

ARTWORK AS NETWORK:
A RECONCEPTUALIZATION OF THE WORK OF ART AND ITS EXHIBITION

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It is as if we woke up one day, and suddenly all the points in the world had burst into webs,
all the straight lines into nets of wires, and all the planes and volumes revealed textured
layerings of branchings within branchings. Nothing is what it seemed it would be.

– Christopher Vitale, *Networkologies*

Dedicated to my son Ash who taught me to travel light
and my Oma Grietje whose determination and
internal strength I've most certainly inherited

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ABSTRACT

Leonie Bradbury

ARTWORK AS NETWORK:

A RECONCEPTUALIZATION OF THE WORK OF ART AND ITS EXHIBITION

As it reshapes the world we inhabit, the concept of the network has emerged as the dominant cultural paradigm across numerous fields and disciplines. Whether biological, social, political, global, communicational, or computational, networks are constituted by a decentered, distributed, multiplicitous, nonlinear system of nodes, plateaus, and edges that are endlessly interconnected and interdependent. Networks prioritize relationships between things over the things themselves, suggesting a reconfiguring of binary elements including: digital/tactile, virtual/material, private/public, and past/present. As networks rapidly change our world, it is logical to assume that contemporary artistic practices are impacted as well. In fact, works of art are uniquely situated to discover and reveal new ways of understanding social and cultural phenomena including that of the network.

Several questions arise: How do contemporary works of art relate to network culture? Alternately, how do networks redefine our understanding of specific works of art? How, in turn, are these works expanding our understanding of the network? As a way of focusing these questions, the dissertation addresses works by four contemporary artists: Franklin Evans, Simon Starling, Jenny Odell, and Pablo Helguera. Based on close art historical analysis, I argue that instead of depicting, illustrating or referring to networks as context, the works discussed are constituted or composed in and *as* networks. They are dynamic relational forms in which the

work of art and the network are rendered indissociable from one another. I further claim, that components which were previously considered as existing outside of the work of art – the gallery, the studio, references to texts, histories, artworks, historic objects, other artists, place, and even public programs and participants – are now part of what constitutes the work, thus indicating a profound shift in perspective in what we consider the “work of art” and the ways in which it is addressed and interpreted.

Keywords: Network, Franklin Evans, Simon Starling, Jenny Odell, Pablo Helguera

PREFACE

In the 2010 Whitney Biennial, Kate Gilmore's performative video, *Standing Here*, was displayed on a monitor next to the sheetrock structure where the artist's performance had taken place. The video, shot from above, first shows the artist busting her way into a narrow sheetrock clad, tunnel shaped 'room' without a door or windows. The artist is dressed in a red dress with white polka dots, sheer tights, black ballet flats, and gloves – an outfit seemingly unbecoming the task at hand – and begins to punch, rip, and grab at the walls in an apparent effort to break out of the room. The audio track consists of her heavy breathing and the destructive sounds of her violent actions. She is in fact creating a stairway of sorts to climb up the sides of the wall towards the camera. The piece ends several minutes later when Gilmore reaches up and turns it off.

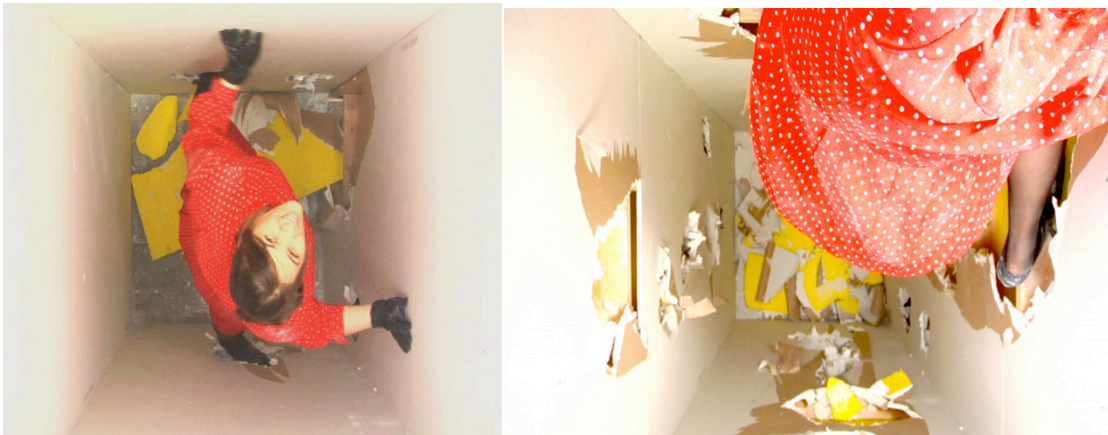


Fig. 1. Kate Gilmore, *Standing here*, video stills (2010).



Fig. 2. Installation View. Zsuzsanna Szegedi, *Erase with Me* (2011).

A year or so later, I encountered a video of a participatory drawing project by Zsuzsanna Szegedi that the artist had posted on her Vimeo channel. Entitled *Erase with Me*, the video captured a public art event held at Fourth Wall Project in Boston, an experimental artist space. It showed a stop motion animation of Szegedi creating a large-scale wall-drawing directly onto the gallery walls and its storefront windowpanes undertaken over the course of a few days. Once the drawing was finished, the artist played the animation that documented her creation of the work on a small monitor that was installed directly on top of the drawing. At the opening reception, she then invited the public to interact with the drawing and handed out spray bottles, sponges, and rags, before asking her audience to erase the work. She documented their process of erasure. Once erased, she added the footage to the monitor to play in a continuous loop following the creation documentation. Once the exhibition closed, the videos were posted on the artist's Vimeo channel.

When I first encountered Gilmore and Szegedi's works, I was intrigued and puzzled by a single question, asking myself: where is the art located? Is it located in the video on-line, on the gallery monitor, or at the performance that takes place in the gallery? Was Gilmore's art primarily the performance that had already taken place in the past, the sculptural remnant that served as a trace of the event, and/or the video documentation on the adjacent screen? In regard to Szegedi's erasing event, I wondered whether the artist's wall drawing was primarily the work? Or was it the public participatory event, the destructive erasing, or the combination of the two? Or ultimately, was it the video recording that served not just as documentation but rather as the actual work of art, especially since it seemed to capture all of the components together? In considering these questions, it became clear that *Standing Here* and *Erase with Me* both push aggressively at the boundaries of what constitutes the 'work of art.' Both works are comprised of multiple elements that exist in multiple mediums, across time, and at various locations to bring into question what is part of the work, what is intrinsic to what the work is, and what exists outside or extraneous to the work, apart from the work. In both *Standing Here* and *Erase with Me*, the video plays only one part in a constellation of fragmented yet related, objects, experiences, and sites that are distributed across multiple temporal and physical localities that *together* comprise the work of art. Indeed, it is the distributed form of the work that led to the emergence of the concept of the artwork as a network.

Artwork as Network

In 2013, I curated the exhibition *Absent/Present* for Montserrat Galleries that paired works by Kate Gilmore and Zsuzsanna Szegedi to explore these questions further. At the time, I

was primarily interested in the manner in which both artists redefined the role video plays within their complex practices, acting simultaneously as document and the work of art, a problem which formed my entry point into their work. For Gilmore, each work begins with the sculpture/performance/recording, while several of the elements, the resultant videos, and the photos are presented as independent objects. But *Standing Here* is not experienced as a singular object; rather it is precisely this constellation of the sculpture/performance/video-recording/photograph that the artist presents to an audience. Subsequent research after the exhibition allowed me to think through questions of creation, distribution, and display that eventually led to conceptual reworking and expansion of the earlier exhibition, opening to what I would come to call “the artwork as network.” While this concept was initially explored in the catalog essay for the *Absent/Present* exhibition, it quickly formed the premise for the current dissertation.

I want to argue that a new terminology is needed to describe these complex works that are constellations of many independent, yet interconnected parts. If, for instance, we consider the individual components as nodes and the relations between them as their edges, their overall form would constitute a network rather than an installation, collage, collection, or sculpture/performance/video-recording/photograph. Understood as a network, Gilmore’s *Standing Here* and Szegedi’s *Erase with Me* are but two examples of works of art that feature both temporal and spatial sequencing of formal, material, and conceptual elements working to create a single work of art that has more than one locale of existence. In this sense, viewers can fully experience specific elements that comprise each work while not seeing all of the parts, even if the artwork does not necessarily appear as incomplete. In this sense, a further series of questions begin to emerge: When has someone actually experienced *Standing Here*? Is it when

looking at the sculpture, the video, or the photograph? Similarly, when does one fully understand *Erase with Me*? When the viewer participates in an erasing? Or while watching the final animation? The answer may in fact be: “all of the above.” For it is in each of these instances that the various elements provide a singular experience of the work of art. The artwork, however, is no longer a singular object or event but rather presents itself as a network of interconnected and entangled autonomies. An artwork can now exist in numerous sites, across multiple media, and present itself through varying modes of distribution, and still be a single work of art. In other words, a single work of art can exist simultaneously in a distributed form across manifold temporal and physical localities. Executed in multiple media, its form has become relational. Crucially, the relational or networked nature of these works is not limited to the physical manifestations of each piece since these multiplicities of medium, presentation, and distribution additionally invite multiple fields of meaning.

Each component of these two artworks thus serves as a sign to the other parts and as a sign to other artistic practices, both past and present. The various elements of each piece form a network of connections that can be entered at any chronological point in a non-hierarchical fashion. One can also choose not to view the video at all, to watch it later at home on-line, or opt for a repeat visit on-line or at the museum. The order and method of engagement is up to the viewer; an added circumstance to be taken into account when we think about how work is viewed and experienced. Different material forms connect under the umbrella of ‘work of art’ and are presented in diverse configurations while using various modes of distribution. For this type of artwork, there is no center for it is a non-linear progression from one state to the next. How and where the viewer encounters the work similarly varies from one person to the next. The

various interpretations of each of these modes, by way of this non-hierarchical mode of experience, add to the complexity of the network.

This type of work thus becomes increasingly elaborate since each iteration of the work contains the possibility of connecting to infinitely more related parts. The various parts that constitute the work and the relationships that bind them congeal together to form a larger, relational form. No longer bound by the singularity of material form (sculpture, mural, video) or a singular mode of presentation (gallery, website, monitor), the location of ‘the work’ is an ever-shifting, non-centered, transformational site. The presentation of art through multiple mediums influences and alters the way we experience the work of art, especially if each component is presented as equally part of the overall work. The complexities of the layering of the various processes, digital and material, drawing and video, artist and audience, create a network of related and connected parts that can be experienced separately or together depending on the viewing mode of encountering the work, as well as at which point in the process of creation the viewer’s interaction takes place.

These new, non-centered works allow for multiple, non-hierarchical entry points in terms of both their physical manifestations, interpretative content, and the viewer’s method of encounter. There is no longer a one-to-one relationship between a unified, autonomous object and the viewer. The various iterations of a single work of art are connected conceptually, visually, and thematically, yet can be separated in terms of their presentation and viewing method. As Deleuze and Guattari so provocatively state in their seminal publication, *A Thousand Plateaus: Capitalism and Schizophrenia*: “A rhizome has no beginning or end; it is always in the middle, between things, interbeing, intermezzo. The tree is filiation, but the rhizome is alliance, uniquely alliance. The tree imposes the verb ‘to be,’ but the fabric of the rhizome is the

conjunction, and... and... and..." (25). This affirmation of the "and, and, and," is particularly relevant here. *Standing Here* is a sculpture, a performance, a performative video, a video document, *and* a series of c-prints, and so on. *Erase with Me* is a drawing, a happening, an erasing, *and* a stop-motion animation, and so on. Each of these pieces contains multiple individual components that are contingent yet independent, autonomous yet united to form such multiplicities. This distribution of the work of art across multiple sites happens physically, interpretively, and subjectively. The non-centered art object is no longer time or location specific, and in each of its iterations the response to the work shifts. The sequential and rhizomatic nature of each piece allow for multiple, non-hierarchical entry points, redefining the traditional, one-to-one relationship between object and subject, artwork and viewer. But how then do these works relate to the contemporary understandings of networks? In fact, in what sense can these artworks even be considered networks?

The guiding theoretical premise of this dissertation is that there are contemporary works of art that do not simply visualize the complexity of network culture. Nor do they simply image or represent the network. Rather, they exist and function *as* complex networks. Indeed, in a sense that remains for us to explore, these artworks *are* networks. The dissertation thus recognizes how contemporary artists can open up new avenues of understanding our current socio-cultural conditions through the works they create and how they are exhibited. The aim of this project, then, is not to create alternate, fixed, or reductive interpretations of networks; rather the goal is to show how specific artworks can help us understand and rework concepts of networks in additional and expansive ways. Simultaneously, the network framework allows us to expand and deepen our understanding of these contemporary works of art, how they act, what they do, how they generate meaning, and what they are showing us about ourselves in our contemporary

moment. In its most basic form, the network is a dynamic, relational form where a number of parts are connected to one another and also to other things through a set of relational connections that form a network. I propose that when an artwork brings together a constellation of objects, people and/or events in various forms across different media, across time, and at various locations, its distributed, relational form can be considered a network. No doubt “network” is a slippery term, but its slipperiness opens up a space of productive ambiguity and leaves room for continual redefinition. In short, the goal is not to create a new, fixed structure but rather allow for new, dynamic, and relational forms to emerge. The visually and conceptually divergent works by Franklin Evans, Simon Starling, Jenny Odell and Pablo Helguera that will be discussed in the chapters that follow each possess such a distributed, relational form whereby the artwork exists across localities and temporalities and is presented in that particular form at that particular moment, even if only temporarily. As we will discover, the formations that constitute the work are apt to change and reconfigure as new opportunities for exhibition or redistribution present themselves. It is important to note that although these individual practices will be examined through a network lens, this is meant as an *additional* reading of these works, one that adds to the readings of these works within their disciplines rather than serves as a substitute. As the chapter titles suggest, this project offers a rethinking of “painting as network,” “sculpture as network,” “archival art as network” and “social practice as network.”

A Reconceptualization of The Work of Art and its Exhibition

The notion of “network” is a pervasive and convincing new way of enframing contemporary societal and cultural practices. The following chapters seek to demonstrate that

networks are evidenced within artistic practice in manifold ways, but most notably in the emergence of the concept of an artwork *as* network. As artists are frequently in the forefront of interacting with and responding to societal change, it is logical to assume that networks impact their practices as well. In consequence, several questions arise that frame the dissertation's larger argument: How do contemporary works of art respond to network culture? Alternately, how do networks expand our understanding of specific works of art? Can a work of art take on a distributed form and thus become a network? In turn, how can these works of art redefine our understanding of networks? As a way of focusing these questions further, the dissertation addresses work by four artists: Franklin Evans, Simon Starling, Jenny Odell, and Pablo Helguera. Based on close description and art historical analysis, I argue that instead of depicting and illustrating networks, or referring to networks as mere context, the work of these four artists is constituted in and *as* a network.

Artwork as Network is divided in five chapters. The first chapter, "Networks and Artworks," serves as an introduction to basic concepts of networks and explores the expanded form of artworks. The main focus of this chapter is to establish a common ground between the text and the reader. It provides an overview of what constitutes a network by analyzing its different characteristics. The chapter addresses the representation of networks as illustrated diagrams and the resulting limitations in our understanding of how they work, asking how they might be addressed in other ways. Lastly, the chapter discusses the larger cultural implications of networks and how the notion of networks is shaping subjectivity and cultural explorations at large. Taken together, the different sections that compose the chapter ground the origins of network thinking within a wide range of fields, including twentieth century philosophy as well as the history of art, again with the intent of introducing the reader to the historical precedents that

serve as jumping off point for the readings of Evans, Starling, Odell, and Helguera in the subsequent chapters. In doing so, all four case studies position history in the present moment, as one node in a constellation of nodes, intimately connected to and as an integral part of the work.

The introduction also explores the connections created between Michel Foucault's essay "Of Other Spaces," Jack Burnham's critical essay "Systems Art," Rosalind Krauss' "Grids" and "The Expanded Field," and Gilles Deleuze and Félix Guattari's "Rhizome" chapter as these texts together come to shape our understanding of networks in the following chapters. Additionally, contemporary precursors to "artworks as networks" are explored through Nicolas Bourriaud's concept of the artwork as a "relational form," a concept that will be expanded both in Chapter Two and in Chapter Three. Lane Relyea's introduction of the term "object networks" also serves as a contemporary contextualization of artworks that are (object) networks. His observations serve as another important starting point for the dissertation. Finally, James Voorhies' concept of "exhibition as critical form" is instrumental in setting up the different chapters, notably in the ways in which exhibitions come to generate their own theoretical content.

Chapter Two, "Franklin Evans: Painting as Network," is focused on a detailed analysis of *juddrules*, a large-scale installation and exhibition I curated for Montserrat College of Art in 2014. Evans' installation spreads across the gallery walls and floors in a maze-like form. Visually overwhelming and intense, certain sections of the exhibition read like an art history textbook with many reproductions of well-known paintings and references to art historical and theoretical texts. Other sections read more like a Google image search, but one where the images are made material and find themselves interrupted, conjoined by color test prints and strips of painter's tape. Evans' practice involves bringing together items ranging from fully finished large-scale *trompe l'oeil* oil paintings to digital printouts, from scraps of tape to bits of string.

While on site in the gallery, he adds even more items, including site-specific blocks of color painted directly onto the wall, printed-out texts from art books, and gallery press releases, layering and connecting the various elements into a site-specific installation. Although Evans considers himself first and foremost a painter, his installations go beyond any traditional definition of painting.

Evans' process reflects our ability to actively consume and produce information using the Internet as a tool. It simultaneously addresses the Internet's utility and its overwhelming complexity and contradictory nature. *juddrules* specifically offers a blend of traditional and digital technologies since it combines hyperrealist paintings with pixelated imagery downloaded from the Internet. *juddrules*' obsessive referencing to outside source materials, both visual and textual, appears to embrace information overload rather than constituting a critique. Evans engages the peripheral, ephemeral materialities that evidence one's life and collects digital images and texts in an effort to rematerialize them in his work. His process of making the abstract concrete, of looping or conceptual doubling, and of mirroring information into various states of mediatization, is where *juddrules* functions as a site of convergence between traditional artistic practices and internet cultures. These so-called feedback loops create a disorienting effect. But how exactly do they relate to the culture or structure of a network? *juddrules* is precisely an installation concerned with the space *between* things, (i.e. objects, people, images, materials, ideas), suggesting that Evans' practice is closely related to this larger cultural phenomenon of networked connectivity. But is *juddrules* in the end a mere visualization of a network? Does it simply offer a metaphor for our networked culture? Or does the work expose other ways of conceptualizing the relation between artwork and network?

Chapter Three, “Simon Starling: Sculpture as Network,” explores Starling’s conceptual research based artistic practice, which is comprised of a complex system of intensive research, art history, film, performance, and object production. The work is frequently described as “rich in associations,” as a “web of information,” and even at times as a “network.” Starling explores the interconnectedness of objects, ideas, and people both past and present. The realms examined in his varied practice include economics, politics, social issues, and the environmental, but it is always through the lens of artistic production, both his own as well as others. Chapter Three focuses on analyzing three works of art created by Starling that were on display in Chicago in 2014. The first is a sculpture, *Bird in Space 2004*, on view as part of the *Metamorphology* exhibition at the Museum of Contemporary Art in Chicago. The second, a companion project, titled *Simon Starling: Pictures for an Exhibition*, was housed at and commissioned by The Arts Club in Chicago. Lastly, *Three White Desks* is a sculpture that was exhibited as part of Nicolas Bourriaud’s *Altermodern* exhibition at the Tate Modern. All three projects are engaged in the discourse and history of modernism and feature as their main protagonists Edward Steichen, Marcel Duchamp, and Constantin Brancusi.

As part of this investigation, Starling addresses concepts such as originality, repetition, reproducibility, authorship, the relationship between modernism and postmodernism, and the photograph as index. Given the ways in which Starling’s work addresses the history of modernist sculpture, the chapter also draws on the work of Rosalind Krauss; even though she has not commented directly on Starling’s work – nor in turn has he directly referenced her own writings or ideas – the chapter argues that Krauss has written many significant texts on the artists and topics raised by Starling’s work. In short, Starling’s conversation with both the history of modernism and sculpture clearly intersects with Krauss’ writings. At the same time, the chapter

situates Starling's individual art works in light of networks, demonstrating how his work can help us understand or reshape our understanding of what networks are and can be. Indeed, his work creates different ways of understanding the concept of a network within the context of contemporary art and its exhibition forms.

Chapter Four, "Jenny Odell: Archive as Network," examines an ongoing archival art project, *The Bureau of Suspended Objects*, that began as part of an artist residency when Odell collected two hundred objects from "the pile," a community dump site at a waste treatment facility called Recology in San Francisco. Odell meticulously documented, recorded, and then researched each object she "rescued" from the waste stream. The resulting information was used to form a digital and physical archive, an exhibition, and a book. The artist showed particular interest in the provenance of each object, as she obsessively traced not just where and when the objects were sold but also recovered its place of manufacture, mode of distribution, material origin, and even the advertisements used to promote its sale. The artist often included historical documentation of factories and manufacturing ephemera such as contracts and patents as evidence of the objects' origins and trajectory through time. Odell's *Bureau of Suspended Objects* consists of many interlocking and interconnected parts that together comprise the work.

As a whole, Odell's project is an archival artwork and as such it engages with current and past discourse regarding the archive. British archivist Sue Breakell's definition of archives as "bodies of information," where "objects bearing value and meaning," serves an opening epigraph for the chapter. Hal Foster's notion of the "archival impulse," a phrase he coined in an article published in *October* in 2004, is also central to our reading of Odell. Additionally, Foster's observation that, "archival artists make historical information, often lost or displaced, physically present" (4) plays a significant role in our understanding of her work. We further situate the

Bureau of Suspended Objects historically in relation to two major exhibitions. The first, *Archive Fever: Uses of the Document in Contemporary Art*, was curated by Okwui Enwezor in light of Jacques Derrida's book, *Archive Fever: A Freudian Impression* (1994), which directly influenced Enwezor's exhibition and title. The second is the exhibition *Deep Storage: Collecting, Storing, and Archiving in Art*, based on an essay "Deep Storage. On the Art of Archiving" by Ingrid Schaffner (1995) and on view at PS1 MoMA in the summer of 1998. Situated in the context of these theoretical texts and two major exhibitions, the goal of this chapter is to address how Odell's *The Bureau of Suspended Objects* expands our understanding of networks by rethinking networks through the lens of the archive. The chapter will provide historical examples of artworks that were collections and/or archives in order to further ground Odell's project in its art historical context. Echoing the chapters on Franklin Evans and Simon Starling, and specifically the relation between their work and concepts of history, *The Bureau of Suspended Objects* is not just an archive, exhibition, and work of art marked by nostalgia and sentimental longing; rather these various components of the work together begin to rearticulate another understanding of the artwork in and as a network.

Chapter Five, *Pablo Helguera: Social Practice as Network*, considers two exhibitions, *Librería Donceles* and *Club Americano*, that present the work of art at the intersection of the venue, the event or event series, and community, which together form a socially engaged form of artistic practice. The first, *Librería Donceles*, is a fully functioning second-hand bookstore stocked with approximately 10,000 objects that also served as a community gathering space, with an active roster of community centered programming, workshops, and performing arts events. *Club Americano* was an exhibition of historic objects selected by Helguera from the museum's fine art and decorative arts collections that were accompanied by a series of

performances, all curated – and also sometimes performed – by Helguera himself. *Club Americano* likewise served as a gathering space for members of the community who were invited to select their presentation topics in response to the themes of the exhibition. Conceptually, both *Librería Donceles* and *Club Americano* explore issues surrounding identity, politics, and immigration within the larger context of The Americas.

In this last chapter, we deploy Helguera’s own definitions of the term “socially engaged art” as a baseline for analyzing the work. For Helguera, social interaction is not just an activity that lies adjacent or parallel to the work; rather it is part of the work, it *is* the work. I argue that we add to this reading of the work by demonstrating that Helguera’s projects create several types of networks: object networks, historic networks, information networks, and most importantly, social networks, in which members of the community participate with the artist, with the project, but also with each other. In looking closely at the various network connections, we will expand the reading of these two works beyond that of a socially engaged work of art. Furthermore, a portion of the public programs that accompany the exhibitions are designed by the community, produced with the community, and presented to the community. The communal aspects of the work do not simply amplify, support, or augment Helguera’s work but rather are an integral part of both what constitutes the work and what makes it a networked art experience. Lastly, I discuss the context provided by the exhibiting venues – Urbano and the Museum of Fine Arts in Boston, respectively – as they too are part of the network that constitutes the artwork. The chapter concludes by reconnecting these two projects to the central thesis concerning socially engaged art as it is understood in relation to networks.

Situated together, the chapters that follow investigate four artists whose work responds to, explores, embraces, and counters the increasing virtualization, mobilization, and globalization

of networked cultures. In this sense, the overarching questions that inform the research are: How do technologies, and especially the Internet and its most ubiquitous interface, the World Wide Web, transform artistic practice? With networks as the ubiquitous form of our current moment, can we discern a wide range of responses reflected in contemporary artistic practices? How do works of art expand our understanding of networks, and conversely, how do networks influence artistic practices? I propose that the aesthetic realm is precisely the place where we can find answers or reformulations to these complex questions, since art, as a questioning and revealing mode of engagement, is particularly suited for this role of visualizing and materializing this response. In the process of closely examining these seemingly disparate works by four quite different contemporary artists, similarities begin to emerge across varied practices, similarities that constellate around different ideas, people, and things across media, time, and place. They also address history, and art history in particular, in diverse ways, questioning – and thus rethinking – our preconceived notions of history as a linear process. Finally, I argue that components which were previously considered as existing outside of the work of art – the gallery, the studio, histories, other artworks or historic objects, even public programs and their participants – are now part of what constitutes the work, thus indicating a profound shift in perspective in what we consider the “work of art” and the various ways in which it is expressed in its exposure or exhibition. In short, the works discussed in the chapters that follow are dynamic relational forms in which the work of art and the network are now rendered indissociable from one another, chapters that constellate around the concept of “artwork as network.” As we will discover, some questions such as where the boundaries of the work are and whether or not the work is an explicit critique of the postmodern condition may remain unanswered throughout this process. In part, it is both the fluid, temporary, and inclusive nature

of these works that complicates an answer to these questions. However, it is my hope that in reading these chapters, and discovering the relational nature of the works of art described, that further questions emerge, questions that take these works and the concept of the artworks as network out into the world where artists and others may think through this complex notion and take it further in new directions.

CHAPTER 1

Networks and Artworks: An Introduction

The network is a pattern that is common to all life.
Wherever we see life, we see networks.

– Fritjof Capra

As it reshapes the world we inhabit, the concept of the network has emerged as a dominant paradigm across numerous fields and disciplines. Whether biological, social, political, global, cultural, communicational, or computational, networks are constituted by a decentered, distributed, multiplicitous, nonlinear system of nodes, edges, and grounds that are endlessly interconnected and interdependent. Networks prioritize relationships between things over the things themselves, suggesting a reconfiguring of binary elements including digital/tactile, virtual/material, private/public, object/subject, original/copy, and past/present. As networks rapidly change our world, it is logical to assume that contemporary artistic practices are impacted as well. In fact, works of art are uniquely situated to discover and reveal new ways of understanding social and cultural phenomena, including that of the network. But in order to understand the relation between networks and the work of art, we need to more fully understand what a network is.

In the twenty-first century, ‘networks’ are a way to see and frame everything around us. For example, our communication and transportation systems, our social networks, both physical and virtual, even the natural world, can all be considered examples of networks. One essential way to define a network is as an arrangement of intersecting horizontal and vertical lines, such as a mesh, grid, lattice, or web. Warren Sack, in “From Networked Publics to Object Oriented

Democracies,” notes that the term network originally was employed in the sixteenth century to represent the weaving together of sets of material strands such as metal, fabric leather, and so on (18). It can also be defined as a collection of connected objects or denote a system of connected things, such as computers, cell towers, or phones. The term network further represents support networks, broadcasting networks, electrical networks, distribution networks, and computer networks. Friedrich Kittler in *Discourse Networks 1800/1900* defines the network as “the network of technologies and institutions that allow a given culture to select, store and process relevant data” (369). It can also refer to natural networks, neuro-networks, circulatory systems, biological systems, bio-political networks, and a variety of ecosystems, both human and non-human. The use of the term as a synonym for a group of interrelated people, by contrast, is a recent invention. In the twentieth-century, it also became a verb: meaning to link, connect, and meet. According to Sack, the verb “to network,” meaning to introduce and be introduced to other people outside of one’s immediate social circle, “made its first appearance in the 1970s after the deployment of ARPAnet, the precursor to the Internet” (18). Most recently, with the advent and rise of social media, the term network also has come to denote on-line social networks that are easily accessed through the web and mobile applications.

Network as a concept, although ubiquitous, is thus broad, complex, and multiplicitous in its definition. How it is defined depends on the various disciplines through which one deploys the term. Christopher Vitale in *Networkologies* wonders what exactly the notion of networks means in a philosophical context:

Certainly the term is everywhere today. And yet, the meanings attached to this notion, at least in everyday speech, are far from clear. It is as if the term were designed to proliferate and slip away from us, to multiply and increase in intensity, functioning

differently in ever more situations, moving from tired and hackneyed to surprisingly different and back again, giving rise to new possibilities in the circuits of flight in between. (7)

No doubt network is an ambiguous term, changing and fluctuating as much as the very networks it seeks to capture. However, it is precisely this ambiguity and the slipperiness of the term that is productive, as it opens up a space for redefining, rethinking, and re-conceptualizing the significance of networks and their critical implications. Although valuable interpretations of networks have been produced in the realms of science and technology, media and communication studies, as well as, the corresponding fields of data visualization, I argue in the pages that follow that we need to move beyond illustrations of networks and look for more imaginative models for rethinking the term.

1.1 ASPECTS OF NETWORKS

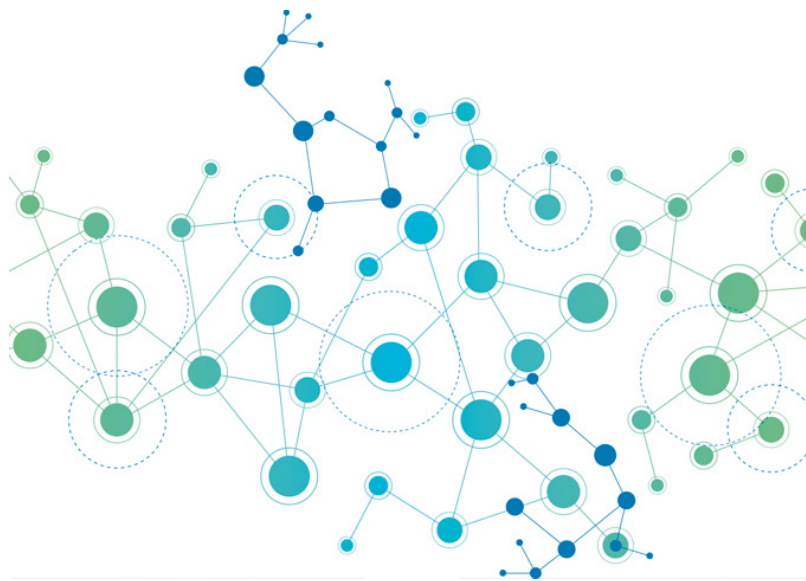


Fig. 3. Illustration of a basic network form showing nodes and edges.

A contemporary diagrammatic representation of a network generally visualizes ‘nodes’ and ‘edges,’ with the latter are also described as ‘vertices’ or ‘links’ (see fig. 3). In general, the nodes are the individuated parts used to indicate the various components or elements (people, objects, concepts), and the edges stand for the *relationship* between them, their mode of connection. The edges are dynamic since the relationship between the nodes they connect is an active process that can be temporary as elements become disconnected and reconnected to and from each other, just as their relationships are reconfigured as a result. The Internet is the most common example of a network whereby one can consider the computers and devices that comprise the network as the nodes, and the physical or wireless modes of connection between the devices as the edges between the nodes. The edges represent the way signals (communications between nodes) act in the network, rather than the actual physical connections (cables, wires, signals). Likewise, when considering the World Wide Web, the websites can be thought of as nodes while the connections or links to other sites would be their edges.

The nodes and the edges together form “the network.” As a result of their relational nature, networks exist in a temporary formation and are often mobile and flexible as they grow or shrink in size. In *The Exploit*, critical theorists Alexander Galloway and Eugene Thacker explore the unique qualities of networks and address their modes of operation through a wide realm of disciplines and figures, including philosophy, French theory, Marx, the military, and academic and computer programming worlds. The book provides a clear understanding of how networks operate and how nearly every aspect of contemporary culture can be located within them. The book is set up in two sections: “nodes” and “edges,” two concepts that we have established as central to any network. Networks are often presumed to be egalitarian, equal systems of distribution, in part due to the oversimplified graphic diagrams in which they are

illustrated. On the contrary, the main argument that *The Exploit* makes is that “to have a network, one needs a multiplicity of nodes. Yet the mere existence of these nodes in no way implies an inherently democratic, ecumenical or egalitarian order. Quite the opposite” (13). Networks have hierarchies within them, with certain nodes having much more weight or significance (or power) than others. Galloway and Thacker address the tension that exists between nodes and edges and the ‘whole’ they produce as follows: “The individuation of the network as a whole is different from the individuation of the network components. However, both concern themselves with the topology of the network” (59). Two terms are worth expanding upon here: “topology” and “individuation.” Topology is a key term in understanding the physical functioning of computer networks and the flow of information within it. Topology within mathematics is the study of connectedness, continuity, and boundary; all are topics relevant to network theory. Time and space are key elements in describing topology. The type of individuation discussed here is different from a classical understanding of differentiation or individualization between persons, organizations, or entities; rather, in this case, ‘individuation’ is “concerned with the tension between the individuation of networks as a whole and the individuation of the component parts of networks” (ibid.). The multiple layers of topologies, physical and logical, spatial and temporal, combine to comprise a network.

In addition to the basic topology of nodes and links and the topological layers mentioned above, Vitale adds the dimension of the “ground.” He states: “The parts connected in a network can be recast as *nodes*, which are joined together by *links*. Nodes and links are always surrounded by backgrounds, or *grounds*, which are aspects of the more general *ground* of which they are themselves parts. While grounds may appear unified, whenever they are examined more closely, they are always composed of more networks, which then reveal their own grounds in

turn” (18). Vitale reveals a level of added complexity by situating networks against a ground, which consists of additional networks, rather than a passive or vacuous background: “Considered together, nodes, links, and grounds give rise to networks, even as each is ultimately composed of more networks in turn” (ibid.). At its simplest, Vitale’s definition of a network is “any whole, composed of parts, distinguished from a background, and composed of other parts and wholes, layered into each other at multiple levels of scale” (16).

Networks, we now understand, are not just comprised of edges and links, parts and wholes, but also can include multiple layers or topologies (physical and logical, spatial and temporal), which suggests that the concepts of background and scale should also be taken into account. Manuel Castells in *Communication Power* further describes the network as a set of interconnected nodes but nuances their individual roles: “Nodes may be of varying relevance to the network, and so particularly important nodes are called ‘centers’ in some versions of network theory. Still, any component of a network (including ‘centers’) is a node and its function and meaning depend on the programs of the network and on its interaction with other nodes in the network” (19). Castells addresses differentiation in the significance of certain nodes in comparison to others:

Nodes increase their importance for the network by absorbing more relevant information, and processing it more efficiently. The relative importance of a node does not stem from its specific features but from its ability to contribute to the network’s effectiveness in achieving its goals, as defined by the values and interests programmed into the networks. (19-20)

He continues to describe the role of the nodes in relation to the network as a whole:

However, all nodes of a network are necessary for the network's performance, although networks allow for some redundancy as a safeguard for their proper functioning. When nodes become unnecessary for the fulfillment of the networks' goals, networks *tend* to reconfigure themselves, deleting some nodes, and adding new ones. Nodes only exist and function as components of networks. The network is the unit, not the node. (20)

Castells here clearly explains both the role of the node in relation to the network as a whole and the dynamic nature of a network's form, one that reconfigures as nodes are added or deleted. In short, not all nodes are created equal, nor are they of equal importance in relation to each other and the network as a whole.

1.2 Network as Relational Form

Networks provide more polymorphous ways of theorizing what has often previously been seen as rigidly dichotomous.

– Christopher Vitale

It is useful to now look at networks in a more theoretical realm as this will aid with further additions to our vocabulary of terms and broaden our understanding of what the concept of network means as it is defined within the scope of this dissertation. Due to the relational nature of its form, networks are in constant motion. Connectivity, flexibility, changeability, and mobility are key identifiers for a network. When considering our networked culture, they are prevalent descriptors of our contemporary moment. The cultural framework of “network” has

become a way to understand and organize a complex global world. The term network now also stands for a system of nodes – decentered, distributed, multiplicitous, non-linear – that are endlessly connected to each other and inform much of what we see around us as information (data) rapidly moves from one side of the planet to another. According to Vitale:

Everything in the world can be seen as a network, and in this sense, to call anything in the world a network simply means to see it relationally, as a network composed of networks, linked to others, layered in levels, against a ground, and as an aspect of various processes and reifications. Networks are then, more than anything, a way of looking at the world, a shift in perspective, a lens, which makes everything appear networkedly.

(20)

The inherent interconnected character of our world confirms that networks are not a new phenomenon since they appear in nature, the human body, medieval transportation networks, and ancient tribal communication networks; rather, it is the dominant presence of the digital communication networks that are revealing and augmenting our inherent connectivity as connectivity becomes faster, easier, and more prevalent than ever.

The relational element of a network is that ‘something’ which exists between two or more things. In terms of the network, that which connects the nodes and the edges represents the relation between the nodes. Additionally, the relationships between the nodes and the overarching network are of significant importance. In fact, according to Galloway and Thacker, connectivity “is so highly privileged today that it is becoming more and more difficult to locate places or objects that don’t in some way fit into a networked rubric” (26). They further state: “a network in a sense is something that holds a tension within its own form – a grouping of

differences that is unified” (61) (as we will see, this concept of the “grouping of differences that is unified” provides a useful visual construct to keep in mind when looking at the particular artworks discussed in the later chapters). They repeat: “the mere existence of networks does not imply democracy or equality. If anything, it is this existence-as-such-of networks that needs to be thought; the existence of networks invites us to think in a manner that is appropriate to networks,” which leads to a further question they address in parentheses “would this then mean experimenting with something called philosophy?” (13). Galloway and Thacker simultaneously dispel the myth of the egalitarian nature of networks, while also expanding the notion of network to reach more existential realms in terms of its conceptual application.

The concept of networks can thus be applied to fields ranging from the physical and technological to the metaphorical, even, as suggested above, the philosophical. In *Reassembling the Social. An introduction to Actor-Network-Theory*, Bruno Latour suggests “the word network is so ambiguous that we should have abandoned it long ago” (128). He distinguishes between two types of networks, one technological, and the other social: “network is a concept, not a thing out there. It is a tool to help describe something not what is described” (130). When Latour first deployed the term, it was initially used to indicate technical networks such as “metrology, subways, telephones” (ibid.). He did so with the intention of using it as a counter to other terms such as “society,” “institution,” or “fields” (ibid.). This was before the release of the Internet to the public in 1995 and terrorist networks such as al-Qaida, who reframed the use of the term in a social context. He laments: “But nowadays, networks have become the rule and the surfaces the exception. It has lost its sharp edge” (ibid.). Latour further disparages the initial “simple-minded visual representations” of “star-like embranchments out of which lines leave to connect other points that have nothing but new connections, [which] provided a rough but faithful equivalent to

those associations,” whose main drawback was “not capturing movements and of being visually poor” (133). He astutely reminds us that the “map is not the territory” and that poor visual graphics should not be confused with the rich and diverse relationships they are meant to symbolize. For Latour, “the ‘main tenet’ of Actor Network Theory is that “the actors themselves make everything, including their own frames, their own theories, their own contexts, their own metaphysics” (“On Using ANT” 67). This last argument is particularly pertinent in the context of our close examination of the works of art that follow since they too generate “their own frames, their own theories, their own contexts, their own metaphysics.”

Actor Network Theory is an important theoretical precursor to contemporary network thinking and the relational nature of things in particular. John Law, in his introduction to *Actor Network Theory and After*, proposes that actor-network theory is based on the belief that entities have no inherent value since value is received from the relationship with other entities. This presents a post-structuralist, semiotic worldview in that values are no longer considered absolute or fixed but rather fluid and malleable. In fact, they argue against fixity and singularity. Law explains the notion of a “semiotics of relationality,” which applies notions of relationality ruthlessly to all things – including materials – summed up in the term: “relational materiality,” rather than adhering to a post-structuralist application of relationality to language alone. The second concept he addresses in the actor-network context is that of performativity, suggesting that according to the semiotic approach, entities “achieve their form as a consequence of the relations in which they are located” and that this means that these entities in turn are “performed in, by, and through those relations” (4). He further defines actor-network theory as “a semiotic machine for waging war on essential differences. [Actor-network] has insisted on the performative character of relations and the objects constituted in those relations” (7). As a social

theory, actor-network theory is significant, firstly in terms of its tremendous influence in the field of network theory, but secondly – in relation to the discussions in the chapters that follow – it serves as a historic marker, a sign-post to refer back to, and a way of acknowledging in discussing works of art through the lens of object networks that one owes a debt to the work performed by Law and his colleagues, notably as they continue to expand and reframe concepts of network, relational materiality, and the performative nature of actor-networks. Although the research that follows is not focused exclusively on actor-network's theoretical frameworks, it is necessary to acknowledge and address its critical importance.

1.3 Imaging Networks

Diagramming describes how networks deal with issues of representation, recasting these notions, as networks tend to do, in more relational form.

– Christopher Vitale

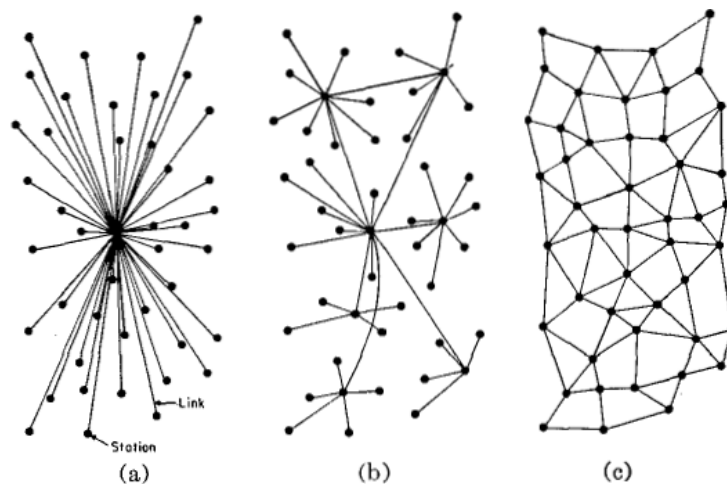


Fig. 1—(a) Centralized. (b) Decentralized. (c) Distributed networks.

Fig. 4. Paul Baran. *Distributed Networks* (1964)

What does a network look like? Now that we have discussed various definitions and applications of the term across several theoretical disciplines, it is useful to turn to some visual imagery to further our argument. The Internet, the most ubiquitous network, is a physical network of things – i.e. computers, routers, cables – yet we often envision it as an organic, expanding form similar to a galaxy or as a nervous system, where the things signal each other. But what can we learn from the visual metaphors we create for this complex network? How does this understanding, or imagining, inform network theory and ways of thinking connectivity? There are at present a few dominant modes of visual representation that come to mind when using network as a term. The three primary modes are “centralized,” “decentralized,” and “distributed” (see fig. 4). It is important to establish an understanding of these terms and their genealogy. The distributed network concept was conceived by network pioneer Paul Baran who formulated it while he worked for the RAND Corporation in the 1960s while trying to build a new system of communication using computers.

At that time, the first two notions of network – “centralized” and “decentralized” – were already in place. In the process of his research, Baran developed a third model, the “distributed” network, where all the nodes were connected to several neighboring nodes and able to communicate with each other directly without going through a centralized hub first. Each node would have several routes to and from which to receive and send data. The Baran network diagram has become ubiquitous within network imaging and continues to influence diagrams today. Baran had designed this as part of his research to find a solution to communication networks while he worked for the RAND Corporation during the Cold War (1959-1968). He created a network design proposal meant to prevent outage or breakdown due to nuclear attack. He is credited with co-inventing “packet switch network design.” What Baran was really

interested in was the process of how information traveled from one node to another, and that the distributed model was designed for maximum efficiency of a “packet” of information to reach its destination, regardless of how many nodes were potentially taken out in a military attack or due to other network failures.

It is useful to delve a bit deeper into the distinguishing characteristics of the distributed network as its specific form is influential to this day in terms of people’s initial understanding of what they assume networks look like and how they behave. Galloway in *Protocol: How Control Exists after Decentralization* describes Baran’s three models as follows: “A distributed network differs from other networks such as centralized and decentralized networks in the arrangement of its internal structure. A centralized network consists of a single central power point (a host), from which are attached radial nodes. The central point is connected to all of the satellite nodes, which are themselves connected only to the central host. A decentralized network, on the other hand, has multiple central hosts, each with its own set of satellite nodes. A satellite node may have connectivity with one or more hosts, but not with other nodes” (11). By contrast, “the distributed network is an entirely different matter. Each point in a distributed network is neither a hub nor a satellite node – they are neither trunks nor leaves” (ibid). Galloway then cites Eric Hall’s text, *Internet Core Protocols*: “the network contains nothing but ‘intelligent end-point systems that are self-deterministic, allowing each end-point system to communicate with any host it chooses’” (qtd. in *Protocol* 11). They thereby emphasize that it is the agency of the individuated elements within the distributed network model that is part of its success.

In general, and by nature, visualizations of networks are reductive and questions of their topology are notoriously problematic. Media theorist Anne Munster’s 2007 essay, “The Image in the Network,” was first published as part of a white paper that accompanied the conference

“New Network Theory” held in Amsterdam in 2007. She explores the concept of imaging the Internet through diagrams and schematics and discusses the limitations of these constructs to accurately depict network connectivity. Munster addresses Paul Baran’s diagrams and concludes that the diagram is so successful, in part, due to its representational vagueness, since it may be applied to all sorts of situations. She states, however, that, “if we really believe that the network diagram provides us with an accurate description of networks, then we are forgetting the very relationality of both diagram and network” (13).

Munster argues: “there can be no coherent, global ‘aesthetics of *the* network.’ And yet there are collective and shared experiences – aesthesias – of networks” (6). Aesthesia is the normal ability to experience sensation, perception, or sensitivity and Munster’s emphasis lies on these experiences being collective rather than individual. Although there is not a singular network aesthetic, she proposes that people have shared experiences and a shared visual understanding of what the network looks like. She further affirms that the vectoral diagram (see fig. 5) “has come to function as a dominant image of and for networks” (6). She sees this shared experience of contemporary networks as one of “repeated cycling through euphoria and boredom,” noting that node-link schematics “lull us in a kind of comatose state about the socio-aesthetic-technical assemblages that enervate network cultures” (7). In a sense, we have become so comfortable with the flat, two-dimensional diagrammatic abstract of a “network” that it has become the ubiquitous mode of representation of a network. However, this is a problematic claim since, as Latour also points out, it fails to address the complexity and dynamic reality of the relational and multidimensional nature of networks themselves.

Munster describes the representational dilemma of the diagram as image of the Internet in the following terms:

The diagram is therefore not a set of instructions – a blueprint – for mapping or building relations between objects. It is instead a representational mode that hooks one class of objects – perhaps links and nodes – to another class, potentially peoples, cultures and their processual relations within networks. This, of course, is why the network diagram is so thrilling – its spatiality and vagueness harnesses the potential to make it work as a representation of something it is not. (13)

As Latour and Munster effectively argue, the biggest problem with the vector diagram as the preferred image of a network is that it is limited in the way it chooses to represent something that is multi-dimensional, ever changing, and relational as a fixed, two-dimensional image. As Latour reminds us, the network diagram is “the map not the territory.” Munster, however, also offers alternative images of networks, in particular those that “operate via divergent, disparate, everyday and surprising associative pathways” (7). Her analysis of web visibility introduces an allegorical dimension when she introduces two illustrations featuring two contemporary diagrams of the Internet created by William Cheswick and Ben Worthen, published in *Who Owns the Internet?* (See fig. 5). As Worthen explains:

In order to build this map Bill Cheswick fired off 300,000 messages to various points on the Internet and mapped how they got there, recording the address of every router his packets passed. He also had to figure out a way to isolate routers in North America. The map is not perfect – he probably missed a few points and maybe double counted a couple more – but for all intents and purposes this is what the North American Internet looks like. (n.p.)

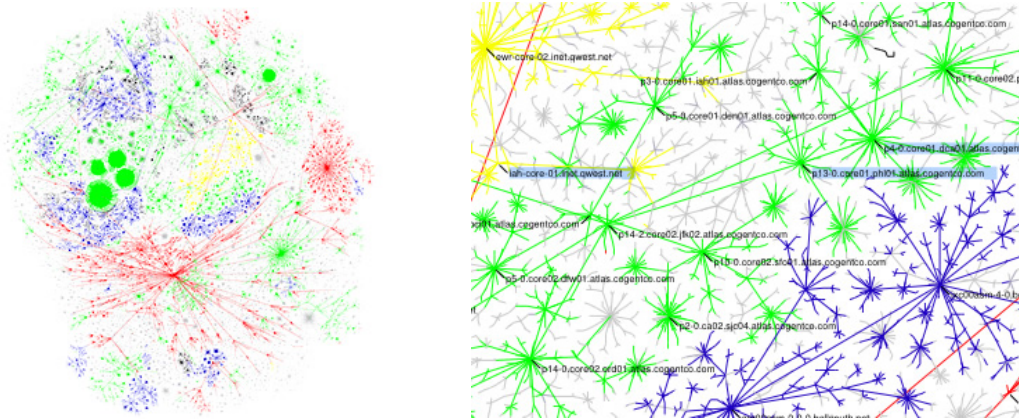


Fig. 5. Left: William Cheswick and Ben Worthen, *Image Diagram of The Internet* (2006).

Right: Detail. *Image Diagram of The Internet* (2006).

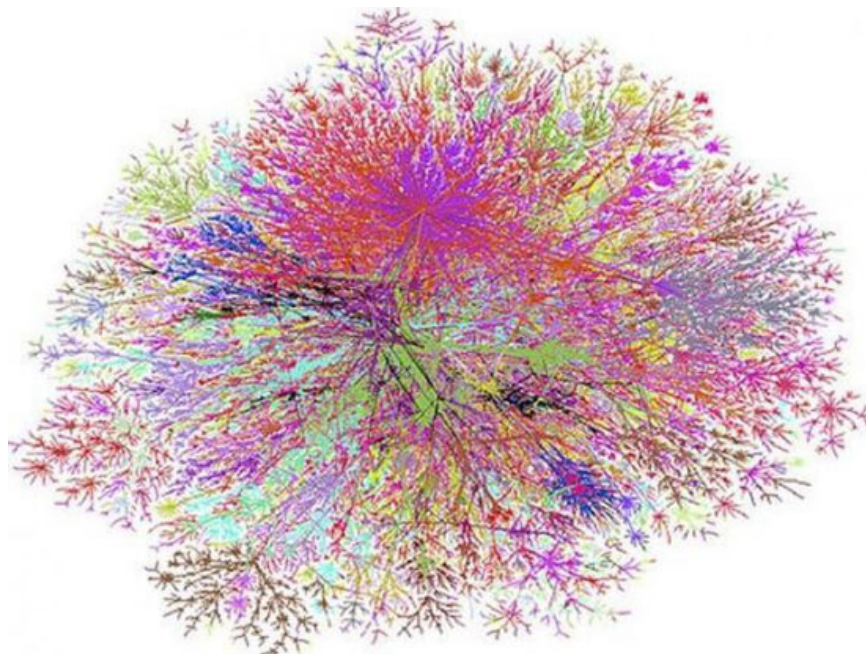


Fig. 6. William Cheswick and Ben Worthen, *Internet Splat Map* (2009).

The example of *Image Diagram of The Internet* (fig. 5) provides a mode of visualizing the abstract nature of the Internet. Worthen and Cheswick's collaboration also produced the 2009 *Internet Splat Map* that visualized Internet connectivity in the United States (see fig. 6). The data was gathered by sending a large number of IP packets out randomly across the network that produced the map.¹ It is an exercise in data visualization that is representative of a rapidly growing industry where the clear, quick communication of complex and often extremely large bodies of data is the goal. The Internet is usually presented diagrammatically as a distributed network, but when looking at the Worthen-Cheswick diagrams it functions and looks like a decentralized network. The vectorial diagram closes off the temporal rhythm of movement across time and space and collapses it into a two-dimensional spatial abstraction. However, what if the definition of a diagram was expanded? For Gilles Deleuze, in his essay "From the Archive to the Diagram," the diagram is a "spatio-temporal multiplicity" (30) and not simply a singular, two-dimensional reduction. He proposes that the diagram is a map of "relations between forces... which proceeds by primary non-localizable relations and at every moment passes through every point, or rather in every relation form one point to another" (32).

Since Munster's analysis in 2007, new forms of networks have emerged and with it new images, illustrations, and diagrammatic renderings aimed at more accurately capturing the three dimensional and temporal nature of a network. Networks are active processes, and due to their relational dynamic forms, they can only be partially represented in static or two-dimensional schematic abstractions given that the network's temporal nature is completely absent. What is of interest to the argument in the following chapters in particular are precisely the limitations of the illustrative diagram, for the work of art can present the essence of network functionality in new and differing ways, not simply as illustrations or representations *of* networks.

1.4 Network Cultures

In considering the various definitions of network through the lens of network theories and social theories outlined above, several questions emerge in regard to networks and their effect in the cultural realm. Are networks influencing human behavior? If so, how? How is the increasingly networked nature of our world impacting our relationships, our choices, and our very experience of the world? Is this the beginning of a new cultural paradigm? Vitale articulates the overwhelming nature of seeing the world through a networked lens. Once you begin, it seems a Pandora's box, and suddenly everything seems inescapably networked, connected, dynamic:

Static territories, rigid boundaries, linear trajectories, flat surfaces, and unitary individuals, all the basic components of the world of yesterday need to be recast. In order to truly deal with the challenges of our age, we will need to learn how to think, act, experiment, learn, value, and perhaps even dream networkedly. We need a new worldview: a philosophy of networks for our hyperconnected age. (Vitale 24)

The question remains whether this will organically happen or if it requires intentional efforts on the part of institutions and governments to embrace these new modes of being in the world.

What then is network culture? According to cultural theorist Kazys Varnelis, network culture is defined as a broadly historical phenomenon in which the network has become the dominant cultural logic of our times. In "The Meaning of Network Culture," he argues: "Although other ages have had their networks, ours is the first in the modern age in which the network is the dominant organizational paradigm, supplanting centralized hierarchies" (147). The volume explores how the Internet, digital media, and mobile technologies intersect with culture and examines the ways that social and cultural shifts created by these technologies have

transformed our relationship to (and definitions of) place, culture, and politics. Varnelis proposes that the Modern and Postmodern paradigms no longer work for us and that we have entered a new stage of consciousness. He aims to capture the rapidly shifting grounds of the dramatic societal changes that he sees are happening as a result of the rise of Internet use and mobile phone technologies, as smart phones were just emerging and supplanting desktop technologies as a main mode for accessing the Internet and its content. Communication networks are everywhere, both visible and hidden. Varnelis remarks: “In contrast to digital culture, under network culture information is less the product of discrete processing units than of the outcome of the networked relations between them, of links between people, between machines, and between machines and people” (146). The author boldly states that this cultural moment is no longer represented by the term “information age” and argues effectively that digital culture is being replaced with network culture. Varnelis clarifies, “But our networks are different. They are lighter, more pervasive, colonizing everyday life. There's no way to separate out technology from mainstream culture anymore.... They've become our primary means of communication not only in the workplace but beyond” (“Introduction” n.p).

For Varnelis, the contemporary subject – unlike its predecessors in the autonomous modernist subject and the fragmented postmodern subject – is “constituted within the network” and has become the networked subject (152). So not only do we live in a networked society, we ourselves are networked subjects. He states that “the subject is increasingly less sure of where the self begins and ends, the question of what should be private and shouldn’t fades” (154). In perhaps an oversimplified analysis, one might conclude that Modernity gave us an autonomous subject while Postmodernity brought the fragmented subject. Our current networked culture brings us a relational subject, a networked subject that is constituted within the network. In

network theory, “a node’s relationship to other networks is more important than its own uniqueness” (Varnelis 153). For Varnelis, the network is not just a relationship between people or information; it also includes things. For the networked subject, boundaries between self and other, private and public, real and virtual are increasingly blurred. So too in the art world, as it becomes increasingly less sure where an artwork begins and ends, just as the question of what should or shouldn’t be considered art also fades. He argues that network culture succeeds postmodernism by delivering “remix, shuffling together the diverse elements of present-day culture, blithely conflating high and low [...] while poaching its ‘as found’ contents from the world” (Varnelis 151).

The artists whose work will be addressed in the following chapters are concerned with the spaces between things, (i.e. objects, people, images, materials, ideas), and in such a way that it is the relational connections that constitute the work. It is precisely through this emphasis on relationality that their practice is closely related to this larger cultural phenomenon of network culture. As their work demonstrates, remix, nostalgia, the conflation of high and low are concepts central to network culture. So too the collision and disintegration of binary realms – high/low, digital/tactile, real/imaginary, private/public – are signature elements of network culture. Additionally, the appropriation of “as found” content (as Varnelis puts it) is also clearly evident in their works. To reiterate, the aim of this dissertation is not to create alternate, fixed, or reductive interpretations of networks; rather, the goal is to show how specific artworks can help us understand and rework notions of networks in additional and expansive ways. At the same time, the network framework allows us to expand and deepen our understanding of these contemporary works of art, how they act, what they do, how they generate meaning, and what they show us about ourselves as networked subjects.

1.5 Heterogeneous Spaces

Our epoch is one in which space takes for us the form of relations among sites.

– Michel Foucault, “Of Other Spaces”

Michel Foucault’s essay “Of Other Spaces” allows us to trace back the origins of the use of the term “network” as it pertains to its larger cultural implication. Published posthumously in 1986, the text was based on Foucault’s lecture notes from a lecture he gave in 1967. Foucault opens the essay by arguing:

We are in the epoch of simultaneity: we are in the epoch of juxtaposition, the epoch of the near and far, of the side-by-side, of the dispersed. We are at a moment, I believe, when our experience of the world is less that of a long life developing through time than that of a network that connects points and intersects with its own skein. (22)

Foucault’s use of the term “skein” refers to a long thread, loosely coiled and/or knotted after the yarn is removed from the reel, a quantity (hank) of yarn, a tangled or complicated arrangement, state, or situation, a web, a weave, a tangle. It also refers to an ovary membrane in fish, or a flock of fowl in flight v-shape formation. Taking up the implications of this material rethinking of what constitutes a network, his text’s emphasis on an “epoch of simultaneity” foreshadows Gilles Deleuze and Felix Guattari’s concept of the rhizome and the affirmation of the “and, and, and” that radically challenges binary thinking and the pervasive either/or mentality of oppositional thinking: good/bad, heaven/earth, sacred/profane, public/private, and so on. Foucault’s further definition of this epoch as one of “juxtaposition,” of “the near and far” and the “side by side,” can be read as the compression and collapsing of linear time, a non-linear viewing of history and

time that displaces any progressive view of history in which all events move toward a greater, more sophisticated moment, where time and events take place in succession along a linear path, each building on the moment that came before and superseding it.

Significantly, Foucault introduces the term “network” in this context as a way to define this epoch, declaring that “our experience of the world is less that of a long life developing through time than that of a network that connects points and intersects with its own skein” (22). Foucault’s analysis here indicates a shift in thinking from a linear, progressive model to an interconnected, heterotopic model for understanding our experience of the world. He follows this claim with an analysis of Structuralism, one that emphasizes its relational nature: “Structuralism, or at least that which is grouped under this slightly too general name, is the effort to establish, between elements that could have been connected on a temporal axis, *an ensemble of relations* that makes them appear as juxtaposed, set off against one another, implicated by each other – that makes them appear, in short, as *a sort of configuration*” (22, my emphasis). Here too Foucault proposes that elements that could have been arranged as linear are transformative, set off against one another, yet are still connected “as a sort of configuration,” in other words, like nodes within a network, individuated yet assembled. Structuralism in this context is defined as a methodology of understanding culture in terms of its structure or system. Its aim is to reveal the underlying structures that inform both language and human behavior (as in the work of Ferdinand de Saussure and Claude Lévi-Strauss). Foucault is often considered a post-structuralist since he resisted what he took to be the rigidity and determinism of Structuralism, as if proposing other ways of thinking the question of relationality that he found in Structuralist thinking. Indeed, it was Galileo Galilei’s discovery that the earth revolved around the sun which “opened up this space” that constituted a radical shift in the basic understanding of the universe.

According to Foucault: “the real scandal of Galileo's work lay not so much in his discovery, or rediscovery, that the earth revolved around the sun, but in his constitution of an infinite, and infinitely open space” (23).² One might argue that Foucault himself is attempting a similar move by analyzing a shift in current thinking away from a linear progression of a lifetime as it moves through space and time, proposing instead a new relational model of defining a site. He explains: “Today the site has been substituted for extension, which itself had replaced emplacement. The site is defined by relations of proximity between points or elements; formally, we can describe these relations as series, trees, or grids” (ibid.). He then reinforces this concept by declaring: “Our epoch is one in which space takes for us the form of relations among sites” (ibid.). It is precisely Foucault’s emphasis here on the primacy of relationality between sites that is significant for our understanding of network thinking, even when Foucault’s network often seems to emphasize the geographical and spatial dimensions of this relational “grid,” as opposed to their temporal dimensions as well.

Foucault’s space is a heterogeneous space, not a void but rather “a set of relations that delineates sites, which are irreducible to one another and absolutely not superimposable on one another” (23). It is a dynamic space, filled with a variety of spaces that one goes through or goes by and that are linked with other spaces. He determines there are two types of spaces: utopias (unreal spaces, placeless places) and heterotopias (real places). Foucault lists many examples of heterotopias such as café, cinemas, cemeteries, but also the home and the garden. They are organized by principles, which includes museums and libraries, which he further describes as “heterotopias of indefinitely accumulating time” (26). He differentiates between museums and libraries that reflected individual choice (until the seventeenth century) and the modern idea of establishing a “general archive, the will to enclose in one place, all times, all epochs, all forms...

that is itself outside of time...an indefinite accumulation of time in an immobile place” (ibid.).

Foucault contrasts the “sites of permanence and accumulation of time” with the fleeting nature of the festival site, a transitory, temporal place such as fairgrounds or the Polynesian themed vacation villages, declaring that heterotopias “always presuppose a system of opening and closing that both isolates them and makes them penetrable” (ibid.). He ends the essay with a reference to brothels and Jesuit colonies as extreme examples of illusionary, yet real spaces, spaces that stand in sharp contrast to the reality of the space of real life that is “messy, ill constructed and jumbled” (27). What is most useful about Foucault’s text within the context of this dissertation and the works it addresses is that “Of Other Spaces” proposes notions of relationality, space, and time, in larger cultural and social contexts, identifying heterogeneous spaces that are connected to one another as a networked “ensemble of relations.” He astutely observes and articulates a historic shift away from a linear progressive model of understanding space and time to that of a non-linear, relational model, a model that will serve our later analysis of the four artists’ case studies. As we will see, it is precisely the relational nature of the art works discussed that makes these projects networks. As such, the artists’ visually and conceptually diverse artistic practices are connected to one another in that they share a common nature, namely that of a dynamic relational form. A form, that allows these works to exist both inside and outside the gallery, across media and includes many objects, people, events, and information that without its networked form would remain outside of the work or be included only tangentially.

1.6 Systems Art

Foucault's analysis of a socio-spatial shift toward relationality is significant and not without contemporaneous context. In September of 1968, Jack Burnham's seminal article "Systems Aesthetics" was published in *Artforum*. His provocative opening sentence sums up the article's thesis: "A polarity is presently developing between the finite, unique work of fine art, i.e. painting, or sculpture, and conceptions which can loosely be termed 'un-objects,' these either being environments or artifacts which resist prevailing critical analysis" (31). Burnham further observes: "We are now in transition from an object-oriented culture to a systems oriented culture. Here change emanates not from things, but from the ways things are done" (32). The author traces this larger cultural phenomenon to a related art world occurrence he names "systems art." Burnham bases the term on the Pentagon's introduction of the term "systems analysis," declaring systems art to be the direct result of a "transition between major paradigms" that "may best express the state of present art," suggesting that "reasons for it lie in the nature of current technological shifts" (31). At the time, an electronic revolution had impacted all manner of social context; for example, space travel was proven possible, satellites were sent into orbit for observing weather patterns and enabled live television, the electric type writer was invented, and audio cassettes and supercomputers were able to be scaled down in size and price to make computers available for commercial and business use, among other things.

Burnham defines systems art as an expansion of the work of art from an autonomous, singular object to that of a system. He compares Picasso's cubism and Marcel Duchamp, noting that Duchamp's lasting influence demonstrated that "art does not reside in material entities, but in relations between people and people and the components of their environment" (ibid.). In a retort to Michael Fried's critique of post-formalist art as "theatrical" and "literalist," he notes:

The systems approach goes beyond a concern with staged environments and happenings; it deals in a revolutionary fashion with the larger problem of boundary concepts. In systems perspective there are no contrived confines such as the theater proscenium or picture frame. Conceptual focus rather than material limits define the system. Thus any situation, either in or outside the context of art, may be designed and judged as a system.” (32)

Burnham defines what is to be considered part of a “system” by arguing: “Inasmuch as a system may contain people, ideas, messages, atmospheric conditions, power sources, etc., a system is, to quote the systems biologist, Ludwig von Bertalanffy, a ‘complex of components in interaction,’ comprised of material, energy, and information in various degrees of organization” (32). Burnham’s deployment here of Bertalanffy’s term for systems – “a complex of components in interaction” – is clearly a precursor to emerging theories of networks.

A specific example Burnham provides to support his argument is the exhibition *Art by Telephone* held at the Museum of Contemporary Art in Chicago, where the presentation of a work by László Moholy-Nagy included the recorded conversation between artist and manufacturer. Burnham emphasized in italics that it was “to become part of the displayed work of art” and declared that for systems art, “information, in whatever form conveyed, becomes a viable aesthetic consideration” (32). He also cites Robert Morris’ *Untitled*, a painted wood piece from 1966 exhibited at the 68th American Show at the Chicago Art Institute in the same year. Morris had the piece recreated through sending instructions to carpenters based in Chicago rather than have the work shipped from NY, as this was more economical. Burnham declares: “In the

context of a systems aesthetic, possession of a privately fabricated work is no longer important. Accurate information takes priority over history and geographical location” (ibid.). As further proof, he also mentions Carl Andre’s modular forms, Robert Smithson’s *Site-Selections*, and Les Levine’s environments of vacuum-formed, modular plastic units.

As a result of this new mode of artistic practice, he also notes that the role of the artist is also changing from solitary maker and/or master craftsman who produces “art for art’s sake,” to that of a “quasi-political provocateur” or “perspectivist.” As Burnham notes: “In evaluating systems the artist is a perspectivist considering goals, boundaries, structure, input, output, and related activity inside and outside the system. Where the object almost always has a fixed shape and boundaries, the consistency of a system may be altered in time and space, its behavior determined both by external conditions and its mechanisms of control” (32). Furthermore, the artist must become interdisciplinary and expand their practice beyond the field of art:

“Consequently some of the more aware sculptors no longer think like sculptors, but they assume a span of problems more natural to architects, urban planners, civil engineers, electronic technicians, and cultural anthropologists” (34). He assures the reader that, “this is not as pretentious as some critics have insisted. It is a legitimate extension of McLuhan’s remark about Pop Art when he said that it was an announcement that the entire environment was ready to become a work of art” (ibid.).

Systems Aesthetics’ prophetic statement – that “in the context of a systems aesthetic, possession of a privately fabricated work is no longer important. Accurate information takes priority over history and geographical location” (32) – foreshadows the advent of a later expansion of systems art in installation art and information arts. Again, Burnham’s analysis of the system as a dynamic physical and temporal form is an early indicator of network thinking. In

fact, Burnham's essay further suggests that the notion of an artwork as distributed across time and space is not a post-1995 phenomenon (the advent of the World Wide Web) but was already in play in the late 1960s. For by that time, Burnham had already observed: 1) the concept of a distributed work of art; 2) the artwork as a spatial and temporal system; and 3) systems art as a "complex of components in interaction" that could include "people, ideas, messages, atmospheric conditions, power sources, etc." The dissertation argues that all three of Burnham's concepts are central to understanding the artwork as network.

1.7 Grids, Diagrams, and Networks

One cannot discuss the relation between artworks and networks without acknowledging the importance of the grid in modern art as a visual precursor. Rosalind Krauss – known for her astute analysis of modernist art and its transition towards the postmodern – discusses the grid on several occasions throughout her career. In terms of critical texts relevant to the chapters that follow, I wish to highlight two of Krauss' essays, "Grids" and "Sculpture in the Expanded Field," both from 1979. The first is discussed as a means to illustrate the documentation of the grid as the underlying structure of modernist art, and the latter as a text that documents the shift away from the grid and modernist thinking to the expanded field of postmodernist thinking. The question that motivates our reading of Krauss here turns on how her emphasis on the grid shapes our thinking of the artwork as network? In other words, perhaps the network is to the art of *our* time what the grid was to the art of the modernist era, and the expanded field was to the postmodern era. It is a new model or paradigm for the art of our times.

In "Grids," Krauss addresses the importance of the grid to modernist painting. She distinguishes two types of relationship to the grid: centrifugal or centripetal. The centrifugal grid,

or “beyond-the frame attitude,” extends the work beyond boundaries of the painting (as object) and extends into the infinite space that is the world. She explains this as follows: “By virtue of the grid, the given work of art is presented as a mere fragment, a tiny piece arbitrarily cropped from an infinitely larger fabric. Thus, the grid operates from the work of art outward, compelling our acknowledgement of a world beyond the frame (60). The centripetal grid, by contrast, works from the outside of the painting within the picture plane, it is “complete and internally organized” rather than being “continuous with the world” (63). Krauss calls this the “within-the-frame attitude”: “The [centripetal] grid is an introjection of the boundaries of the world into the interior of the work; it is a mapping of the space inside the frame onto itself. It is a mode of repetition, the content of which is the conventional nature of art itself” (61). Krauss thus sets up a duality and set of binary oppositions to structure the argument including: inside/outside, infinity/containment, and continuity/autonomy. She then describes the function of the grid as both temporal and spatial, suggesting that its defining characteristic that it is a “form that is ubiquitous of the art of our century” (52). Additionally, she defines its purpose in terms of art that secures its own autonomy and self-purpose:

Insofar as its order is that of pure relationship, the grid is a way of abrogating the claims of natural objects to have an order particular to themselves; the relationships in the aesthetic field are shown by the grid to be in a world apart and, with respect to natural objects, to be both prior and final. The grid declares the space of art to be at once autonomous and autotelic. (51-52)

Krauss also addresses its capacity to bridge the gap between science and spiritualism and adds a psychoanalytic dimension by analyzing the grid’s “capacities to repress” both the scientific and the spiritual. She concludes her essay by reiterating the powerful hold the grid had on modernist

art: “Indeed, as we have a more and more extended experience of the grid, we have discovered that one of the most modernist things about it is its capacity to serve as a paradigm or model for the anti-developmental, the anti-narrative, the anti-historical” (64). In short, Krauss equates the grid with the very essence of modernism.

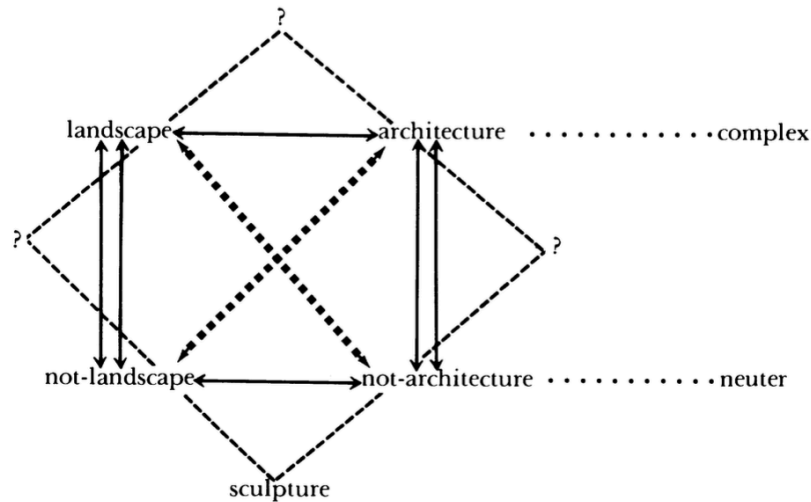


Fig. 7. Rosalind Krauss, illustration of the quaternary field model (1979).

Krauss wrote “Grids” and “Sculpture in the Expanded Field” at a time when Modernism was in the process of being surpassed by a new, emergent model of the postmodern. In contrast to her analogy of the grid, which was limited to the field of painting, her argument in the “Expanded Field” essay is focused on the domain of sculpture. In both essays, she uses a mathematical model to explain her case. For “Grids,” as the title suggests, she uses the grid as a model underlying abstract painting, whereas for the “Expanded Field” she offers a new mathematic model derived from a Structuralist mapping operation known as a “Piaget group,” which is illustrated through a diagram or “quaternary field” (see fig. 7). In this case, the diagram is not a model that visualizes the underlying structure of a painting, as she explained through the

use of the grid in Agnes Martin's work, among many others; rather, this diagram is meant to illustrate a phenomenon in the field of sculpture, where artists are making work that falls outside of the established categories of modernist sculpture. She describes this transformation as a "logical expansion" whereby a set of binaries (not sculpture, not architecture) is "transformed into a quaternary field which both mirrors the original opposition and at the same time opens it" (37). Her earlier emphasis on binaries and the modernist grid has thus now been expanded to include more axes (as if there are two grids overlaying each other at a 45° angle). Her diagram highlights the reciprocal relationships – the "edges" – between the various "nodes" such as "landscape," "architecture," and so on, relationships that can be read as a type of network diagram.

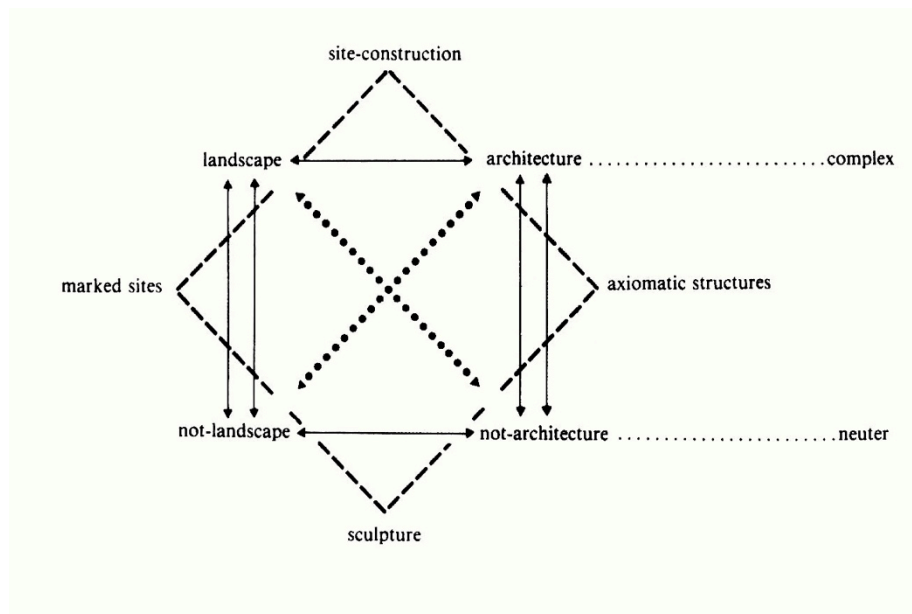


Fig. 8. Rosalind Krauss, illustration of the complex model (1979).

This new “complex model” is used to capture and reflect the many emergent three-dimensional art forms that could no longer be classified by the category of sculpture, which Krauss defines as “not-landscape” plus “not-architecture” (37). These contradictory relationships are in turn opposed by their opposites “landscape” and “architecture,” which Krauss terms “the complex.” Krauss acknowledges that other (non-western, earlier) cultures have generated works in this category, even if this work was not included in “ours.” In addition to “the complex,” she also introduces the newly added categories of “marked sites,” “site-constructions,” and “axiomatic structures” as categories for classifying new works (that are now primarily identified as earthworks) such as those created by Robert Smithson, Robert Morris, Nancy Holt, and Alyce Aycock. She then summarizes the diagrammatic relationship as follows: “The expanded field is thus generated by problematizing the set of oppositions between which the modernist category sculpture is suspended” (38). Modernist sculpture, she argues (recalling a phrase that we observed in Foucault’s “Of Other Spaces”), moves away from its “site” and becomes “placeless and self-referential,” essentially “nomadic” (280). Additionally, its relationship to the base/pedestal is altered since it becomes absorbed into the art object itself: “the sculpture depicts its own autonomy” (ibid). Krauss aligns her theory of the expanded field with the term postmodernism, a counterpoint to the medium specificity and “demand for the purity” of modernism.

It is in this sense that Krauss is also able to address a critique of postmodern work as “eclectic,” emphasizing that postmodernist practice is not “defined in relation to a medium,” but rather “on a set of cultural terms” for which any medium can be used (288). She solidifies this with an analogy of the “field” as the new operative mode: “Thus the field provides both for an expanded, but finite set of related positions for a given artist to occupy and explore, and for an

organization of work that is not dictated by the conditions of a particular medium” (288-289).

According to Krauss, “the expanded field of postmodernism occurs at a specific moment in the recent history of art”; it is “a historical event with a determinant structure” (44) that could be mapped in the quaternary field diagram.

The distinction between Krauss’ affirmation of the grid and field and the concept of the network is instructive, for one might argue that both of Krauss’ models no longer work completely today in the same way and that a new structural model has emerged, namely the network. It is important to remember that the network model – although a structural model like Krauss’ models – is not a fixed model but rather a dynamic model that is capable of expanding and contracting. It is a model that is not comprised of a series of binary oppositions defined by a finite relational activity (i.e. a two-way street), but can be characterized instead as a multiplicitous sets of Deleuzian “and, and, ands....” It is a system where the relational possibilities are complex and infinite. Networked artworks combine the postmodern embracing of literature, narrative, and discourse (history) with a new system where the relational form (the network) includes both the grid and the expanded field. However, both the grid and the field are flat, geometrically ordered, and concerned with the surface of things (they are diagrams), whereas the network’s structure is deep, dynamic, and multidimensional.

The question thus emerges whether the network can serve as a contemporary diagrammatic model, signifying an even further expanded field of artistic production, or whether it presents something entirely different? If Modernism is characterized by a breaking away from the past, and if we equate Postmodernism with a re-embracing of the past (as pastiche/collage), what is the model for the networked artwork’s relationship to the past? Is it the mash-up? A feedback loop? My argument lies parallel to Krauss’ in the sense

that I too find myself at a moment in time where a new paradigm is emerging, one connected to the network. Krauss identified the grid as the ubiquitous art form of the twentieth century. The network has most certainly emerged as the prominent form of our own current moment, although whether it will come to visually represent an entire century of cultural production remains to be seen. When analyzing the structures of artworks and recognizing within them the structure of a network, the network provides us with a new model (or system) through which to understand contemporary artistic practice. Whereas Clement Greenberg's model was related to the artwork as a formal entity (organism) and Krauss' model was structural (mathematic), the interpretive model addressed in light of the works included in the following chapters is the network. Just as Krauss in 1979 identified new concerns within postmodern art practice, concerns that no longer reflected those of modernism, the set of conditions informing artistic practice today can no longer be described as postmodern. I propose, therefore, that we need to consider new interpretive models for the work of our current time, which – in the case of the works discussed in this research – is a networked model.

That Krauss' arguments are still relevant today is evidenced by the recent publication of *Retracing the Expanded Field: Encounters Between Art and Architecture* (2014), an anthology of contemporary texts that resulted from a 2007 conference of the same title organized at Princeton University's School of Architecture. Both the conference and the book discussed the continued influence of Krauss' original essay. Its purpose is twofold: first, to revisit conditions that frame the origin of Krauss' essay, and second, to examine it within the context of subsequently expanded practices of art and architecture (viii). The editors Spyros Papapetros and Julian Rose state in the introduction: "The history

of the expanded field is thus as open and ongoing as the future practices that will continue to constitute it” (xiii). Although the continued influence and significance of Krauss’ “Sculpture in the Expanded Field” cannot be denied, the two closing statements of the book’s introduction suggest that new diagrammatic forms may be warranted, especially since, “ultimately, the expanded field designates not only a set of axiomatic principles but also a constellation of themes that can reflect as well as deflect the orientation of the scheme devised by the essay’s author.” As they argue, “the diagram’s resilient afterlife demonstrates that the Structuralist framework that Krauss was so instrumental in introducing into art historical writing has not dissipated entirely; instead, it has generated a number of alternative geometries that both retrace and transgress the grid of her crystalline pattern” (xvii). Perhaps, then, these new diagrammatic models include the multi-dimensional, dynamic form of a network, especially since it too provides a “constellation of themes” and an “alternative geometry” that seems reflective of our contemporaneity. Indeed, several authors in the volume address the transition of the grid into a network by way of representing a transition from a modern to the postmodern sensibility. For instance, Lars Bang Larsen in “The Unimaginable Globality of Networks” asks us to reconsider this relation between the grid and the network: “the grid epitomized modernism, as the interior space of reason, planning and representation. The network, on the other hand, is grid-like but also a flexible and plastic space of conjecture and proliferating connections” (12). In the face of the world’s increasing complexity and heterogeneity, the grid thus fails to capture this complexity and heterogeneity. In the words of Vitale: “With each passing year, space appears less like a grid, and time less like a linear progression, even as neither seems to be returning to the simple bordered terrains or cyclical seasonal patterns of old” (4).

1.8 The Rhizome

In addition to Foucault's heterogeneous space, Burnham's systems art, and Krauss' systematic approach laid out in various grids and diagrams, there is fourth concept to consider in relation to our understanding of the notion of network, namely that of the "rhizome." The rhizome is a concept brought to the foreground of twentieth century theoretical thinking by Deleuze and Guattari's book *A Thousand Plateaus* (1984) where a short text titled "The Rhizome" forms its preface. The book is an open-ended system, a treatise about flow and flux, movement and multiplicity. It is a call to action to build up intensity in life and create a circumstance of heightened critical awareness and a highly energized state. Organized around a series of "plateaus," the authors declare that "a plateau is always in the middle, not at the beginning or the end" (21), suggesting how multiple connections and passages can be built between the various hubs of activity and creating a "fabric of heightened states" (Massumi, xiv). As a site of multiplicity, when extended these plateaus form a rhizome. The fundamental image of classic, western philosophy is the root-tree, which is based on the binary logic of the dichotomy. It is hierarchical, centralized, and filled with binaries. Deleuze and Guattari criticize this dualism of the oldest form of thought since it limits the affirmation of multiplicities. Their goal is to break with the dualism of binaries set up by this system they call the arborescent (based on hierarchical tree forms). They advocate instead for the diverse and distributed form of the rhizome. The principal characteristics of the rhizome are "connection" and "heterogeneity," with "any point of a rhizome having the capability to connect to anything other" (7). Their third principle is "multiplicity," which has "neither subject nor object only determinations, magnitudes, and dimensions" (8). They continue: "There are no points or positions in a rhizome, such as those found in a structure, tree, or root. There are only lines" (ibid). The fourth principle

is an “assignifying rupture,” also known as “line of flight.” It is an interruption of the structure or line, which is part of the rhizome (9). The fifth and sixth principles of the rhizome are those of “cartography and decalcomania” (ibid).

Deleuze and Guattari’s most famous example of a rhizomatic connection is the relationship between a wasp and an orchid. They are separate elements, plant and animal, that are connected and depend on each other for survival and who together form a rhizome. Deleuze and Guattari ask: “how could movements of deterritorialization and processes of reterritorialization not be relative, always connected, caught up in one another?” (10). They use the scenario of the wasp and the orchid as an example of deterritorialization and reterritorialization, both the animal and plant bringing out one state in the other, interlinking and repeating, thus forming a site of intensity, what they term a plateau. Viruses are another example of the rhizome: they form a symbiotic relationship with their host site, at times “jumping” from one line (species) to another. This moment of discontinuity and rupture is rhizomatic and a perfectly “normal” phenomenon in nature. Rhizomatic behavior is also evident when considering cartography and decalcomania, the process of transferring a picture from one surface onto another. For Deleuze and Guattari, “tracings are like the leaves on a tree ... all of tree logic is a logic of tracing and reproduction” (12). By contrast, the rhizome is not a tracing but rather forms a map. The map has multiple entry points. It is “an experimentation in contact with the real” (ibid). A tracing is closed representation of the unconscious whereas the map is open, connected, and susceptible to change. A tracing tries to translate and reduce the map into an image. However, they can be connected through to the map and be incorporated. There are, for example, various “map-tracings” or “rhizome-root-assemblages” which, as a result of their unusual combinations, can become deterritorializations. The map is a form of territorialization and is closely related to the

detrterritorialized space. It is always *en route* from one state to the other, always in a state of “becoming.” Conventional art is part of this space. By signing a work of art, you claim it as yours and it becomes part of the territorial machine. Another example of this are tattoos as a way of claiming the body as a territory. The territorial is concerned with boundaries, which are always in flux and linked to the center, which is where the intensity of activity happens. Again, Deleuze and Guattari set up counter points, but connect passages between them and allow for the matter to flow between the various states on the spectrum.

The world of Deleuze and Guattari is not binary, nor static. Although they set up dichotomies as a method of creating understanding of a spectrum, the most notable thing to remember is that all things are in flux, constantly changing, folding in on each other, becoming one or the other and then becoming remixed again. Flowing from one state to the next, they create a place between. It is non-dictatorial, non-dialectic, non-structured, non-reproducible place. Instead, it is a collection of lines and multiplicities, always changing, moving. The “lines of flight” or “detrterritorializations” are not links between points as in a structured system like a tree, but rather a line that passes through points and redirects, non-centered. It is about the movement that speeds through places and points, emerging from the middle rather than beginning and end: the place between things, and as such a relational form. What Deleuze and Guattari are describing is, in essence, a networked space. The place between things, the middle, is a relational space, which can be phrased as the space between nodes, people, objects, ideas – in other words – a “network.” The state of flux and continuous state of remixing, looping, and folding in on itself is also a characteristic of networks.

The wide influence of Deleuze and Guattari’s text in understanding networks is undeniable. According to Lars Bang Larsen, the concept of the rhizome “owes its influence to its

capacity for lateral articulation of structures and events” (14). When considering history through a rhizomatic lens, “instead of primal scenes and immaculate origins, this view would accept cross pollinations and irregular developments at all levels of life and culture. When binary recapture of truth and essence is prevented, non-linear energies and influences are set free” (ibid). Umberto Eco in “The Encyclopedia as Labyrinth” describes the rhizome as a “vegetable metaphor,” “a tangle of bulbs and tubers”; “it is dismountable, reversible and susceptible to continual modifications ... it is multi-dimensionally complicated but also because its structure changes through time” (qtd. in Larsen 30-31). Galloway also evokes the rhizome in his discussion of the distributed network, which he deems “native to Deleuze’s control societies”: “like the rhizome, each node in a distributed network may establish direct communication with another node, without having to appeal to a hierarchical intermediary” (qtd. in Larsen 166).



Fig. 9. Installation View. Matthew Ritchie, *Universal Cell* (2005).

An example of an artistic practice that is influenced by the concept of a rhizome is that of Matthew Ritchie, whose diverse, expansive practice is an embodiment of rhizomatic thinking. For *Universal Cell* (2005), Ritchie started by scanning several drawings onto his computer, which became a set of digital vector files. The files were then sent to a machine that cut the drawings out of a metal sheet. The many drawn components became a fractal pattern, functioning as three-dimensional, modular building blocks to become architectural, sculptural forms. The piece is a collaboration between the artist, the computer, the machine, and a group of fabricators. In a sense, it is a living document of its own history and all the “hands” (human and machine) that participated in its making.

Those same vector drawings were projected onto the gallery wall, where they were then reproduced and painted by hand. They were combined with framed water-colors on paper, adhesive vinyl on the floor, and repeated as glowing wall-mounted light boxes and an interactive digital game of chance played on a LED screen console that was in turn accompanied by projections of the game results on the wall. Throughout the process, there is a consistent vocabulary of shapes and lines that teeters on the edge of abstraction and figuration. *Universal Cell* explores a single vocabulary of a few original drawings across multiple scales, media, and modes of artistic production. Their organization is rhizomatic in nature as its multiplicitous forms intersect, interconnect, and disconnect at various points. It is simultaneously cohesive and diverse, expansive yet controlled, repetitive yet original, all the while inviting contemplation in which we are asked to question our place in the universe.



Fig. 10. Left: Installation View. Ryan McGinness, *Paris Mindscapes* (2016).



Fig. 11. Right: Installation View. Ryan McGinness, *Ryan McGinness Works* (2009).

A second artist whose practice can be characterized as rhizomatic is Ryan McGinness, whose ornate vocabulary of visually sensual signs and linear graphic marks appears across paintings, prints, sculptures, aluminum objects, skateboards, and t-shirts. McGinness skillfully integrates dense design forms with poetic content, generating a unique alphabet of forms that repeat as a prolific visual language, transcribable across multiple surfaces. His opulent iconography is at once personal and universal, acting as a set of metadata that is deployed as a unique visual communication system. The artist frequently quotes and references well-known artworks and symbols of popular culture. His baroque organic forms are frequently repeated and applied across both fine art and commercial applications, even extending into unauthorized territories of use and exploited in t-shirts, TV shows, and other media. His work explores surface and depth, simplicity and complexity, scale and surface patterns, and repetition is innate to the process. The silkscreened paintings evoke psychedelic experiments that allow a discerning viewer to become immersed in the imagery and lose sense of their surroundings.



Fig. 12. Ryan McGinness, *Ryan McGinness: Studio View and Collection Views* (2017).

Most recently, the exhibition *Ryan McGinness: Studio View and Collection Views*, held at the Cranbrook Art Museum in Detroit, featured a large-scale installation based on the artist's studio practice that included thirty-six paintings, sketches, and a room sized "maze" made out of the silkscreen frames McGinness uses to create his work. By including the elements of the process of their making such as the sketches and screens as part of the final work, *Studio Views* shows how an image icon "travels" from a sketch to a digital image, then through a silkscreen and onto the painted surface. *Studio Views* serves as yet another iteration of McGinness' familiar vocabulary that advances to new places while remaining connected. In short, the work functions like a rhizome.