These functives and functions, which were represented on the mathematical system as the variable set of two colours, the size of the grid, and the rate the permutations of icons change, become sensational attractors. As

sensational attractors, these transduced functives and functions then become the enabling constraints for the incipiency of images.

Once this transduction takes place, the functives and functions change into the compositional elements and techniques for the plane of technical composition. It is at this point that *Every Icon* transversally moves from the plane of reference, through the plane of technical composition, and emerges aesthetically on the plane of composition. Deleuze and Guattari explain:

> There is only a single plane in the sense that art includes no other plane than aesthetic composition: in fact, the technical plane is necessarily covered up or absorbed by the aesthetic plane of composition. It is on this condition that matter becomes expressive: either the compound of sensations is realized in the material, or the material passes into the compound, but always in such a way as to be situated on a specifically aesthetic plane of composition (Deleuze and Guattari 1994: 195-6).

Every Icon begins as a work that generates scientific representations but ultimately is able to present itself as an aesthetic composition of sensations. It generates a seeing that exceeds the limits established on the plane of reference. According to Manning, "to see is to feel-with, to participate in the intensive passage from the virtual to actualization" (2009b: 95). Viewers experience this passage from the virtual to actualization transductively as the incipiency of images. As long as there is a computer to run the program and a monitor to

display *Every Icon*, it will endure well beyond anything that is present today or that can easily be imagined for the future. This is because, according to Simon, *Every Icon*'s "theoretical possibilities outdistance the time scales of both evolution and imagination" (Simon 1996).

Chapter Two

Tentatively Constructing Images:

The Dynamism of Piet Mondrian's Paintings

Relations must come first.

– Piet Mondrian, Letter to László Moholy-Nagy (June 6, 1939)

Grids and Matrices

Grids can appear to present space and time statically. For some people the sight of grids can immediately conjure up notions of fixity, timelessness, and imposed order. According to Lutz Koepnick, grids are "not a product of the unpredictable temporality of the viewers' physical movement and sensory perception but a prearranged logic of compilation and construction, a mechanism seemingly engineering uniformity, universality and unwavering stability" (2006: 53-54). Images such as algebraic graphs, geographic maps and architectural blueprints come to mind. Through their use of Cartesian *x/y* coordinates, these images produce gridded spaces that establish a methodical, inanimate, and invariant order upon all that is contained within them.[23] Koepnick and Sabine Eckmann suggest that the grids found in the modernist paintings of the early twentieth century particularly display this inclination towards immutability and predictability. For them, "the grid enabled art's

capacity to distance itself from language, figuration, and representation and provided visual experiences favouring simultaneity over the sequential, the spatial over the temporal, the abstract over the representational, and the universal over the particular" (Eckmann and Koepnick 2006: 8). One clear example they give is the paintings of Piet Mondrian.[24]

When looking at Mondrian's *Composition No. 12 with Blue* (1936-42), viewers will see that it is an almost square painting (62 x 60.3 cm) comprising a complex black and white grid with a snippet of blue near the bottom. The canvas is filled with a series of black horizontal and vertical lines that cross one another perpendicularly, forming the grid structure. There are several intersections resulting from the six horizontal and the seven vertical lines. These crisscrossing black lines give the appearance of slicing the white background into quadrilateral sections. Near the bottom right corner, caught between two of the black vertical lines and enclosed by black lines along the top and the bottom, is the only coloured section, a square of blue. The black lines along the blue square's top and bottom edges extend to the right. The bottom line stops after intersecting with the next vertical line. Like the line at the bottom, the top line intersects the next vertical line but instead of stopping, it leaps to the next vertical line to continue to the edge of the canvas.

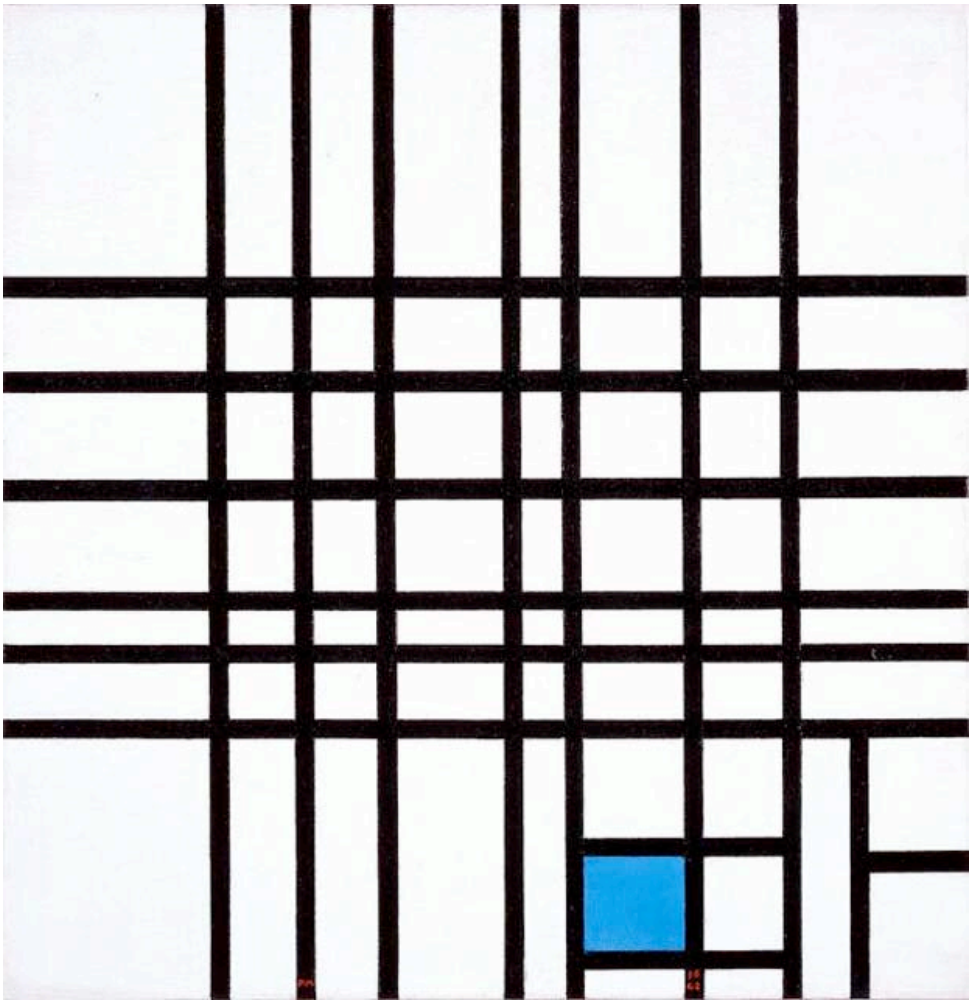

Figure 2.1. Piet Mondrian, *Composition No. 12 with Blue* (1936-42).

Eckmann and Koepnick contend that modernist works consisting of grids, like Mondrian's *Composition No. 12 with Blue*, are not only static, but also constitute the image viewers see. For them the painted grid and the seen image appear to be one and the same, approaching viewers "as immediately recognizable and hence devoid of unwanted surprises" (Eckmann and Koepnick 2006: 8). Following the assertion that modernist grids are static, if the images viewers see when looking at Mondrian's painting consist only of the grid composed on the canvas, then the seen images are as immutable as the grids that

generate it. As viewers look at *Composition No. 12 with Blue* with its black perpendicular lines dividing the white background into quadrilaterals of varying sizes and shapes, the generated image *is* the static grid.

Eckmann and Koepnick believe that modernist grids, like Mondrian's *Composition No. 12 with Blue*, were freed from their methodical immutability and were reworked into what they call "matrices" with the rise of digital imaging in the late twentieth century. According to Eckmann:

> The digital matrix, consisting of pixilated visual bits created by a binary code of numbers, transforms the static modernist grid into a moving configuration, one that is nevertheless still informed by the basic structure of the grid. Yet, in contrast to the modernist grid, the digital matrix may remain invisible and is capable of forming images independent from its own structure (2006: 16).[25]

Matrices are bodies generated on the plane of reference, as discussed in the previous chapter. They transform grids from static configurations into bodies that are capable of change. They enable difference to occur across the invariant structure of grids. Because matrices open grids to change, for Eckmann and Koepnick, they "emancipate the grid from its confinement to two dimensions; they displace the grid's tendency towards the static and unchangeable" (2006: 9). Matrices enable grids to extend beyond their own invariance through the displacement of "pixilated visual bits" that change within the grid itself.

Although grids form the underlying invariant structure for matrices, matrices are not grids. The grids that constitute matrices are backgrounded from the viewers' attention. By taking the viewers' focus away from the grids as such, matrices bring the elements that change within grids to the forefront of the viewers' perceptual awareness. A good example of this can be seen in John F. Simon Jr.'s internet artwork *Every Icon* (1997).[26] As Eckmann explains, the grid in this work cannot generate the images viewers see as such; rather, it "remains one and the same while the matrix, independent from a fixed form, is shown as the tool that creates these new images" (2006: 17). When looking at *Every Icon*, the viewers' attention is not on the grid that structures the unfathomable number of images that are generated in this work. Instead, as the previous chapter explains, their attention is focused on the frantic oscillation of black and white squares that generated movement across the grid. Viewers do not perceive an invariant grid that happens to contain elements that change; rather, they see black and white moving images that primarily flicker in the upper left corner of the work.

According to Eckmann, the invisibility of the grids that structure matrices gives the images that are generated the ability to independently produce themselves. "The capability of the matrix to generate images different than itself allows artists to use digital imaging technologies and their underlying grids of mathematical codes without being confined to an abstract and rigid structure" (Eckmann 2006: 17). When compared to the gridded images of modernist painting, like Mondrian's, the ability for matrices to produce images that are

different from their underlying gridded structure can easily be understood. This is because movement generated within matrices results from the displacement of the compositional elements across the underlying and imperceptible gridded structure. When viewers look at Mondrian's *Composition No. 12 with Blue*, the compositional elements – the perpendicular lines, the white background, and the blue square – appear to not physically move or change. For Eckmann and Koepnick, this work can only be seen as a static gridded image. In the absence of any visible displacement, the grid is thrust to the forefront of the viewers' attention and is statically seen as both the image as such and that which generates this image.

Excesses in the Seeing

When Eckmann and Koepnick distinguish those features that comprise gridded images, like Mondrian's *Composition No. 12 with Blue*, from those images generated by matrices, like Simon's *Every Icon*, they produce a series of dichotomies.[27] Upon closer inspection, the opposition between the visibly stable images of modernist grids and the imperceptible moving matrices of digital images begins to unravel. The line that demarcates gridded images from those images generated by matrices is not solid at all. Despite Eckmann and Koepnick's conceptualization of grids stated above, Koepnick reveals that, "whatever appears to be a product of the grid's unyielding structure surreptitiously speaks of that which may exceed the grid's rational order and

control" (2006: 55). This means that the gridded images of modernist painting, like *Composition No. 12 with Blue*, have the potential to reach beyond the structures that compose and contain them.[28] These works generate a movement that viewers experience through the activity of seeing, which is in excess of their compositional structure. There are excesses in the seeing that go beyond the limits of what is actually painted on the canvas.

When viewers look at *Composition No. 12 with Blue*, the grid that they see is capable of motion but not in the same manner as matrices. Unlike the black and white colours that move across the squares found within the matrix of Simon's *Every Icon*, the compositional elements in Mondrian's painting – such as black perpendicular black lines and planes of solid colour – do not change. The lines do not change places or angles. The solidly coloured quadrilateral planes of white and blue do not change colour, increase or diminish in size, or move across the black lines of the grid. None of the compositional elements in *Composition No. 12 with Blue* generate any spatial displacement. This does not mean that movement does not occur in this painting. According to Mondrian:

> The vitality of living organisms as well as their physical characteristics is manifested not only through their appearance but through their movement. Vitality is more difficult to discern in inorganic things. Nevertheless we feel the vitality of reality in everything that exists. In plastic art this feeling of vitality is created

> through the dynamic rhythm of forms and colours (1986/1993: 387).

Many viewers will experience a motion that is not actually painted on the canvas, but one that is felt through the activity of seeing. Susanne K. Langer states: "What we call 'motion' in art is not necessarily change of place, but is *change made perceivable*" (1953: 66; original emphasis). This movement in Mondrian's work generates a dynamism that is beyond vision itself. It exceeds both the compositional elements that comprise the painting and the viewers' ability to see. "To exceed vision is to displace contours of thought to engage with the ephemeral" (Manning 2003: 11). Viewers can sense that there is something at work in Mondrian's painting, yet at the same time there is nothing tangible to verify that anything has actually occurred. As viewers look at *Composition No. 12 with Blue*, they will see a grid but feel a movement that leaves absolutely no indication that it occurred. According to Henri Bergson: "There are changes, but there are underneath the changes no things which change: change has no need of a support. There are movements, but there is no inert or invariable object which moves: Movement does not imply a mobile" (2007: 122). This felt dynamic movement leave no trace because there is nothing that actually supports it. Dynamism needs no foundation to activate changes felt in the seeing.

Before viewers experience this dynamism, they will tend to notice two things when initially looking at *Composition No. 12 with Blue*: it presents a grid and it appears to be static. The painting's black perpendicular lines seem to place

a geometric order onto the white background, removing the potential for any movement to occur. The web of intersecting black lines grabs the viewers' attention and stops them in their tracks. Yet, in that brief moment as Mondrian's web holds the viewers' attention, movement begins to emerge. It is not a free-flowing continuous movement but rather one that feels jittery, provoking the viewers' gaze to jump all over the canvas. This is because flashes of whitish-grey begin to appear at the intersections of the black lines. The more the viewers' gaze jump from one intersection to another, the more the flickering appears. This in turn incites the viewers' vision to continue jumping. If viewers try to hold their gaze on one intersection, the fluttering of whitish-grey appears to diminish momentarily. However, within a couple of seconds the flickering resumes in the other surrounding intersections, which eventually provokes the viewers' gaze to move again. What viewers discover is that there is a restless rhythm generated in Mondrian's painting, which can be felt emerging from the flickering intersections. "Thus rhythm runs through a painting just as it runs through a piece of music" (Deleuze 2003: 37).

Composition No. 12 with Blue holds the viewers' attention just long enough to generate visually resonant images: images that emerge from the jittery rhythm of the flickering intersections. The painting does not produce a singular static image but rather generates what Erin Manning would describe as "a felt rhythm that invents itself in the watching" (2009b: 188). The images viewers see emerging from *Composition No. 12 with Blue*, as a frenetically felt rhythm, only

occur in the encounter with the painting. This experienced rhythm is a dynamic movement felt in the seeing. Neither the viewers nor the painting produce these rhythmic images alone. This is because, as Mondrian states: "Everything is expressed through *relationships*" (1986/1993: 86; original emphasis). Understanding images in this light means that no one thing can produce them. It is neither the painting nor the viewers that generate the seen images. Rather, images emerge in the relations occurring between Mondrian's painting and viewers as a *shared experience*.

When viewers and *Composition No. 12 with Blue* enter into relations, both the viewers and the painting actively participate in generating the images that are seen through the experience that they mutually share. Images are only visible when viewers experience the painting and, as odd as it may seem, when the painting experiences viewers. This means that the ability to have an experience is not something that is exclusively human. Viewers are not the only entities that have experiences. Mondrian's painting experiences something too, even if it is on some rudimentary level. Even a rock experiences something. "A falling rock 'feels,' or 'perceives,' the gravitational field of the earth. The rock isn't conscious, of course; but it is affected by the earth, and this being affected is its experience" (Shaviro 2009: 12-13).[29] A falling rock experiences the gravitational field of the earth because the earth has an impact on it by way of physical attraction. Conversely, as a rock falls, the earth also experiences the gravitational field. This is because the gravitational field emerges from the relations that occur between

the falling rock and the earth. The gravitational field is the shared experience that arises from these relations, similar to the images that emerge from the shared experience between viewers and Mondrian's painting. So, like a falling rock, *Composition No. 12 with Blue* "experiences": it is constantly being affected somehow, whether it is the nails holding it to the wall, the contact it has with the wall, the moisture floating in the room, or the attention the viewers visually give it.

The Relational Complex

The felt relations between *Composition No. 12 with Blue* and viewers, as a shared experience, does not only include the set of relations from which images emerge. According to Mondrian, this is because the painting "must be viewed as a duality or multiplicity – as a *complex*" (1986/1993: 86; original emphasis). This "complex" involves the relations among the plastic, or compositional, elements of the painting – such as lines, colours, and the planes they compose. For Mondrian: "If purely plastic expression is created by 'the relationships' of line, planes surface, and colour in their purely plastic values, then these means exist only through their relationships. Therefore, relationships are just as important as the plastic means" (1986/1993: 246). The relations that occur between the compositional elements are just as vital to the emergence of images for Mondrian as the compositional elements themselves.

Mondrian takes a radically empirical approach to his painting practice, in which "the relations that connect experiences must themselves be experienced relations, and any kind of relation experienced must be accounted as 'real' as anything else in the system" (James 2003: 22-23). Because the "complex" Mondrian composes for his painting cannot be experienced without the relations that gather among the compositional elements, these relations must be considered as much a part of the experience viewers encounter with the work as the lines, colours, and planes seen on the canvas. Since relations are key to the generation of Mondrian's "complex," it can thus be called a *relational complex*.[30] It is important to note that these relations occurring among the compositional elements are not just vital to the shared experience viewers and Mondrian's work generate. The relational complex that emerges from the compositional elements and their relations is in fact *crucial* to the experience viewers have with any artwork.

It is from this relational complex that images begin to incipiently form as a rhythm felt in the seeing. Mondrian testifies to this stating: "Rhythm arises through the relationship of plastic means" (1986/1993: 313). As the relational complex comes together, the rhythm that viewers feel when looking at the painting does not generate fully formed images. Rather, the relational complex, along with the shared experience occurring between viewers and the painting, initiates a process out of which images emerge. This process is felt as the *incipiency of images*. It is the compositional elements in *Composition No. 12 with*

Blue – the black perpendicular lines, the planes of white, and the blue square – that gather and begin forming a relational complex, making it possible for images to begin emerging.

The emergent images that arise from the shared experience between the relational complex of *Composition No. 12 with Blue* and the viewers are more dynamic than Eckmann and Koepnick's notion of either grids or matrices. Recall that Eckmann and Koepnick's understanding of gridded images assumes that the relationship between viewers and artworks is based on a notion of stability. For them, viewers see immutable images when looking at gridded images. Brian Massumi points out that if artworks are assumed to be static, this affects how vision is understood.

> The idea that there is such a thing as fixed form is actually as much an assumption about perception as it is an assumption about art. It assumes that vision is not dynamic – that it is a passive, transparent registering of something that is just there, simply and inertly. If vision is stable, then to make art dynamic you have to add movement (Massumi 2008: 3).

In this light, grids are immutable because both the seen artwork and the viewers' ability to see are believed to be stable, whereas matrices are full of motion because movement is added to compositional elements that are contained within its underlying static gridded structure. This means that *Composition No. 12 with Blue* cannot be considered a grid, as defined by Eckmann and Koepnick, because

viewers actually see movement occurring in the form of the jittery rhythm that emerges from the flickering intersections of the black perpendicular lines.

Viewers experience a seeing that exceeds what is painted on Mondrian's canvas. Alternately, this also means that grids are not stable as such. They are never as immutable as they seem. The fluctuation of grayish-white in the intersections of the grid provokes viewers to constantly shift their focus from one section of the painting to another. Their gaze is not fixed upon the painting as a whole but instead is endlessly darting about the canvas. For Mondrian, "vision does not start from a single given point, but takes its viewpoint everywhere, from no fixed place" (1986/1993: 197). The instability of the viewers' vision is instrumental to the dynamism that is generated with the work.

Composition No. 12 with Blue cannot be classified as a matrix either. This is because, first, the movement that takes place in the painting does not result from the addition of motion to the compositional elements; second, the black lines make the grid visible; and third, it is not a digital artwork. The moving images viewers see in Mondrian's painting are not caused by changes that are exclusively generated from the work itself. There is no underlying binary code that was programmed to move or change the compositional elements within the visible grid, unlike Simon's *Every Icon*. Rather, when viewers look at *Composition No. 12 with Blue*, the moving images they see are co-generated through dynamic relationship between the relational complex of compositional elements and the shared experience that the viewers and the painting mutually encounter

together. It is the excesses in the seeing that generate the dynamism that is felt as the incipiency of images of Mondrian's work.

Landing Sites

Composition No. 12 with Blue shows that the line that demarcates grids from matrices is not solid because the dynamic movement generated from the jittery rhythm felt in the seeing blurs this boundary. In Mondrian's last completed painting, *Broadway Boogie Woogie* (1942-43), the criteria that separate grids from matrices become even more tenuous. This is because *Broadway Boogie Woogie* generates a dynamism felt in the seeing without any black perpendicular lines. There is no grid that is immediately visible, unlike *Composition No. 12 with Blue*. Rather than composing this painting with black perpendicular lines, Mondrian fills *Broadway Boogie Woogie* with an array of rectangular and square planes of varying sizes. The larger planes are primarily white and are surrounded by smaller, mostly square, planes that are composed of four different colours: red, yellow, blue, and grey. What is striking about this square painting (127 x 127 cm) is that as viewers look at it, they begin to notice that the smaller planes that border the larger white planes actually form a series of perpendicular lines. These colourfully composed lines, in turn, generate a gridded pattern that echoes Mondrian's previous work, such as *Composition No. 12 with Blue*.[31]

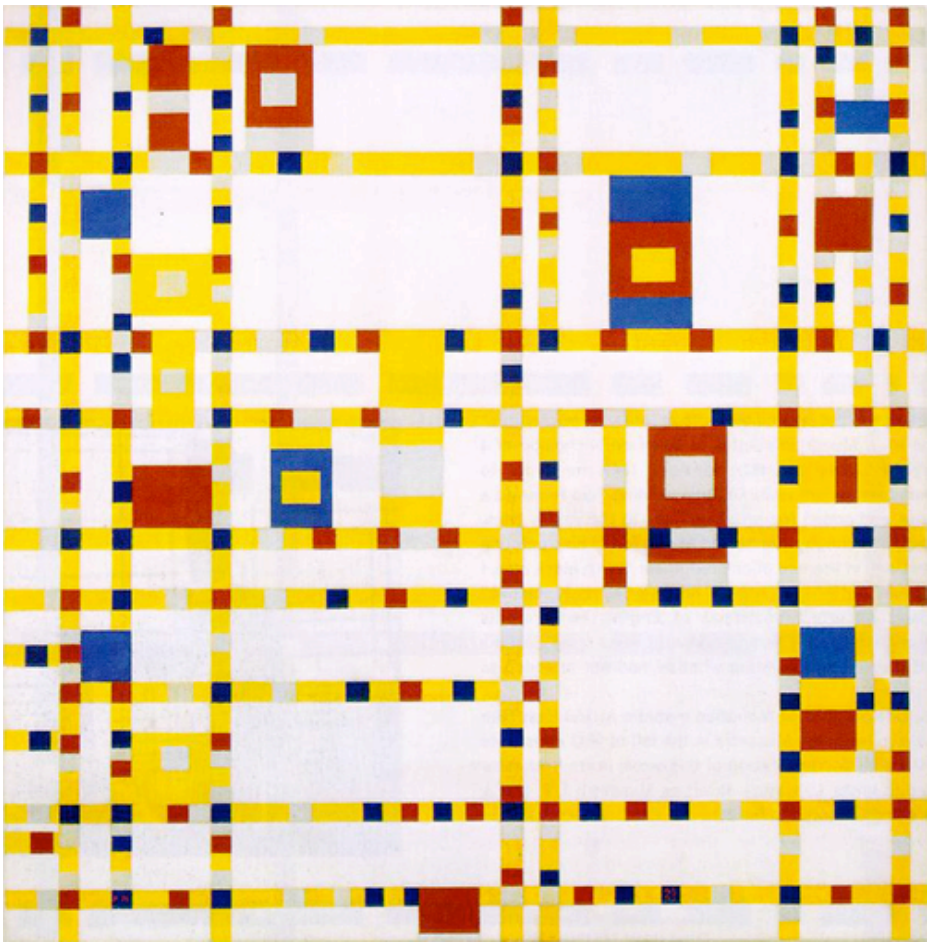

Figure 1.2. Piet Mondrian, *Broadway Boogie Woogie* (1942-43).

In *Broadway Boogie Woogie*, the perpendicular lines and the grid can actually be difficult for viewers to see as a cohesive whole because these compositional elements are not a uniform colour. This is because the lines and the grid are generated in the seeing. Discussing *Broadway Boogie Woogie,* Mondrian explains that the perpendicular lines composed of the small planes are not the only things that are produced through the activity of seeing, but that the planes themselves are as well. He states that, "the lines are absorbed by the colour planes; but the limitation of the planes shows themselves as lines and

conserve their great value" (Mondrian 1986/1993: 356). The perpendicular lines viewers see, which form the grid, are composed of the small coloured planes. The coloured planes themselves are composed of contour lines that surround their edges. These contour lines, which delineate the planes' shape, emerge in the relations between the coloured planes. The contour lines and coloured planes mutually compose each other and together generate the painting's relational complex. It is the mutual composition of and relations between the coloured planes and the contour lines that enable the emergence of the perpendicular lines and the grid.

Viewers initially encounter the emergence of the relational complex in *Broadway Boogie Woogie* through the dazzling display of colours found in the planes. It is the array of coloured planes that grab the viewers' attention, as opposed to the perpendicular lines they generate. This is because, according to painter Bridget Riley, Mondrian "paints the sensation that his own work generates: the little tiny squares in *Broadway Boogie Woogie* originate in the after images of the linear intersections that were the beginning to crop up in his paintings" (2009: 318). Instead of the perpendicular lines generating a jittery rhythm of whitish-grey flickers, like in *Composition No. 12 with Blue*, Mondrian reverses the roles of the flickers and the perpendicular lines in *Broadway Boogie Woogie*. It is the flashes of colour, now made corporeal and embodied as the coloured planes painted on the canvas, which generate the dynamism that is felt in the seeing. As the colours of the planes take hold of the viewers' attention, a

dynamic movement begins to appear that follows the sequences of the small coloured planes. This dynamic movement is discontinuous, but not like the jittery flickers of *Composition No. 12 with Blue.* It flows through the sequences of reds, yellows, blues, and greys around the larger white planes as an irregular rhythm. From this flowing irregular rhythm, the perpendicular lines and the grid are made visible as the images that viewers see.

The array of coloured and white planes that compose *Broadway Boogie Woogie*, as well as the perpendicular lines, the grid, and the irregular rhythm that viewers experience in the seeing, might be considered what Madeline Gins and Arakawa call *landing sites*. According to Gins and Arakawa, landing sites designate "the 'coming alive'… of anything whatsoever, including even the most fleeting sensations" (2002: 6). As new encounters are experienced between *Broadway Boogie Woogie*'s compositional elements, the gathering relations among the elements and viewers, more landing sites are felt in the seeing. These felt landing sites cannot be specifically located. They are not stable places that can be mapped with any sort of precision. They do not occur in or on Mondrian's painting. Rather, landing sites are what constitute the composition of the experienced encounter, as they are being experienced. Landing sites generate a space for experience to be felt, enabling viewers to "feel the vitality of reality in everything that exists" (Mondrian 1986/1993: 387).

As landing sites, the array of coloured and white planes tease out an intensity that is experientially felt between viewers and the relational complex of

Mondrian's painting. While these planes are being experienced, they become "the landings of sites for future cueing and aligning" (Manning 2010: 6-7). They are what mobilize potential into the felt dynamism that flows throughout Mondrian's painting, generating the irregular rhythm and enabling the incipiency of images. This means that what is generated in the midst of the viewer-artwork experience is composed of landing sites, including all the relations that occur between landing sites and the experiences themselves. This is because, according to Gins and Arakawa, what is actualized into perception is composed of configurations of landing sites. As well, each landing site that is experienced is always composed of more landing sites. "Anything perceived can count as both a landing site in and of itself and as a larger landing site" (Gins and Arakawa 2002: 9). Because there are landing sites within landing sites that constitute even bigger landing sites, Gins and Arakawa further refine the conception of landing sites and specify that there are three distinct types: perceptual landing sites, imaging landing sites and dimensional landing sites. The composition of anything that emerges into experience involves all three of these types of landing sites simultaneously. This is because, as Gins and Arakawa state: "Landing sites dissolve into each other, or abut, or overlap, or nest within each other" (2002: 8). It is through the overlapping of the three types of landing sites that experience emerges, changes, and is made perceptible. As the three types of landing sites constantly shift their configurations, the experience that they compose and recompose is always in the making.

The first of these landing sites that compose experience are called perceptual landing sites. They can be understood as the "building blocks" of all landing sites. This is because these sites, as Gins and Arakawa state, "serve up the initiating sites of all sites" (2002: 11). Perceptual landing sites consist of what is actually perceived as it is being perceived. "All points or areas of focus, that is, all designated areas of specified activity, count as perceptual landing sites (visual, aural, tactile, olfactory, proprioceptive, kinesthetic, somaesthetic [pain])" (Gins and Arakawa 2002: 10). Perceptual landing sites are the compositional elements that are actually seen in Mondrian's paintings, such as the colours and shapes of the planes in *Broadway Boogie Woogie*. They are also the assemblages of these compositional elements, like the grouping of colored planes that generate a particular horizontal line or a set of these perpendicular lines, which then forms the grid that viewers eventually come to see. Perceptual landing sites, according to Manning, "are singular and multiple at once" (2009b: 211). Each individual perceptual landing site is a singular site onto itself, like the coloured planes, but they also make up other perceptual landing sites that are experienced through their multiplicity, such as the perpendicular lines and grid that are composed of many coloured planes.

Imaging landing sites are the second type of landing sites. These landing sites extend beyond the experiential limits of the perceptual landing sites. As Gins and Arakawa explain: "Taking off from perceptual landing sites (actual points of focus), imaging landing sites (generalizing factors) extend and diffuse

surfaces and volumes. Imaging landing sites enlarge the areas over which qualities hold sway" (2002: 12). Imaging landing sites are the incipient actions that generate the about to become perceptible of experiences.[32] They constitute the dynamism that is felt gathering throughout any composition that is experienced. They are the excesses in the seeing that are felt when viewers look at *Broadway Boogie Woogie*. The dynamic movement that viewers feel as the irregular rhythm that compose the perpendicular lines and the grid visible are the imagining landing sites, which flow throughout Mondrian's painting.

Finally, dimensional landing sites are the sites that occur between perceptual landing sites and imaginary landing sites. Gins and Arakawa state that dimensional landing sites combine "the qualities of a perceptual landing site with those of an imaging landing one, coupling and coordinating direct responses with indirect ones, the formed with the formless" (2002: 8). Dimensional landing sites are the sites of relation that arrange the spacing and the placing of all landing sites. They generate the depth and emphasis necessary to any experience. In *Broadway Boogie Woogie*, dimensional landing sites are what enable viewers to take the composition of planes on the canvas and simultaneously feel the emergence of the dynamic irregular rhythm, while seeing the perpendicular lines and the grid that this rhythm generates. Dimensional landing sites connect the composition of planes to the irregular rhythm they generate in the seeing and bring them both to the forefront of the viewers' experience in order to make the perpendicular lines and the grid visible. Without

these dimensional landing sites to coordinate the felt excesses of imaging landing sites and the perceived compositional elements of perceptual landing sites, the act of experiencing the world would be made completely chaotic.

All three landing sites are necessary in order for any visual experience to occur. The images that viewers see when looking at *Broadway Boogie Woogie* all arise from the ever-changing configurations of these three types of landing sites. The perpendicular lines and the grid are made visible not only from the configuration of perceptual landing sites that are immediately seen as the composition of planes, but also from the imaging landing sites that generate the dynamism felt in the seeing and the dimensional landing sites that constitute the relations that occur between all landing sites. As these landing sites compose and recompose what viewers experience, they also coordinate the emergence of the relational complex and the shared experience between Mondrian's painting and viewers. The relations among landing sites bring forth the notion that the viewers' experience is in constant negotiation between the overlapping of landing sites, forever composing, in which there is no distinct division between the viewers' body, Mondrian's painting, or the experiences that both share. It is from the constantly changing configurations of landing sites that the incipiency of images is made possible.

Landing sites are not only constantly configuring what viewers visually experience when looking at *Broadway Boogie Woogie*, they also are perpetually composing all the visual experiences viewers have of anything they see, whether

they are gridded images, like Mondrian's paintings, or images generated by matrices found in digital imaging, like Simon's *Every Icon*. The encounter viewers have with a single white square in *Every Icon* generates a landing site that is experienced in and of itself. This same encountered white square is also a part of a larger composition of squares that generates different landing sites for the experiencing. All of these landing sites that are felt in *Every Icon*, like those in Mondrian's paintings, continually shift about configuring an experience for viewers, as that experience is itself emerging into existence. Whether images emerge from digital means or with paint, everything that viewers see is constituted in the shared experience generated through the encounter with landing sites that are felt as "a depositing of sited awareness everywhere" (Gins and Arakawa 2002: 7). Images actively emerge in midst of a shared encounter with the world that is infinitely populated with landing sites.

Tentatively Constructing Images

Because landing sites are active within every shared experience with and within the world, rather than attempting to classify the images as either being gridded or generated by matrices, all images – digital, modernist or otherwise – should be considered to be what Gins and Arakawa call "a *tentative constructing towards a holding into place*" (2002: 23ff.; original emphasis). The images emerging from the shared experience between an artwork and its viewers arise from the constantly shifting configurations of landing sites. Because everything that is

experienced changes as the landing sites rearrange themselves, any images that are made visible never last as such for very long. As Gins and Arakawa explain: "Everything is tentative" (2002: 49). It is important to be mindful of the nuanced manner in which Gins and Arakawa use the term "tentative", which is defined by them in both its provisional and hesitant sense (2002: 82). Specifically, tentativeness should be understood provisionally as an arrangement that lacks fixity and hesitantly as a momentary pause. This means that the images that viewers see when looking at Mondrian's *Composition No. 12 with Blue* or *Broadway Boogie Woogie* emerge as "a tentative constructing towards a holding into place" that are provisionally "constructed" but also are hesitantly "held."

The experiences that are shared between Mondrian's paintings and the viewers are provisionally tentative because at any moment these particular experiences can change or even vanish. When Gins and Arakawa discuss the tentativeness of the biosphere, or what they call the "bioscleave", they assert that if any single element fails to hold, then this could potentially create disastrous effects for the entire planet.[33] Although the consequences are not as cataclysmic when a shared viewer-artwork experience does not take hold, emergent images and shared experiences are nonetheless tentative in this provisional way. For example, when viewers walk away from *Composition No. 12 with Blue* or *Broadway Boogie Woogie*, the shared experience between the viewers and the painting ceases, while the developing relational complex and the incipiency of images continue to persist by taking new and different forms. This is what makes the

"constructing" of images so provisionally tentative. Even minor changes to the experience shared between Mondrian's paintings and its viewers can affect the incipiency of images. A blink of the eye, a stomach gurgling with hunger, a gentle breeze flowing through the gallery space, a cough made by another viewer, or even an appearance of crack in the paint that is just beyond perceptibility can all tentatively impact the shared experience.

The key is that these provisionally tentative, shared experiences need to be held long enough to enable the coming together of relations and allow for the incipiency of images to occur. In order for this holding to happen a hesitation must occur. Neither Mondrian's paintings nor the viewers are capable of provoking this hesitation. Rather, according to Gins and Arakawa, *critical holders* enable this hesitation. Critical holders emerge to help the viewers detect and piece together incipient images while they are "activated and held and holding and activating" (Gins and Arakawa 2002: 82). Recall that when viewers first encounter *Composition No. 12 with Blue,* the web of perpendicular black lines holds their attention for a brief moment just before the whitish-grey flickers begin to emerge from the intersections. The moment viewers encounter the painting, the black perpendicular lines initiate a composing of an about-to-become image. This causes a hesitation to occur in the seeing. It is important to understand that the composing black lines are not yet an image as such. This composing or incipient action should be viewed as the initial coming together of the relational complex. When viewers look at *Composition No. 12 with Blue*, as the

black lines begin composing, a hesitation is generated in the seeing. When looking at *Broadway Boogie Woogie*, the critical holder is the array of colours that dazzle the viewer into hesitation. As the viewers begin looking at the colours found in the painting, the colours start to compose the coloured planes, which then generate the irregular rhythm that takes the viewers on a journey around the various white planes throughout the canvas.

It is the critical holder that enables this hesitant moment to take place so that the relational complex can continue coming together enabling the incipiency of images to occur. This is because the critical holder exists in a relationally emergent field that includes Mondrian's paintings, but also extends beyond them. It invites viewers to engage with these paintings through its ability to attract and hold the viewers' gaze. The initial configuration that begins to become visible in Mondrian's paintings is the critical holder, which takes form as the composing black lines in *Composition No. 12 with Blue* or the coloured planes in *Broadway Boogie Woogie*. In that hesitant moment when the critical holder emerges, several actions occur almost simultaneously, enabling the incipiency of images. To begin with, the viewers' attention is *held.* Then the shared experience is *activated* between Mondrian's paintings and the viewers. Finally, the relational complex continues to come together after viewers see the initial configuration of the black lines, in the case of *Composition No. 12 with Blue* or the composition of coloured planes in *Broadway Boogie Woogie*. From these three nearly simultaneous occurring actions a rhythm becomes active in the seeing. Images then emerge

from the jittery and irregular rhythms of these paintings, *holding* the viewers' attention even longer.

In that brief pause between experiencing a composition of visual elements and a dynamic rhythm that incites the viewers' gaze to move about the canvas, the critical holder, to paraphrase Gins and Arakawa, enables viewers to hold the images that hold them.[34] "Everything stops dead for a moment, everything freezes in place – and then the whole process will begin all over again" (Deleuze and Guattari 1983: 7). The perpendicular lines in *Composition No. 12 with Blue* or the coloured planes in *Broadway Boogie Woogie* emerge as the critical holder that hesitantly facilitates the "construction" or incipiency of images, while simultaneously holding the shared experience between the painting and viewers in place. The critical holder enables viewers to feel the emergence of a dynamism that can only be felt in the seeing during the shared experience.

Forces Felt in the Seeing

As the jittery flickers of whitish-grey in *Composition No. 12 with Blue* or the flowing irregular rhythms that emerge from the coloured planes in *Broadway Boogie Woogie* are encountered in the shared experience between Mondrian's paintings and viewers, these ephemeral occurrences could be easily dismissed as having no bearing on the viewers' actual perception. For Evan Thompson, these ephemeral occurrences do not have a place in his understanding of visual perception because they are not stable and distinct entities. This is because, for

him, the jittery flickers and irregular rhythms viewers experience when looking at Mondrian's paintings are not solidly grounded in something like the paint on a canvas or something rational like the structure of grids. Thompson believes that: "In perception, one is aware of things as stable and distinct entities in relation to an indeterminate background" (1995: 247). This would mean that in order for viewers to encounter the images generated in the shared experience with Mondrian's paintings, they would have to background the dynamic movement that is actually experienced as the flickers and the irregular rhythms felt in the seeing. Viewers would have to encounter the compositional elements in these works, and the paintings themselves, as a set of stable entities that constitute the images they see. They would have to concentrate solely on the perceptual landing sites, paying absolutely no attention to either the imaging and dimensional landing sites that occur in the seeing, which enable the activation of the dynamism that is felt in the midst of the shared experience.

If perception unfolds how Thompson believes, then, according to Bergson, it would "be inextensible; it would consist of the assembling of certain specific materials, in a given quantity, and we should never find anything more in it than what had been put there in the first place" (2007: 113). Mondrian's paintings would be no more than the paint on the canvas and the grid pattern it presents. Viewers would not experience any movement when they encounter either *Composition No. 12 with Blue* or *Broadway Boogie Woogie*. Yet the excesses in the seeing present in the experience shared with Mondrian's paintings in the form of

the jittery and irregular rhythms extend beyond Thompson's stable understanding of perception. This is because there is always more that is experienced than is directly perceived. As painter Bridget Riley notes: "We *feel* with our eyes more that we *see*" (2009: 69; emphasis added). When viewers gaze upon Mondrian's paintings they are experiencing a seeing that exceeds what is actually visible.

The dynamism felt in the encounter between viewers and Mondrian's paintings enables both to surpass the rational and stable order that grids tend to impose. Neither viewers nor Mondrian's paintings can generate the dynamism that is experienced on their own. It is the felt intensity of dynamic movement generated through the activity of seeing that draws viewers into a shared experience, rather than the depictions of grids or the sense of stability the grid may offer. This means the dynamism that is experienced exceeds both what Mondrian's paintings offer to be seen, as the emergent relational complex, and the viewers' actual vision. What is experienced is co-generated through the relations that occur between the viewers and Mondrian's paintings through the activity of seeing. The jittery flickers of *Composition No. 12 with Blue* and irregular rhythms of *Broadway Boogie Woogie* felt in the seeing are *compositional forces* that compose the images that come to be seen. These compositional forces are co-generated though the relations that occur within the shared experience because, according to Gilles Deleuze, "any force is already a relation" (1988b: 70). These

felt compositional forces are the relations viewers encounter with Mondrian's paintings. They are what thrust the incipiency of images into action.

When looking at *Composition No. 12 with Blue* or *Broadway Boogie Woogie*, viewers simultaneously experience two conflicting compositional forces that constitute the dynamism felt in the seeing. This is because, according to Mondrian, "the opposition of two forces creates dynamic movement" (1986/1993: 384). One force centrifugally spirals outward, while a second force moves in the opposite direction, centripetally spiraling inward. The *centrifugal force* both exceeds the confines of the surface of Mondrian's paintings, spilling out beyond the works' relational complex and into the world. It also surpasses the perceptual limits of the viewers' vision, lavishing viewers with *more than* they can actually perceive. This centrifugal force is the conduit that enables viewers to feel the emergent excesses in the seeing.

The other compositional force felt in the seeing draws viewers towards Mondrian's paintings by luring their attention with the potential of experiencing a novel perception. This *centripetal force* pulls the viewers' attention to the visual offerings of *Composition No. 12 with Blue* or *Broadway Boogie Woogie* by subtracting much of the excess that viewers encounter through the centrifugal force. The centripetal force generates a seeing in which viewers perceive *less than* what they actually experience. Deleuze asserts that "perception is not the object *plus* something, but the object *minus* something, minus everything that does not interest us" (1988a: 24-525; original emphasis). This does not mean that the

centripetal force removes these felt excesses from the shared experience viewers have with Mondrian's paintings. Rather, this inwardly turning force enables particular excessive sites of attention felt in the seeing to potentially become something that viewers actually perceive.

When the centrifugal and centripetal forces encounter each other within the shared experience between Mondrian's paintings and viewers, they eventually reach a state of equilibrium. This equilibrium for Mondrian "is not a static state without action, as generally thought but, on the contrary, [it is] a continuous and mutually annihilating opposition of equivalent but unequal elements" (Mondrian 1986/1993: 252). Just because a state of equilibrium is reached between the centrifugal and centripetal forces within the shared viewer-artwork experience, it does not mean that these forces stop being active. The centrifugal force continues to generate the more-than of experience, while at the same time the centripetal force persists in producing the less-than of perception. As one force enables more to be actually experienced, the other constantly lures the viewers' attention towards particular occurrences felt in the seeing. Because of the continued activity these opposing compositional forces produce, the equilibrium they co-generate constantly shifts and reconfigures itself, which in turn creates the dynamism that is felt in the seeing. Together these vertiginous compositional forces felt in the shared experience between viewers and Mondrian's paintings generate a dynamism that, according to Koepnick "at once

point our attention inward and outward, suspend our perception and stir our appetite for more" (2006: 55).

The difference between what viewers encounter when looking at Mondrian's work and what is visibly painted on these canvases creates a disparity that Gins and Arakawa believe is "between the world as it happens… and the world, reduced and distorted, made to appear as other than what it happens as" (2002: 51). If viewers truly believe that the images they see are exclusively the grids painted on the canvas, then they will not visually encounter images as "a tentative constructing towards a holding into place." Viewers who see Mondrian's paintings as merely static grids potentially miss the dynamism that the activity of seeing has to offer. "Instead of visualizing a complete triumph of modern rationality over any remaining trace of uncertainty, Mondrian's grids simultaneously invite centrifugal and centripetal readings" (Koepnick 2006: 54-55). Works such as *Composition No. 12 with Blue* and *Broadway Boogie Woogie* enable a seeing in which dynamic movement is felt in the seeing experience. Disregarding the jittery flickers and the irregular rhythms felt in the seeing goes against one of Mondrian's most important beliefs, "that reality is *in constant movement*" (1986/1993: 351; original emphasis). Mondrian held movement in such high regard because, as he states, "it evokes the sensation of life" (1986/1993: 351).

Chapter Three

From Below the Threshold of Visibility:

The Formation of Images in Paul Sharits' *N:O:T:H:I:N:G*

In the comings and goings of our mind between the without and the within, there is a point, at equal distance from both, in which it seems to us that we no longer perceive the one, and that we do not yet perceive the other: it is there that the image of "Nothing" is formed.

– Henri Bergson, *Creative Evolution*[35]

Paul Sharits' film *N:O:T:H:I:N:G* (1968) consists primarily of colour-fields that fill the entire screen.[36] Following the title sequence, the film begins with the passage of several colours that are seen changing at a rate of one half to two seconds per shot. The colours red, yellow, green, blue, white and black are clearly discernible.[37] After about a minute the colours begin to change more quickly. Eventually, these changes become so rapid that it becomes nearly impossible for viewers to discern the colours and the order in which they appear. In fact, the colours become so volatile that it is difficult to say with confidence that they are actually seen at all. At this point in the film viewers begin to perceive something other than a series of easily identifiable colours – they begin to see an emerging flicker.

When viewers start to see the flicker, many of them begin to mistrust their visual capabilities because what they see is truly bizarre. The flicker appears simultaneously to throb at its edges, rise from the screen, and float in some ambiguous space between themselves and the screen. William C. Wees contends that in many of Sharits' works, "the whole image may seem to expand and contract and even lift itself off the surface of the screen and hover disconcertingly in some ambiguous plane that is impossible to fix in space" (1992: 147).[38] It can be difficult for viewers to comprehend exactly what it is they are actually seeing. When they see these strange occurrences taking place in *N:O:T:H:I:N:G*, it is not clear to them whether they are seeing features of the film itself or something fabricated by their minds. Sharits himself does not claim to know what viewers will experience when watching his films. He states that many of his films "brings us to the limits of our perceptual abilities so often one cannot tell whether or not what one is experiencing is in the work or in oneself" (Sharits and Cathcart 1976: unpaginated). By pushing viewers to their perceptual limits up to the point where they doubt their own visual abilities, *N:O:T:H:I:N:G* incites them to question not only their ability to discern what the images they see actually are, but also their understanding of how the images they see come into being.

At the time when viewers begin to see the throbbing flicker in *N:O:T:H:I:N:G,* the colour-fields of which the film is composed are no longer visible. This is not to say that they have disappeared. Rather, these colour-fields continue to fill the entire screen but they change at such a rapid pace that they

simply cannot be seen as such. In fact, by the time viewers begin to see the flicker, the length of time that each colour is projected has decreased from the two seconds at the beginning of the film to a twenty-fourth of a second. At this rapid rate of projection it is nearly impossible to distinctly see each colour. According to Jimena Canales, "most events occurring in this short period of time cannot be perceived" (2009: ix). The colour-fields in *N:O:T:H:I:N:G* effectively become *imperceptible*.

Some viewers may be capable of recognizing an occasional colour presented. However, according to Alva Noë, "the moment you stop and try to make a specific feature the sole object of your consideration – this shade of red, for example – it slips away from you in the sense that it exceeds what you can take in, in completeness, at an instant" (2004: 135). Because the colours at this point of the film are changing so quickly, any particular colour that viewers can grasp – such as the colour red – seems to evaporate upon recognition. This is not a criticism of the viewers' abilities to discern these rapidly changing colours; it merely shows the limits of their visual capabilities. They experience a seeing that is, in Rosalind Krauss' words, "*below the threshold of actual visibility*" (1976: unpaginated; emphasis added).

The Seen and the Unseen

As the film continues, the flicker comes to dominate what viewers feel they see. However, several times throughout *N:O:T:H:I:N:G* the flicker is broken

by brief interludes of what can best be described as a foggy evanescence of colour. There is no abrupt jump from the flicker to these evanescent colours; viewers see the flicker fluidly phase into, and eventually out from, these evanescent colours. For example, at one point in the film the flicker recedes into a pinkish-orange colour.[39] During the viewers' encounter with this pinkish-orange colour, it looks volatile, as though it is on the cusp of transforming into a completely different colour. This evanescent colour is constantly and minutely shifting in brightness and in hue, veering towards several different colours, such as white, green, and red, all the while maintaining its pinkish-orange quality. In the persistence of this evanescent colour, the small adjustments in brightness and in hue become more significant. The modifications that take place within the pinkish-orange colour eventually become so substantial that the evanescent colour disappears and the flicker seamlessly reveals itself again, becoming what is dominantly seen. As *N:O:T:H:I:N:G* nears its conclusion, the oscillation between the flicker and the evanescent colours passes and the film returns to the slower pace found at its beginning. Viewers are once again able to distinctly recognize several colours as they are projected on the screen for longer periods of time.

What is interesting about the evanescent colours in *N:O:T:H:I:N:G* is that the colours as seen by the viewers do not correspond to the colours that are actually projected. An example of the difference between what the viewers see and what is actually shown is apparent in the evanescent pinkish-orange colour-

field described above. If viewers were able to see the film projected at a much slower speed or have the opportunity to see the filmstrip directly, they would realize that neither the colour orange nor the colour pink are found. Instead, the colours on the filmstrip that make up the evanescent pinkish-orange are red, yellow and white. When this segment of the film is shown at its proper speed, the viewers do not see the colours that are actually being displayed; rather, they tend to see something completely different. What becomes visible is a field of colour that is not the colour itself – red, yellow, white – but an evanescent feeling.

This perplexing disjunct between the colours that are actually seen and those that are projected is not the only point in this film when there is a disparity between what is projected and what viewers feel they see. The same situation occurs when viewers are watching the flicker. As noted earlier, when viewers see the flicker, it is difficult for them to discern any particular projected colour. If viewers were able to see a segment of the flicker slowed down or see it directly on the filmstrip, they would notice that the colours that are actually projected change dramatically in brightness or hue, and sometimes even both. For instance, a segment of the flicker might begin with the projection of the colour black, and be followed by a bright yellow, then a dark green, then light blue, then white, then back to black, and so on. Like the evanescent colours, the rapidly changing projected colours are not actually seen by viewers when watching the flicker.

Because the projected colours appear to not be visible when either the flicker or the evanescent colours are seen, they could be called *unseen* colours.

The term "unseen" was chosen with specific reference to Steve Goodman's concept of "unsound".[40] In *Sonic Warfare: Sound, Affect, and the Ecology of Fear*, Goodman uses the notion of unsound to describe "both the peripheries of auditory perception and the unactualized nexus of rhythms and frequencies within audible bandwidths" (2010: xx). The notion of unsound is concerned with two imperceptible facets of sound. The first involves those sounds that fall outside the range of acoustic perceptibility. Two examples of this for humans are low frequency sounds like those made by large motor engines or high frequency sounds such as those made by blowing a dog whistle.[41] If there is sound that is beyond a creature's perceptual capability then it simply cannot be heard and is therefore an inaudible sound, or an unsound.

The second facet of unsound involves the imperceptible sonic vibrations that constitute audible sounds. These sonic vibrations cannot be heard because, as Goodman states, they're the "not yet audible" of sound (2010: xviii, 48). They are not yet audible because they are merely the compositional elements that have the potential to come together and form a sonic perception. These imperceptible sonic vibrations constitute that which is *about to become* audible. Together they generate a "relational complex" that potentially emerges into something that is actually heard when encountered.[42]

Gilles Deleuze gives an example of this second facet of unsound when he states: "I apprehend the sound of the sea, or of an assembly of people, but not the murmur of each wave or person who nonetheless is part of each whole" (1993: 87).[43] When listening to the sea or the roar of a crowd at a football game, the sound made by one wave in the sea or one person in a crowded football stadium cannot be differentiated from the other sounds that are made in close proximity. The specific sound made by each wave or person is imperceptible and nearly impossible to locate or isolate. However, when several of these imperceptible unsounds act together, they provide the potential for an audible sound "as such" to emerge. The imperceptible sonic vibrations generated by the waves or people are the about-to-become audible elements that compose the sound of the sea or stadium crowd.

These two facets of unsound have corresponding characteristics that are paralleled in vision. The first facet of unsound, those sounds outside the range of sonic perceptibility, are analogous to colours beyond the range of visibility. For humans this includes ultraviolet and infrared colours.[44] Although pursuing an exploration into those unseen colours that are beyond the limits of human visibility would be fascinating, especially if this investigation were to look into the question of how these unseen colours may potentially affect those colours found within the visible spectrum, it is beyond the scope of this present discussion. Instead, it is the second facet of unsound that is of interest. This is because the imperceptible sonic vibrations, which are the about-to-become

audible elements that constitute what is actually heard, can be paralleled in vision as imperceptible unseen colours, or what Deleuze calls *microperceptions*.

Seeing with Microperceptions

Microperceptions are both the elements that compose perceptions as well as the relations that occur between a work's compositional elements. According to Deleuze, microperceptions are "as much the passage from one perception to another as they are the components of each perception" (1993: 87).[45] The reason that microperceptions are both the elements of perceptions and the relations between those elements is because they cannot be experienced independently. No one particular microperception can be experienced in isolation from other microperceptions. There are no discrete and individual microperceptions. Microperceptions can only be experienced relationally. This means that all microperceptions are relational entities.[46]

The same holds true for perceptions themselves. Perceptions cannot be experienced in isolation from other perceptions or the microperceptions that compose them. Perceptions can only be experienced in relation to other perceptions and microperceptions. But unlike microperceptions, which occur below the threshold of visibility, perceptions comprise what viewers actually see. Yet despite the fact that perceptions are what rise above the threshold of visibility, they continue to have relations with that which is unseen.

From this Deleuzian perspective, the unseen colours in *N:O:T:H:I:N:G* cannot be understood simply as a rapid succession of discrete projections. This is because, as microperceptions, unseen colours can only be experienced through their relations. For example, if the unseen colour "red" is projected, then it cannot be experienced in isolation from the unseen colour that preceded it and the unseen colour that will follow. When viewers experience the unseen red, they will also experience the relations it has with the preceding and following unseen colours. If the unseen red is preceded by an unseen yellow and followed by an unseen white, then the moment viewers experience the unseen red they will also experience a yellow-red relation, a red-white relation, and a yellow-red-white relation.

As microperceptions, the unseen colours are relational entities that imperceptibly come together to produce something perceptibly more extraordinary than any one of them alone could. It is important to emphasize that the unseen colours and their relations are not just components that make up the seen flicker and evanescent colours in Sharits' film. They are not parts that go on to make a whole. Deleuze states: "We are not dealing with relations of parts-to-wholes because the totality can be as imperceptible as the parts, as also when I do not sense the grinding noise of the water mill to which I am overly accustomed. And a buzzing or deadening effect are wholes without necessarily being perceptions" (1993: 87). Microperceptions do not stand out enough to be actually perceived. Even when they enter into relations, they may not generate

something that is actually seen. It is only that which is truly remarkable that becomes perceptible. When viewers watch *N:O:T:H:I:N:G,* the flicker and evanescent colours that they see need to be understood as remarkable singular events generated by a multiplicity of ordinary unseen colours that come into relation with each other. Deleuze provides an example that uses colour, which is very relevant to the present discussion. He states that the colour green emerges from the differential relations between the colours blue and yellow (1993: 88). This means that both the colours blue and yellow are active in the perceptual field that is the colour green. This perceptual field is filled with microperceptions. The colours blue and yellow are these microperceptions that are the about-to-become visible elements that compose the colour green. It is their incipiency that enables the colour green to become visible.

The perceived flickering and evanescent colours in *N:O:T:H:I:N:G* thus emerge out of the potential provided by both the unseen colours and the relations occurring between them. Recall that when viewers see the pinkish-orange evanescent colour, the unseen colours that are actually projected consist primarily of red, white, and yellow. When the unseen colours red and white are displayed more frequently than yellow, the pinkish-orange evanescent colour tends to appear pinker. When the unseen colours red and yellow are presented more frequently than white, the pinkish-orange evanescent colour verges closer to orange.[47] When understood through the notion of microperceptions, the evanescent pinkish-orange colour becomes visible as the unseen colours red,

white, and yellow enter into relations. This shows that during particular sequences in *N:O:T:H:I:N:G* in which the projected unseen colours rapidly change between a small set of differentiated colours, viewers see an evanescent colour that is a mixture of that particular set. Wees notes similar occurrences when watching Sharits' work and other flicker films stating: "Alternating frames of black and white, for instance, will evoke perceptions of an ephemeral and slightly pulsating gray. Alternating red and blue frames produce a comparably vivid, yet insubstantial, violet" (1992: 147).

Recall that when viewers see the flicker, the unseen colours are changing radically in brightness and in hue. As the flicker is seen, the changes that take place among the unseen colours are often extreme. They can jump between lighter and darker colours or between complementary colours. According to physicist Ogden Rood: "Colours which are complementary are already as far apart on the chromatic circle as possible; hence they are not changed in hue, but merely appear more brilliant and saturated" (1879: 246). Because complementary colours appear brighter and more saturated, he asserts that they "furnish the strongest contrasts" (Rood 1879: 161). This means that in works using coloured light, like Sharits' film *N:O:T:H:I:N:G*, if viewers were to be presented the colour blue followed by it complementary colour yellow, they would feel that the yellow they saw appears brighter and more saturated than had been preceded by any other colour. When these drastic shifts in brightness and hue occur among the unseen colours, they do not blend like the evanescent colours; instead, they

produce what can best be described as an indiscernible pulsation of light. This shows that the flicker, which appears throughout the film, also emerges from the series of differentiated unseen colours. The images that are visible in *N:O:T:H:I:N:G* emerge from the relations that the microperceptual unseen colours enter into amongst themselves.

As viewers watch Sharits' film and see the flicker and the evanescent colours, they are continually being bombarded by hundreds of different unseen colours. A new unseen colour is encountered by viewers every twenty-fourth of a second. Deleuze states that as new microperceptions are encountered, perception changes (1993: 86). The relations that microperceptions enter into, which enable something to emerge into visibility, are tentative and can alter their configurations in order to accommodate for those new microperceptions that are encountered. Adjustments to the relations among the unseen colours are occurring every second, which then alter what is actually seen.

Despite the fact that viewers are constantly encountering new unseen colours, seeing is not just a process of accommodating and adjusting for the new. This is because, as Deleuze states, "we perceive the thing, minus that which does not interest us as a function of our needs" (1986: 63). The activity of seeing involves a process of subtracting from the perceptual field of microperceptions. "To see is to subtract form from a relational field of potential" (Manning 2008a: 327). This relational field of potential is the perceptual field where microperceptions reside. Viewers will always encounter large numbers of

microperceptions and all of them have the potential to emerge into something visible. As microperceptions enter into relations and begin emerging from below the threshold of visibility, only those microperceptions remarkable enough to grab the viewers' attention will continue to become the actual images viewers see. Those microperceptions that are subtracted from the perceptual field remain below the threshold of visibility.

There is always a process of addition and subtraction within every perceiving moment.[48] The flicker and evanescent colours that viewers see when watching *N:O:T:H:I:N:G* become visible through this seemingly contradictory dual process. As Sharits' film is projected, new unseen colours are constantly being added to the perceptual field. When these unseen colours begin entering into relations and start emerging from below the threshold of visibility, it is only those relations of unseen colours that are able to lure the viewers' attention that continue on to become the seen flicker and evanescent colours. Those unseen colours that do not attract the viewers' gaze are subtracted from the incipiency of images. Those subtracted microperceptions that are not remarkable enough to emerge above the threshold of visibility do not vanish or cease to exist. Instead, they remain within the perceptual field, prepared to engage in new potential relations.[49] This is how perceptions and microperceptions interact. This process of adding and subtracting will continue provided that the newly emerging unseen colour relations can persist in holding the viewers' attention. Because new unseen colours are constantly being introduced and removed as viewers

watch *N:O:T:H:I:N:G*, what is actually visible is never stable or completely whole. This means that the images viewers encounter when watching Sharits' film are always in the making.

Future Folds Presently Unfolding

Although adding and subtracting are usually structured in opposition to each other, the additive-subtractive process of seeing does not operate as a dichotomy. Rather, these two activities involved in the incipiency of images function together. A better way to state this is to say that microperceptions perpetually *fold* and *unfold*. The folding-unfolding process operates in concert, similar to that of a contraction-dilation pair, like the bicep and tricep muscles. As the bicep muscles contract, they fold in. At the same time, the tricep muscles dilate and unfold. The bicep muscles cannot contract alone. They need the dilation of the tricep muscles in order to carry out this function. For a folding to occur, an unfolding must simultaneously take place. This is why Deleuze explicitly states, "folding is not opposed to unfolding" (1993: 7).

This process of folding and unfolding can be said to be a double-folding process that takes place through the coming together and emergence of microperceptual relations in the incipiency of images. The first fold occurs when microperceptions gather into relations within the perceptual field. The microperceptual relations will then unfold as they emerge from the perceptual field and attempt to lure the perceptual interest of viewers.[50] The second fold

takes place during the incipiency of images coming into themselves as such. As these microperceptual relations attract the viewers' interest, those "interesting" microperceptual relations fold together and generate what will become visible. Any remaining, or "uninteresting," relations will continue to unfold but return to the perceptual field to potentially be folded again.

This double-folding process is the activity of seeing. Deleuze states: "I am forever unfolding between two folds, and if to perceive means to unfold, then I am forever perceiving within the folds" (1993: 93). To see is to be caught within the vertiginous spiraling action of the double-folding process. The constant movement of folding and unfolding that occurs within this process generates forces that compose the images that viewers see. These *compositional forces* are what travel between the folds. These forces are what connect the folds, enabling viewers to see a continuity of images. As discussed in the previous chapter, compositional forces are comprised of two seemingly opposed vertiginous forces that are felt in the seeing. One force spirals centripetally inward, emerging from the folding process, while a second force unwinds centrifugally outward, as an unfolding occurs. When these two forces encounter each other, a dynamism is generated that exceeds these two forces as such. Viewers feel this dynamic excess as the incipiency of images.

This vertiginous double-folding process in action is seen during the pinkish-orange sequence in *N:O:T:H:I:N:G*. Sharits' film effortlessly slips from the flicker to the pinkish-orange evanescent colour and just as effortlessly back to the

flicker. The transition from one to the other is executed seamlessly. Viewers do not see sudden jump cuts, wipes, fades to black or other familiar transitions found in most films. Rather, they see fluid metamorphoses between the flicker and the evanescent colours. Enabling this transmutation is the constant folding and unfolding of unseen colours below the threshold of visibility. Recall that the pinkish-orange evanescent colour is primarily composed of the unseen colours red, yellow, and white. As viewers see the flicker, these three unseen colours are gradually introduced into the perceptual field and begin to fold into relations. Once folded, these initial relations then proceed to unfold and emerge from the perceptual field. All the while more red, yellow, and white unseen colours continue to appear and fold. Eventually, the unfolding red-yellow-white relations start to lure the viewers' attention away from those unfolding relations that have been generating the flicker. This gradual shift in the viewers' attention then enables this set of unfolding red-yellow-white relations to be folded a second time. As more red-yellow-white relations are double-folded, the compositional forces that are generated by this process change and viewers see the flicker transmute into the pinkish-orange evanescent colour.

What this example of the double-folding process shows is that the unseen colours in *N:O:T:H:I:N:G* and the relations between them occur prior to the emergence of the seen images they generate. Before the pinkish-orange evanescent colour is seen, the unseen colours that it is composed of are entering into relations while the flicker is still visible. According to Erin Manning,

relations operate "in the future anterior (the tense of the 'will have' and of the 'not yet')" (2006: 103). Remember that the unseen colours are the about-to-become or the not-yet of the visible. This means that the images viewers presently see are brought about in the future by the coming together of relations among the unseen colours. By the time viewers see the flicker or the evanescent colours, the unseen colours and their relations that generated those visible images will have already become. If what viewers see takes place in the present, then the incipiency of those images takes place just before those images are seen.

According to professor of physiology Benjamin Libet, the incipiency of images occurs during the half-second before viewers actually see the images that are generated. In experiments conducted from the 1960s to the 1980s, he demonstrated that the imperceptibility of sensations persists for up to half a second.[51] The subjects of these experiments were administered a variety of electrical and visual stimulations. Libet then measured and compared the length of time the stimulations lasted and the time it took for the subjects to acknowledge the sensations. What he discovered was, first, that the subjects experienced sensations prior to their actual perception and, second, that if sensations lasted for less than half a second, the subjects reported that nothing was perceived. Sensations occur below the threshold of perception and can only emerge above this threshold if they last for longer than a half-second.

Libet was able to calculate this half-second gap between the initial experience of sensations and their actual perception based on two results from

his experiments. First, by recording subjects' brain activity using an electroencephalograph (EEG) monitor, Libet found that the intention to actually perceive sensations that are being experienced appears ahead of the actual perception by approximately 150 to 200 microseconds (Libet 1985: 537). Second, again recorded by the EEG monitor, Libet noted that there is "a slow negative shift in electrical potential by the brain" (1985: 529). This "slow negative shift" *precedes* the actual intention to perceive by about 345 microseconds (Libet 1985: 532). This "slow negative shift" demonstrates that for approximately 0.3 seconds the subject is unknowingly experiencing sensations before they are perceived. As these sensations continue to persist, the intention to perceive them occurs for about 0.2 seconds before the actual perception. This entire process, from the initial experience of sensations to their actual perception, takes a half-second. If the sensations were to cease prior to the completion of this half-second process, they would not actually be perceived.

In light of Libet's research, we can understand that when viewers watch *N:O:T:H:I:N:G*, they experience the unseen colours as sensations. Because sensations cannot be perceived as such unless they persist for at least a half-second, this means that for viewers to actually see the unseen colours, they need to endure beyond this short time frame. But remember that they are projected for only a twenty-fourth of a second, which means that they occur too fast to actually be perceived. Despite this fact, the unseen colours are able to relationally persist in the before and after of their unseenness and participate in the double-

folding process. It is therefore possible for the unseen colours to be experienced as though they had lasted for a half-second. This means that, as a result of the compositional forces created by the vertiginous double-folding process, the unseen colours are able to rise above the threshold of visibility and become the flicker and evanescent colours that viewers actually perceive. As Sharits' film progresses, additional unseen colours are encountered, which alter the existing relations among the unseen colours. This changes the form the compositional forces take and generates the perceptible transmuting images viewers see. In *N:O:T:H:I:N:G*, the images are always in the making because the compositional forces that are generated below the threshold of visibility are constantly affecting what viewers see.

The Cinematic Paradigm

The idea that the flicker and the evanescent colours viewers see when watching *N:O:T:H:I:N:G* are constituted by compositional forces generated by the folding and unfolding of the unseen colours does not follow the traditional understanding of images in film. Throughout the history of film there has been one dominant paradigm that, in its very definition of film, has attempted to explain how viewers are able to see moving images through the rapid displacement of displayed images on the filmstrip, which are themselves moved by the film projector. This cinematic paradigm makes no mention of sensations, microperceptions, compositional forces, or half-second gaps. Instead, it defines

film as "a sequence of still images, photographed or created in rapid succession, [that] will, when projected or otherwise mechanically displayed in equally rapid succession, be perceived by the human brain as a continuously moving image" (Enticknap 2005: 6).[52] Film is ordinarily projected at a rate of twenty-four images per second. Viewers don't actually see the rapid sequence of projected images; rather, they see moving images. According to the cinematic paradigm, this is because as viewers watch a film, their minds synthesize the succession of projected images and render them as one continuous flow.[53]

According to the cinematic paradigm's definition, a film consists of two disparate and homogenous systems that function independently of each other. One system involves such things as the projector, the filmstrip, the screen, and the images on the filmstrip, or as Sharits calls it – "the work." The other system involves a viewers' ability to see, or what will also be called a viewers' visual system. This system includes all the psychological and physical mechanisms necessary for sight, such as the rods and cones in the retina, the ability of the optic nerve to transfer electrical impulses to the brain, and the ability of the brain to interpret the information imbedded in these electrical impulses. Both systems operate independently of each other and one system cannot affect the constitution of the other. The work's system can show a quick succession of projected images without the need for viewers to see them, and conversely, the viewers' visual system does not need a film to be playing in order to see. When these two disparate systems interact, the outcome is a moving image.[54]

As a film is displayed, according to the cinematic paradigm mentioned above, the projected images occur independently from a viewers' ability to see them. Everything involved in making the work's system operate is preconstituted before viewers actually see anything that it has to visually offer. Because of this, the viewers' visual system cannot change the film itself in any manner. When viewers see a particular film, the cinematic paradigm stipulates that they will always see the same composition of projected images no matter how many times they revisit that particular film. The only way the film itself can possibly change is if something within the work's system is altered, such as the filmstrip being cut in order to either add or subtract images to be projected. Any changes that occur within the film itself remain outside of the realm of the viewers' visual system. The functioning of the viewers' visual system cannot change the work's system.

This cinematic paradigm also claims that the viewers' ability to see is also fully constituted prior to any encounter viewers have with a film. When viewers watch a film, the work's system cannot alter the functionality of their visual systems. For example, proponents of the cinematic paradigm would assert that the manner in which the rods and cones convert particular wavelengths of light into electrical impulses – which will subsequently be sent to the brain via the optic nerve – cannot be made to function differently by the film itself.[55] If a particular set of cones in the retina is sensitive to the frequencies of light considered to be the colour red, then the film itself cannot suddenly make that

set of cones sensitive to the frequencies light associated with the colour blue. Proponents of this cinematic paradigm take the position that the work's system cannot alter how the cones, or any other component of the viewers' system of vision, operate.

Under this cinematic paradigm, the only way the viewers' visual system can be altered is if damage is sustained to any of the components that constitute this system. If, for instance, a particular viewer sustained a severe head injury and began to suffer from achromatopsia, the inability to see colours, then her visual system would be altered.[56] Any film that this particular viewer who suffers from achromatopsia sees would be in shades of grey, even if this film itself displayed coloured images. According to this cinematic paradigm, this chromatic change has nothing to do with the functionality of the work's system and does not affect that particular system in any way. Thus, in this cinematic paradigm any changes that occur to the viewers' visual system take place independent of the work's system.

Considered from the point of view of the cinematic paradigm, the unseen colours in Sharits' film *N:O:T:H:I:N:G* would need to be understood as being within the exclusive domain of the work's system. According to this position, the unseen colours would not need the viewers' visual system in order to be displayed and viewers cannot alter the composition of the unseen colours. Furthermore, the viewers' visual system functions independently from the encounter with the unseen colours, which cannot alter the viewers' ability to see.

However, the separation of the unseen colours and the viewers' ability to see does not explain how the flicker and the evanescent colours are actually seen. It only explains how the two systems differ and what specific functions they each possess. According to this cinematic paradigm, the viewers' mind synthesizes the projected images into a seen moving image. This means that the viewers' visual system is responsible for generating a seen moving image. It is responsible for taking what is given below the threshold of visibility and transforming it into what viewers see. The flicker and the evanescent colours in *N:O:T:H:I:N:G*, when understood through this cinematic paradigm, are produced solely by the viewers' visual system and its ability to synthesize the projected unseen colours into a seen moving image.

Problems with the Cinematic Paradigm

The cinematic paradigm structures film as consisting of two heterogeneous systems that are in a dichotomous opposition to each other. This means that when the viewers' visual system and the work's system are compared in any way, one of these systems will be given priority over the other. For example, if the projected images of the work's system and the seen moving image of the viewers' visual system are compared, it follows that either the projected images or the seen moving image will be prioritized to the detriment of the other. If the seen moving image is prioritized, as will be discussed below, then the projected images will be deemphasized. However, because of the

dualistic nature of dichotomies, it is possible to take the opposite position.[57] If the projected images are emphasized, then the seen moving image will be deprioritized. Both positions are problematic in their own unique ways for an analysis of Sharits' film *N:O:T:H:I:N:G*. As a dichotomy, the cinematic paradigm cannot properly account for both the unseen colours and the seen flicker and evanescent colours because the unseen and the seen are components of opposing systems.

The notion under the cinematic paradigm that the viewers' visual system is responsible for generating a seen moving image in film is cause for concern. This is not only because this stipulates what a film can do prior to it being encountered by viewers, but also because, according to Sharits, this would allow viewers to place a higher value on the seen moving image that their visual systems synthesizes while deemphasizing all other aspects of film. Sharits asserts: "Those who acknowledge only the projected 'movie' as a source of their metaphysics tend to impose a value hierarchy that recognizes the frame and the strip of film only as potential distractions to the flow of the 'higher' process, that temporal abstraction, 'the shot'" (1972: unpaginated). By placing what is seen (the movie) on a different and more valued level, there is a risk that the role the projected images (the frames on the filmstrip) play in the incipiency of the seen moving image will not be accounted for. Because the projected images are below the threshold of visibility, it is easy to forget or purposely ignore the fact that the projected images perform a key role in the making of the seen moving image –

that is, without the projected images there would be no moving image for the viewers to see.

When any element in one of the systems within this cinematic paradigm is prioritized, it is possible for the particular system of which the prioritized element is a part to be more highly valued. If the seen moving image is emphasized above all else in film, then it can follow that the viewers' visual system will also be emphasized to the detriment of the film itself. When the focus is solely on what the viewers think they see, more value is placed on the seen moving image and the viewers' visual system, and subsequently the projected images and the work's system are devalued. This means that when viewers watch Sharits' film, their attention will be primarily directed toward the flicker and the evanescent colours. Very little consideration, if any, will be given to the unseen colours that make the flicker and evanescent colours possible, backgrounding the work's system.

However, when viewers watch *N:O:T:H:I:N:G*, it is difficult for their attention to be entirely focused on this film's seen moving image. Recall that as viewers watch Sharits' film, the moving image they see – the flicker and the evanescent colours – pulses beyond the edges of the screen and floats in an ambiguous space between themselves and the screen. Unlike most films, the seen moving image in *N:O:T:H:I:N:G* is a highly unstable image, which makes focusing on it nearly impossible. These strange occurrences constantly tug the viewers' attention away from the seen moving image, making them question

their ability to see. Because viewers are unable to continue attending to the experience of watching the film, it becomes difficult for them to only prioritize the seen moving image. This activity of questioning stops viewers from emphasizing the seen moving image and compels them to acknowledge that a film is more than just what they think they see.

Because this cinematic paradigm is structured as a dichotomy, when the viewers' visual system is no longer prioritized, then the film itself must therefore be thrust into the forefront of the viewers' attention. Several filmmakers, such as Peter Kubelka and those who P. Adams Sitney has identified as being a part of a movement referred to as "Structural Film,"[58] have been known to prioritize the work's system to such an extent that they do not believe that viewers truly see an moving image. They claim that viewers are deceiving themselves if they think they are seeing movement in a film. "Cinema is nothing but a rapid slide projection," states Kubelka. "When you see something on the screen which you accept as movement, it is an illusion, a magician's trick" (Kubelka 1978: 149). These filmmakers consider the seen moving image to be a false image that that takes the viewers' attention away from the rapid display of the projected images, which compose what they see. If viewers truly believe they are seeing a moving image, then they are being distracted from the operation of the film itself and the elements that comprise it, such as the projector's lens,[59] the filmstrip,[60] as well as the projected images.[61]

By placing the work's system in the forefront of the viewers attention, the unseen colours of *N:O:T:H:I:N:G* become the focus, rather than the flicker and the evanescent colours. But what still needs to be accounted for when prioritizing the work's system is the fact that when watching *N:O:T:H:I:N:G*. viewers see a moving image that throbs out from the edges of the screen and that also levitates from the screen's surface. Those who prioritize the work's system would claim that the strange occurrences are a part of the illusion of a seen moving image that is evoked by the film itself. This means that the strange occurrences are a part of the viewers' actual visual system. This is because there is nothing within the film itself that produces a seen moving image. In the case of *N:O:T:H:I:N:G*, the film itself can only rapidly project sequences of apparently static unseen colours that are below the threshold of visibility. Anything that is identified as being visible has to be a part of the illusion of a seen moving image. The strange occurrences therefore cannot be a part of the work's system and are to be placed within the viewers' visual system.

Images in Formation

The strange occurrences in *N:O:T:H:I:N:G* cannot be solely situated within either of the two disparate systems of the dominant cinematic paradigm. But as the cinematic paradigm stipulates, the throbbing and floating image seen in Sharits' film must be placed within either the viewers' visual system or the work's system. Because these bizarre events in Sharits' film cannot be situated in

either one of the two disparate systems, an inconsistency emerges that undermines the oppositional structure of the cinematic paradigm.

Rather than prioritizing either the viewers' visual system or the work's system, Sharits proposes an alternative that sidesteps the dichotomy offered by the dominant cinematic paradigm and irons out the inconsistencies it produces. He believes that "it would be valuable to regard cinema as an *informational system* rather than starting with a priori metaphysical theories or with a fully developed aesthetic" (Sharits 1972: unpaginated; emphasis added). For Sharits, it is problematic to assert what any particular film can do before it is actually encountered by viewers. This means that he does not adhere to the dichotomy of the dominant cinematic paradigm and sees no value in prioritizing either the viewers' visual system or the work's system. Prioritizing either system found within this cinematic paradigm establishes what viewers will see and how it will see it in advance of their encounter with a film. However, Sharits' proposition that film is an informational system puts forward the notion that what viewers see and how they see it cannot be configured before their encounter with a particular film. It is only during the shared encounter between the work's system and the viewer's system that something visible emerges.

It is important to note that when Sharits uses the term "information," he is not discussing the display or transmission of a prearranged set of data. That would only lead him back to the cinematic paradigm. Instead, he is using the term in a manner akin to Gilbert Simondon's conception. For Simondon,

information "is never available in a form that could be given; it is the tension between two disparate realities, it is the signification that will emerge when an operation of individuation will discover the dimension according to which two disparate realities may become a system" (2009: 9-10). Simondon conceives of information not as a collection of facts, data, or, in the case of film, images that are preconfigured and available for ready analysis. Rather, information is to be understood as that which is constantly *in the process of formation*. It is what is constantly emerging in the midst of two disparities coming together in relations with one another.

This means that images, as information, are constantly in a process of taking form. They cannot be preconceived. According to Simondon, "information can be said to always be in the present" (2009: 10). Understood in this manner, images cannot take shape prior to the viewers' visual system and the work's system engaging with each other. The two disparities must come together and enter into relations before any image is seen. If the relations between the viewers' visual system and the film itself are disrupted and cease to hold, then the images viewers see stop taking shape and will disappear. As long as two disparities continue to actively engage each other, then images, as information, will continue to be generated and an informational system will persist.

Furthermore, Sharits suggests that this informational system should be understood as a dialogue. When viewers watch a film, according to Sharits, there

is "a dialogue between the viewer and the work in the sense that there's a perception that's a kind of outcome of both of them interacting" (Sharits and Cathcart 1976: unpaginated). Film as an informational system consists of a set of relations that take place between the viewers' visual system and the film itself. As these two disparate systems come together into relations with each other, images emerge, as information. These images involve not only the viewers' ability to see something but also the work's capacity to offer something to be seen. What viewers actually see emerges when *both* systems operate in concert, as a singular informational system.

As the viewers' visual system and the work's system come together to form an informational system, they compositional forces felt in the seeing are encountered. It is the relation between the disparities that opens viewers to these compositional forces generated by the double-folding process. Viewers can only experience the double-folding process as they participate within the informational system. What this then shows is that the compositional forces not only generate the images that viewers see but also the system that makes seeing them possible. It is the compositional forces that induce an engagement with viewers that enable the incipiency of images to be felt. "We don't actually see an image – the image composes itself through the force of a relational dynamic" (Manning 2009b: 145).

N:O:T:H:I:N:G demonstrates that what is made visible is activated and continually modified below the threshold of visibility. The flicker and the

evanescent colours are only visible while viewers are engaged in an activity of seeing with the unseen colours, which are constantly entering into new relations with each other. Sharits' film shows how the unseen colours, as sensations that are too quick to be actually seen, play a significant role in the incipiency of images. This incipiency can only occur as the relations between the unseen colours generate the compositional forces that are felt by viewers in the activity of seeing. By bringing viewers to the edge of their perceptual capabilities, Sharits reveals through his film *N:O:T:H:I:N:G* that images are unstable, always in the making, constantly changing, and generated from below the threshold of visibility.

Chapter Four

Woody Vasulka's Time/Energy Objects:

Compositional Forces in Analog and Digital Video

We thought the world was still material, even though we were handling metaphysical material – Time and Energy.

– Woody Vasulka, "Curatorial Statement"[62]

The Need for a New Vocabulary

Woody Vasulka's video *C-Trend* (1974) begins with a screen filled with visual noise, which resembles the snow-like pattern seen when there is no signal coming into a television. After a few seconds, a sphere-like formation emerges in the centre of the screen in front of the visual noise, rotating in a counter-clockwise direction. This sphere-like formation is comprised of very fine horizontal lines that bend within it, which give it the appearance of a rotating contoured globe. As well, there is a gap that breaks the continuity of the fine horizontal contoured lines and divides the sphere-like formation into two distinct halves. This gap follows the rotation of the sphere and repeats at a regular interval. As the sphere-like formation continues to rotate, it repeats the same pattern of fine horizontal contoured lines. But on occasion there is a sudden

shift in the pattern that causes the contoured lines that lie around the center of the sphere-like formation to rise up and race around it.

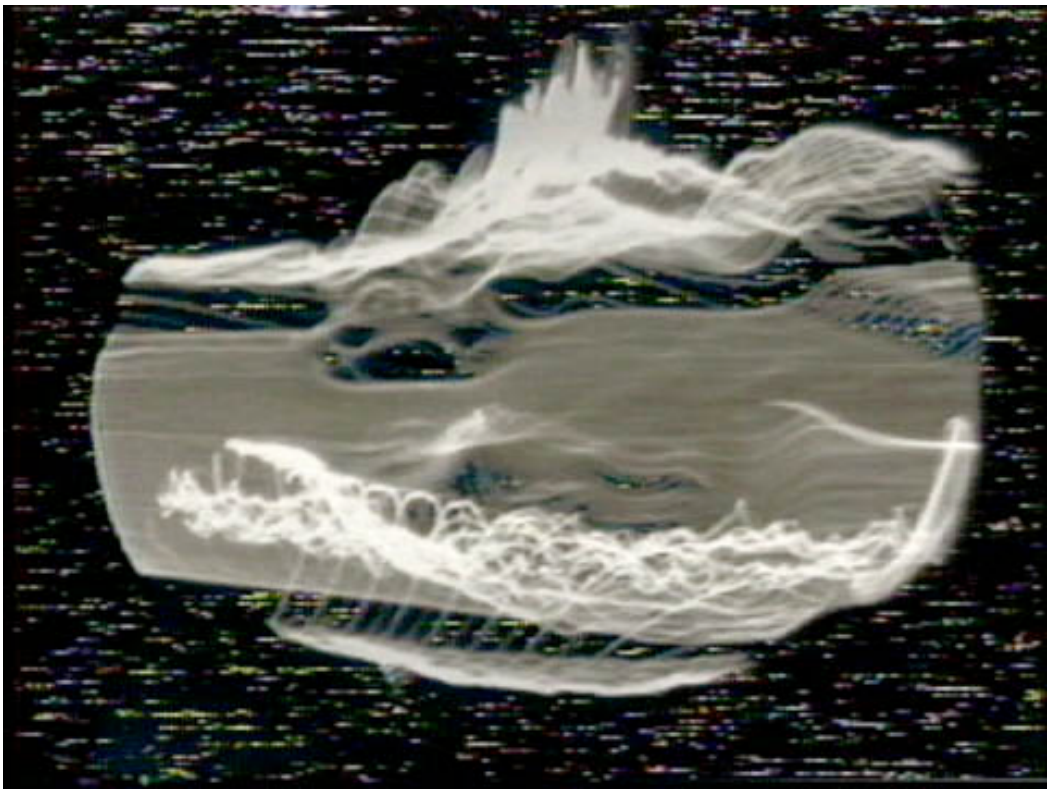

Figure 4.1. Woody Vasulka, *C-Trend* (1974). Image captured from video.

There is then a sudden cut from the rotating sphere-like formation and its snowy background to a floating contoured plane that is positioned at an oblique angle on a black background. This begins the second part of *C-Trend*. The contoured lines that compose the floating plane, which move from left to right, are broken at regular intervals by a gap similar to the one found on the sphere-like formation in the first part. In this second section the differences between the horizontal contour lines on either side of the vertical break become more apparent. As the horizontal contoured lines move from left to right within the

floating plane, several of the lines in the centre of the plane bend into small plateaus and dash across the plane from left to right more rapidly than the overall movement of the plane. These small plateaus disappear when they reach the gap, and do not continue on to the other side. Unlike the first part of the video, in which the same contoured pattern of horizontal lines seems to repeat, in the second part of the video the contoured pattern is constantly changing. In fact, as this section continues, the contoured plane's shape begins to change, first by completely flipping, then by twisting, curving and bending into a series of bizarre shapes.

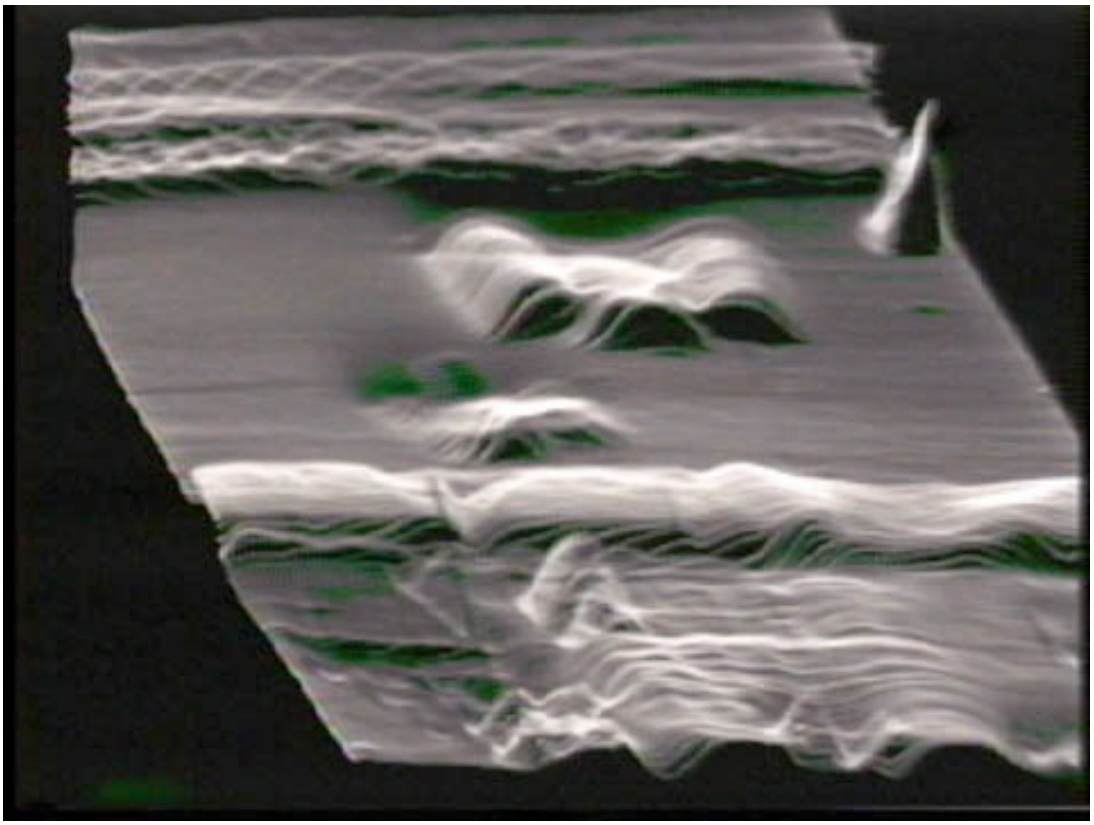

Figure 4.2. Woody Vasulka, *C-Trend* (1974). Image captured from video.

The unusual images that viewers experience while watching *C-Trend* are based on a very mundane source material, a local city street. Vasulka set up a stationary analog video camera to record the street outside his window, capturing images of the cars as they drove by. The electronic signal from the analog camera was then immediately fed into a Rutt/Etra Scan Processor, which transformed this common street scene into the contoured lines that formed the images seen in *C-Trend*. The Rutt/Etra Scan Processor "is a real time system which electronically alters the deflection signals that generate a television raster" (Etra and Rutt 1992: 138).[63] It manipulates the electronic signals that are inputted live from an analog video camera by altering the horizontal lines of resolution, otherwise known as raster lines, which compose the seen video image. When watching *C-Trend*, viewers see an effect that is produced by the Scan Processor in which the bright areas of the image cause the raster lines to bend as the electronic signal coming from the analog video camera is inputted. Bill Etra and Steve Rutt, the inventors of the Scan Processor, explain that this effect "causes the brighter parts of the video to 'pull' the raster lines upward. When combined with other synthetic waveforms, the raster forms a three dimensional contour map where video brightness determines elevation" (1992: 139).[64] In *C-Trend*, the more luminescent areas of the street scene inputted by the analog video camera cause the raster lines to the bend and curve. Viewers see these altered raster lines as the contours that comprise the sphere in the first part of *C-Trend* and the plane in the second part. When anything moves into the view of the camera, the bright areas

of these objects appear as the lifting sections found on the contoured shapes. This is particularly evident in the second part of the video. As cars drive by and pass in front of the camera, the associated raster lines bend, causing the contours of the sphere or plane to lift up and form the small plateaus that dash across these formations from left to right.

As Vasulka continued to work with the Rutt/Etra Scan Processor and other tools that manipulated electronic video signals, such as George Brown's Video Sequencer and Dan Sandin's Analog Image Processor,[65] he felt that the images his videos generated did not fit within the two dominant paradigms that shaped much of the discussion surrounding images at the time – linear perspective and the cinematic paradigm. These two paradigms attempt to generate images that appear as realistic to viewers as possible. Yet the images emerging from Vasulka's videos have been manipulated with these new electronic signal processors and synthesizers to such a degree that, according to Maureen Turim and Scott Nygren, they "do not appear natural" (1996: 50). For them: "Even camera images that are processed by synthesizers depart from traditional concepts of realist or expressive representation" (Turim and Nygren 1996: 50). Because the images viewers encounter when watching videos like *C-Trend* are unlike anything that had been seen prior, Vasulka recognized that a new vocabulary surrounding the notion of the image was necessary in order to discuss the innovations that he and other artists were pioneering with video during the 1970s and early 1980s.[66] This new vocabulary had to reflect a new

understanding of images that departed from long-standing models provided by linear perspective and the cinematic paradigm.

Linear Perspective

The first dominant paradigm Vasulka felt images generated with video could not adhere to was the camera obscura model of depicting three-dimensional space on a two-dimensional plane, otherwise known as linear perspective. Vasulka believed that the majority of images, including those produced by video cameras, "are based on their capture from the visible world with the help of the camera obscura principle" (Vasulka and Nygren 1975: 9). But before discussing Vasulka's contentions with linear perspective, it is important to outline how this paradigm operates in terms of generating images. During the fifteenth century, Leon Battista Alberti wrote *De pictura* (*On Painting*), presenting the founding theory of linear perspective in which light travels in straight lines conveying information from the surface of objects that then converge to an apex found in the eye. His theory suggests that one's overall field of vision can be conceived as an imaginary visual pyramid, in which the eye is the central point. For an artist to reproduce a three-dimensional scene two-dimensionally, it is necessary for the visual pyramid of the artist to be intersected somewhere between themself and the scene in order to "express whatever outlines and colours that intersection presents" (Alberti 1972: 49). A slice must be made at

some point between the artist and the scene, otherwise the visual pyramid would continue infinitely as far as viewers are able to see.

To assist in producing a particular depicted scene based on a sliced intersection between the scene and the artist, Alberti suggested using a transparent veil of loosely woven cloth that is stretched across a frame in which thicker threads were laced into a grid of square sections. This gridded veil is then placed between the artist and the scene that is being depicted so that "the visual pyramid passes through the loose weave of the veil" (Alberti 1972: 69). By using this gridded veil of transparent cloth, Alberti found that it provided three advantages when attempting to recreate a depicted scene. First, it fixed the position of the visual pyramid's apex, making it easier for the artist to return to the exact same scene. Second, according to Alberti, "the position of the outlines and boundaries of the surfaces can easily be established accurately" (1972: 69). This is because the squared sections woven into the veil uniformly divide the overall scene, breaking down every contour into manageable sections. Finally, the artist is able to see how objects that are either in relief or round would appear on a flat surface. The gridded veil enables the artist to more efficiently and accurately render the objects and an overall scene because they can easily return to the exact point of view they started from, divide the objects within the scene into smaller details, and visualize all the overall depiction in two-dimensions.

The overall advantage offered by Alberti's conception of linear perspective in depicting three dimensions on a two-dimensional surface is the

creation of an unchanging and homogenous space. Linear perspective creates a standardized system of vision in order to attain a high degree of perceptual accuracy. Yet in order for this visual system to function, according to Erwin Panofsky, Alberti had to assume "first, that we see with a single and immobile eye, and second, that the planar cross section of the visual pyramid can pass for an adequate production of our optical image" (1991: 29). This "single and immobile eye," otherwise known as the vanishing point, is placed at the cross section or apex of the visual pyramid, which standardized the overall visual space. This means that when using linear perspective, the sizing and spacing of every depicted object with a particular depicted scene is determined based on its location in relation to the fixed vanishing point.

Linear perspective organizes vision into what Deleuze and Guattari call striated space. "In striated space, lines or trajectories tend to be subordinated to points: one goes from one point to another" (Deleuze and Guattari 1987: 478). In striated space, lines are subservient to points, the vanishing point in particular. Points are foregrounded in the organization of a given space, using lines as joiners. Brian Massumi states that the composition of images utilizing linear perspective is "guided by a geometry of parallel lines projecting infinitely toward the vanishing point in whose virtual distance they appear to converge" (2008: 19). Linear perspective subordinates all depicted objects, first, to a central vanishing point and, second, to several points generated by the intersection of the object's contours and the grid woven into the cloth veil. The girded veil

organizes the overall depicted scene, while the vanishing point arranges the space within the scene. Linear perspective striates the visual space through standardization in order to present an organized depiction of the world.

The striation of space in Alberti's theory also shapes vision through what Deleuze and Guattari call the *plane of organization*. Linear perspective creates this plane through its systematizing of vision. It contains a visual space by territorializing every detail though the coordinates of the gridded veil and centralizes the trajectories of every line within this territorialized space through the vanishing point. According to Deleuze and Guattari: "The plane of organization is… always trying to plug lines of flight, stop or interrupt movements of deterritorialization, weigh them down, restratisfy them, reconstitute forms and subjects in a dimension of depth" (1987: 270). Like the plane of reference discussed in Chapter 1, the plane of organization attempts to prevent the appearance of any bifurcations or openings that would extend or exceed beyond the structure of the constructed system as such.[67] Linear perspective does this by focusing and coordinating all lines and movement within the depicted scene through the centralized vanishing point and the intersecting points of the gridded veil.

The horizontal and vertical cross points of the gridded veil and the vanishing point subject all the contours and depicted objects to the formation of the abstract visual pyramid. Linear perspective, according to Massumi, "spatializes the visual movement it creates in order to produce a perceived order.

The harmony and regularity of this perceived spatial order continues infinitely into the distance at the virtual center of the vanishing point" (2008: 20). The depth viewers perceive as three-dimensional space abstractly emerges through the organization of lines that are subject to the centralized vanishing point and framed by the squared sections of Alberti's gridded veil.

Alberti's system of shaping vision through linear perspective can be understood as the foundation for analog video's visual organization with two modifications. First, the lens of the analog video camera generates the vanishing point, rather than the artist's single immobile eye. The lens of the camera does this by recreating the optics of the eye. Second, the raster lines found in the imaging sensor in the analog video camera have replaced Alberti's gridded veil. The raster lines of analog video subdivide the depicted scene into uniform sections similar to the gridded veil of cloth with its woven parallel lines. The camera lens and the raster lines territorialize vision and striate the depicted space providing a contemporary use of the plane of organization, which, according to William J. Mitchell, "extends the tradition of mathematically constructed perspective that began with Brunelleschi and Alberti" (1992: 6).

Despite the connection between linear perspective and analog video, the images generated in the majority of Vasulka's videos are composed without a vanishing point or the necessary converging lines that generate the semblance of three-dimensional space found in linear perspective. They are either internally generated by a test screen pattern created by a Broadcast Signal Generator,[68] as

seen in Vasulka's videos *The Matter* (1974) and *Explanation* (1974), or they are created with images from a camera that are manipulated to such a degree that the vanishing point becomes imperceptible, like in *C-Trend*. The three-dimensional space that viewers perceive in Vasulka's videos is not produced by a fixed vanishing point; rather, it is generated through the layering of compositional elements within the image. This can be seen in *C-Trend* through the use of the horizontal contour lines. For example, in the second section of the video, the bends seen in the contour lines of the floating plane look like a landscape with rolling hills. The layering of the "hills" within in the image generates the semblance of depth for viewers.

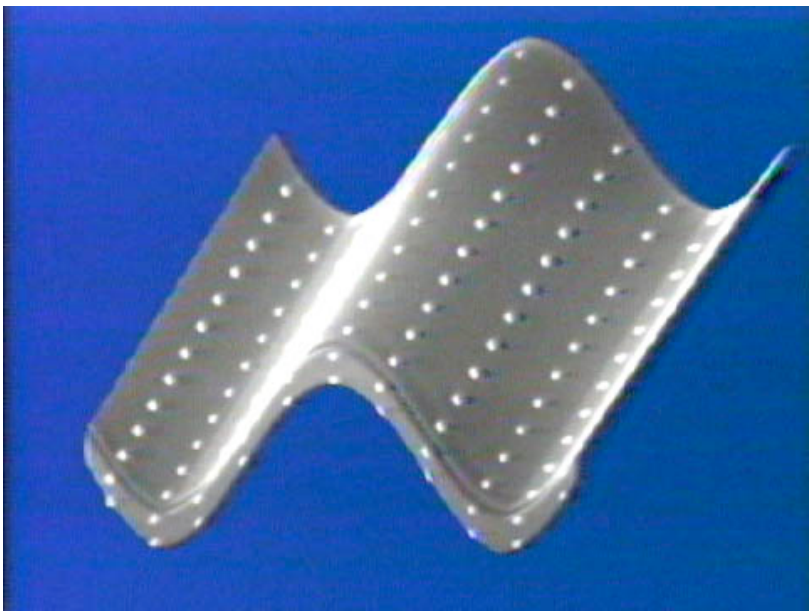

Figure 4.3. Woody Vasulka, *The Matter* (1974). Image captured from video.

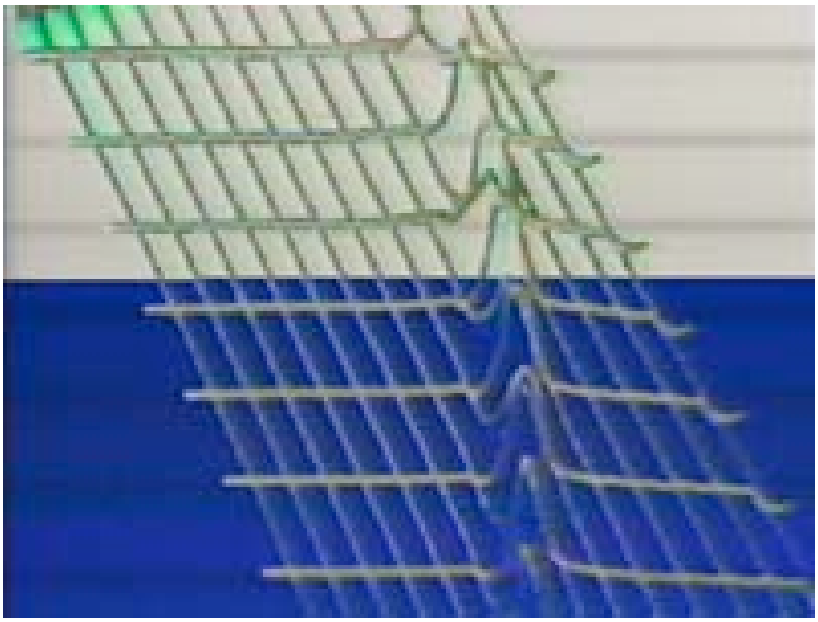

Figure 4.4. Woody Vasulka, *Explanation* (1974). Image captured from video.

Time/Energy Objects

The second dominant paradigm that Vasulka felt his video work could not adhere to was the cinematic paradigm. Vasulka took this position because moving images, according to the cinematic paradigm, are what viewers perceive when sequences of discretely framed images are rapidly displayed onto a screen. The previous chapter explained that the cinematic paradigm conceived moving images as being comprised of two disparate and homogenous systems that interact with each other in order to generate what viewers see. The first system was the work's system, which was comprised of such things as the screen, the projector, the filmstrip, and the framed images on the filmstrip. The second system was the viewers' visual system, which consisted of all the physical and psychological mechanisms necessary for sight, such as the brain, the eyes, and

the brain's ability to interpret incoming visual stimuli. Because Vasulka had prior experience working with film, he understood that the cinematic paradigm's conception of the work's system could not properly explain how images are generated with video. He states: "I come from the movies, where the frame was extremely rigid, and I understood that electronic material has no limitation within its existence. It only has limitation when it reaches the screen because the screen itself is a rigid time structure" (Vasulka in Gill 1992: 84).

Like Vasulka, Henri Bergson understood the cinematic paradigm to be rigid. He thought that film was a series of immobile images that move in succession, frame by frame, through a projector. The movement viewers experienced was not found in the images themselves; rather, they were artificially recomposed in a mechanical apparatus. According to Bergson: "It is because the film in the cinematograph unrolls, bringing in turn the different photographs of the scene to continue each other, that each actor of the scene recovers his mobility; he strings all his successive attitudes on the invisible movement of the film" (1998: 305). Movement is thus created through the successive displacement of frozen poses within immobile images.[69] This step-by-step progression of film frames is the rigidity Vasulka believes is not found in images generated with video. This is because the seen images in video are not comprised of preconstituted framed images situated on a celluloid base that is then projected onto a screen, as the cinematic paradigm dictates. Rather, they are comprised of an electronic signal that constantly fluctuates in a perpetual state of

metamorphosis. Even when a particular image appears to be static, it is constantly being remade, as an electronic signal continuously scans across the television screen or video monitor. This understanding that images generated with video never stop changing led Vasulka to believe "that there was no truly rigid frame, just particular organizations of time and energy" (Vasulka in Gill 1992: 84).[70]

This concern with time and energy became the basis of Vasulka's vocabulary for discussing analog video. Using various electronic signal processors and other manipulation tools, Vasulka was able to organize and alter electronic signals and view the results as they were happening live on a video monitor. The electronic signal thus became the foundation of the analog video image because, according to Sherry Miller Hocking and Richard Brewster, the signal "refers to changes in energy and reveals a physical nature by forming and influencing images" (1992: 169). This led Vasulka toward theorizing analog video in terms of movement, transformation, and metamorphosis, in which a direct connection could be conceived between alterations of the electronic signal and the incipiency of images. With video he was generating, manipulating, and viewing images by controlling time and energy itself. For Vasulka: "Emphasis has shifted towards a recognition of a *time/energy object* and its programmable building element – *the waveform*" (Vasulka and Nygren 1975: 9, original emphasis).

Vasulka specifically states that the emphasis should be on time/energy *objects* and not on time/energy *images* because he was interested in uncovering the relationships and processes that generate what viewers see and how they see. Vasulka states: "Sometimes these relationships border on suggesting an understanding of the image as object, because for me creating an electronic image is a matter of architectural construction; in fact it's building an image in time" (1978: 21). Time/energy objects are not quite images because they are what emerge from the manipulations of the electronic signal. They are what is generated as the about-to-become of images. *Time/energy objects are the relational complexes of video.*[71]

Because the electronic signal that composes time/energy objects is constantly being manipulated and remains in a state of constant metamorphosis, they co-generate with viewers' images that are continually under construction. What is seen is not fixed within the static or rigid models of linear perspective and the cinematic paradigm. According to Robert Arn: "The video artist controls or intervenes strategically in an ongoing process" (1992: 186). This process of endlessly manipulating and constructing time/energy objects can be seen in the rotating spherical object and bending planes in *C-Trend*, the bending sheet-like form found in Vasulka's video *The Matter* (1974), and the resonating cylinder form in his video *No. 25* (1976). Because time/energy objects are not fixed or discrete entities, they are "no longer the image of an object but the image of the set of constraints at the intersection of which the object is created" (Cache 1995:

97). They are relational complexes that move and change over time as they are continually manipulated, providing the potential for images to be seen.

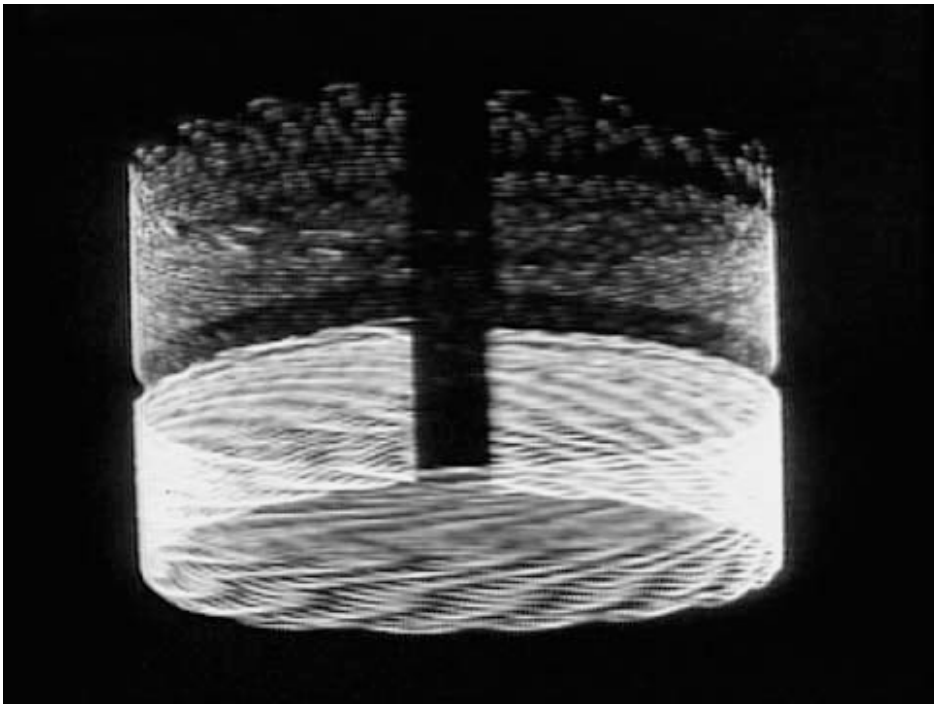

Figure 4.5. Woody Vasulka, *No. 25* (1976). Image captured from video.

Time/energy objects are not only generated by the manipulation of an electronic signal, they are also constructed on a television screen or a video monitor by a constantly moving electron beam. As various tools alter the electronic signal, originating from either an analog video camera or a signal generator, these modulations flow as an unbroken electric stream that then builds time/energy objects onto the surface of the screen or monitor by a constantly moving electron beam. D.N. Rodowick explains in further detail:

> [An] electronic display actively constructs images in time; or, more correctly, it displays signals that produce an image through sequential scanning. Rather than producing a whole spatial field, in

> NTSC interlaced scanning, for example, an electron beam traces first the odd lines of a 525-line display, exciting light sensitive phosphors along the way, and then the even lines. The different parts of the display correspond to different phases in time such that there is never a moment when the entire image is spatially or temporally present to us. We perceive an "image" because the sequential phosphors (600 pixels per line) continue to glow in overlapping durations and because the scanning process is so rapid (one-fifteenth of a second for a field; one thirtieth of a second for a frame) (Rodowick 2007: 137).[72]

The dual processes of electronic signal manipulation and electron beam construction generate the time/energy objects that emerge as the images viewers come to see.

It is important to understand that the electronic signal and the electron beam are not completely responsible for producing the images viewers see. Although these two processes generate the time/energy objects of Vasulka's videos, they alone cannot produce what viewers are able to see. As was stated in Chapter 2, the incipiency of images occurs in the experience that is shared between viewers and the artwork. This means that the emergent time/energy objects of Vasulka's videos are made visible only through the relational encounter viewers have with these works.

Topological Figures

The relational complexes that emerge from the dual process of electronic signal manipulation and electron beam construction as Vasulka's time/energy objects can be understood as topological figures because they undergo a process of constant change. "A topological figure is defined as the continuous transformation of one geometrical figure into another" (Massumi 2002: 134). Topological figures emerge through a process of continuous metamorphosis. The classic example of a topological figure is a ring that transforms into a cup.[73] Although the ring's form is completely altered throughout the entire ring-to-cup transformation process, it is still considered to be the same entity. According to Massumi: "All of the geometrical figures you can create in this way are versions of the *same* topological figure" (2002: 134). Time/energy objects are topological figures because they are capable of changing into a variety of forms through a continuous process of metamorphosis, while remaining the same figure under this transformation. This can be seen in the continual bending and twisting of the contoured shapes in *C-Trend*. Despite the fact that the contoured shapes can be transformed into either a spherical or plane formation, both can be considered different iterations of the same figure.

This conception of the topological figure differs from the long-standing Euclidian conception of a geometrical figure, which achieves its form when the process of transformation stops. This is not to say that Euclidian figures cannot change. The transformation between two Euclidian figures can happen, but only

through a serial transition of static poses, similar to the cinematic paradigm. For example, for a square to be transformed into a circle, a new side would have to be added to change it into a pentagon. Another side would then have to be added to the pentagon to change it into a hexagon. New sides would have to continue to be added to the figure until the sides themselves were unable to be seen. Once this occurred, then the figure could be perceived as a circle. However, the perceived roundness of the circle would actually still consist of a geometric shape comprising of thousands, if not millions, of sides. This process of always adding a side to the geometric figure could continue on to infinity without ever producing a truly round circle. This is because a straight side can always be added.[74] Returning to the topological figure of the ring-to-cup, in order for the ring to become a cup following a Euclidian process of change, the transformation of the ring to the cup would occur through a progression of static changes viewed as a series of unique figures. Each figure would represent one step in the change from the ring to the cup.

Ultimately, a topological figure can take on a multiplicity of forms through a process of continuous transformation, whereas a Euclidian figure needs a series of discrete forms in order to change shape. A multiplicity, according to Alfred North Whitehead, "consists of many entities, and its unity is constituted by the fact that all its constituent entities severally satisfy at least one condition which no other entity satisfies" (1929/1978: 24). Each form a topological figure transforms into can be considered an actualized entity, like the

ring or the cup. But unlike a Euclidean figure, these actualized entities are not distinct as such. Instead, as a multiplicity, these actualized entities constitute a continuum of emergent forms that a topological figure can potentially become.

The connection between time/energy objects and topological figures becomes even more apparent when Vasulka's work is viewed in relation to Greg Lynn's topological approach to architectural design. In his work, Lynn moves away from, as he states, "the abstract space of design [that] is conceived as an ideal neutral space of Cartesian coordinates" (1999: 10). Rather than designing buildings within a hypothetical Euclidian space that utilizes the Cartesian coordinates of the X, Y, and Z-axis, Lynn's interest lies in producing designs within a topological space that is "characterized by flexible surfaces composed of splines" (1999: 20).[75] Splines are vectors that are strategically placed in order to compose the direction and flows of a curve. Lynn states: "The spline curve is unlike a line or radius in that its shape is not in reducible to exact coordinates. The spline curve flows as a stream between a constellation of weighted control vertices and any position along this continuous series can only be defined relative to its position in the sequence" (1999: 22). When designing with splines, the shape of a curve is not determined by the connections made between a series of arcs that emanate from various central radii, as found in Euclidian geometry; rather, the shape of a curve is composed by the pulling action of various weighted control points. The difference here is that a curve determined by the connection of centralized arcs cannot change. It remains frozen. If one were to

change the degree of any of the arcs that compose a particular curve, that particular curve would break apart and become two different curves. This is because as soon as one of the arcs changes, the alignment of the curve is severed. Alternatively, the flow of a curve determined by splines will always persist, even if one of the weighted controls changes the strength of the pulling action it exerts. This will cause the shape of the curve to change but flow will remain. The curve's shape is relative to any change in the pulling action bearing on it. Like the cup-ring topological figure, a curve composed of splines can transform into any curved figure, from the simplest arc to the most exaggerated series of twists.

Like Lynn's splined curve, Vasulka's time/energy objects are able to transform themselves into a multiplicity of forms. In *C-Trend*, the curves that shape the contoured plane and spherical figures are determined by the changes in brightness coming from a street scene being recorded by an analog video camera. Anything that moves in front of the camera, such as cars that drive by, alters the curves that shape the contoured figures. The intensity of the brightness functions like the weighted control of a spline. As the cars move across the video camera's view, the light reflecting off of the cars determines the weight of the pulling actions seen on a particular line on the contoured figure. These pulling actions produce the curves seen in the figures. The brighter something in front of the camera appears, the more weight the spline will apply to the contour, producing a steep curvature in the process. As the brightness changes over the course of the scene, the pulling actions of the splines shift, transforming the form

of the figure. The plane and spherical figures seen in *C-Trend* are topological figures whose forms are composed with the pulling actions generated by the intensity of light. These pulling actions are the *compositional forces* that shape the images that viewers see.

The Virtuality of Compositional Forces

Compositional forces cannot actually be seen. Only the effects these forces generate are perceptible. "No scientist has ever observed a force. Not even Newton saw gravity. Only force-effects are observable" (Massumi 2002: 160). When viewers watch *C-Trend,* the contoured figures they see are the effect generated by compositional forces. The splines pull at the contoured topological figures and alter their shapes below the threshold of visibility. The contoured topological figures emerge as time/energy objects because the relational movements of compositional forces create a dynamic form. The multiplicity of compositional forces acting on the contour lines is what transforms the seen time/energy objects.

Because compositional forces are imperceptible and can only be felt through the effects they generate, they are in fact virtual. As Massumi points out: "No one kind of image, let alone any one image, can render the virtual…the only way an image can approach it alone is to twist and fold on itself, to multiply itself internally" (2002: 132). The virtual is a multiplicity of potential movements that cannot be depicted by one singular image. According to Steven Shaviro:

"The virtual is like a field of energies that have not yet been expended, or a reservoir of potentialities that have not yet been tapped. That is to say, the virtual is not composed of atoms; it doesn't have body or extension. But the potential for change that it offers is real in its own way" (2009: 35).[76] The virtual is not foregrounded in linear perspective, the cinematic paradigm, or the Euclidian model space because these paradigms assume movement occurs through displacement. These three models of space are connected to what Lynn calls "actual movement." "Actual movement often involves a mechanical paradigm of multiple discrete positions, whereas virtual movement allows form to occupy a multiplicity of possible positions continuously with the same form" (Lynn 1999: 10). When viewers watch *C-Trend*, the metamorphosis of the contoured topological figures is not a result of actual movement caused by some form of displacement. Rather, the contoured topological figures transform through the virtual movements of imperceptible compositional forces that can only be felt in the seeing. The virtual compositional forces in relation to the topological figures create the time/energy objects that come to be seen in the encounter viewers have with Vasulka's videos.

The idea that virtual compositional forces generate visible time/energy objects in analog video is not totally new. As early as 1970, Gene Youngblood discussed this concept through his notion of *synaesthetic cinema*.[77] "The fundamental subject of synaesthetic cinema – forces and energies – cannot be photographed. It's not what we're seeing so much as the process and effect of

seeing" (Youngblood 1970: 97). Like the time/energy objects, synaesthetic cinema generates images in which the effects of virtual compositional forces manifest themselves as topological figures of transformation.

It should be noted that Youngblood does not make a distinction between cinema and video. "Just as the term 'man' is coming to mean man/plant/machine, so the definition of cinema must be expanded to include videotronics, computer science, atomic light" (Youngblood 1970: 135). His interest lay in the notion of an expanded cinema, which included film, video, and computers as a means of breaking away from the traditional theatrical screening space and image structures found in cinema up to that point, such as the cinematic paradigm. This expanded cinema takes shape as synaesthetic cinema. "A synaesthetic film is, in effect, one image continually transforming into other images: metamorphosis" (Youngblood 1970: 86).

The key connection between Vasulka's time/energy objects and Youngblood's synaesthetic cinema is that they are both open to new technological innovations and processes. Youngblood was pioneering when he conceived of film as "synaesthetic" because it included new technologies such as analog video. He was one of the earliest thinkers to advocate for an image making practice that was interdisciplinary. Youngblood felt that artists could no longer "specialize in a single discipline and hope truthfully to express a clear picture of its relationships to the environment" (1970: 41). By pushing analog video into more experimental areas, Vasulka's conception of time/energy-objects

echoes Youngblood's thoughts on image production. Vasulka used, and at times invented, new technological tools in order to expand the capabilities of manipulating the analog video signal. Many of these machines were constructed for particular tasks, such as the Rutt/Etra Scan Processor mentioned earlier. According to Yvonne Spielmann, Vasulka would also "connect together as many devices as possible in complex arrays, in order to exploit the capacity of the particular technology" (2008: 197). This experimentation opened Vasulka to using technologies that fell outside the realm of analog video.

The Digital Codification of Time/Energy Objects

By the mid-1970s, Vasulka was using some of the earliest digital computers as a way to continue his innovative experimentation with video. With Jeffery Schier, he invented the Digital Image Articulator in 1976, which "processes video signals and combines analog functions with digital components for programming" (Digital Image Articulator 2004). Vasulka sought to discover the relational potential occurring between time/energy objects and new digital technologies. What he found was that time/energy objects were not exclusively confined to analog video but could also be generated in digital video. Vasulka states:

> The dramatic moment of the transformation into a binary code of energy events in time, as they may be derived from light, or the molecular communication of sound, or from a force field, gravity,

> or other physical initiation, has to be realized, in order to appreciate the power of the organization and transformation of a code. The process of analog-to-digital and digital-to-analog conversion envelops the internal digital-code operations, the state of the world" (Vasulka 1978: 20).

One consideration to be kept in mind when thinking about time/energy objects digitally is that their conversion into binary code cannot be viewed as a process involving the virtual. The conversion of the analog video signal to digital binary code is not a virtual process of transformation, even though Vasulka describes it as such, but instead is a numerically based process of codification. The tools that produce this codification, such as the Digital Image Articulator, take the electronic analog video signal and break it down so that it can be reshaped "in an environment governed by mathematical laws" (Digital Image Articulator 2004). Specifically, these digital tools convert the analog video signal into a series of zeros and ones.

Because virtual compositional forces of time/energy objects are always moving and fluctuating, they cannot be articulated by digital binary code. This means that the digital has little access to the virtual. According to Massumi: "Digital technologies in fact have a remarkably weak connection to the virtual, by virtue of the enormous power of systematization of the possible" (2002: 137). Time/energy objects emerge from virtual compositional forces and not from being converted into a digital binary code. This is because the mathematical

governance of digital codification reduces the virtual compositional forces of time/energy objects to only two possibilities: zero or one. The digital codification process does not generate virtual compositional forces and thus cannot provide the potential necessary for time/energy objects to emerge.

This weak connection between the digital and the virtual becomes complicated because of the commonly held belief that the virtual is directly connected to the digital. Instead of associating the digital with a process of codification and the virtual with the multiplicity of compositional forces that have the potential to generate emergent forms, the virtual and the digital are often mistakenly linked through the notion of simulation. "Simulation means that physical processes that create visibility – such as the registration of light rays, or chemical and mechanical manipulations – are copied, or duplicated in a type of fakery which pretends (simulates) that we are all dealing with the actual" (Spielmann 1999: 135). In terms of video, when an analog electronic signal is converted to binary code by a tool like the Digital Image Articulator, the output of this analog-to-digital conversion is understood to be a simulation of an analog video image. The electronic signal that generates the analog video image is a physical process that creates something real, whereas the digital video image is the binary coded copy that simulates the analog electronic signal. The digital video image is understood to be a simulation of an analog video image. In this light, the term virtual, according to Lynn, "is often used interchangeably with the term simulation" (1999: 10). This undifferentiated use of the terms virtual and

simulation makes it possible to define the digital video image as a "virtual image."

This conception of an image generated by digital video as a "virtual image" pushes the notion of the virtual and the digital further away from Vasulka's understanding of time/energy objects. This is because the common usage of the term virtual only takes into consideration the analog-to-digital conversion and views the resulting digital video image as a simulation of the "real" video image, the analog one. The problem with this conception of the virtual-as-simulation is the assumption that the digital video image is visible. When the electronic analog video signal is converted into digital binary code, the signal is changed into sequences of zeros and ones. Although this digital binary code is not visible as an image, it is not exact to say that it is invisible. With the use of a computer, one can gain access to this numeric code and see the millions of zeros and ones that the analog video image has been translated into. A digital image conceived under the common usage of the term virtual-as-simulation does not actually occur because *there is no image to be seen*. The "virtual image" is only a binary code and is not the simulation of a "real" analog image. According to Massumi: "Nothing is more destructive for thinking and imaging of the virtual than equating it with the digital" (2002: 137). This means that the notion of the virtual-as-simulation cannot be used in the conception of time/energy objects because it confuses the compositional forces that generate the topological figure

with the process of codification. A virtual process of generative compositional forces is not a digital process of numeric codification.

Another consideration to be kept in mind is that because it is the virtual compositional forces that generate time/energy objects, if one were to stop at the analog-to-digital codification process of the electronic video signal, returning to the time/energy object, and therefore to the virtual, would be impossible. Recall that Vasulka specifically states that this codification process not only involves the conversion of the analog to the digital, but that it is also necessary for the digital to be converted back to the analog. This return to the analog from the digital is required, according to Massumi, because "digital technologies have a connection to the potential and the virtual *only through the analog*" (2002: 138; original emphasis). Once a video's electronic analog signal is converted to digital binary code and is manipulated using a computer or some other digital tool, this binary code must be re-converted back to an analog electronic signal in order to be seen as an image. This means that "the digital is sandwiched between an analog disappearance in to code at the recording and an analog appearance out of the code at the [viewing] end" (Massumi 2002: 138). When Vasulka uses the Digital Image Articulator, time/energy objects are broken down into code only to be transformed and then recomposed into new time/energy objects. By converting the binary code back to an electronic analog signal, time/energy objects are able to re-emerge as the seen images that are experienced through the relational encounter with viewers. This re-emergence of time/energy objects does not

occur within the raster lines of the analog electronic signal; rather, it takes place on the level of the pixel.[78]

Compositional Forces and Pixels

In *C-Trend*, the compositional forces that transform the time/energy object are directly connected to the changing levels of brightness of an incoming electronic video signal, in which the visible effect was the metamorphosis of the contoured lines rising and falling. The compositional forces that transform time/energy objects after they have been digitally manipulated are more complex than those produced in videos like *C-Trend* because these forces operate on two levels: first, at the level of the pixel and, second, at the level of the overall image. The compositional forces generated by the changes occurring within just one pixel have the potential to transform an entire time/energy object. This is because compositional forces not only take place within each pixel, but also between pixels through the direct relations they have with each other. Pixels are more than simply a point within a grid. Like the squares found in John F. Simon Jr.'s internet artwork *Every Icon* discussed in Chapter 1, pixels are particular occurrences that have the potential to exceed themselves, affecting the encounter viewers have with the other pixels. The transformation occurring within one pixel has the potential to alter the relations among the pixels that surround it. This one alteration can generate a compositional force that has the potential to change the entire image. As Whitehead notes: "Any local agitation shakes the

whole universe" (1938/1966: 138). Because the compositional forces generated among the thousands of pixels create a multiplicity of potential, the entire field of pixels becomes a time/energy object. This pixel-field emerges as a time/energy object because there is the potential for change within and across every pixel.

As stated earlier, compositional forces cannot actually be seen because they are virtual. Only force-effects can be seen or felt. This means that the changing colours that are visible within each pixel are these force-effects. Each pixel has a limited number of colours it can generate. For example, the Digital Image Articulator uses a sixteen-shade grayscale that enables each pixel to fluctuate between white and black using sixteen gradations of grey (Kirby 1996). Returning to Lynn's topological spline model, this means that each pixel has two splines – one pulling towards white and the other toward black. Each spline generates a virtual compositional force that enables pixels to change between these sixteen gradations. Any movement within a particular pixel occurs as the weight of one spline pulls more forcefully than the other. If one spline pulls with its full weight in one direction, the force-effect seen will be white in that direction and black in the other. If both splines pull with equal weight, then medium grey becomes visible. In contemporary digital video, each pixel has three splines that pull on the three primary additive colours: red, green and blue. Each of these three colours has two hundred and fifty-six gradations, enabling each pixel to fluctuate between just under approximately seventeen million colours combination. As well, similar to the black and white digital video technology

Vasulka was using, when the three splines pull at equal weight, the colour that becomes visible will appear grey.

The compositional forces pulling the splines within any of the pixels can also stabilize, thereby creating a colour that appears to be static. Yet, according to Lynn, for something to actually be static "motion [must be] eliminated at the beginning" (1999: 14). Because there is always the potential for movement to occur, the pixel's colour cannot be considered static – or anything else for that matter. When the colour of a particular pixel stops changing for a period of time, it is because the forces that pull the black and white splines form a mutual equilibrium, or what Gilbert Simondon calls "metastability" (2009: 3).[79] This metastable equilibrium can sustain itself for a long period of time, giving the appearance of stasis, but nonetheless has the potential to change at any moment. According to Simondon, stasis "corresponds to the lowest possible level of potential energy; it is the equilibrium that is reached in a system when all of the possible transformations have been realized and no more force exists" (2009: 3). One colour within a pixel may be on the screen for the entire duration of a video, or it can transform itself radically. Because there is always the potential for compositional forces to alter the colour found within a pixel, every pixel can be seen as a topological figure.

The second level of compositional forces that impact the time/energy object that has been manipulated digitally is comprised of the relations between pixels. Each pixel has its own set of compositional forces and durations of colour.

A topological surface forms when a multiplicity of compositional forces from thousands of pixels emerge together simultaneously.[80] "In this way, topology allows for not just the incorporation of a single moment but rather a multiplicity of vectors, and therefore, a multiplicity of times, in a single continuous surface" (Lynn 1999: 10). The digital time/energy object generates this single continuous surface that incorporates a multiplicity of singular pixels. On the one hand, the pixels are singular because they have their own compositional forces acting within themselves as the splines pulling colours. On the other hand, they are a multiplicity because compositional forces are generated among the relations occurring between them. As a multiplicity, each pixel exceeds its singularity, going beyond the forceful shifts in colour it is capable of generating. Through the relations between metastability and flux among the pixels, the force-effects that are seen in the emergent digital time/energy object appear as the movement viewers see.

This relation between metastability and flux can be found in a particular section of Vasulka's video *Artifacts* (1980). The section begins with an image of visual noise comprised of the fluctuation of thousands of pixels changing between various shades of black, white and grey. Within seconds, the pixels in the centre of the image begin to fluctuate more radically and to change their colour more quickly than those pixels surrounding it, and in doing so, produce a circular figure. As the video continues, the circular figure changes when the pixels that are concentrated in the centre stabilize, which produces a second

smaller circular figure. Vasulka then continually shifts the smaller circular figure from a state of flux to one of metastability. During this section, Vasulka, through voiceover, encourages viewers "to freeze and unfreeze the image a few times." When the video is paused, both circular figures disappear and are indistinguishable from the other pixels that surround them. Viewers only see a frozen image of visual noise. The difference between stasis and metastability is demonstrated by the circular figure when the video is paused. When the virtual compositional forces that transform the pixels are frozen, so are the compositional forces that alter the topological surface of the digital time/energy object. When these two levels of compositional forces are momentarily restrained, the image that is generated runs the risk of being understood as being constituted by a cinematographic/Euclidian model instead of the topological one. This is because the paused digital video could be mistaken as a static image rather than of a metastable one.

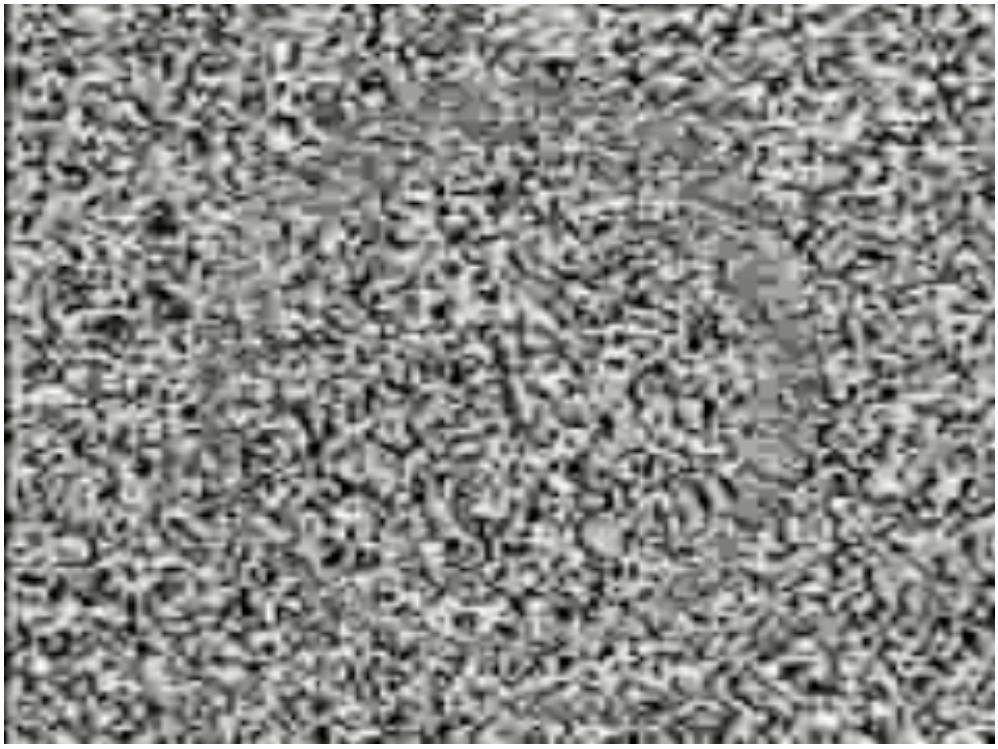

Figure 4.6. Woody Vasulka. *Artifacts* (1980). Image captured from video. As this captured image reveals, the concentric circles are difficult to see without the movement occurring among the pixels.

As Vasulka's videos demonstrate, time/energy objects can emerge from a digital source through the conversion of an analog video signal into a digital binary code and then back into an analog display of pixels. In videos such as *Artifacts*, in which the time/energy objects have been digitally manipulated, it is difficult to describe these digitally generated images in terms of linear perspective, the cinematic paradigm or the Euclidian model of space. As Vasulka states:

> Most of the work done with computers is labeled as patterning. It may look like patterns, but the images really are encoded processes. People may look for and try to decode the processes within these

> images, but the processes are hidden; there is no way to decode them, no language in which to decode them (Vasulka 1978: 21).

Often, what are described as Euclidian geometric patterns in digital video are actually emerging time/energy objects. The hidden processes that cannot be decoded are the virtual compositional forces that transform each pixel and the overall topological surface of time/energy objects. Attempting to decode these hidden compositional forces is impossible because only their force-effects are observable. Within digital time/energy objects these force-effects appear as the changing colours that are generated within each of the pixels. What at first seems to be a decodable Euclidian geometric pattern is in fact an emergent topological surface that is produced by the fluctuation of force-effects within the pixels. The perceived images emerge from this topological surface that is filled entirely with these colour-changing pixels. These compositional forces that are generated by the relations among the pixels produce the topological surface that enables time/energy objects to potentially become visible images.

Chapter Five

Encounters with Incipient Action:

Robert Irwin's Posture of Inquiry

The more you limit yourself, the more resourceful you become.

– Søren Kierkegaard, *Either/Or*[81]

Irwin's Posture of Inquiry

Robert Irwin is an artist motivated by problems that arose in the midst of his constantly evolving artistic practice. Every series of paintings Irwin created emerged from the problems generated by the previous series that he produced. Irwin states that "from about 1960 to 1970, in an almost reclusive and 'deadly serious' activity, I used my painting as a step-by-step process, each new series acting in direct response to the questions raised by the previous series" (1977: 23). As Irwin would complete a new series of paintings, new problems would inevitably emerge that needed different solutions to address them. These new problems would then guide his artistic practice through the next series of paintings. In order to satisfy these emergent problems Irwin had to respond to his work in a new and unique way. Irwin states: "Each time I had to find something materially, physically, that had the same scale as the questions I was asking" (Weschler 2008: 114). These new problems would then compel Irwin to reinvent the set of conditions that informed his painting practice. New

techniques needed to be constantly developed in order to solve these emerging problems. This is because, according to Henri Bergson, "stating the problem is not simply uncovering, it is inventing" (2007: 37). This continuous process of uncovering problems and solving them through inventive techniques was Irwin's *posture of inquiry* that activated his painting practice.[82]

As Irwin radically transformed his painting practice with each new set of problems that arose from his posture of inquiry (to the chagrin of his art dealer),[83] he had one motivating inquiry that underscored all of the problems he encountered. He wanted his paintings to have "nothing to do with content but rather purely with its own physicality and how that physicality was experienced perceptually" (Irwin in Weschler 2008: 67). When viewers encounter his paintings, Irwin wanted to curtail the emergence of any potential representational readings or psychological interpretations. He did not want the experience viewers shared with his work to generate any sort of recognizable imagery or interpretive meaning. Instead, Irwin aspired to produce paintings that would enable viewers to experience an intensity felt in the seeing that went beyond the actual visibility of the marks and gestures on the canvas. The encounter between viewers and his paintings would generate a seeing that would exceed the work's compositional elements as such. Specifically, Irwin's interest lay in developing a set of conditions that would enable viewers to not just *see* the painting's compositional elements but also to *feel* the intensive forces

these marks and gestures generate in the seeing as they act upon and affect each other.

When viewers encounter Irwin's paintings, or any work of art, they are always situated within a specific set of conditions. As Jonathan Crary notes, each particular viewer is "one who sees within a prescribed set of possibilities, one who is embedded in a system of conventions and limitations" (1990: 6). These conventions and limitations constitute the conditions of the work. When encountering an Irwin painting, viewers are not positioned outside of the experience of that work. The experience viewers have with one of Irwin's paintings neither happens to them, nor is solely created by them. Viewers do not passively look at the set of conditions a painting offers them. They also do not generate what they see completely with or in their minds. Instead, according to Irwin, "we participate directly in the forming of that envelope of the world and our being in it, and we do so every moment of our lives" (1985: 20). The experience viewers have when encountering Irwin's work is just as dependent on their ability to experience and perceive that work as it is contingent on the work's set of conditions that inform that specific encounter. This is because, for Irwin, "the art act can only occur in response to a set of specifics" (1985: 23).

Irwin began by experimenting with the compositional elements in his work because he was trying to discover what set of conditions either enabled or inhibited viewers from experiencing the intensive *compositional forces* they collectively generated in the seeing. He wanted to ensure that viewers

encountered a set of conditions that enabled them to attend to the work's emergent compositional forces. The difficulty that would arise for Irwin in pursuing this problem of attuning viewers to the intensity generated during their encounter with an artwork is that there is not one specific set of conditions that can bring this about. This is because each work of art uses a completely different assortment of techniques in order to generate the emergent compositional forces viewers come to experience. The intensity felt in the encounter with two different artworks never emerges from the same sets of conditions.

The artworks discussed in the previous chapters, for instance, all generate compositional forces felt in the seeing, but each work uses a completely different set of conditions to accomplish this. The intensity viewers experience in John F. Simon Jr.'s internet work *Every Icon* (1997) emerges from the transductive overlapping of scientific and artistic techniques in the form of a constantly changing black and white grid. In the paintings of Piet Mondrian, the forces felt in the seeing arise from a relational complex composed of perpendicular lines and coloured planes. The forces felt in the encounter with Paul Sharits' *N:O:T:H:I:N:G* (1968) emerge from an informational system that is activated by a series of rapidly changing colour-light-fields. Finally, the compositional forces experienced in the encounter with Woody Vasulka's videos emerge from time-energy objects that undergo constant metamorphosis by either manipulating the electronic signal in his analog videos or the gradations of colour within each pixel in his digital work. What these previously discussed artworks demonstrate

is that there is not one particular set of conditions that is able to generate compositional forces for every work of art. Each work must use its own unique set of conditions to produce the intensity felt in the seeing.

Throughout the 1960s, Irwin produced three distinct series of paintings that each had their own particular set of conditions. The "Lines" series (1960-64), the "Dot" series (1964-66), and the "Disc" series (1966-69) used different techniques in order to generate the intensity viewers came to experience in the seeing. The reason Irwin produced these three series, which were each radically different from each other both visually and experientially, was because he could not find a set of conditions that would satisfactorily solve his primary concern. He could not uncover the right techniques that would enable the compositional forces generated in his work to fully capture the viewers' attention. Yet despite his best efforts, other problems would always get in the way of Irwin's primary inquiry. When he completed a series of paintings, he would find new problems with the conditions that he had failed to take into consideration, such as the viewers focusing on the lines rather that the intensity these lines generated in the "Line" series of paintings; or the distraction the shadow that framed the "Dot" series produced, taking attention away from the compositional forces; or viewers interpreting the "Disc" paintings as an eye or a mandala, rather than experiencing the forces that are present in the encounter. Irwin felt that these new problems impeded the viewers' ability to experience the force generated by

the painting's compositional elements because they allowed viewers to interpret imagery or meaning into the work.

As will be discussed below, each new series of paintings would bring Irwin closer to his goal of inhibiting the viewers' ability to encounter representational imagery and interpretive meaning in the work, allowing them to focus on the emergent compositional force felt in the seeing. If viewers are to experience anything while looking at Irwin's paintings, it is the intensive presence that his works generated. According to Irwin, his work "was more about the feel in the painting, not about the pictures" (Feinstein 1997). Irwin sought to create paintings not that were *about something*, but rather, that would offer viewers encounters with *incipient action*.

Series One: The "Lines" (1960-1964)

Problem: How can an image be generated without any recognizable imagery?

Following in the footsteps of the Abstract Expressionist movement, which dominated American painting throughout the 1950s, Irwin was initially seeking to capture in his own work the same forceful physical presence that paintings by artists such as Willem de Kooning and Philip Guston generated.[84] He was searching for new ways to approach his paintings that would enable them to produce a heightened intensity, which could be felt in the shared encounter with viewers. Irwin states:

> Strength was a big word in abstract expressionism; you were trying to get power into the painting, so that the painting really vibrated, had life to it. It wasn't just coloured shapes sitting flat. It had to do with getting real tension going in the thing, something that made the thing really stand up and hum" (Weschler 2008: 64).

Irwin wanted viewers to feel a similar dynamism in the shared experience with his paintings that he felt when encountering those Abstract Expressionist works he greatly admired.

By the end of the 1950s, Irwin begins to experiment with the compositional elements in his work, paralleling the Abstract Expressionist tradition he admired. These works are quite nonrepresentational, filled with gestures of colour that feel spontaneously applied to the canvas. In works such as *Ten Bulls* (1959), viewers encounter vibrant swirls of reds, oranges, and blacks that generate a flame-like intensity. Like a blazing campfire with its dancing flames and billowing smoke rising upward, this work produces a sense of movement that draws the viewers' gaze around the canvas towards the upper left corner. Like many of the paintings Irwin produced during this period, *Ten Bulls* generates a dynamic presence that is felt in the seeing through the sweeping gestures and swirls of colour.

Figure 5.1. Robert Irwin, *Ten Bulls* (1959).

Reflecting on these early Abstract Expressionist works, Irwin thought that his paintings "were full of holes" (Feinstein 1997). These holes are areas or gestures of colour that fail to contribute to, and sometimes even inhibit, the intensity of the encounter occurring between the viewers and the painting. They are areas that can negatively affect the work as a whole, acting as vortical doldrums that suck the vibrancy out of the experience. These lifeless areas and gestures of colour generate inconsistencies in the seeing. According to Irwin, they produce contradictions "in terms of how they were physically read"

(Weschler 2008: 59). This can be seen in the muddy reddish-browns and blacks in the upper and lower right corners in *Ten Bulls*. These two areas in the painting appear to have very little vitality to them. They are holes that douse the intensive impact of the whole experience, countering the vitality of the swirling activity of colour in the center of the painting. Because Irwin felt that many of his abstract expressionist paintings had areas that seemed to impair the work, he believed there were still major aspects that needed to be adjusted so that *only* the compositional forces felt in the seeing would comprise the experience generated in the encounter shared between the viewers and the work.

One of the key aspects Irwin thought needed to be changed in his work was the manner in which his paintings were composed. He wanted every mark and gesture of colour to play a significant role in maximizing the physical presence of the work. "A good painting has a gathering, interactive build-up in it. It is a psychic build-up, but it's also a pure energy build-up" (Irwin in Weschler 2008: 64). This gathering of energy, or dynamism, within the work is generated because each element that composes the work is more than just a spot of paint or swirl of colour. These compositional elements always exceed themselves as such through the relations they enter into with the other compositional elements on the canvas. As these relations accumulate among the compositional elements, the dynamism that is felt in the seeing emerges.

Irwin wanted viewers to actually feel this accumulation of the dynamic intensity produced in the encounter with his paintings. This meant that every

gesture within any particular work had to contribute to the production of these intensive compositional forces. Each mark had to be instrumental to the *incipient action* of the painting. This is because incipient action is what composes the about-to-become visible that is felt in the shared experience.[85] It is what incites the emergence of images that are not yet visible, or the incipiency of images. Each mark and gesture had to be instrumental in generating the incipient action of the painting, contributing to the production of the felt intensive compositional forces. Any compositional element that either hinders or prevents the incipient action of compositional forces from gathering, thereby diminishing the dynamism present in encounter with a painting, Irwin would remove. "A canvas full of rhetorical strokes may be full, but the fullness may be just hollow energy, just as a scintillating wall of colours may be full of colours but have no colour" (Newman 1990a: 249).

A second aspect that Irwin wanted to adjust in his paintings is the type of compositional elements he uses. He felt that he needed to find a very simple set of marks and gestures that he could use throughout his work that would shift the viewers' attention towards their ability to perceive the incipient action generated within the paintings and away from their desire to interpret or find imagery. This is because imagery, for Irwin, "constituted representation, 're-presentation,' a second order of reality, whereas I was after a first order of presence" (Weschler 2008: 65). Irwin aimed to create paintings in which a series of simple marks and gestures on the canvas could be composed in such a way that viewers would be

unable to interpret the paintings as an image of something representational or imbuing them with analyses originating from outside the immediate shared experience.

Enabling Constraints and Clichés

Irwin was trying to find *enabling constraints* that he could use throughout his work in order to maximize the presence of compositional forces within the shared experience between his paintings and viewers, while simultaneously attempting to curtail the emergence of what Gilles Deleuze calls *clichés*. Before discussing Deleuze's notion of clichés, an introduction to enabling constraints is necessary. Enabling constraints are techniques developed in order to modulate the compositional forces of a work into an emergent form. According to Erin Manning: "Enabling constraints focus multiplicity into emergence. Without this focus, multiplicity disperses with little or no diagrammatic force" (2010: 9). Diagrammatic force is not external to the work. It is how the work composes itself in the work. It is an artwork's compositional force, which would be unable to emerge from the numerous elements that constitute the artwork without enabling constraints.

It is important to note that the compositional forces felt in the encounter with an artwork are diagrammatic not because they offer viewers something representational to see, which would work against Irwin's intention of foregrounding the dynamism his paintings generate. As Deleuze and Guattari

explain, the diagrammatic "does not function to represent, even something real, but rather constructs a real that is yet to come, a new type of reality" (1987: 142). Compositional forces are diagrammatic because they co-generate a seeing in the encounter with viewers that enables the dynamism generated by the incipiency of images to be felt. But in order for this dynamic intensity to be felt in the seeing, enabling constraints need to harness and shape these compositional forces into emergence.

Enabling constraints are a set of conditions that bring relations together by limiting the incipient action of compositional elements, while allowing innovations to occur. These innovations are the images that emerge compositionally from an artwork. Enabling constraints make the incipiency of images possible. Think of the grid in John F. Simon Jr.'s internet artwork *Every Icon* (1997) discussed in Chapter 1. In Simon's work, the grid is an enabling constraint that modulates the incipient action of the flickering black and white squares into a dynamic movement that viewers feel flowing across the top of the grid itself. As each of the thirty-two squares in the top row of *Every Icon*'s grid oscillate between black and white at various intervals, with the square furthest left changing one hundred times per second and the square furthest right changing approximately every 1.36 years, the grid limits the incipient action of these squares by modulating the types of relations that can occur among them. The grid, as an enabling constraint, harnesses the incipient action of the

flickering squares into a compositional force, which in turn incites the incipiency of images viewers see in this work.

Simon's *Every Icon* demonstrates how enabling constraints provide a platform that gives an array of compositional elements the means to generate relations through the incipient action each element generates. These relations occurring among the flickering squares of *Every Icon*'s grid are not compositional afterthoughts; rather they emerge compositionally, taking form as the forces dynamically felt in the seeing. While discussing Lygia Clark's "relational objects," Manning explains: "Without a set of enabling constraints to make the work take form, Clark's objects would melt into an already overcoded environment" (2009b: 219). Without enabling constraints to shape the incipient action of compositional elements, these elements that constitute an artwork would not be able to gather into the relations needed in order for compositional forces to emerge. If compositional forces cannot be generated, then viewers will not feel any presence or intensity within the artwork. When little to no dynamism can be felt, there is a risk that an artwork will proceed to slip into the realm of clichés.

According to Deleuze, clichés are everywhere. They are "ready-made perceptions, memories, phantasms" (Deleuze 2003: 71). More specifically, clichés are that "which circulate in the external world, but which also penetrate each one of us and condition our internal world, so that everyone possesses only psychic clichés by which we think and feel, are thought and felt, being ourselves a cliché

among the others in the world which surround us" (Deleuze 1986: 208-9; translation modified). Clichés are techniques, ideas, or actual things that are or have become too familiar and are ready at hand for use. Clichés are not necessarily that which lacks originality; rather, they are that which no longer generates an intensively novel experience. For instance, someone who has never encountered snow falling from the sky who visits a place such as Canada, Norway, or Russia will likely find his or her first experience of white frozen flakes dancing down slowly in the air to be completely novel. There will be an intensity felt that is unique to this first encounter. On the other hand, anyone who as lived in one of these locations for several years will potentially find an encounter with falling snow to be extremely familiar. There will be no forceful impact felt in the experience, making this encounter a clichéd one. Another example of an encounter with clichés is in advertising – once an advertisement has been repeatedly seen or heard, it may not have the same novel impact as it did the first time it was experienced. The more a particular advertisement is encountered, the more it risks becoming cliché. Because clichés are also widely distributed and easily available for experience, they can clutter almost every aspect of life. This makes them difficult to avoid and even more difficult to eliminate.

With the plethora of clichés circulating in the world, it can be difficult to simply focus on experiencing a painting or any other artwork as such. When viewers encounter a particular painting, the work can, as Ronald Bogue asserts,

"become so invested with cultural codes, clichéd forms and conventional interpretations that it is no longer truly seen" (1996: 259). This is because long-standing conventions, such as searching for representational imagery or literary and psychological meaning, have potentially generated a habituated way of encountering paintings. These habits are the clichés of experience, sight, and even thought.[86] As a result of these habits, an instinctive attunement towards seeking clichés is foregrounded when encountering paintings. "We therefore perceive only clichés" (Deleuze 1989: 20).

When clichés are at the forefront of the shared experience between viewers and a painting, then it becomes difficult for the incipiency of images to occur. This is because, according to Daniel W. Smith, "the cliché is precisely what prevents the genesis of an image" (2003: xxiii). Clichés have the ability to impede the incipient action that occurs among the compositional elements within a painting by offering an alternative compositional process to the work. Rather than allowing this incipient action to gather, which would enable images to emerge in the shared experience between viewers and a painting, clichés produce preconstituted formations that do not exceed vision or the work itself. There is little to no dynamism generated in works composed with clichés. Recall the areas of Irwin's abstract expressionist painting *Ten Bulls* that were detrimental to the felt intensity the work generated. The muddy reddish-browns and blacks on the right side of the painting retain the look of gestures that would typically appear within an abstract expressionist painting, but they do not

generate the compositional force felt in the seeing. These gestures in Irwin's painting take away from the incipient action gathering throughout the other areas of the work, obstructing or even possibly preventing the incipiency of images from taking place. Gestures like these are compositional clichés that have the ability to obstruct the incipient action compositional elements generated within an artwork, which in turn kills the incipiency of images.

Having clichés creep into his work, Irwin was faced with the arduous task of becoming more attuned to how they are formed within his painting practice in order to devise a set of conditions that would draw the viewers' attention toward the incipient action taking place within his paintings.[87] Because clichés potentially appear everywhere within experience, they have a tendency to emerge on their own. This make them feel like such a naturalized part of any painting or artwork. As Deleuze states, "clichés are always-already on the canvas" (2003: 72). This means that before Irwin even began making paintings, he was already fighting the impact clichés would have on how his work was encountered. He explains how easy it is for artists to fall prey to the clichés that surround them: "[W]hat you normally do is you bring to the situation all your aspirations, all your assumptions, all your ambitions – all your stuff. And then you pile it up on your painting, reading into it all the things you want it be" (Irwin in Weschler 2008: 77). It is easy for artists, such as Irwin, to be blinded by the clichés that slide into their work. However, if Irwin was to create a set of conditions that avoided clichés altogether, he had to ensure that he was not

filling his work with them. He had to determine what the potential clichés were, how they could enter into his work, and understand how they inhibited the incipient action the compositional elements generated. Irwin had to constantly question whether the techniques used to compose his paintings generated clichés or not.

Jackson Pollock notes that, "new needs need new techniques" (1999: 20).[88] The trap of clichés can be avoided when an artwork does not continually rely upon the same techniques that may have successfully captured the attention of viewers in the past. Techniques that artists have had available to them for generations, such as linear perspective or cross-hatch shading, may not be able to generate the same compositional forces to lure the focus of viewers like they had when they first debuted. As successful techniques are repeatedly used, the compositional forces generated in the encounter become more subdued, rather than producing an intensity that exceeds the techniques as such. When linear perspective is used to compose a painting today, it is often because it is a technique that is familiar and easily understood when encountered. It does not generate an intensity felt in the seeing that a more contemporary painting technique may be able to produce. As soon as a technique becomes so familiar that viewers are unknowingly attuned to seeing with it, then this technique can no longer generate the excesses in the seeing needed to capture their attention. It will have become just another habit of sight, another cliché.

Another way to ensure that artworks are not contaminated by clichés is for artists to devise a set of conditions that evades any predetermination of what a particular piece can do. Techniques or conditions that are used to establish what viewers will experience in advance of their encounter with an artwork can only rely on clichés. This is because clichés are always already known prior to any encounter. Although there is no guarantee that clichés can be completely removed from an artwork, if artists do not specify exactly what kind of experience viewers should have when encountering their work, then an artwork may be able to generate compositional forces that viewers can feel. Brian Massumi points out that enabling constraints are a set of conditions that do not prescribe what viewers will actually experience. They are "sets of designed constraints that are meant to create specific conditions for creative interaction where something is set to happen, but there is no preconceived notion of exactly what the outcome will be or should be" (Massumi 2009: 15). Artists who use enabling constraints cannot predict what will happen when viewers encounter their work. This is because enabling constraints only constitute part of the incipiency of images. They do not generate what will be seen completely on their own. Through their participation with an artwork, viewers may experience the intensity of the work's compositional forces, while others who are too blinded by clichés may see nothing.

Irwin believed he found an enabling constraint that through its repeated use had the ability to generate compositional forces significant enough to lure the

viewers' attention away from any circulating clichés. This enabling constraint was the straight line. "The simple straight line seemed to me to be the best possible tool, the clearest element I could find, with the least amount of literate associations to it, and the greatest amount of power on the other side" (Irwin in Weschler 2008: 66). Many of the paintings Irwin started in 1960 continued in the Abstract Expressionist action painting manner he had been employing up to this point, applying the paint with spontaneous gestures of colour. But rather than filling the canvas with these active marks, these new works used a limited number of straight lines. This more disciplined approach however did not sacrifice any of the intensity felt in the seeing. In fact, Irwin was able to generate the same quality of presence with fewer marks. The straight lines in these paintings are primarily horizontal but there are a small number of them that cut across the canvas diagonally and pass over the horizontal lines. The extremities of the lines never come into contact with each other or the edge of the canvas. The two ends of the lines also never come into contact or connect. In setting these conditions, Irwin believed that the viewers' ability to see or find clichéd imagery would be inhibited.

Ocean Park (1960-61) is a good example of Irwin's initial line paintings. This work continues from Irwin's earlier action painting style. Approximately twenty rough-looking straight lines appear in this work, seeming as though they were violently cut into the nearly monochromatic orange background. As viewers encounter the painting, their gaze is immediately drawn towards the

centre. This is because most of the lines conglomerate here, with the thickest and darkest of all the lines sitting almost exactly in the middle of the work. From this central weighty line, the other lines spread towards the top and bottom of the painting. As the lines scatter both upwards and downwards, they also become progressively thinner. The lines that are nearest to the top and bottom edges of the work are thin and made up of a yellow colour that verges towards orange and seem to almost melt into the monochromatic background. This gradual spreading and thinning of the lines draws the viewers' gaze away from the centre towards the edges of the painting.

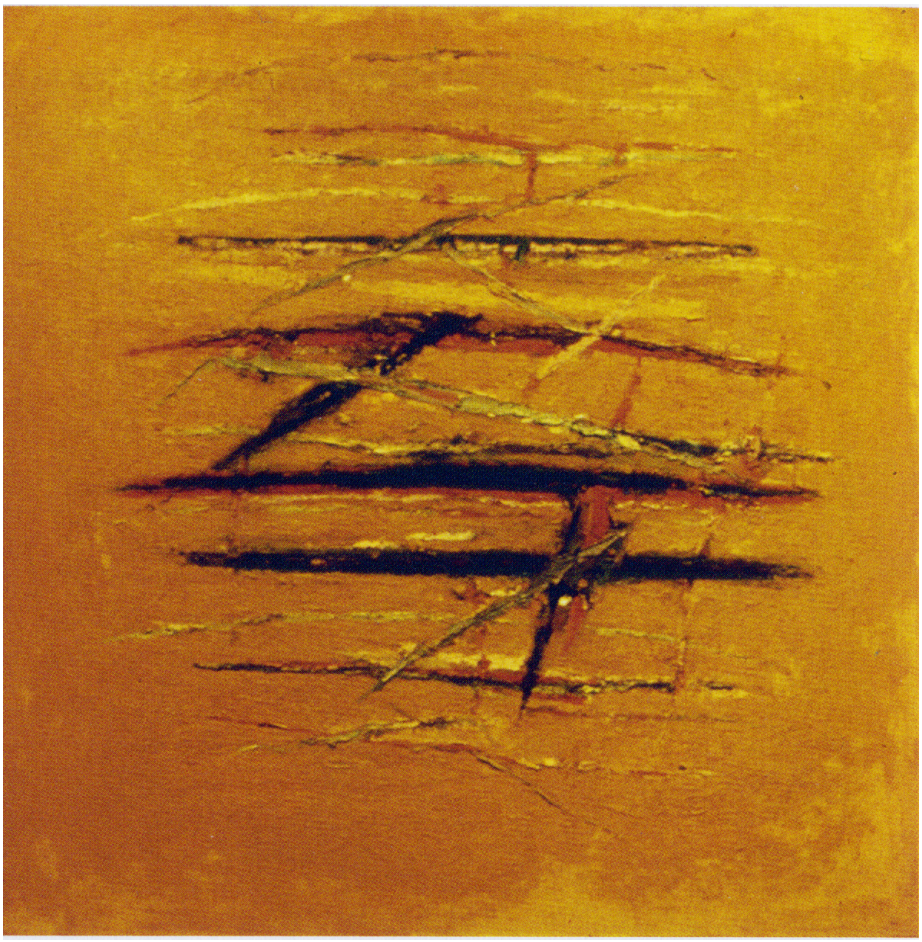

Figure 5.2. Robert Irwin, *Ocean Park* (1960-61).

A tension emerges in the seeing of this painting because as the viewers' gaze is drawn to the weight of the heavier lines in the centre, they also want to follow the dispersion of the lines towards the top and bottom of the work. This tension generates a feeling of tumbling similar to that of waves in the ocean. As the viewers' gaze moves away from the centre towards the top of the painting, their attention immediately falls back to the centre, only to be drawn away from the centre again. This feeling of perpetual tumbling is *Ocean Park*'s compositional force.

Despite the fact that Irwin succeeded in generating compositional forces that could be felt in many of his initial line paintings, he still continued to remove elements from his paintings. This was because he continued to find elements that did not truly contribute to the generation of the compositional forces in the work. Also, imagery could still be found in these works. His fear was that viewers could still find clichés in these paintings. Irwin's biographer Lawrence Weschler explains:

> Although Irwin had already broken down most of the pictorial elements in his painting… he was still left with a painting that was articulable. The eye followed the lines, form one energy nexus to another, from intersection to separation, and so forth. These relationships seemed to be what the painting was about (2008: 68).

Viewers were about to read the lines like paths on a map that take them on a journey around the canvas. Even Irwin saw clichés in these initial line paintings.

He thought the paintings reminded him of a game of pick-up sticks, which is why he would end up calling these initial line works the "Pick-up Sticks" paintings.

Perceptual Fields

Undeterred by the imagery found in his initial line paintings, Irwin continued to reduce the number of lines in his work from twenty down to eight. By mid-1961, he had reduced the number of lines down to four, creating a series of paintings called the "Early Line" paintings. Finally, between 1962 and 1964, Irwin began to paint works with just two thin lines on a monochromatic colour-field. These paintings are known as the "Late Line" paintings. When Irwin reached this point, he explains that "the rough lines straightened out, becoming simply horizontal, their presentation thinning to a spare ribbon" (Weschler 2008: 68). The lines that Irwin used in these "Late Line" paintings had none of the dramatic expression that was seen in works like *Ocean Park*. They were thin strips of colour that extended across almost the entire width of the canvas, usually with one line placed in the upper half of the canvas and the other in the lower half.

Nearly all of the ten "Late Line" paintings Irwin produced during this two-year period were kept within a narrow range of colour that consisted primarily of oranges and yellows. The colour of both the two lines and the monochromatic colour-field these lines resided in would often match or nearly

match. Irwin states that he used a bright orange paint straight out of the tube for the colour-field and then "applied it very evenly over the canvas, trying to avoid any discrepancies in the field while at the same time providing a definite texture" (Weschler 2008: 75). Then from the same tube, he applied the two lines onto the canvas. Irwin had reduced the enabling constraints of his work to almost the lowest degree of incipient action a painting could generate without adversely affecting the work's felt intensity.

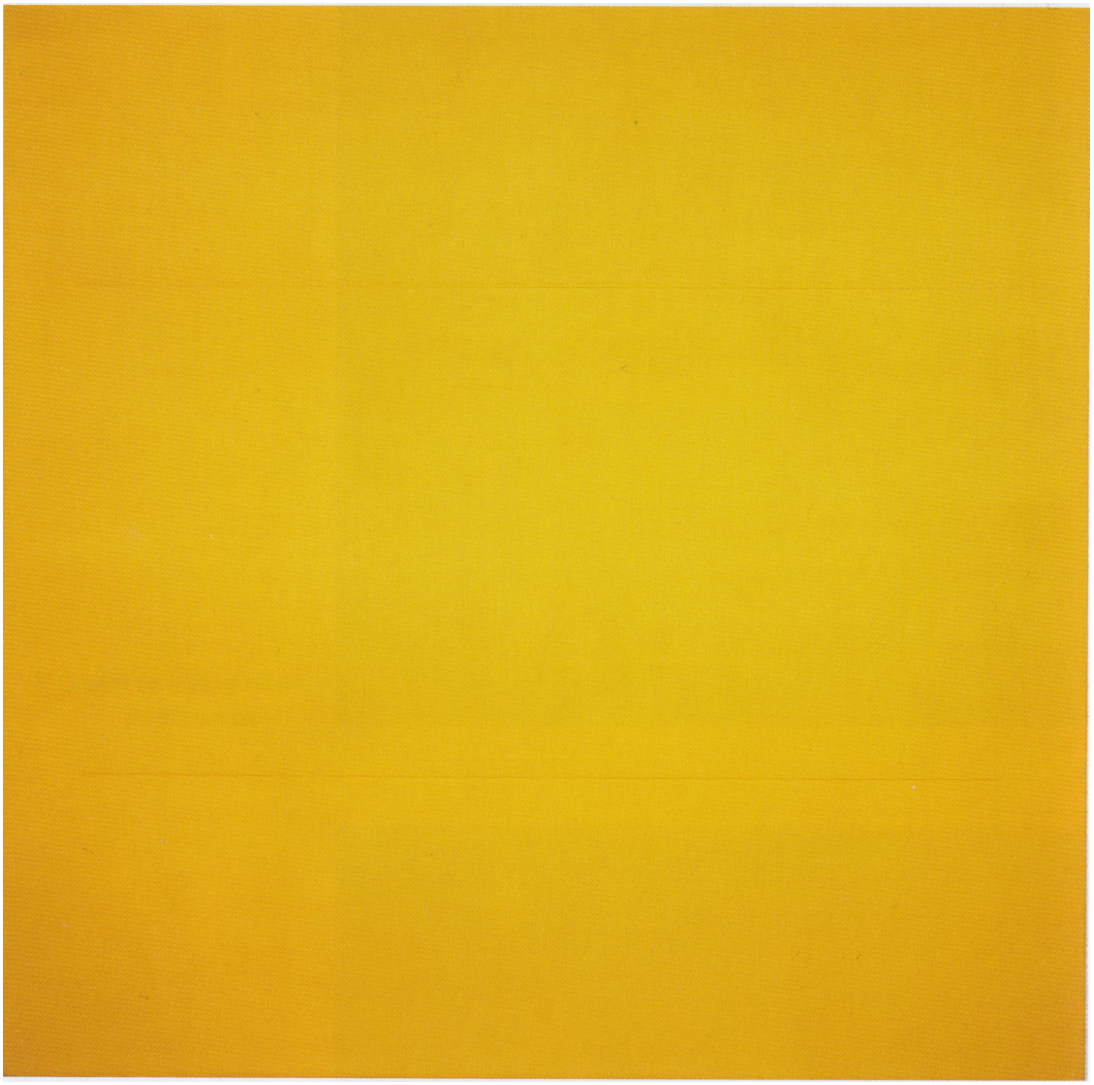

Figure 5.3. Robert Irwin, *Untitled* ("Late Line" Series) (1963-64).

Although the initial line paintings and the "Late Line" paintings share similar compositional elements in that they are both constituted of straight lines on a monochromatic ground, they do not generate the same kind of experience for viewers. Irwin notes that despite the "Late Line" painting's structural similarities, "on an experiential level, they are in an entirely different world" (Weschler 2008: 79). This is because, unlike his previous Abstract Expressionist style of painting, the intensity generated by these "Late Line" paintings no longer simply resides in the activity that occurs among the lines themselves. The space in-between these marks also plays a key role in producing the forces that viewers feel. According to Barnet Newman: "The artist's function is to use, not to draw, what is in between the lines" (1990b: 83).[89]

Irwin's aim was not to have the lines appear as the subject matter of these paintings. He felt that the monochromatic colour-field that the lines resided in was just as essential as the lines themselves: together they produce the intensive compositional forces experienced by viewers. Irwin explains: "The lines were intended not really to dominate the grounds as a figure-ground thing" (Weschler 2008: 78). When looking at the "Late Line" paintings, the lines do not thrust themselves to the forefront of the viewers' attention. Because the colour of the lines is almost the same as the monochromatic colour-field, it can be quite difficult to even see the lines when first encountering one of these paintings. Although viewers may not be able to immediately see the lines, they can feel their presence. Rather than appearing as a fully formed figure to be looked at, the

lines imperceptibly quiver like prongs of a tuning fork that has been struck, producing a resonance that travels throughout the entire colour-field. With each subtle twitch the lines make, new waves of compositional forces proceed to ripple throughout the colour-field. Viewers experience these waves of compositional forces as reverberations of colour that radiate out from the canvas. The quivering lines in the "Late Line" paintings and the reverberating colour-field they co-create become so caught up with each other that a *perceptual field* of resonating colour emerges.

This emergent perceptual field is relational, generating a seeing that is co-composed in the shared experience between viewers and a particular "Late Line" painting. According to Manning, a field "forces a recombination of figural structures and qualities of ground" (2009a: 100). As viewers encounter Irwin's work, the two lines and the monochromatic colour-field enter into relations in which neither is the sole focus of their attention. This is because both of these compositional elements are constantly fluctuating between foreground and background. They never stabilize or take a definitive position within the perceptual field. They are in a state of constant incipiency. The incipient action occurring between the two lines and the colour-field also makes it difficult for viewers to visually determine whether the paintings are offering an image of a colour-field with two lines cut into it, which provides a glimpse into an unknown world hidden behind it, or an image of two lines that sit atop a colour-field background. Since this fluctuation between figure and ground makes it difficult

for viewers to clearly see either one, it produces an intensity that can be felt. "The thing is you cease reading and you cease articulating and you fall into a state where nothing else is going on but the tactile, experiential process" (Irwin in Weschler 2008: 79). This experiential process creates an incipiency of images. The constant modulation between figure and ground, foreground and background, in the "Late Line" paintings produces an incipient action that generates a perceptual field experienced as a felt resonance of colour.

The incipient action that occurs between figure and ground in Irwin's "Late Line" paintings differs significantly from earlier painting traditions, in which the figure would be the focus of the painting and the ground was used as a support that further emphasized the figure. This difference can be seen when comparing the "Late Line" paintings with those paintings from the Renaissance that use linear perspective.[90] In Renaissance linear perspective, the figure is given priority above the ground. Think of Leonardo da Vinci's *The Last Supper* (1495-98), in which Jesus is the focus of work, or Sandro Botticelli's *The Birth of Venus* (1486), which pushes the goddess Venus to the forefront of the viewers' attention. By prioritizing the figure, these paintings do not generate the same perceptual fields of compositional forces that are encountered in Irwin's "Late Line" paintings. Instead, these works of linear perspective rely on a particular representational emphasis that backgrounds these forces, making it difficult for them to be felt in the seeing. This representational emphasis is produced in these paintings by lines that converge towards a centralizing vanishing point where

the figure is placed. In the *Last Supper* this convergent point is Jesus' head and in *The Birth of Venus*, it is Venus' navel.

Figure 5.4. Leonardo da Vinci, *The Last Supper* (1495-98).

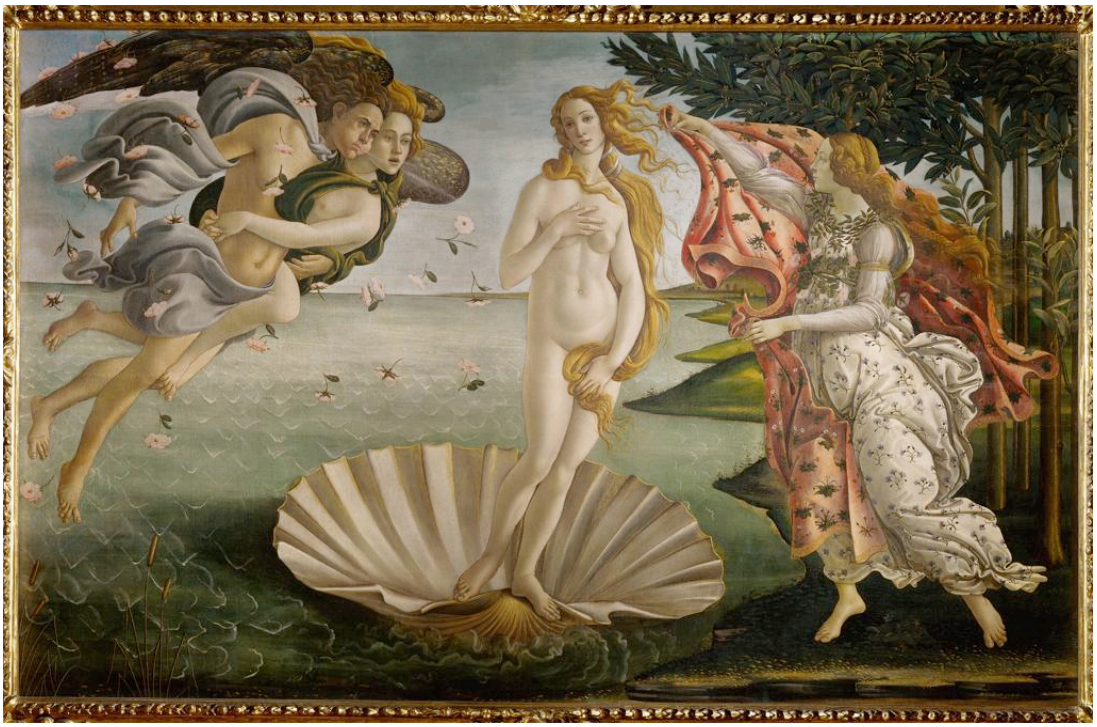

Figure 5.5. Sandro Botticelli, *The Birth of Venus* (1486).

Since most of the lines in linear perspective paintings are directed towards the vanishing point, the figure becomes the primary focus of the viewers' attention. It can be difficult for their attention to wander away from the figure in order to ponder the surrounding ground. This is because the ground is oriented so that the viewers' gaze will always return to the centralized vanishing point, and thus to the emphasized figure of Jesus in da Vinci's work or Venus in Botticelli's painting. The figure becomes the primary focus of the work, while the ground hides itself by ushering the viewers' attention away from it and back towards the figure again. Rather than generating a perceptual field that resonates throughout the entire canvas, like Irwin's "Late Line" paintings, works employing linear perspective produce a perceptual field that emanates from and surrounds the centralized vanishing point. Because of the figure's proximity to

the vanishing point, a perceptual field appears to be generated by and attracted to the figure, which further enhances the figure's ability to focus the viewers' attention upon it. Much of the incipient action in these works is then directed towards distinguishing the figure from the ground.

Yet, despite the ability of the vanishing point to focus the viewers' attention on the figure, Massumi explains that there are two potential openings within linear perspective capable of generating compositional forces that enable it to exceed its own centralized organization. These two bifurcations appear both within and outside the space organized around the centralized figure.

> [Linear perspective] circles back from the virtual center, around to the outside of the frame. The scene is centered on the infinity of its spatial order, and is also fringed by it. It is immersed in it. The artwork is actually bounded by the frame, but its scene is virtually unlimited. It's the semblance of a world, bounded and unlimited (Massumi 2008: 20).

The first bifurcation concerns the vanishing point itself because it potentially continues on infinitely. The space behind both da Vinci's Jesus and Botticelli's Venus is never-ending, continuing on beyond the limits of what is actually visible in these works. This infinite space generates a force that has the potential to pull the viewers' gaze beyond the limits of what they actually see within the paintings. The second bifurcation appears at the edges of the painting around frame. The space that the paintings depict potentially exceeds any frame that

slices it from a larger visual whole. The horizon in *The Birth of Venus* does not stop on the right and left edges of the painting, but potentially exceeds beyond these limits, and the room depicted in *The Last Supper* is designed to appear to extend into the space where the viewers are standing encountering the work. These two bifurcations are excesses in the seeing that both centripetally spiral down the vanishing point and centrifugally extend beyond the frame, generating felt compositional forces that potentially undermine the emphasis placed on the central figure.[91]

Although there is the potential for these bifurcations to emerge in the seeing, Renaissance linear perspective relies upon a set of conditions that is both familiar and easily understood when encountered in order to generate a perceptual field for the experiencing. The notion that the figure is the primary focus of a painting, which is supported by the ground, is a long-standing one. Despite the potential for compositional forces to emerge, Renaissance linear perspective offers viewers a clichéd seeing experience. The way techniques such as linear perspective thrusts the figure to the forefront of the viewers' attention has become such a common method of structuring vision that it can often be mistaken to be the *only* means of making seeing possible. This means that other sets of conditions, such as the one proposed in Irwin's "Late Line" paintings, are often dismissed as not being capable of rendering vision at all. As Jonathan Crary claims:

> Over the last century vision has increasingly been denied any hierarchy of objects within which the important could be distinguished from the trivial, as figure might be isolated from ground. Without theses distinctions vision becomes a derelict and uninflected mode of reception and inertia, *incapable of seeing* (Crary 2009: 14; emphasis added).

If for Crary seeing is defined only as the ability to distinguish and isolate particular entities from their surrounding environment, then what Irwin is doing with his "Late Line" paintings falls outside this definition. The felt resonance of colour that viewers experience in the encounter with Irwin's paintings would not be considered seeing in this sense because viewers do not perceive any distinguishable representations of objects. In the "Late Line" paintings, there is an intensity that is generated during the act of seeing that exceeds the viewers' vision as such. As the two lines and the monochromatic colour field of the "Late Line" paintings affect each other, they generate excesses in the seeing that viewers experience as the incipient action of compositional forces. If viewers are not searching for a figure to focus on and approach these works perceptually, then, according to Irwin, "you find that your eye ends up suspended in midair, midspace, or midstride: time and space seem to blend in the continuum of your presence." (Weschler 2008: 79). The viewers' vision exceeds the act of seeing in order to co-generate the emergent perceptual field with the particular "Late Line" painting that is encountered. Viewers feel the intensity that the perceptual

field produces as it emerges from the relations that occur between themselves and Irwin's work in the midst of the seeing.

Again, like the "Pick-up Stick" paintings, many viewers were unable to feel the intensity that the perceptual field generated by the "Late Line" paintings because they could not approach the painting without looking for representational or conceptual imagery. For some who could feel the intensive resonance, as soon as they discovered that it was the two lines on the monochromatic colour-field that produced what they felt, the paintings could no longer generate a perceptual field. Like the magician's illusionary trick that has been revealed, once the audience knows how the trick is performed, the felt force the illusion generated disappears. When viewers could discern the two lines from the colour-field, the modulating figure-ground relationship was lost. Instead, viewers would resort to a clichéd form of seeing. What they would see was a painting that was about two lines that were the same colour as the ground that they were placed upon. Weschler explains that no matter what Irwin had intended for "Late Line" paintings, "they still read *as* lines, the paintings seemed to be paintings *of* two lines, and that prepositional tendency had the effect of dribbling away the viewer's presence before the canvas" (2008: 90-91; original emphasis).

Series Two: The "Dots" (1964-66)

Problem: How can an image be generated without visible marks?

Irwin could have taken the next logical step in his process of reducing the number of compositional elements in his work by removing the lines completely. His paintings would then only be composed of a monochromatic colour-field. This would eliminate the possibility of viewers seeing figures on a singularly coloured ground because there would not be any visible marks on the canvas. Without anything that could be considered a figure occupying the forefront of the viewers' attention, there would potentially be nothing to distract viewers from encountering Irwin's work perceptually as such. This absence of any marks or gestures within the monochromatic colour-field may be able to inhibit viewers from interpreting representational imagery in the painting, but can a felt perceptual field be generated in the seeing? Is there any incipient action in a painting that is comprised of a singular colour?

Although the lines in the "Late Line" paintings can be understood as a series of abstract figures on a ground, they also co-produce a felt resonance of colour with the monochromatic colour-field. The constant modulation that occurs between the two lines and the colour-field generates compositional forces that are felt in the seeing. However, it is also possible to generate a felt compositional resonance with just the monochromatic colour-field. The lines are not necessarily needed. Yves Klein's *Blue Monochrome* (1961), which is comprised entirely of a singular blue colour, is capable of generating compositional forces

that produce a resonant perceptual field. For Deleuze and Guattari: "The coloured or, rather, colouring void, is already force" (1994: 181). The blue in Klein's painting is able to generate compositional forces because all colours incessantly vibrate, radiating out into the world in search of other colours to enter into relations with them. The colour of *Blue Monochrome* does not suddenly begin to quiver ever so slightly because viewers encounter the work or because there is some external force or element is acting upon it. Rather, the blue in Klein's painting, like all colours, according to Henri Bergson, "amounts, in itself, to a series of extremely rapid vibrations" (2007: 124). Colours simply vibrate: that is what they do in and of themselves.

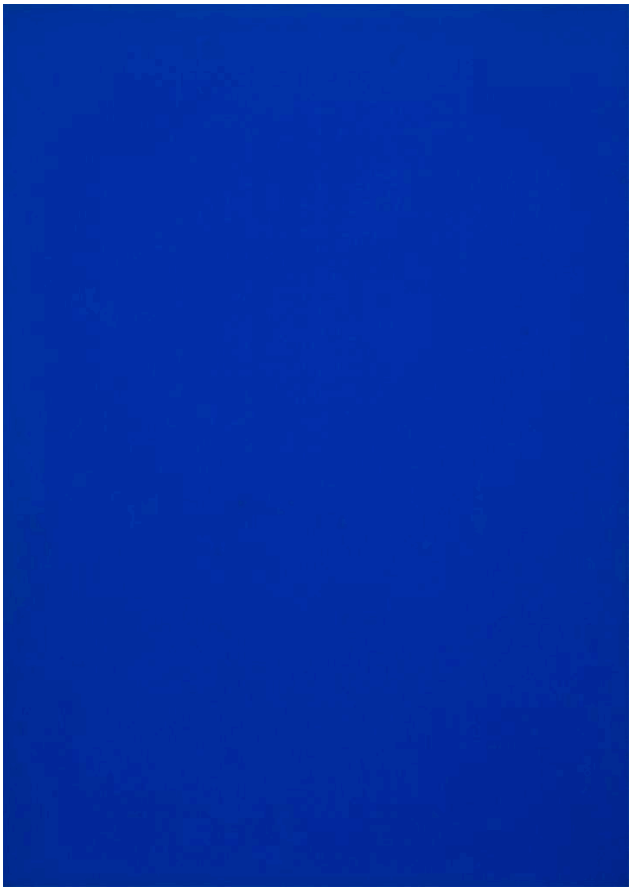

Figure 5.6. Yves Klein, *Blue Monochrome* (1961).

Yet despite this extraordinary ability for colours to incessantly vibrate, viewers cannot actually perceive this subtle quivering movement. Even when viewers are inches from Klein's painting, encountering the blue colour that populates it, they cannot see the vibrations that the blue generates. The work's incipient action is not visible. This is not because their ability to see is flawed. Anyone with excellent eyesight would still not be capable of actually seeing the quivers of colour. Rather, it is because the viewers' perceptual threshold gets in the way. According to Steve Goodman: "If we subtract human perception, everything moves. Anything static is so only at the level of perceptibility. At the molecular or quantum level, everything is in motion, is vibrating" (2010: 83). Although the viewers' perceptual limits prevent them from directly perceiving the vibrations of the colour blue occurring within Klein's painting, the imperceptible incipient action is felt in the seeing. This is because in any visual encounter, viewers will always *feel* more than they *see*.

Like the unseen colours viewers felt in the seeing when encountering Paul Sharits' film *N:O:T:H:I:N:G* (1968), as discussed in Chapter 4, there is a seeing generated between viewers and *Blue Monochrome* that exceeds actual perception. Because colour is always vibrating, the blue of Klein's painting will constantly surpass the viewers' perceptual limits to see the colour as such. Colour has an elasticity that is not restricted to any particular perceptual threshold. The colour's incipient action extends beyond the colour itself. This enables the colour

to potentially affect all that it relationally encounters or conversely encounters it. "All entities are potential media that can feel or whose vibrations can be felt by other entities" (Goodman 2010: 83). The blue of Klein's canvas has the ability to affect the colours neighbouring it through the vibrations it generates. As the blue colour quivers, it extends out beyond the painting itself and affects all the colours that surround it. This, in turn, affects how these colours surrounding *Blue Monochrome* emerge into perception. Conversely, the blue of Klein's painting will also be affected perceptually by the fluctuations generated by the surrounding colours.

According to Josef Albers, "we almost never (that is, without special devices) see a single colour unconnected and unrelated to other colours" (2006: 5). This is because colours always seek relations with other colours through the incipient action they generate. As both the blue in *Blue Monochrome* and the colours surrounding this work vibrate and extend beyond themselves, they enter into relations that mutually affect how each comes to be perceived. Once Klein's blue and the surrounding colours mutually enter into relations with another, it is through their contrast that compositional forces are generated.[92] For Deleuze and Guattari, "the area of plain, uniform colour vibrates, clenches or cracks open because it is the bearer of glimpsed forces" (1994: 181). Viewers encounter these compositional forces, produced by the contrasting colour relations, as a perceptual field of resonating colour. Assuming that viewers encounter Klein's

painting mounted on a white wall, the resonance that is felt in the seeing produces a vibrant blue.

Klein's *Blue Monochrome* demonstrates that a painting does not need any marks and can composed exclusively of a singular colour in order to produce an intensity that is felt in the seeing. It also shows that the incipiency of images not only involves the compositional elements within an artwork, but also those conditions within the surrounding environment. A perceptual field can emerge when viewers encounter a monochromatic colour-field painting, through the compositional forces generated by the contrast of colours between the work and its surroundings.

Intensity Through Contrast

Although Irwin did ponder the idea of producing purely monochromatic paintings, he did not act upon this thought. This is because, at the time, he believed that the decision to remove the lines from his work would not properly address the problem of generating a felt intensity within the work. It would be decision based on an intellectual problem and not a perceptual one. He states that, "in terms of where I seemed to be heading, it would have been – let's say on an intellectual level – it would have been closer to where things were going" (Weschler 2008: 78). Because Irwin's interest lay in the perceptual aspects of paintings, investigating intellectual problems was not an avenue that he wanted to go down. In fact, he thought that if he began making monochromatic colour-

field paintings, any intellectual considerations that arose would ultimately distract viewers from feeling the intensity generated by the compositional forces. Irwin states: "I was interested in terms of how one could read this actuality, this physicality, without those kinds of what I had come to consider distractions" (Weschler 2008: 79). This rejection of producing purely monochromatic paintings did not deter Irwin from devising a new set of conditions that would enable viewers to experience the generation of compositional forces, while inhibiting any possible representational or conceptual readings. Instead of completely removing marks from his paintings, Irwin decided to make the marks so small that they became almost imperceptible.

In 1964 Irwin abandoned the use of straight lines as an enabling constraint in his work because of their inability to generate an intensity that would inhibit viewers from seeing representational or conceptual imagery. The lines could not disable viewers from seeing clichés. Instead of using a constraint that the viewers could easily see, in a tactical shift, Irwin began to paint a series of works that were composed of minuscule green and reddish-magenta dots on a white colour-field. Because these paintings were composed of thousands of dots, they became known as the "Dot" series (1964-66).

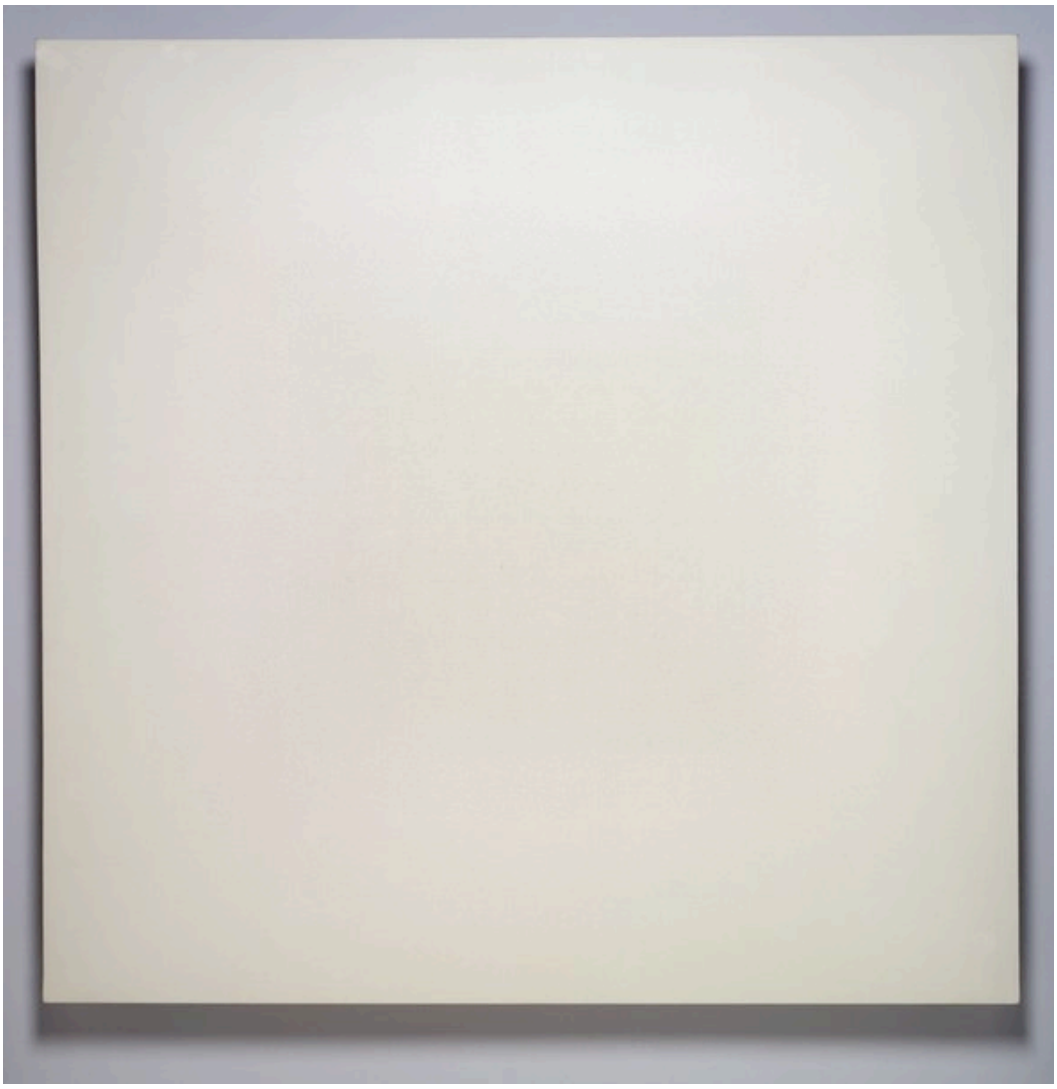

Figure 5.7. Robert Irwin, *Untitled* ("Dot" Series) (1964-1966).

Reminiscent of Georges Seurat's pointillist technique, Irwin applied the dots onto the canvas using only the tip of a fine paintbrush.[93] He would alternate a dot of green with a dot of reddish-magenta. If viewers were to look at these painting up close, they would notice that the dots are mostly concentrated in the centre of the painting, where they are separated by a space equivalent to the width of one dot. As the viewers' gaze moves away from the centre of the painting towards the edge of the canvas, they will notice that the space between

the dots gradually increases. Before the viewers reach the edge of the painting on this up-close inspection, the dots stop altogether and all that remains is the white colour-field.

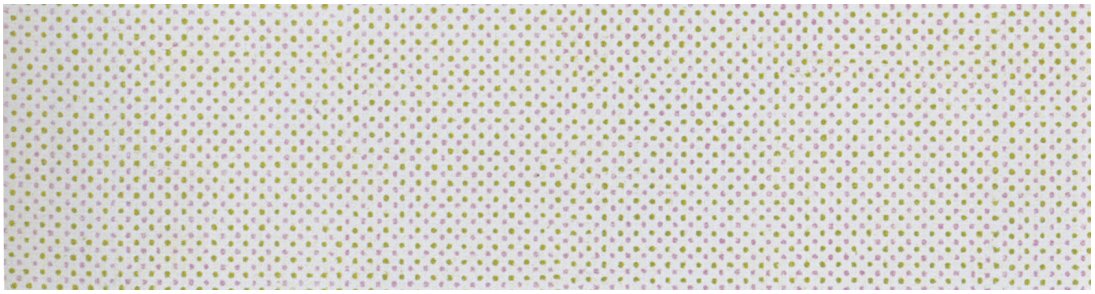

Figure 5.8. Robert Irwin, *Untitled* ("Dot" Series) (1964-1966) (detail).

Standing further back in order to see the painting in its entirety, viewers will not be able to see the green and reddish-magenta dots that are dispersed throughout the centre of the painting. The dots become almost imperceptible, yet the field they create can be felt in the seeing. This is because, as Irwin explains, the two colours the dots are comprised of "essentially cancelled each other out, so that you [don't] see either green or red but rather the energy generated by their interaction between the two" (Weschler 2008: 91).[94] Green and reddish-magenta are complementary colours of light. When they are within close proximity to each other, as they are in Irwin's "Dot" paintings, the one colour will effectively nullify the ability of the other to be seen. This is because, according to physicist Ogden Rood: "Any two colours which by their union produce white light are called complementary" (1879: 161). Rather than seeing an array of green and reddish-magenta dots, viewers see only a white light emanating from the canvas. This white light emerges from the modulation that

occurs between the green and reddish-magenta dots. Like the modulation of figure and ground in the "Late Line" paintings, the dots generate a perceptual field that viewers experience as a felt resonance of colour-as-light. As viewers look at the "Dot" paintings, they see a white monochromatic colour-field that vibrates in the centre. They experience a painting in which the intensity emerges through contrast.

In order to enhance the felt resonant intensity generated by the contrasting coloured dots, Irwin altered the frame of the "Dot" paintings by making the frame perceptibly square. The "Dot" paintings measure two hundred and ten by two hundred and fifteen centimeters. Although the paintings are not mathematically perfect squares, viewers perceived them as though they are. Irwin decided on this perceptibly square, yet mathematically rectangular shape because, as Weschler states, "a square would read more neutrally than a rectangle, [yet] an actual square still harboured a disturbing tendency not to read as one at all but rather as something vaguely rectangular" (2008: 92). Irwin wanted viewers to approach the "Dot" paintings perceptually and not be distracted by any other concerns. By making the paintings a perceptible square (an actual rectangle), Irwin's hope was that the shape would be innocuous enough not to divert the viewers' attention away from the incipient action occurring within the painting.

In addition to making the shape of the "Dot" paintings perceptibly square, Irwin also altered the way the canvas was stretched in order to enhance

the viewers' ability to experience the intensity generated by the contrasting coloured dots. As Weschler explains: "Irwin ballooned the center of the canvas forward, only slightly (no more than two inches) in an even swell, not enough to be noticed as such but enough that the painting's edge seemed to fall away" (2008: 93). Irwin constructed the frame beneath the canvas so that it caused the centre of the painting to subtly protrude away from the wall.[95] He was careful not to push this curve in the canvas out far enough so that it would create shadows. Irwin wanted to make sure that the viewers could not see that the paintings were actually not flat, which would create another distraction. What the curving of the "Dot" paintings did was amplify the intensity of the contrasting dots. According to Irwin, curving the canvas would "maximize the energy or the physicality of the situation and minimize the identity or idea or imagery of the situation" (Weschler 2008: 94). Because the dots are more concentrated in the center of the canvas, subtly thrusting the centre forward by two inches further emphasizes the intensity the colour-light field generates, while simultaneously inhibiting the viewers' ability to rely on clichés and see representational or conceptual imagery.

Yet despite Irwin's best intentions, upon seeing these paintings hung in a gallery setting for the first time he felt that, "the shadow around the frame would almost be stronger than anything else" (Feinstein 1997). The shadow that bordered the edge of these paintings distracted him so much that he felt it overpowered the intensity of the compositional forces that these the paintings

generated. For Irwin, the frame became more alluring than the painting itself. This prompted Irwin to question, for the first time, the need for the frame in painting. He believed that the frame acted as "a structure that *prestructured* everything we did" (Irwin in Feinstein 1997; emphasis added). Irwin came to the realization that the frame imposes a particular organization that affects how a painting is encountered before the first brushstroke is even made.

The frame became the ultimate cliché that Irwin had to inhibit in his work in order for viewers to be able to experience the work's intensity. He began to question what the function of the frame actually was in painting and whether the frame was even necessary. Irwin specifically asked: "What kind of 'reality' was this that allowed itself such abstraction as to demand that the world end at the edge of the canvas? Yet what kind of world would it be if there were no such limits?" (1985: 12).

Series Three: The "Discs" (1966-69)

Problem: How can an image be generated without a frame?

The series of paintings that resulted from Irwin's questions about the frame became known as the "Disc" series. These paintings, which were produced between 1966 and 1969, are noteworthy because they do not end at an edge, but rather appear to continue on into the gallery environment. Unlike most paintings, these works have no frame. This is because when Irwin looks at the world around him, he sees that there are no distinct frames that shape what is

seen. For him, "the world is continually knitted as an envelope all the way around you" (Irwin in Feinstein 1997). To reflect Irwin's observation on how vision functions, the "Disc" paintings created a situation that made it difficult for viewers to separate the paintings from the wall they were mounted on. This was done through the manipulation of shape, lighting, and colour. Irwin states that he wanted "to get the painting caught up in the space around it" (Feinstein 1997). The incipient action of the "Disc" paintings would not only occur within the work, but would also involve the world around them. Irwin wanted the threshold between the paintings and the surrounding gallery environment to disappear so that there was no longer a clear distinction between the two. Weschler states: "Irwin was trying to create a painting that would simply *dissolve* into its environment" (2008: 103; original emphasis).

When walking into a room in which the "Disc" paintings are presented, it is easy for viewers to feel unsettled. This is because one of the first things many of them notice is that there appears to be nothing in the gallery. There are no frames, or even edges, on the walls to clearly indicate that there are paintings actually mounted in the room. It is difficult for viewers to see anything because there are no visual clues or clichés for them to rely upon. Despite the fact that they cannot see anything in the room, they can sense that there is something different about the gallery space. There is something uncanny occurring in the seemingly empty gallery that is making it feel different. Viewers can feel

incipient action resonating throughout the gallery space but cannot pinpoint where it is being generated.

Figure 5.9. Robert Irwin, *Untitled* ("Disc" Series) (1966-1969). Aluminum version.

After a few minutes of exploring the gallery trying to discover what is producing the uncanny feeling in the room, viewers eventually begin to notice white disc paintings ambiguously floating just beyond the surface of the gallery wall. As viewers spend more time in the gallery, they realize that the floating discs are actually Irwin's paintings, which are mounted parallel to the wall by a metal tube that pushes them approximately fifty centimeters away from the wall

and into the gallery space. The discs themselves consist of a circular, convex shape and are approximately one hundred and fifty centimeters in diameter.[96] Because of their convex shape, the discs curve slightly towards the wall, muting the visibility of the edges.

It is important to note that Irwin produced two versions of the "Disc" paintings: one was made of lightweight aluminum, while the other was made of translucent acrylic plastic. Both versions produce the unsettling feeling experienced by the viewers but in slightly different ways. The aluminum version is painted entirely white and generates the feeling that part of the wall is somehow either protruding out or receding inward. Sometimes it can feel like both at the same time. The plastic version is also painted white except for an one horizontal line running through in the centre of it, exposing the translucent plastic. Again, viewers experience the feeling that something is protruding and receding from the wall. But with the plastic version it is not the wall that viewers feel is moving, rather it is the horizontal line that is fluctuating. In both versions, viewers experience an intense resonance that is felt throughout the room where the paintings are mounted.

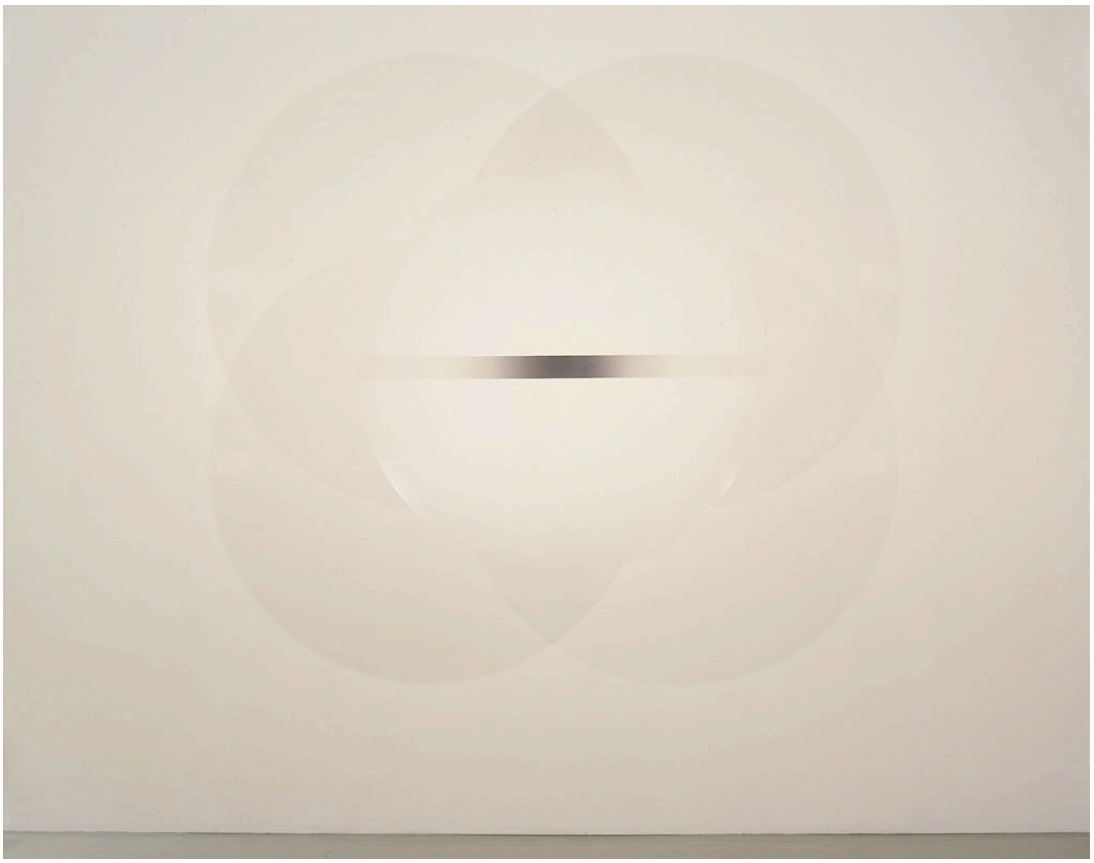

Figure 5.10. Robert Irwin, *Untitled* ("Disc" Series) (1966-1969). Plastic version.

Although unconventional in their design, the "Disc" paintings on their own are not capable of generating the intensity that viewers felt in the seeing. The compositional elements that constitute the paintings are not the only enabling constraints used to produce the experienced incipient action. In order for the "Disc" paintings to dissolve into the surrounding gallery environment, Irwin integrated the lights and the gallery walls the paintings were mounted on into the design of the work. He devised a set of conditions that extended beyond the work itself, involving elements that were never intended to be used to actually activate the compositional forces in the encounter with a painting.[97] Weschler states, for the "Disc" paintings, the "light and backdrop themselves

were about to become active, positive elements in the game of presence" (2008: 102). Viewers would experience a seamless transition between the "Disc" paintings, the gallery walls, and the illuminating lights, unable to clearly distinguish where one of these three components began or ended. In order to prevent the visual separation of the "Disc" paintings and the gallery space, Irwin would paint the walls a similar shade of white found in the paintings. He then devised a strategy for the lighting, effectively eliminating any shadows that would enable viewers to distinguish the paintings from the walls they were mounted on. According to Weschler, "light and paint had now become equal elements in Irwin's new palette" (2008: 103).

By integrating the gallery space and the lighting into the set of conditions that activated the "Disc" paintings, Irwin felt these works "achieved a balance between space occupied and unoccupied in which both became intensely occupied at the level of perceptual energy" (Weschler 2008: 108). As viewers encounter Irwin's work, the paintings, the lighting and the walls all take part in generating the incipient action viewers experience in the seeing. Viewers begin to feel a resonance that flows equally though the "Disc" paintings and the environment they are situated in, turning the gallery itself into *a vibrant colour-field for the seeing*. The "Disc" paintings transform the entire gallery space into a set of conditions that generate emergent compositional forces for the incipiency of images.

The Frame as Parergon

Despite the fact that Irwin's "Disc" paintings are able to co-generate with viewers an experience of incipient action without the use of a frame, any examination of these works must consider the role that the frame plays in the practice of painting. According to Jacques Derrida, no theory, art practice or theoretical practice concerning painting "can intervene effectively in this field if it does not weigh up and bear on the frame" (1987: 61). As a device that supplements the paintings' ability to lure the viewers' attention, Derrida suggests that the frame functions like a *parergon*. In painting, a parergon traditionally is something subordinate or accessory to the main subject of a work. It is an ornamental addition that embellishes what is already established within a painting.[98] Derrida, however, does not understand a parergon to be something that merely supplements a painting from within. Derived from his reading of Immanuel Kant's *Religion within Limits of Reason Alone* (1793), Derrida states that a parergon is "neither work (*ergon*) nor outside the work [*hors d'oeuvre*], neither inside nor outside, neither above or below, it disconcerts any opposition but does not remain indeterminate and it *gives rise* to the work" (1987: 9; original emphasis).[99] For Derrida, a parergon is what lies amidst more established oppositions and does not hold any hierarchical status. It is neither more nor less important than the work or the surroundings outside the work. As well, a parergon is neither above nor below the status of the work or its surroundings and holds no dominating power over either. Instead, a parergon disrupts any

direct contact these two dichotomous entities may have by slipping between them. It activates a space during the encounter with the work that is not a part of either side.

Although this in-between space a parergon produces is distinct from both sides of the dichotomy, it is also connected to both of them. On the one hand, from the perspective of the work, the space of a parergon is outside it and thus is a part of the surrounding environment. On the other hand, from the perspective of the surrounding environment, the space activated by a parergon is not a part of the surroundings because it is distinct from the environment itself. A parergon therefore must be a part of the work. Despite the claims of both perspectives, a parergon's space is neither a part of the work nor the surroundings of the work. It functions as a supplement to the work in order to create a greater differentiation between the work and its surrounding environment. By separating the work from its surroundings, the space a parergon opens emphasizes their difference. This emphasis is what gives rise to the work. A parergon accentuates the difference between the work and its surroundings so that the work is foregrounded when it is encountered.

In *The Truth in Painting*, Derrida gives the example of the frame in painting in order to further explain his conception of a parergon. For Derrida, the frame of a painting stands out both from the painting and from the wall in the art gallery (1987: 61). Like a parergon, the frame is distinct from both the work, which in this case is the painting, and its surrounding environment, which is the

gallery wall. Derrida specifically points out that the frame "does not stand out in the same way as the work" (1987: 61). The frame is distinct but not in the same manner as the painting. This is because when viewers encounter a particular painting, their attention is not focused on the frame in the same way that it is on the painting. The frame acts as a device that lures the viewers' attention towards the painting and away from itself. Like a parergon's relationship to the work, the frame assists in emphasizing the painting as it is encountered by highlighting the difference between the painting, as such, and the surrounding gallery environment is situated it in. The frame does this by disrupting the dichotomy between the painting and the gallery wall. The frame generates a space that separates this opposition, but while doing so, it also simultaneously and paradoxically connects itself to both opposing sides. In short, the frame emphasizes the painting by separating it from the surrounding gallery environment, while at the same time, connects itself to both sides of the painting-gallery opposition.

In order to understand how the frame functions like Derrida's parergon, both sides of the paradoxical relationship it has with the painting and the gallery environment need to be taken into consideration. From the perspective of the painting, the space the frame opens between it and the gallery wall cannot be considered part of the artwork as such, yet the frame is connected to the painting as it accentuates the painting's ability to lure the viewers' attention, foregrounding the artwork above its surroundings.

When these relationships the frame has with both the painting and the gallery wall are brought together, then the frame as a parergon is, according to Derrida, "a hybrid of outside and inside, but the hybrid which is not a mixture or a half-measure, an outside which is called to the inside of the inside in order to constitute it as an inside" (1987: 63). The frame is outside the painting but is surrounded by the gallery wall. It is both outside the work and inside the milieu. However, because of the differential space the frame opens between the painting and the gallery wall, it shifts the viewers' attention from the milieu of the wall and defers it towards the painting. This deferral of attention from the wall through the frame to the painting thus activates the painting for the viewers. When the painting is activated by the viewers' attention, the frame then *disappears*. Derrida writes:

> There is always a form on a ground, but the *parergon* is a form which has as its traditional determination not that it stands out but that it disappears, buries itself, effaces itself, melts away at the moment it deploys its greatest energy. The frame is in no case a background in the way the milieu or the work can be, but neither is its thickness as margin a figure (1987: 61).

In the instance the frame lures the viewers' attention from the gallery wall to the painting, the frame, according to Derrida, begins to generate its power to both defer and disappear. This is what makes the frame such an exemplary parergon.

Beyond the Limits of the Frame

After examining Derrida's understanding of the frame as a parergon in painting, at first glance, it seems odd that Irwin would take such a radical step as eliminating the frame from the paintings in the "Disc" series. This is because, as Derrida notes above, the frame is usually not perceived in relation to the painting it surrounds. Unlike Irwin's experience with his "Dot" paintings, the frame is not supposed to be noticed when viewers encounter a painting. The frame, as a parergon, should separate the painting from the surrounding gallery environment, calling attention to the painting while simultaneously not calling any attention to itself. It supplements the painting's ability to lure the attention of viewers without becoming a distraction onto itself. The frame serves as a focusing device that assists in activating the relations experienced between viewers and the painting, and does so through difference and deferral. Is it then possible to say that Irwin's concerns with the frame are actually in line with Derrida's thoughts of the frame as parergon?

Both Derrida and Irwin tend to agree that the frame is a device that shapes the viewers' attention and assists in differentiating the work from the surrounding environment. Irwin states that a painting's frame produces "perceptual boundaries between what is seen and what isn't" (1985: 15). Recall the shadow that surrounded Irwin's "Dot" painting, the shadow that he worked to remove in the "Disc" paintings so that the viewer would not predetermine, or "preframe," the experience of seeing the work's dynamic movement. As Irwin

writes, “I had not worked that out philosophically, I had not even begun to dig into the root question of how an orthodoxy like that becomes so deeply rooted that it becomes hidden” (Weschler 2008: 101). He had to determine what the frame’s function was in order to remove it.

If we follow Derrida’s assertions as concerns the parergon, the foregone conclusion would be that it is ultimately impossible to create a work that is “unframed.” Remember that for Derrida there is always a form on a ground, even if that form takes on a parergonal configuration that disappears the moment it is encountered. Even as he deconstructs the dichotomy between form and ground, painting and gallery environment, through the parergon, he asserts: “Deconstruction must neither reframe nor dream of the pure and simple absence of the frame” (Derrida 1987: 73). Yet, as Irwin turns away from canvas, it seems that the frame is effectively removed. How is this possible?

As an example of the first works that physically exceed the space of the canvas, the “Disc” paintings come to Irwin through the process of trying to conceive of an art experience that was not framed in advance. Recall that as viewers enter a gallery displaying these paintings, they do not actually see these works hanging on the walls. When encountering the plastic version of these paintings, viewers perceive a transparent horizontal line floating in front of the gallery wall. Both ends of the line also appear to dissolve into the same gallery wall. This makes it difficult for viewers to know exactly where the line is actually situated in relation to the wall and to themselves. In the case of the all-white

aluminum version, viewers at first do not see "anything." They believe that the white walls do not have anything hanging on them and that the gallery itself is empty. Yet at the same time, the space does not feel empty. Viewers then become overwhelmed by an unsettling feeling because they are able to experience an incipient action resonating throughout the space but cannot perceive what is enabling this dynamic occurrence. Both versions of the "Disc" series generate an unframed experience where viewers cannot distinguish the work from gallery environment. Because the "Disc" paintings do not rely upon a frame to supplement the work's ability to lure the viewers' attention, they enable a seeing that goes beyond the clichés experience likes to rest on. This does many things, amongst them destabilizing viewers, who feel the need to walk up to the "Disc" paintings to be able to differentiate them from the surrounding environment. What Irwin has done with this series of paintings is uncover a way to paint the gallery space in its totality by breaking away from clichéd ways of seeing that rely on the frame for activation. By painting the wall the same colour of white and tweaking the lighting to hide differentiations between the work and the walls, Irwin invents a new set of conditions that effectively eliminates the need for the frame in painting. These "Disc" paintings alter how art is experienced, generating a seeing that can only take place in the midst of the encounter.

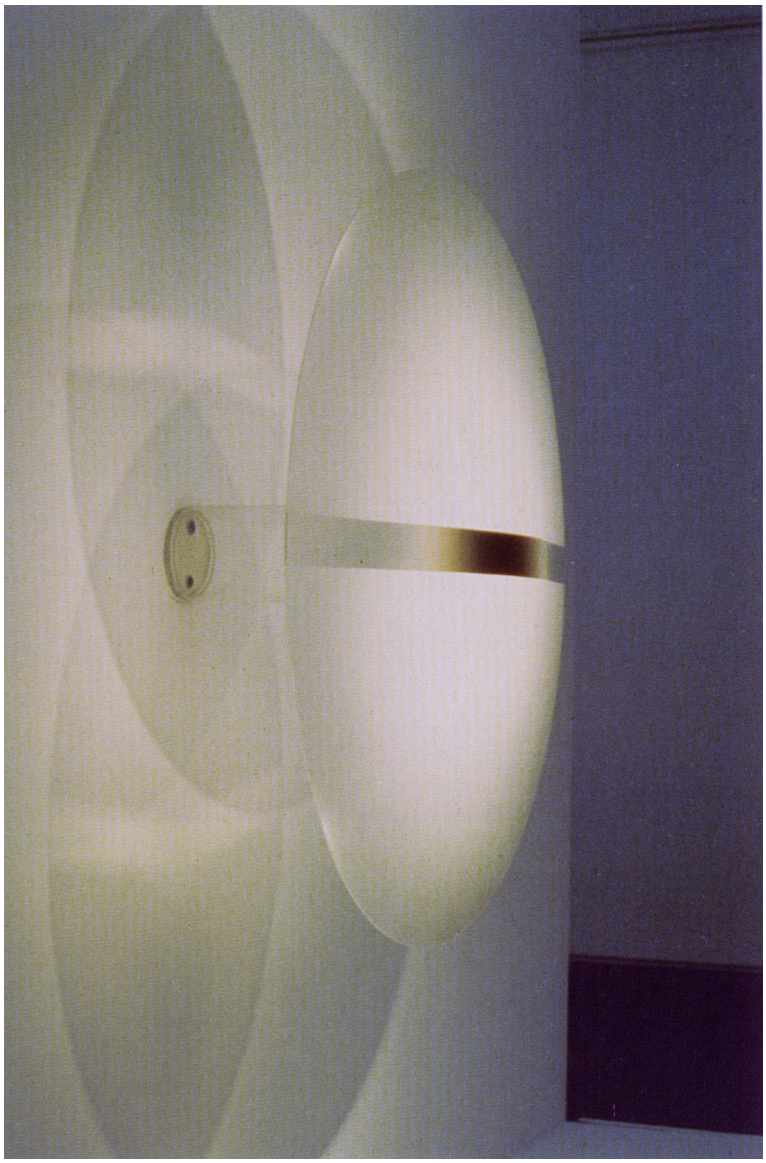

Figure 5.11. Robert Irwin, *Untitled* ("Disc" Series) (1966-1969). Plastic version. Side view.

Perhaps the key difference between Derrida's and Irwin's perspectives on the frame is that they draw on two sides of experience. For Derrida, the frame constitutes the parameters of seeing at the level of the macroeconomies of experience. He is concerned with only those forms that are fully actualized and perceptible. For Irwin, what is at stake is microperception. Like Derrida, Irwin

would certainly agree that the problem with the frame is that it structures not only the viewers' attention, but also an entire system of values surrounding vision. The frame transforms vision into a clichéd form of seeing. "Our perception in the world, once it has become thus structured, simply omits or habituates out (ignores) that which is deemed to have no value" (Irwin 1985: 15). But where they differ is that Irwin does believe that there can be an act of creation – or an act of perception – that can exist unframed. We are talking here of a microperception, a level of analysis which is not present in Derrida's analysis. At the level of the institution, of the exhibition, of the art world, Derrida is perfectly right as regards the parergon. There is no experience, which is not framed. And yet at another level, at the level of microperception and experience, what Irwin's "Disc" paintings do is give viewers an encounter with the dynamically unframed; that is, an experience of incipiency itself.

When Irwin devised a set of conditions that enabled him to remove the frame in his "Disc" paintings, the dichotomies between the painting and the gallery environment that Derrida claims the frame mitigates, begin to vanish. Weschler states:

> But if the discs had effectively eliminated the frame from the art object, they still required an attitude of focus; they still demanded a heightened level of attention aimed at one area of the room. Irwin, meanwhile, had become fascinated by everything else that was already going on in the room anyway, and he was coming to see

> that the very attitude of focus needed to be brought into question (2008: 113).

Without a frame to assist in differentiating Irwin's paintings from everything else, all the elements in the gallery – the paintings, the lighting, and the gallery space itself – now had to be understood as being co-constitutive. Irwin explains: "When I married the painting to the environment, suddenly it had to deal with the environment around it as being equal to the figure and having as much meaning" (Weschler 2008: 112). By removing the frame through the complex use of light, shadow, and the gallery space itself, Irwin's "Disc" paintings place the artwork on an equal footing with the dynamics of the environment, generating a perceptual field of felt resonance. The paintings exceed their frames and become environmental.

Images of Incipiency

The collapse of the "Disc" paintings into their surroundings is exactly what Irwin intended, having worked towards this moment through his posture of inquiry, which began with the problem of creating a work that foregrounded the feeling of incipient action. Irwin succeeds with these "Disc" paintings – and in fact almost all of his subsequent work – in creating artworks that activate the relations in the shared encounter with viewers. The work's incipiency of a specific viewer-artwork encounter does not survive outside of the experience that is co-generated between viewers and the paintings. The incipient action that

activates the perceptual field in the encounter with Irwin's paintings brings the world to the work in a different way. Paradoxically, Irwin's "Disc" paintings show that the perceived image was never on the surface of the canvas within the confines of a frame. It occurs in the relation. It takes place within the environment that the viewer-artwork encounter inhabits.

By rigorously following his posture of inquiry in questioning the clichés surrounding representational imagery, the mark, and the frame, Irwin not only challenged many of the assumptions concerning painting, but he also questioned assumptions concerning the act of seeing itself. His three series of paintings, and much of his subsequent work, make viewers aware that every encounter is filled with the incipient action of compositional forces. For Irwin, "everything acts within a set of conditions" (Irwin and Davies 2008: 54). The experiences viewers encounter with the world involve a set of conditions that always have the potential to be actively felt in the seeing. Once viewers experience the feelings that incipiency activates, they can then feel this intensity at any time. Irwin explains: "It's something that once you gain it, you carry it with you all the time and you live in an enriched world. The beauty of all this is that it is totally free. It's something you have every moment of your life as you walk through the world" (Irwin in Feinstein 1997). Viewers can feel incipient action as it is generated in the perceptual field encountered and created in the continuously emerging relations with the world. In other words, viewers experience what Manning and Massumi would call a *worlding* of incipient action.[100] To see is to

encounter an ever-present feeling of intensity. This intensity cannot be framed or represented because it is constantly in the process of exceeding itself, making its own incipiency felt.

Art is one conduit to this dynamic experience, but it is not the only one. Sunsets, as Michael Taussig has written, are one example of a threshold experience that exceeds the frame.[101] The desert, for Irwin, is another, particularly at dawn and dusk. He believes that the dynamism of the desert has a particular magical quality to it. "It just suddenly stands up and hums, it becomes so beautiful, incredibly, the presence is *so* strong" (Irwin in Weschler 2008: 164; original emphasis). The images that emerge from these experiences are images, one could argue, of the felt. Images composed only of incipient action. Images of incipiency itself.

Generating images of incipiency is, according to Weschler, what Irwin set out to do: Irwin "began to wonder how it might be possible to make an art of the incidental, the peripheral, the transitory – an art of things not looked at (indeed, invisible when looked at directly) yet somehow perceived" (Weschler 2008: 114). What Irwin was attempting to capture in his artwork was an encounter with the ephemeral in the moment of its genesis, making it not only felt in the seeing but also actually visible. Like all of the artists discussed throughout the previous chapters, Irwin sought to catch an "aspect of our experience that is both there and not there, the object and not the object of our sensations, perceived but seldom attended to" (Weschler 2008: 115). Ultimately, as Irwin makes clear, the

encounter with art is not about seeing something that is recognizable, but about "a shimmering sense of awareness" (Weschler 2008: 236). It is about making the elusive present.

Notes

[1] John F. Simon Jr. recounts his reaction to the postmodernist notion that there will be very few new images in the near future in Mirapual 1997 and Baumgärtel 1999. The internet artwork discussed in this parable, *Every Icon* (1997), is the subject of Chapter 1.

[2] This parable is based on experience the author had when viewing Mondrian's *Composition No. 12 with Blue*. This work is discussed in greater detail in Chapter 2.

[3] This parable is based on William C. Wees account of watching the films of Paul Sharits. See Wees 1992. Paul Sharits' flicker film *N:O:T:H:I:N:G* (1968) is the subject of Chapter 3.

[4] The parable is discussed in more detail in Chapter 4.

[5] Lawrence Weschler originally told this parable in his biography on Robert Irwin. See "The Dots" in Weschler 2008. Irwin's "Dot" paintings, as well as his "Line" and "Disc" paintings, are discussed in Chapter 5.

[6] See Guattari (1995: 101).

[7] See Deleuze and Guattari (1994: 197).

[8] For the purposes of this chapter, I will be referring only to the version *Every Icon* that can be seen on Simon's web site, which can be viewed at http://www.numeral.com/appletsoftware/eicon.html. Simon made numerous editions of *Every Icon* that were sold over the internet. "Produced at a time when very few artists or galleries could manage to sell net art, *Every Icon* was in fact

marketable; it lent itself to the production of unique editions, each inscribed with its discrete starting-point and buyer's name, which were sold" (Greene 2004: 92). Some of these other editions of *Every Icon* can still be viewed online. For example, one edition, owned by the Institute of Artificial Art Amsterdam, can be seen at

http://radicalart.info/AlgorithmicArt/grid/every/EveryIcon/eicon.html

(Simon 2001) and another edition, owned by Enterzone, can be seen at

http://ezone.org/ez/e11/articles/jfsjr/everyicon.html (Simon 1997a). As well, Simon created versions of the work that are to be mounted on a wall, which comprise of modified computers and monitors. He even made versions for projection and Palm Pilot, an early Personal Digital Assistant device (PDA) popular in the late 1990s (Ploug 2003). Recently, a version of *Every Icon* has been made available as an application for Apple's iPhone and iPod Touch.

[9] In fact, these three statements are included in every edition and version of *Every Icon*. For a detailed account of the various versions see Note 8. As well, when the work is presented as a still image for publication these three statements are shown alongside an image of the grid. See Eckmann and Keopnick (2006: 10), Green (2004: 91), and Rush (1999/2005: 213).

[10] At the time this chapter was written in March 2011, there were three black squares in the second row from the top. The squares in the first two columns from the left and the fifth square from the left were black.

[11] The reason Simon chose a thirty-two by thirty-two square grid was because, as he explains, "that was the original Macintosh definition for an icon, when the first Mac system came out. With the old Macs, you went to the icon editor 'ResEdit', where you could design your own icon by clicking on the different fields of the grid" (Baumgärtel, 1999).

[12] For further discussion on linear perspective see Alberti 1972; on the videos of Woody Vasulka see Dunn, Vasulka and Vasulka 1992, Hatanka, Koizuiai and Ekiguchi 1998, Sturken 1996b, and Vasulka and Weibel 2008; and finally, on Seurat's pointillist painting technique see Broude 1978, Fénéon 1966 and Homer 1985. Also, see Chapter 4 for an analysis on liner perspective in connection to Vasulka's videos and for additional discussion on the pointillist painting technique see the section in Chapter 5 on Robert Irwin's "Dot" series of paintings.

[13] According to physicist Ogden Rood: "Any two colours which by their union produce white light are called complementary" (1879: 161). Because magenta and green are complementary optical colours, when they combine, viewers will see neither magenta nor green. Instead, they will see the colour white. A more detailed analysis of this phenomenon is explored in Chapter 5.

[14] For further analysis on pixels see Chapter 4.

[15] Stacy Reed notes: "Some popular raster file types you are sure to come across are JPG, GIF, BMP, TIFF and PNG" (Reed 2006).

[16] For further discussion on the use of primary colour within the raster technique see Chapter 4.

[17] It must be remembered that internet art was still fairly new when *Every Icon* was uploaded to the World Wide Web in 1997. "By 1997, net art had become an established pocket of relatively autonomous art-making, though it had not succeeded in reaching a wider public. Beyond the spheres of internet communities, media festivals and artists' immediate social and professional circles, there was little interest in and even less money for net artists' work" (Green 2004: 73).

[18] The term "enabling constraints" has been in use for more than a decade prior to Manning's adoption of it. Despite this, she has been one of the few researchers – along with Brian Massumi – to fully develop the conception of this term. For early uses of the term "enabling constraints" see Massumi 1998 and Hansen 2002. For further investigations into the conceptualization of this term see Manning 2009b and Massumi 2009. For further analysis on enabling constraints see Chapter 5.

[19] These planes cannot be directly perceived. According to Deleuze and Guattari:

> The plane can be a hidden principle, which makes visible what is seen and audible what is heard, etc., which at every instant causes the given to be given, in this or that state, at this or that moment. But the plane itself is not to be given. It is by nature hidden. It can

only be inferred, induced, concluded from that to which it gives rise (1987: 265).

[20] For reference, one billion is ten to the ninth power (10^9 = 1,000,000,000).

[21] This rate of change in *Every Icon*, as presented on Simon's website, can be verified by finding the square in which the one hundredth change takes place and timing that specific square's rate of change. If that particular square cycles between white and black only once per second, then the entire work displays one hundred images every second. The square in which the one hundredth change takes place can be ascertained by converting the number one hundred to its binary base equivalent. Because *Every Icon* is essentially a counting machine that works in binary numbers, once the number of digits necessary to express the number one hundred in binary is discovered, then the number of squares that are needed for the first one hundred changes can be easily ascertained. The number one hundred expressed in binary is 1100110. This binary number uses seven digits. Therefore, the one-hundredth change in *Every Icon* takes place in the seventh square from the left of the top row. When observing this seventh square from the left, it does indeed cycle between white and black once every second, thus proving that *Every Icon*, as presented on Simon's website, shows one hundred images per second.

[22] The United States Geological Survey estimates that the age of the Earth is 4.54 billion years old. See "Age" 2007.

[23] For a more detailed analysis on Cartesian space in relation to static form in art see Chapter 4, as well as Lynn 1999 and Manning (2009b: 163-168).

[24] In the exhibition catalogue for the art exhibition entitled *[Grid< >Matrix]*, which they also curated, Eckmann and Koepnick specifically discuss Mondrian's painting *Composition of Red and White* (1938-42).

[25] Several other authors have drawn a connection between the digital and the concept of the matrix. Tim Lenoir, like Eckmann, understands the digital image to be "a matrix of numbers, a table of integers a grid of cells capable of being stored in computer memory, transmitted electronically and interpreted into an image by a display device (such as a video screen) or printer" (2004: xiii). However, one of the most notable and earliest conceptual examples of the digital matrix can be found in William Gibson's science-fiction novel *Neuromancer* (1984). In the novel the matrix is the equivalent of an immersive version of the internet in which users, such as the protagonist Case, experience "bright lattices of logic unfolding across [a] colourless void" (1984: 4-5). Media critic Lev Manovich in his book *The Language of New Media* applies Gibson's conception of the digital matrix as a void in order to differentiate digital, or computer, space from human space. He states:

> In contrast to human space, in which the verticality of the body and the direction of the horizon are two dominant directions, computer space does not privilege any particular axis. In this way it is similar to the space of El Lissitsky's *Prouns* and Kazimer Melevich's

> suprematists compositions – an abstract cosmos, unencumbered by the earth's gravity or the weight of a human body […] William Gibson's term "matrix," which he used in his novels to refer to cyberspace, captures this isotropic quality (Manovich 2001: 262).

Manovich understands digital space of the matrix as having no particular grounding; unlike human space, which emerges from the horizontality of the actual ground and verticality of the body.

[26] For more on John F. Simon Jr.'s *Every Icon* see Chapter 1.

[27] In their introduction to the catalogue for the art exhibition *[Grid< >Matrix]*, Eckmann and Koepnick clearly state that the distinction between grids and matrices "form a central dialectic of modernism and postmodernism" (2006: 8). Although it would be interesting to challenge this claim, it steps outside the scope the present discussion.

[28] Beyond Mondrian, Keoepnick also claims that the grids depicted in paintings of Theo van Doesburg have the ability to exceed their structure (2006: 55). As well, Rosalind Krauss mentions several other artists who use grids in their work that similarly exceed their compositional structures, such as Josef Albers, Ellsworth Kelly, and Sol LeWitt (1985: 22).

[29] In his address at the Fourth Annual Conference of the Whitehead Research Project titled "Consequences of Panpsychism," Shaviro suggests that rocks and other non-organic entities not only feel but that they also have minds and the ability to think. This concept that all entities are able to think is called

panpsychism. Shaviro summarizes this concept stating:

> We cannot restrict mentality just to human beings; nor can we restrict it to mammals, or to organisms that have nervous systems, or even to the entire animal kingdom. Rather, we must say that plants, fungi, and unicellular organisms think; and what is more, that nonliving entities, like stars and lumps of granite, think as well (Shaviro 2010a: 1).

So not only does Mondrian's painting have experiences, it also has the ability to think on a very rudimentary level.

[30] The notion of the relational complex is to the notion of the "diagram" in the writings of Deleuze and Guattari and "significant form" in the writings of Susanne K. Langer. See Deleuze and Guattari 1987, Deleuze 2003, and Langer 1953 and 1957. Also see Chapter 5.

[31] When Mondrian moved to New York in 1940, he began to experiment with the compositional elements in his paintings. This can be seen in his *New York* series of painting, produced between 1941 and 1942, in which the perpendicular lines were no longer coloured black. Instead, he used a variety of red, yellow, and blue lines. This use of coloured lines foreshadows the fragmented coloured lines seen in *Broadway Boogie Woogie* and the painting left on his easel upon his death, the uncompleted *Victory Boogie Woogie* (1942-1944).

[32] For a more detailed analysis on incipient action see Manning 2009b and Massumi 2002, as well see Chapter 5.

[33] In replacing the term biosphere with bioscleave, Gins and Arakawa wanted to emphasize the dynamism and tentativeness they believed was missing in most standard descriptions of the natural environment. In the following they define what they mean by this new term. They state:

> All species belonging to bioscleave exist only tentatively (which remains true whatever turns out to be the truth about natural selection, whether it happens randomly or with directionality), with some species, all things being unequal, existing on a far more tentative basis than others. Additionally, bioscleave stays breathable and in the picture only so long as elements take hold of each other in particular ways, only so long as there can be a cleaving of a this to a that and a cleaving of a this off of a that. So that there might be new and different link-ups, fresh points of departure, ever renewed tentative constructing towards a holding in place, a firm and definite taking hold, which gives one sense of the term to cleave, must also readily entail cutting apart, cut-off, relinquishment, the other sense of the term (Gins and Arakawa 2002: 48).

[34] The phase originally stated: "She holds the architecture that holds her" (Gins and Arakawa 2002: 82).

[35] See Bergson (1998: 279).

[36] Although *N:O:T:H:I:N:G* is composed almost entirely of colours, Sharits does include images of two objects, a light bulb and a chair. In the following, he describes what occurs when these two objects appear:

> The major image is that of a light bulb, which first retracts its light rays; upon retracting its light, the bulb becomes black and, impossibly, lights up the space around it. The bulb emits one burst of black light and melting; at the end of the film the bulb is a black puddle at the bottom of the screen. The other image… is that of a chair, seen against a graph-like background, falling backwards onto the floor (actually, it falls against and affirms the edge the frame); this image sequence occurs in the center, 'thing le' section of *N:O:T:H:I:N:G* (Sharits 2008: 269).

According to Sharits, these two images serve as markers of the film's passing. As he noted above, the middle of the film is signified by the image of the falling chair. The light bulb, on the other hand, is repeated throughout the film at regular intervals. Each appearance of the bulb is slightly different as indicated in Sharits' description above. Sharits states that the reason for placing these images in *N:O:T:H:I:N:G* is because:

> You get to the point [when watching the film] where you almost forget the whole development which is going on and then there is an image which reminds you again of the chain of logic (or illogic) which is very gradually being enunciated at the level of

> referentiality. They are markers – real metric markers – markers of time. But they are markers which you are experientially unable to relate rhythmically (Sharits and Cathcart 1976: unaginated).

Several authors have also noted that the light bulb and chair imagery in *N:O:T:H:I:N:G* may be references to the light bulb of the film projector and the seats in the film theatre. See Sitney (2002: 360-362), Chodorov and Deville (2003: 18), and Krauss 1976.

[37] Black and white are included in this list of colours because it is possible to treat them as colours, rather than the absence of colour, in the case of black, or the presence of all colours, in the case of white. Those who Deleuze calls "colourists" have no difficulty with this classification and take the position that black and white are indeed actual colours because they "tend to substitute relations of tonality for relations of value" (2003: 112). Colourists treat black and white as hues (relations of value), like the colours red or green, as opposed to the extremes of the tonal range of colour. "Colourists can indeed make use of black and white, light and dark; but this is because they treat light and dark, black and white, as colours, and establish tonal relations between them" (Deleuze 2003: 112).

[38] Sharits has commented on the pulsating effect in his work stating that "in the final section of *T,O,U,C,H,I,N,G* (1968) I wanted to visualize 'inverse pain' as a kind of imploding reverberation of the picture edge – the screen appears to collapse, in rhythmic pulses, into itself" (1978: 257-8). Wees has also noted that

the flicker in Sharits' films can produce both enlightening and unpleasant effects for viewers. For some viewers the flicker can produce a "meditational-visionary experience" (Wees 1992: 152). For others, the same flicker can induce "headaches, nausea, and even for a small number of people, epileptic seizures" (Wees 1992: 147). Sharits was aware that his films could produce both of these effects. He described the structure of several of his films as "mandalas", such as *Piece Mandala/End War* (1966), *N:O:T:H:I:N:G*, and *T,O,U,C,H,I,N,G*. By referring to the mandala, Sharits was drawing a connection to Buddhist meditation practice. However, he states that he is "not interested in the mystical symbolism of Buddhism, only in the strong, intuitively developed imaginistic power" (2008: 269). In response to the more violent effects of the flicker, Sharits produced a two-projector film installation entitled *Epileptic Seizure Comparison* (1976), in which viewers see a flicker that alternates between images of colour or depictions of people in the midst of having epileptic seizures.

[39] This pinkish-orange colour was actually seen by the author. However, because of the tenuous nature of Sharits' film, other viewers may not see this exact colour at the particular moment that the author saw it.

[40] Erin Manning, in her paper "Colouring the Virtual," develops a similar notion concerning the imperceptible aspects of seeing, which she calls "the *not-seen* of actual experience" (2008a: 331; original emphasis). Although Manning defines the not-seen as that which is visually imperceptible and yet still experienced, the use of the prefix "not-" can convey the idea that what is imperceptible in the

moment of seeing is not present during seeing experience. However, I believe the term "unseen" does communicate the notion that there is something imperceptibly present during the seeing experience. As well, Paul Virilio develops a conception of the term "unseen" that is similar to the one developed in this chapter. See Virilio 2009.

[41] The range of audible frequencies that humans can hear is "traditionally said to span the range of about 20 Hz [hertz] to 20 kHz [kilohertz] are perceptible to the ear" (Roads 2001: 7). This range may vary between individuals. However, any sound below 20 Hz and above 20 kHz for humans will be experienced as an unsound.

[42] For more detail concerning the term "relational complex" see Chapter 2.

[43] Deleuze is elaborating on an example that Leibniz gave in his *Discourse on Metaphysics*. See Leibniz 2005, particularly p. 40-41.

[44] Although humans cannot see any colours beyond the limits of infrared and ultraviolet, Thompson discusses how some creatures, notably pigeons, are able to see outside the range of human vision. See Thompson (1995: 168-177).

[45] Throughout *The Fold: Leibniz and the Baroque* Deleuze calls microperceptions by several other terms: tiny perceptions, molecular perceptions, minute perceptions, inconspicuous perceptions, and more (1993: 86-99). He also described microperceptions as subjective perceptions in *Cinema 1: The Movement-image* (1986: 63-64) and as little perceptions in *Difference and Repetition* (1994: 213). For Deleuze, the notion of microperceptions has its origin in the writings of Leibniz;

however, Leibniz never used this term. In *The Mondaology*, Deleuze's microperceptions are what Leibniz calls "representatives." See Deleuze (1993: 154n4) and Leibniz, *The Mondaology* §63 (2005: 58).

[46] Use of the term microperceptions is not exclusive to Deleuze. Although he defines microperceptions as those relational entities that compose perception, this is not the only way this term has been used. Don Ihde has a different understanding of the term. He defines microperceptions as "what is usually taken as sensory perception (what is immediate and focused bodily n actual seeing, hearing, etc)" (Ihde 1990: 29). For Ihde, microperceptions are not elements that compose what is perceived, but rather they are that which is actually perceived. Ihde's microperceptions are what are visible and audible. Although it would be interesting to compare the use of the term microperceptions by Deleuze and Ihde it is outside the scope of the current discussion. For further analysis on Ihde's microperceptions see Verbeek 2005.

[47] For further discussion on the mixing of colour, particularly the difference between mixing coloured pigments and mixing coloured light, see Rood (1879: 124-160).

[48] For further analysis on the process of addition and subtraction regarding perception see Manning 2008b.

[49] According to Massumi, some proponents of "pure" science would prefer to discard microperceptions and discount them as irrelevant and "even lacking in reality" (2002: 234). This is because the "excess" or "surplus" of microperceptions

that do not emerge into perception and remain unfolded tend to obscure scientific results by creating "surprising" results that cannot be explained quantitatively. These "surplus" results tend to add qualitative data that cannot be confirmed or denied by a quantitative methodology. So instead of enquiring further into this excess, "pure" science dismisses the results as anomalies. See Massumi (2002: 208-256).

[50] This process of luring the viewers' attention, or what Whitehead calls the "lure for feeling" or a "proposition" is further developed in Chapter 1. Also see Whitehead 1978, Manning 2008b and 2009b, and Shaviro 2010b.

[51] See in particular Libet 1985. For an application of Libet's work in connection to the philosophy of perception and affect see Massumi 2002 and 2010.

[52] This cinematic paradigm is actually older than film itself. In *Creative Evolution*, Henri Bergson gives a detailed analysis of the history of this paradigm, or what he calls the "cinematographical model." He shows that this paradigm takes its foundation from the philosophical thought of Zeno of Elea and he then traces the philosophical history of this model up until the end of the nineteenth century. See Bergson 1998. For further analysis and critique of this paradigm see Bragaglia 1970, Crary 1990, and Deleuze 1986 and 1989. Also see Chapter 4.

[53] Up until the late 1970s, the moving images the viewers see were explained to be the result of a cognitive phenomenon known as the "persistence of vision." "This is held that the human brain continues to 'see' a projected image momentarily even after it has ceased to be projected, thereby enabling a seamless

transition from one [projected] image to the next to be perceived" (Enticknap 2004: 6). With the invention of electronically produced images, such as television and both analog and digital video, as well as recent research on the perception of motion, this concept is shown to provide an insufficient explanation. On the conceptual origins of the persistence of vision see Crary (1990: 108-112). On the debunking of "persistence of vision" see Enticknap (2004: 6), Bill Nichols and Susan J. Lederman 1980, and Joseph and Barbara Anderson 1980 and 1993.

[54] The interaction that occurs between the viewers' visual system and the film itself is what Lev Manovich calls "psychological interaction." He states that this type of interaction is "the psychological processes of filling-in, hypothesis formation, recall, and identification, which are required for us to comprehend any text or image" (Manovich 2001: 57).

[55] On the specific psychological and physiological functions of vision see Thompson 1995.

[56] "Lesions in area V4 [of the brain] 1ead to achromatopsia, in which patients see only in shades of gray. This syndrome is different from simple colour blindness: not only do such patients fail to see or know the world in colour, they cannot even recall colours from a time before the lesion formed. Nevertheless, if their retinas and V1 regions [of the brain] are healthy, their knowledge of form, depth and motion remains intact" (Zafi 1992: 73).

[57] In many of Jacques Derrida's writings, he demonstrates how hierarchies that are established within dichotomies are easily inverted and further problematized

through his notion of deconstruction. Throughout his career, Derrida has explored this concept extensively in relation to the visual art, particularly painting and drawing; however, he has never turned his attention to film. For examples of Derrida's notion of deconstruction in connection to painting and drawing see Derrida 1987 and 1993, as well as Derrida and Thévenin 2000.

[58] Some of the filmmakers that fall into Sitney's conception of "Structural Film" are Tony Conrad, Michael Snow, Hollis Frampton, Joyce Weiland, Ernie Gehr and Sharits. He also sees Kubelka and Andy Warhol as "forefathers" of this film movement. See Sitney 1970 and 2002. Although Sitney includes Sharits in this group, as this chapter will show, Sharits does not assert that the work's system should be emphasized over the viewers' visual system. Sharits is concerned with the attributes involved in the film itself and how these attributes are usually ignored; however, he does not disregard the viewers' visual system in his understanding of cinema.

[59] Michael Snow's film *Wavelength* (1967) may be one of the best examples of exploiting the projector's lens because the film is structured around its inherent linear perspective. This film is basically a forty-five minute zoom across a room. Beginning from the widest perspective, the film slowly creeps towards the closest view possible with the lens that was used to produce it. The zoom in this film reminds the viewers that the space depicted in the moving image they see is constructed with the use of a single lens around a central vanish point. For a more detailed analysis of this film see Elder 1989 and Legge 2009.

[60] Many films have called attention to the filmstrip in different ways. Andy Warhol's *Screen Tests* (1964-1966) emphasized the filmstrip by showing a single unedited shot of a person. Each single shot would use the entire load of film in the camera. This tended to be four hundred feet of 16mm film, which is approximately eleven minutes when filmed and projected at twenty-four frames per second. As well, these single shot films would also begin and end with the light flares created when the film is loaded in and removed from the camera, which called the viewers' attention to the filmstrip. See Comena (No Date). Other filmmakers have produced films that call attention to the filmstrip itself, either by asserting its physicality, like purposely scratching filmstrip, or by showing aspects of the filmstrip that the viewers do not see, like the sprocket holes. Examples of these works include George Landow's *Film in which there appears sprocket holes, edge lettering, dirt particles, etc.* (1966) and Sharits' *S:TREAM:S:S:ECTION:S:S:ECTION:S:S:ECTIONED* (1970).

[61] There were two different techniques that were used in order to call attention to the projected images. The first technique involved changing the projected images as quickly as possible, meaning every twenty-fourth of a second. These films focused on the modularity of the projected images and often produced a "flicker effect." This technique can be seen in films such *N:O:T:H:I:N:G*, Tony Conrad's *The Flicker* (1966), Keewatin Dewdney's *The Maltese Cross Movement* (1967). The second technique took a different approach repeating the same projected image for longer periods of time, thus emphasizing the photographic qualities of each

projected image that composes film. This technique can be seen in several films produced by David Rimmer, such as *Surfacing the Thames* (1970) and *Waiting for the Queen* (1973). For further writings on flicker films see Conrad 2008 and Dewdney 2001. For further writings on Rimmer's use of the photographic technique see Hoolboom 2001 and Russell 1993.

[62] See Vasulka (1992: 12).

[63] For more detailed information and instructions on the functionality of the Rutt/Etra Scan Processor see "Rutt/Etra Scan Processor" 2002 and "RE Video Synthesizer Systems: Model RE4-A and RE4-B" 1974.

[64] Bill Etra and Steve Rutt have called this specific effect generated by their Scan Processor the "Vasulka Effect" (1992: 139). This is likely because Vasulka used this effect in several of videos he produced, such as *C-Trend*, *The Matter* (1974), and *Explanation* (1974), or in videos he produced in collaboration with his wife Stiena Vasulka, such as *Noisefields* (1974).

[65] To see a catalogue of the other video manipulating devises that Vasulka and other video artists used or invented throughout the 1970s and 1980s see Dunn, Vasulka and Vasulka 1992.

[66] It is also important to state that many of the innovations and inventions Vasulka produced were in collaborations with others, particularly with his wife Steina Vasulka. Despite this collaborative practice, Martia Sturken notes:

> Both of the Vasulkas have explored the capacity of electronic technologies to remap space; while for Woody this has been a project

> of mapping virtual and cartographic space, for Steina this has meant a concern with the viewer's phenomenological relationship to the landscape and natural processes. Indeed, one could say that while Woody has investigated the mapping of virtual and physical "indoor" space, Steina has mapped "outdoor" space-sky and landscape (Sturken 1996a: 43).

Although an exploration of the differences between Woody's and Steina's individual video practices would be interesting, it is outside the scope of this particular project.

[67] Although the plane of organization that linear perspective generates does attempt to prevent any bifurcations from opening, like the plane of reference discussed in Chapter 1, there will always be crack in the plane's construction. For more on how bifurcations emerge in linear perspective see the "Perceptual Fields" section in Chapter 5. For further analysis on the organization and bifurcations of linear perspective also see Massumi 2008.

[68] The Broadcast Signal Generator "is a mathematical tool, a clock, that was needed in early television to generate the broadcast signal of NTSC" (Spielmann 2004: 5). NTSC is the video signal standard used in North America and Japan. Throughout the world there are different systems used for video signal scanning. Spielmann states these differences:

> Here various standards are customary: whereas in the North America and Japanese system (NTSC) the vertical field is

> constructed of 262.5 half lines, in the European PAL system, the vertical field consists of 312.5 half lines. The term *frame* refers to an image format, which numbers 525 lines, 30 images per second (60 half-images/second) with 60 hertz in NTSC, or, alternatively, 625 lines, 25 images per second (50 half-images/second) with 50 hertz in PAL and SECAM (2008: 47).

[69] More specifically, Vasulka is not discussing the cinematic experience of perceiving movement, which Gilles Deleuze calls the movement-image. For Deleuze, cinema "is an immediate image, to which movement is not appended or added; the movement on the contrary belongs to the intermediate image as immediate given… it immediately gives us a movement-image" (Deleuze 1986: 2). This conception of the experience of perception in cinema counters Bergson's understanding of the cinematic paradigm found in *Creative Evolution* with his own notion of images conceived ten years earlier in *Matter and Memory*. Deleuze notes this bizarre discrepancy in Bergson's thought. "The discovery of the movement-image, beyond the conditions of natural perception, was the extraordinary invention of the first chapter of *Matter and Memory*. Had Bergson forgotten it ten years later?" (Deleuze 1986: 2). For further analysis of the cinematic paradigm and the cinematic experience of perceiving movement see Chapter 3.

[70] Vasulka's position that there are no individually rigid frames is similar to the notion of images as information stated in Chapter 3.

[71] For further discussion on the relational complex see Chapter 2.

[72] NTSC is the video signal standard used in North America and Japan. For more detail see Note 69.

[73] Both Massumi and Lynn discuss the topological transformation of a ring into a cup. See Massumi (2002: 134, 184) and Lynn (1999: 18, 22).

[74] This situation is similar to Zeno's paradox in which the distance between two points can always be divided in order to accommodate more points. For further reading on Zeno's Paradox see Bergson (1998: 308-314) and (2007: 118-121).

[75] For further discussion on topological architecture design see Lynn 1998 and Massumi 1998 and 2002.

[76] For further reading on the notion of the virtual see Bergson 1991, Massumi 2002, Murphie 2002, and Deleuze (1994: 208-221). Also see Chapter 1.

[77] Youngblood's use of the term "synaesthetic" differs from the clinical definition of this term. Synesthesia is when the operation of one bodily sense occurs in another. For example, being able to taste the colour red. Massumi explains synesthesia further stating:

> Clinical synesthesia is when a hinge-dimension of experience, usually lost to active awareness in the sea change of adulthood, retains the ability to manifest itself perceptually. In synesthesia, other-sense dimensions become visible, as when sounds are seen as colors. This is not vision as it is thought of cognitively. It is more

> like other-sense operations at the hinge with vision, registered from its point of view (2002: 186).

Youngblood appears to be using the term metaphorically because of the way in which images are generated in synaesthetic film through the use a various media, such as film, computers, and analog video.

[78] William J. Mitchell states, "a pixel value is a sample in time and space of light intensities projected onto the picture plane – a discrete datum" (1992: 66). For more on the history and technical particularities of the pixel see Lyon 2006 and Smith 1995.

[79] Also see Simondon 1989/2007.

[80] Standard-Definition digital video displays 355,200 pixels, whereas High-Definition digital video presents over two million pixels.

[81] See Kierkegaard (1992: 233).

[82] The phrase "posture of inquiry" comes from Irwin's essay "Notes Towards a Model" published in the catalogue for his 1977 exhibition at the Whitney Museum of American Art. It is here that he first questions exactly what it is viewers experience when encountering a work of art. He explains that if we "allow this process of intimate questioning to bring us, in time, to the periphery of what is now held to be true, we will have gained a unique – and precarious – *posture of inquiry*, a perceptual/conceptual equilibrium from which we can now begin asking that question: 'Why this art?'" (1977: 24; original emphasis).

[83] His former art dealer Irving Blum states that whenever Irwin created a series of paintings,

> he pretty much exorcised them in his own head and then set another standard very quickly and another set of ambitions and went on to pursue that phase of his evolution. Which was fine. Only, in the process, everyone who I had painfully developed in terms of a kind of sympathy to the earlier work couldn't make heads or tails of the new, so that the process of education had to start over as if from scratch. Being Irwin's dealer during that period presented some extraordinary challenges (Weschler 2008: 90).

[84] For Irwin on de Kooning see Weschler (2008: 58) and on Guston see Weschler (2008: 63-4).

[85] For further analysis on incipient action see Manning 2009b, as well as Massumi 2002.

[86] As Simon O'Sullivan notes, one way of understanding Deleuze's notion of clichés is "as habits, habits of sight and habits of thought" (2006: 63).

[87] Deleuze make the point that if painters do not remove clichés or purposely work with them, they perpetuate their circulation. He writes:

> [I]f the painter is content to transform the cliché, to deform or mutilate it, to manipulate it in every possible way, this reaction is too intellectual, too abstract: it allows the cliché to rise again from its ashes; it leaves the painter within the milieu of the cliché, or else

give him or her no other consolation than parody" (Deleuze 2003: 72).

[88] Jackson Pollock explains this need for new techniques further stating:

> It seems to me that the modern painter cannot express this age, the airplane, the atom bomb, the radio, in the old forms of the Renaissance or of any other past culture. Each age finds its own technique (1999: 20).

[89] Like Newman, other painters who were a part of the generation just prior to Irwin also arrived at this same conclusion. Joseph Albers further explains the notion of how the space between the marks made on the canvas were just as important as the marks themselves through a demonstration using his two index fingers.

> Look here: One finger and on finger are two fingers (both are my forefingers, in a vertical position). Now try to forget that we are dealing with fingers and concentrate on their width, which is about three-quarters of an inch. Now I place them closer together (parallel) at a distance of also three-quarters of an inch. And now – one finger and one finger present three equal distances – in short, 1 + 1 = 3 (and it is easy to continue 1 + 1 = 4, etc.). Such counting is possible only in visual formulation (Holloway, Weil and Albers 1970: 462).

This observation can be traced back even earlier to the writings of Michel Eugène Chevreul. In his 1839 treatise *The Principles of Harmony and Contrast of Colours and Their Application to the Arts*, he noted: "The *Ground*, as well as the *interval* we place between the coloured materials, have some influence upon the effect of colours" (1967: 106; original emphasis).

[90] In *De pictura* (*On Painting*), Leon Battista Alberti wrote the earliest conception of linear perspective. See Alberti 1966. For further discussion on linear perspective also see Chapter 4.

[91] For a further discussion on the emergence of centripetal and centrifugal forces in art see Chapter 2.

[92] For more specific analysis on how relations generate forces see Deleuze 1998b and Chapter 2.

[93] For further analysis on Seurat's pointillist technique see Broude 1978, Fénéon 1966 and Homer 1985.

[94] Although Irwin states that the two colours used in the "Dot" series paintings are green and red, upon closer inspection of the paintings the red dots appear more magenta. In terms of light, magenta and green are complementary colours, not red and green. Because of this discrepancy between red and magenta, the term reddish-magenta has been adopted for the chapter.

[95] By pushing the surface of the canvas outward, Irwin is also challenging what many thought was the only unique attribute to painting. This was the flatness of the painting produced by the canvas being stretched across the frame. According

to Clement Greenberg: "Because flatness was the only condition painting shared with no other art, Modernist painting oriented itself to flatness as it did to nothing else" (Greenberg 1993: 87). Although it would be interesting and worthwhile to further examine how Irwin's "Dot" paintings challenge the Modernist painting orthodoxy that was being discussed at the same time by critic like Greenberg, it falls outside of the scope of the present discussion.

[96] Not all of Irwin's "Disc" paintings were approximately one hundred and fifty centimeters in diameter. There were some that were made smaller in size. See Weschler (2008: 103).

[97] Irwin's "Disc" paintings moved his artistic practice even further than his "Dot" paintings had from the Modernist tradition espoused by critics like Greenberg. Paintings were defined as such through the use of three essential constraints: a flat surface, a frame, and the use of paint itself. Greenberg specifically states: "The limitations that constitute the medium of painting [are] the flat surface, the shape of the support, the properties of the pigment" (1993: 86). As stated in Note 95, Irwin's "Dot" series broke away from the use of a flat surface, in favour of a subtly curved canvas. With the additional use of light, shadow, and the gallery space itself, Irwin's "Disc" painting moved even more radically away from the Modernist understanding of painting. Again, it would be fruitful to examine how Irwin's painting practice challenges Modernist orthodoxy, but it falls outside of the scope of the present discussion.

[98] This definition of the term parergon is derived from the Oxford English Dictionary. See "Parergon" 2011.

[99] Regarding Derrida's reading of Kant and the parergaon, he specifically states:

> [The parergon] is a concept of the remark, of this "General Remark," insofar as it defines what comes to be added to [Kant's] *Religion within Limits of Reason Alone* without being a part of it and yet without being absolutely extrinsic to it. Each part of the book comprises a "General Remark," a *parergon* concerning a *parergon*. As there are four parts to *Religion*, then the book is in a manner of speaking *framed*, but also squared up by these four remarks on *parerga*, hors-d'oeuvres, "additives" which are neither inside nor outside (1987: 55).

[100] For more on the concept of worlding see Mannign 2009b and Massumi 2002.

[101] See Tassig 2009.

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