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後人類傳介：文·溫德斯紀錄片的科技動能

Posthuman Mediations: Technological Being in Wim Wenders's
Documentaries

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Wenders's Documentaries

　　本論文係郭寶婷君（R03122017）在國立臺灣大學外國語文學系完成之碩士學位論文，於民國 106 年 6 月 9 日承下列考試委員審查通過及口試及格，特此證明

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Abstract
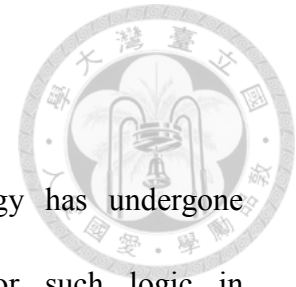
From modernity to postmodernity, the logic of technology has undergone dramatic change. Traditional cinema studies often search for such logic in science-fiction films, where technology is usually represented as an exaggerated image. Seeing documentary as a network system, the current study uses a posthumanist view as a lens through which to look at documentaries made by Wim Wenders in search for contemporary logic of technology.

This study takes the posthumanist view as a philosophical stand which points to a tendency to stress the informational pattern over material instantiation, which thinks of the body as the original prosthesis, and regards the world as being virtual with multiplicities. This study seeks to shed light on three aspects of technology through three documentary films by Wenders. Firstly, through *Tokyo-Ga* (1985), this study looks at distributed agency and automated actors in the distributed network. Secondly, in the documentary is *Pina* (2011), I investigate new media techniques and the mediated experience. Finally, through *Notebook on Cities and Clothes* (1989), this study discusses posthuman social issues namely control society and the paradox of control. By the end, I conclude the study by reflecting on the logic of technology and the posthumanist view as methodology in literary studies.

Keywords: Wim Wenders; Documentary; the Posthuman; New Media; Logic of Technology; Literature and Science

論文摘要

在現代主義到後現代主義的進程中，科技經歷了巨大變革。為尋找電影中的科技邏輯，學者們常常以科幻題材電影作為藍本，而找到的時常是誇大的、硬科幻的未來科技呈現。本論文試圖突破這種方法，以後人類的觀點重訪德國導演文・溫德斯的紀錄片，將紀錄片視作系統網絡，從而在紀錄片中尋找當代科技邏輯的脈絡。

本文視後人類主義為一種廣義的哲學視角，認為後人類主義不侷限於探討人與非人關係、人類未來、賽博格等議題，而是一種重視抽象信息流動模式大於物質實體、視身體為原始增能輔助、指向世界潛能與虛位性的哲學思維。以後人類主義作為一種視角，可以幫助我們在紀錄片中接近科技的本質。

本文通過三個章節用後人類的觀點分析文・溫德斯三部紀錄片，探討科技邏輯的三個面向：第一章探討致敬小津安二郎的紀錄片《尋找小津》中，導演在東京旅行時拍攝的隨機場景元素有其自主動能，形成有機動態網絡，在複雜系統模式的運作下，構成小津的虛位主體性；第二章討論紀錄片《皮娜・鮑許》對強調臨場感的舞蹈表演進行虛擬實境化數位製作，點出數位媒體增強傳介經驗，並透過體觸在虛擬劇場中投射身體運動；第三章將探討《城市時裝速記》中數位科技帶來的社會效應，帶出控制社會架構以及其背後悖論的討論。最後，本文將總結從紀錄片中分析出的當代科技邏輯，並為學術語境提供文學與科學研究中後人類觀點作為方法論的可能性。

關鍵字：文・溫德斯、紀錄片、後人類、新媒體、科技邏輯、文學與科學

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Introduction: a Posthumanist Study of Documentary Film

Posthumanism as Philosophical Stand

From modernity to postmodernity, technology has undergone dramatic change. With the rise of cyberpunk and techno-mania in the 1980s and 90s, technology is attracting increasing attention in literary studies and becoming a more profound topic not being purely celebrated or decried as utopian or dystopian.

Posthumanism began to appear in contemporary critical discourse in the mid-1990s with the influence brought by Donna Haraway's *A Cyborg Manifesto*, leading to a turn to human-nonhuman relationship, but is accompanied by debates and concerns.[1] Adopting a posthumanist view, this study stands with Katherine Hayles (1999a), Neil Badmington (2003), and Cary Wolfe's (2010) position that the term is not a continuation of humanism, nor a turn to transhumanism.[2] Instead, it rethinks the being of humans and nonhumans, recognizing the blurred boundaries between "bodily existence and computer simulation, cybernetic mechanism and biological organism, robot teleology and human goals" (Hayles 1999a, 3).

Scholars often bring in posthumanism as an approach to solve issues concerning the human future. However, I argue that the development of posthumanism as separate

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[1] *A Cyborg Manifesto* is published in 1984. In the concept of "cyborg", the Manifesto rejects rigid boundaries notably between human and animal, human and machine. The Manifesto is considered a milestone in the development of posthumanist theory.
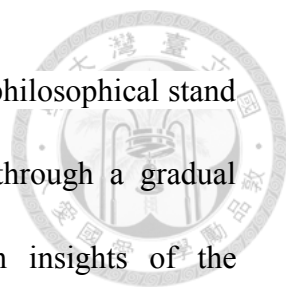
[2] Badmington brings Jacques Derrida into the picture in his theorization of posthumanism's position vis-à-vis humanism. Quoting Derrida's view in *Violence* that "the pure-outside is possible to lodge oneself within traditional conceptuality in order to destroy it" (Derrida 1978, 111), Badmington reveals the internal instability of humanism and argues that humanism is forever rewriting itself as posthumanism.

from human histories. Rather, it calls for philosophical inquiries on technology and its logic.

As I mentioned above, technology has undergone dramatic change. In psychophysics and neurophysiology, random generators are found. Moreover, in the late twentieth and twenty-first centuries, studies of control as self-regulation stem from the interconnection of digital computers. I do not intend to review the history of technological and scientific development. My point is, there is a shift from the twentieth-century theories on technology by Walter Benjamin, Martin Heidegger, Jean Baudrillard, Paul Virilio, etc., to new logics and paradigms emerging from the development of chaos theory, complexity, self-organization, connectionism and neural networks. This new logic is not only operating in the field of science, but is changing larger social paradigms. As John Johnston (2012) points out, referring to information theory and cybernetics theory developed by Claude Shannon, Norbert Wiener, John von Neumann, and others, "it can be argued that the work of this group made possible a genuine 'epistemological break,' the full consequences of which we are only now beginning to witness" (7). The development of technology is changing the epistemology of other areas, for example, social, economic and cultural areas. Such development urges us to break disciplinary boundaries and adopt new methodologies to look at issues in technological light. I intend to use a posthumanist view to reflect on this shift. And this project will particularly address the literary issues, especially documentaries as my "text."

Posthumanism is considered as a suitable lens to look at this technological change

and its logic. In this study, I propose to use a posthumanist view as philosophical stand for this investigation, for the logic of technology is developed through a gradual process and will still be developing and evolving. Only with insights of the posthumanist view can we see that a new kind of technical object is born and becoming organic among the systems (Simondon 1958); that technology is an extension of our bodies into the world (McLuhan 1994); that information as a function of the probability distribution of the elements comprises the message (Shannon 2001); that interactive computer technologies encourage us to revel in our dispersed subjectivity, our unbounded physical form (Noland 2006); that the manner of becoming a cyborg is mechanistic or prosthetic; and that technical beings embody complex temporalities, and the complex temporalities are embodied in living beings, interfacing between humans and networked and programmable machines (Hayles 2012). Seb Franklin (2015) addresses control as a cultural logic and locates such logic in the information age. My methodology, to a large extent, is the same with Franklin's: to investigate how thought and practice related to documentary film making are imbricated with technology.

Logic of Technology

Technology is something very messy and complex. Yet as Hughes (2004) points out, many of us still reduce technology's complexity and contradictions to computers and the Internet (1). Bruno Latour (2003) describes this highly technologized and posthumanist world as a "rather horrible melting pots" (38), where the domains of

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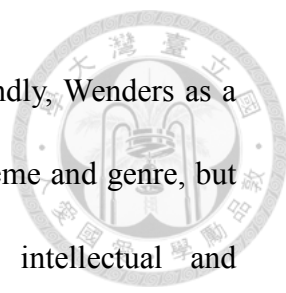
science no longer stay only on surfaces of spheres of politics, values, and norms. Proposing this thesis, I offer an appeal for a deeper understanding of the logic of technology in the face of massive technical distribution, to make sense of questions of agency, complexity, and evolution.

Technology and information is not only material, but is also becoming conceptual as logics. Friedrich A. Kittler, for example, finds great significance in the new communications network brought by the Internet and fiber optics. Saul Ostrow (2003) interprets Kittler's focus as twofold: "first, that information and communication had gained their autonomy, and second, that we are now moving toward becoming the object of technological developments that were once secreted within our body" (x). Bernard Stiegler (1996) also offers critique that technics itself is becoming a "heuristic vector," a new paradigm that reveals "we humans are ourselves computers" (189). In a way, we are not simply becoming cyborgs, rather, we are conceptually becoming reflections of our information systems. In this project, I name the patterns of technology's imbrication with the non-technological beings and this conceptual technological being of human ourselves "the logic of technology." This study, adopting such a position, takes a posthumanist view as a philosophical stand which points to a tendency to stress informational pattern over material instantiation, thinks of the body as the original prosthesis, and regards the world as virtual with multiplicity.

In cinema studies in particular, there are famous examples of films reflecting the logic of technology in certain periods: *Metropolis* (1927) demonstrates the shock of

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large-scale industrial production; *Videodrome* (1983) reflects a sense of horror towards the rise of modern mass media. Both are science fiction films and depict a rather predictable technological world where technological developments are represented as a fictional, or often an exaggerated image.

Instead of science fiction films like the abovementioned examples, this study selects documentaries made by the award-winning German director Wim Wenders for investigation. The choice may seem odd to readers at first: documentaries made by Wenders does not deal with technology. In fact, Wenders's works have been largely regarded as humanist in nature, rather than anything posthumanist. However, this study selects such pieces of work on purpose. Firstly, documentary film is produced by gathering, processing, and packaging information. How filmmakers select a portion of reality and make it into visual expression is largely influenced by technology in his or her time. The influence is both material and conceptual: material in terms of camera, lens and postproduction method used, and conceptual in terms of the information gathering and the delivery patterns. Unlike fictional movies where plots, characters and even movements are carefully arranged and one scene can be shot repeatedly until it is satisfactorily done, in documentary, due to its nonfictional nature, the filmmaker usually do not have the control of every element in the environment but have to be adaptive according to changing circumstances. The process of making a documentary, therefore, contains many uncontrollable and contingent elements, which may include even the camera itself. That makes a documentary a system with more potentiality for technological elements, which is more open than fictional films. I will elaborate more

on this point in the next section about documentary as genre. Secondly, Wenders as a director is suitable for my investigation. His films are diverse in theme and genre, but consistent in questioning the cinematic medium. Wenders's intellectual and self-reflexive discourse is discernable in his choice of themes and production method, especially in his documentaries (Graf 2002, 1). Thus, his documentaries are suitable for investigation.

The contemporary logic of technology has largely mutated today given that waves of technological development and their influence on society have taken place. The methodology of finding the logic of technology in documentaries through a posthumanist view would be a bold attempt in academic discourse – it surpasses traditional approaches in cinema or documentary studies, and also demonstrates the availability of posthumanism as a philosophical approach to look at general cultural works. Adopting such methodology, the study will provide a new perspective to understand contemporary logic of technology.

Documentary Film as a Genre

There is no universal or single definition on what is documentary film. Scholars have adopted their different ways to describe documentary: John Grierson's "the creative interpretation of actuality" was one dictum, while John Corner (1996) calls documentary "the art of record." Brain Winston (1995) refers to it as "claiming the real." The difficulty of capturing the definition of documentary lies in one dilemma: documentary is something that is attempting to represent reality, but uses specific
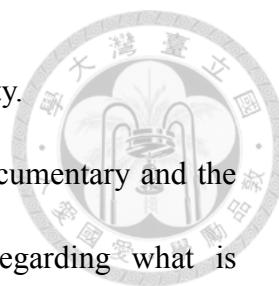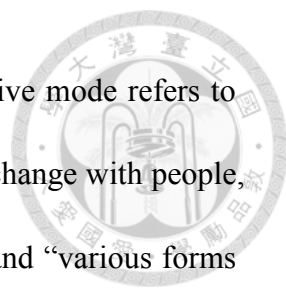
aesthetic devices. Such devices would usually distort or change reality.

Paul Ward (2005) gives an overview of the key features of documentary and the theoretical debate on this subject matter. His starting point regarding what is documentary is the distinction between "nonfiction" and "documentary." "All documentary films are nonfictional," he writes, "but not all nonfictional films are documentaries" (7). Ward argues that the unchanging thing about documentary is "a form that makes assertions or truth claims about the real world or real people in that world" (8). Meanwhile, it is also undeniable that the aesthetic side is a crucial part in documentary filmmaking. In other words, documentary has its unchanging feature of representing the real, but *how* it does it is always subject to change.

Therefore, the "*how*" is the most interesting part in documentary, i.e., the filming process and storytelling pattern. To explain "how," cinema scholars have proposed models to describe ways of documentary storytelling. Bill Nichols proposes a few "modes." His famous documentary typology includes expository, observational, interactive and reflexive modes.[3] In later years, he adds performative mode and participatory mode to the typology.[4] Nichols, in his recent works, also tends to focus more on the term "poetic" mode. By "poetic," Nichols refers to the poetic rhetorical structure and associations of mood, tone, and texture. An example is the mesmeric montage style in Godfrey Reggio's *Koyaanisqatsi* (1983). In addition, stressing the "interactive" or participatory mode, Nichols privileges interactions between the filmmaker and what they are filming. Instead of being neutral, detached, and

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[3] See *Representing Reality* (1991).
[4] See *Blurred Boundaries* (1994) and *Introduction to Documentary* (2001).

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observational (the didacticism of the expository mode), the interactive mode refers to one in which the filmmaker values active engagement and social exchange with people, where "textual authority shifts towards the social actors recruited" and "various forms of monologue and dialogue predominate" (44).

Toni De Bromhead (1996) criticizes Nichols's rational categorization of documentary modes, emphasizing hearts, souls and emotional response in documentary's storytelling, bringing in other modes like the episodic mode, the hybrid mode, etc. However, for the current posthumanist project, there is no essential difference between De Bromhead's modes and Nichols's ones, at least because in one documentary film there can be multiple modes and there is no clear boundary between one and another.

Recent research tends to address rapid evolutions in documentary films, especially in regard to interactivity. In a paper focusing on this new type of documentary that utilizes digital technology, Aston and Gaudenzi (2012) argue that the interactive documentary is *not* a result of the chronological evolution of the documentary genre. Instead, it is a distinctive mode of practice that moves towards immersive and enacted user experience.

The above comprises a documentary-study outline of the theorization of *how* to capture reality in documentary. While debates over documentary modes progress chronologically, documentary films often revisit previous themes, devices, and modes. This study finds that in traditional documentary studies, there is a lack of academic reflection on the relationship between the evolution of documentary film and that of
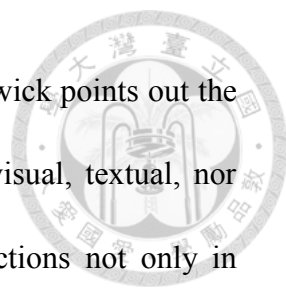
technology, even in dealing with the interactive documentary where digital technology plays a significant role in affecting the audience/user experience. It is very difficult to find patterns of technology with the mode model.

As previously mentioned, this study selects documentary as the "text" on purpose, because documentary is a special film genre. Unlike fictional films where storylines and movement of characters are carefully designed, documentary contains certain "liveness," where the filmmaker is to capture natural states of beings. Although documentary directors may make certain arrangements, the nonfictional nature requires it to keep the power of each element. The director's job is more to bring in elements as agencies in a network and wait for the chemistry to take place. Each actor or agency has its own power and potentiality and makes the documentary a heterogeneous product which cannot be fully explained in an authorist model.[5] This study's purpose is to dissect this process, especially to look at posthuman agencies, mediation, and control, in order to reflect on the logic of technology.

Another feature that makes documentary as a special genre is that, documentary in essence is simulacrum, an attempt imitate reality. David Norman Rodowick (2001) presents the idea of "figural" (based on Jean-Francois Lyotard's theorization) in his reflection of philosophy after the new media. According to Rodowick, figural is "a force that transgresses the intervals that constitute discourse and the perspectives that frame and position the image" (2). The figural must also "claim the powers of virtuality, becoming a nonrepresentational image that morphs continually" (3). Through the

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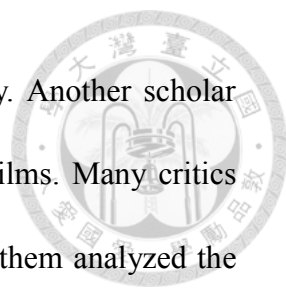
[5] By "actor", I mean actor as in Actor-Network-Theory. I will give more detailed explanation on this concept in Chapter One.

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notion of figural and the numerical manipulation of digitality, Rodowick points out the

basis of representation: virtuality, that "digital media are neither visual, textual, nor

musical – they are pure simulation" (37). This study sees abstractions not only in

digital media, but in all simulative attempts, especially representation forms such as

documentaries.

In the traditional cinema studies model, Wim Wenders's documentaries are

interactive, poetic and even hybrid. Not only a film director, Wenders is also a

photographer, writer, and thinker who has published essays on photography, cinema,

and their mediation effects. His book *The Logic of Images* (1992) is a collection of

conversations and essays containing his philosophical reflections on this medium. For

this reason, current Wim Wenders's documentary criticism either leans towards an

authorist and formalist study of the director and his oeuvre, or tends to focus on

specific themes or topics to expound his cinema philosophy. Works like Robert Phillip

Kolker and Peter Beicken (1993), and Alexander Graf (2002), take Wenders's position

as a thinker to deal with his oeuvre. These works usually trace the American influence

on Wenders's New German Cinema and pays special attention to the "road movie"

genre, and to the city and its history.

Within authorist studies on Wim Wenders, there is a wide range of approaches.

Andrew Light (1997) uses Albert Borgmann's theory of "devices" and "focal things" to

examine the representation of technologically mediated built space in Wim Wenders's

Alice in the Cities (1993). Mariniello (2005) uses Wenders's films as examples to
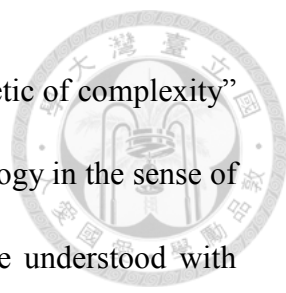
elaborate on cinema's relation to our lived experience and memory. Another scholar George Kouvaros (2015) uses photography to analyze Wenders's films. Many critics have noted Wenders's interactivity in his films, but almost none of them analyzed the technological logic behind it. This thesis proposes that Wenders's manner of shooting can be best explained from the posthumanist view: through looking at how agency distributed in a network contributes to documenting, how digital technology in documentary mediates audience's experience, how automated environmental elements contributes to narrative, with a posthumanist view rather than a cinema studies approach, this study provide a possible approach to understand the logic of contemporary technology.

Documentary, as mentioned earlier, is a paradoxical product, part representation of the real, part aesthetic production. It may be even more interesting to use a posthumanist view to look at the relationship between the real and the represented, between the filming technique and the process of capturing actors in a network working together, and between the world inside the camera and that outside, and eventually to understand the logic of technology in documentary making. This is the topic that the current study aims to engage with.
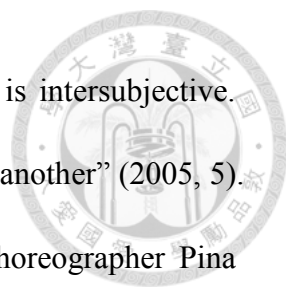
Thesis Outline

This study will shed light on three aspects of the logic of technology through three documentary films. The first is distributed agency and the distributed network. As film scholar R. L. Rutsky (1999) concludes in his analysis of how art and technology move

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towards the posthuman, the internal logic of technology is "an aesthetic of complexity" (140). By quoting scientist Steven Levy, Rutsky understands technology in the sense of the complex system. This study argues that such logic can also be understood with Alexander Galloway's conception (2004) of the distributed network and Bruno Latour's Actor-Network Theory (1987, 1999, 2011), where all intelligent end-point systems are self-deterministic and can communicate with any host it chooses. This study finds the distributed network an important concept to understand documentaries with, because the filmmaking process here is the process of coordinating different automated elements in the setting. In Chapter One, we will investigate this issue through Wim Wenders's documentary about Japanese film director Yasujiro Ozu, *Tokyo-Ga* (1985), specifically on how distributed agency works in the distributed network, and how different elements in the documentary work as a network-system with automation.

The second aspect of the logic of technology is mediation. The rise of new media since the late twentieth century brings about new expressions. More importantly, it generates new ways of mediation and mediated experience. The process of mediation is even more interesting when new media techniques are implemented on theatre works. Works like Matthew Causey (1999), Susan Kozel (2007), and Carrie Noland (2009) have noted that a traditional approach with an emphasis on the immediacy of performance is no longer enough for the analysis of digitized and mediated performing art. New media theorists Jay David Bolter and Richard Grusin (2000) introduce the logic of remediation, which can be traced back to Derrida's (1981) account of mimesis

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where the reproduction of the feeling of imitation or resemblance is intersubjective. Hayles construes this as "the cycling of different media through one another" (2005, 5). With *Pina* (2011), Wim Wenders's documentary about German choreographer Pina Bausch and her works, we will focus in Chapter Two on how technology, especially digital technology and new media techniques are interfacing performance and the film audience.

The third aspect of the logic of technology is the problem of control and posthuman social issues. The society undergoing transformation from Michel Focault's discipline society to Deleuze's control society is a major turn that the study will discuss. Galloway (2004) theorizes control into a protocol allegory, and McKenzie Wark makes a similar effort in *Gamer Theory* (2007). With the documentary *Notebook on Cities and Clothes* (1989), in Chapter Three we will see how artisits in the city and the world of fashion are working against control, and how such artistic practices contain a paradox.

The above constitutes a preliminary delineation of background, framework, and outline of the current study. At the end, I will give a conclusion on contemporary logic of technology, the problem of control, and offer some reflection on a posthumanist view as methodology in literary studies.

Chapter One

Tokyo-Ga: Complexity and Distributed Agency
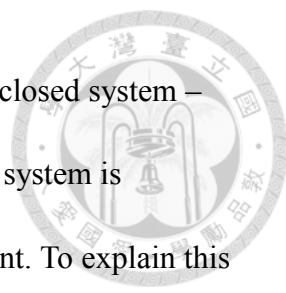
Journey to Tokyo as a Network System

At the Cannes Film Festival 1986, Wim Wenders introduced his documentary *Tokyo-Ga* as a "diary on film." He recorded his trip to Tokyo in 1983, 20 years after the death of Japanese film director Yasujiro Ozu. For Wenders, Ozu is a film master because he captures truth that can hardly be found in films today. Making this documentary, Wenders wandered on streets of Tokyo, shooting and searching for what was once there in Ozu's films: "I wondered whether I could still detect any traces of the time, whether there was anything left of that work, images, or even people."[6] Through a highly reflexive way of filmmaking, Wenders questions whether the sense of a city still remains, and feels anxious about the ontological being of images.

In traditional documentary studies model, *Tokyo-Ga* is a combination of dairy film and road movie. It uses episodic storytelling, which juxtaposes situations and scenes that have no narrative or causal relations. From this perspective, Mariniello (2005) uses *Tokyo-Ga* as an example to elaborate on cinema's relation to our lived experience and memory. Mainly addressing the notions of being "existent" and of the "chaos of life," Mariniello argues that images recorded during Wenders's Tokyo trip "are not in competition with true memories but with cinematic images," that film is an integral part of the lived experience of the world (165). But from a posthumanist view,

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[6] See Wenders et al., *Emotion Pictures*, p.115.

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I see this journey to Tokyo as an active and open system unfolding a closed system – Yasujiro Ozu's life and the "truth" in his films. Such active and open system is characterized by its randomness and interactivity with the environment. To explain this network system, I will mainly quote from three major theoretical sources: distributed network, complexity theory, and Actor-Network Theory. This study does not intend to tangle with terminological issues; just as John Law (1999) points out, "only dead theories and dead practices hang on to their names, insist upon their perfect reproduction" (10). Elements in *Tokyo-Ga* shares common features with all network system models, and displays the life of a documentary.

In previous works, for example, Rutsky thinks that the logic of technology in film is one of complexity: a complex system which is unpredictable and therefore can "be seen, like life, as autonomous, as governed by its own internal processes of replication and mutation, from which it evolves its own patterns, organizations, and behaviors" (141). To further explain complexity and complex system, here I quote Melanie Mitchell's introduction to the complex system in her book *Complexity* where she proposes three major properties of a complex system:

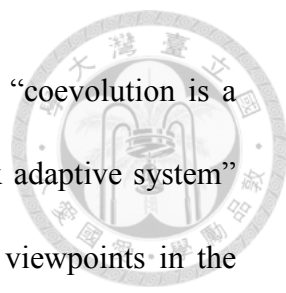1. Complex collective behavior: All the systems […] consist of large networks of individual components, each typically following relatively simple rules with no central control or leader. It is the collective actions of vast numbers of components that give rise to the complex, hard-to-predict, and changing patterns of behavior […].

2. Signaling and information processing: All these systems produce and use

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information and signals from both their internal and external environments.

3. Adaption: All these systems adapt – that is, change their behavior to improve their chances of survival or success, through learning or evolutionary processes. (12-13)

Mitchell defines "complex system" as "a system in which large networks of components with no central control and simple rules of operation give rise to complex collective behavior, sophisticated information processing, and adaptation via learning or evolution" (13). According to Mitchell, "intrinsic random and probabilistic elements are needed" for a comparatively small population of simple components to explore an enormously larger space of possibilities in information processing (181). In this information processing, there is a continual interplay of unfocused random moves and focused actions driven by this system's perceived needs (183).

Mitchell Waldrop, in the book *Complexity: The Emerging Science at the Edge of Order and Chaos*, tells stories about scientists in different fields trying to forge the sciences of the twenty-first century – the complex system theory, or complexity theory. Among them, computer scientist John Holland develops profound original theories of evolution and learning in the digital world: "organisms in an ecosystem don't just evolve, they *co*evolve. Organisms don't change by climbing uphill to the highest peak of some abstract landscape […], real organisms constantly circle and chase one another in an infinitely complex dance of coevolotuion" (259). Tales in Waldrop's book provides evidence that complexity is not only found in physics and biology, but lies in

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universal a law posed by an autocatalytic technology change, that "coevolution is a

powerful force for emergence and self-organization in any complex adaptive system"

(259-260). Daniel Dennett in *Freedom Evolves* has raised similar viewpoints in the

cognitive science field. He argues that free will exists like air or the atmosphere. "Free

will is like the air we breathe," and furthermore, "the atmosphere of free will is another

sort of environment" (10). Therefore, the state of free will is changing and unstable; it

is not eternal, but is always evolving as a product of human interactions.

In the 1980s, Michel Callon (1986), Bruno Latour (1987), and John Law (1992)

developed the Actor-Network Theory (ANT). In ANT, objects are treated as part of

social networks, and nonhuman agencies are taken seriously. The network is

considered as heterogeneous amalgamation of a cluster of actors. The central idea of

ANT moves from one single actor to many loci of agency, from homogeneous agency

to hybrid constellations, from hierarchy to interactivity; in sum, it tends to distributed

agency.

Humberto Maturana (1969) proposes a radical new epistemology in biology to

reject simple causality: events act as "triggers" for responses determined by a system's

self-organization. Maturana defines a self-organizing system as a composite unity,

which consists of components' relations with each other and with other systems. Based

on this idea, Hayles (1994a) improves Maturana's biological metaphor with a new

concept: reflexivity. Reflexivity, Hayles concludes, is left by the Macy conferences,

pointing to a tendency towards complexity: "[Whereas in the Macy conferences]

reflexivity was associated with psychological complexity, in Maturana's world it is
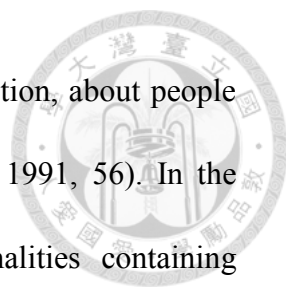
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constituted through the interplay between a system and its components" (462). Introducing this concept, Hayles also makes comparisons between Maturana's (1991) autopoietic systems and reflexivity, pointing out that autopoietic systems ,which take the maintenance of their own organization as goal, is "the ghost of homeostasis" (462).[7] To conclude, Hayles further pushes the idea of reflexivity from a balanced and interactive system to that of complexity.

All of these theoretical developments point to complexity and reflexivity in the sphere of information processing and system operation. If we look at *Tokyo-Ga* in this light, it will appear to us that the aim of the journey is to unfold, or in other words, to gather and process information about Ozu, and thus to form a system as described above. The journey is filled with a sense of randomness, for example, pedestrians on the streets, customers in the shops, passengers in the metro station, tourists on the cherry blossoming street, etc. The trip uses its intrinsic random elements to enable a complex collective behavior – the atmosphere that once appeared in Ozu's films. The director would not have control of any of these elements. He only uses the camera to engage in interaction with the city and the environment. These automated elements in the city give the documentary a free-flowing storytelling style rather than plotted narration.

Tokyo is a very unfamiliar and exotic place for Wenders. In fact, in his fictional and nonfictional films, Wenders has been situating himself or the protagonist in an unfamiliar place all along: "All these films are about people who encounter unfamiliar

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[7] Homeostasis is a concept that Hayles introduces in contrast to reflexivity. Homeostasis is defined as the ability of an organism to maintain itself in a stable state, while reflexivity privileges change over constancy.

situations on the road; all of them are to do with seeing and perception, about people who suddenly have to take a different view of things" (Wenders 1991, 56). In the complex system model, Tokyo works as the source of externalities containing differences and becoming the driving force to push the documenting process forward. Process of documentation thus becomes "adaptive" – a life cycle that keeps interacting with its environment and forming structural patterns in an evolving manner, from which unpredictable elements emerges constantly. Just as Hayles (1994a) points out:

> The narrative of cybernetics as I have constructed it here suggests that the field is moving along a trajectory that arcs from homeostasis to reflexivity to emergence/immersion. First stability is privileged; then a system's ability to take as its goal the maintenance of its own organization; then its ability to manifest emergent and unpredictable properties. (466)

This is why I see the journey to Tokyo as a complex system.

From Randomness to Pattern

In the documentary, Wenders could not, and of course did not intend to control or predict what he might see or encounter in Tokyo. He made sudden decisions to visit the wax model factory, the golf course, and Disney Land. He shot scenes randomly on the street, from taxies, and in the metro. It was a totally unfamiliar experience for Wenders, until one moment in the Tokyo metro, when he saw a boy who is so stubborn that he is pulling all his strength together to resist his mother dragging him to get on the train.
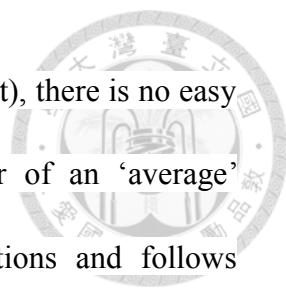
Wenders feels a strange intimacy when he saw this boy, suddenly relating him with the

many stubborn boys in Ozu's films.

Figure 1 Wim Wenders, *Tokyo-Ga* (1985) underground scene

From this randomly encountered and captured boy, Wenders finds his way to

reach Ozu, or to recognize Ozu's pattern of art. Wenders describes this scene in *The*

Logic of Images: "It wasn't till I saw this little boy on the underground, who'd simply

had enough, that I realized my images of Tokyo felt to me like the perceptions of a

somnambulist: long before I ever went there, I had this very strong preconceived image

of Tokyo and its inhabitants, more so than any other place on earth: it came from Ozu's

films … In the little boy on the underground I'd recognized one of the countless

rebellious children of Ozu's films" (61). In Wenders's "somnambulist" wandering, he

found the pattern of what Ozu means, or at least he thought he had – an emergence.

From the complex system point of view, collective behavior is emerging itself from a

universe of randomness.

In John Holland's (2000) theorization of complexity, emergence is on an

agent-based model, where "actions of the individual agents are conditioned by the

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immediate surroundings (other agents and objects in the environment), there is no easy way to predict the overall behavior by looking at the behavior of an 'average' individual" (118).[8] For Holland, emergence arises from interactions and follows nonlinearity: "Emergence is above all a product of coupled, context-dependent interactions. Technically these interactions, and the resulting system, are *nonlinear*" (121-22). Holland argues that we can have a better view on life and consciousness by emergent phenomena and knowing more about interaction mechanisms. And such emergent experience that has a close relationship with "intuition, taste, and leaps of faith based on experience are indispensable to the production of either a poem or a scientific theory" (219). This nonlinear and intuitive style is an obvious feature of Wenders's documentary. Just as Wenders himself expressed in the monologue:

> Tokyo was like a dream. And today, my own images appear to me as if they were invented, like when, after a long time, you find a slip of paper, on which you once had scribbled down a dream on the first light of dawn. You read it in amazement, and you don't recognize a thing, as if it were someone else's dream. (*Tokyo-Ga*, 09:16 – 09:37)

Here I want to use cellular automata to further explain emergence and lay a foundation for the next section. Cellular automata were invented in the 1950s by John von Neumann as a formal model of self-reproducing machines. The famous Game of Life is an example of a two-dimensional cellular automaton. This model was revived in

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[8] This agent model is primarily a commodity market model where individual agents – buyers and sellers – enter and leave. They are severely limited in their actions and exhibit complicated dynamics (See Arthur et al., 1997). Holland takes the idea of "agent" in describing ecosystems, referring to "interacting species" (117).

the 1980s by Stephen Wolfram in his book *A New Kind of Science.* Wolfram uses the concept of cellular automata to illustrate how order emerges from chaos: "many systems spontaneously tend to organize themselves, so that even with completely random initial conditions they end up producing behavior that has many features that are not at all random" (223). A cellular automaton is a typical self-reproduction model where random unit which evolves according to a conditional rule such as "a cell becomes black if either of its neighbors are black." Experiments show that even if a cellular automaton starts from any random initial condition, it will gradually exhibit a set of structures. For any particular rule, the form of these structures remains the same. In the figures, we can see that cellular automaton never settles down to a stable state, but continues to exhibit patterned behavior (e.g., the presence of triangles and other small structures) that in otherwise seems random:
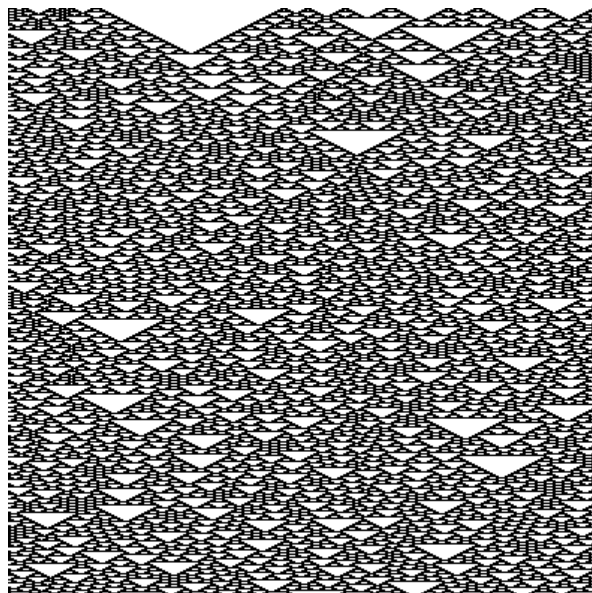
Figure 2 Wolfram (2002), Cellular automata rule 30
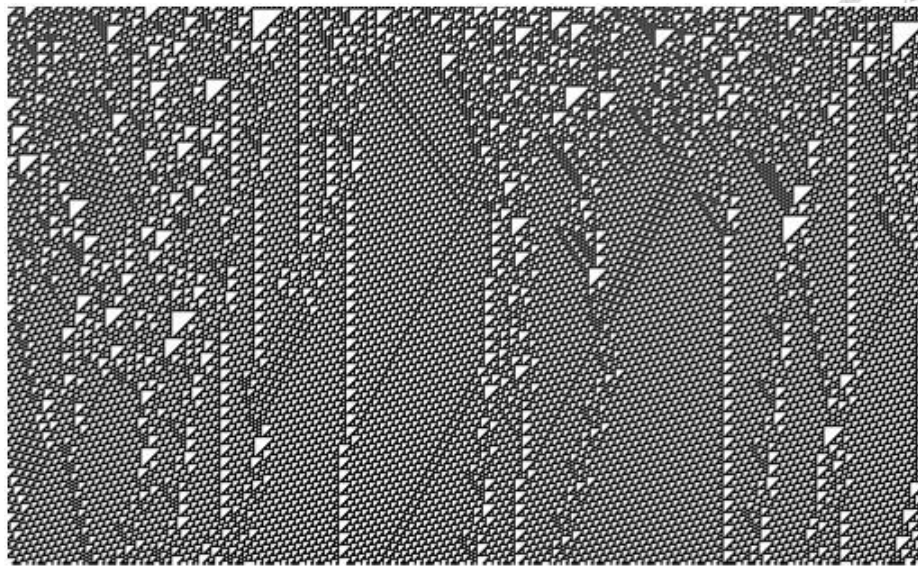
Figure 3 Wolfram (2002), Cellular automata rule 110
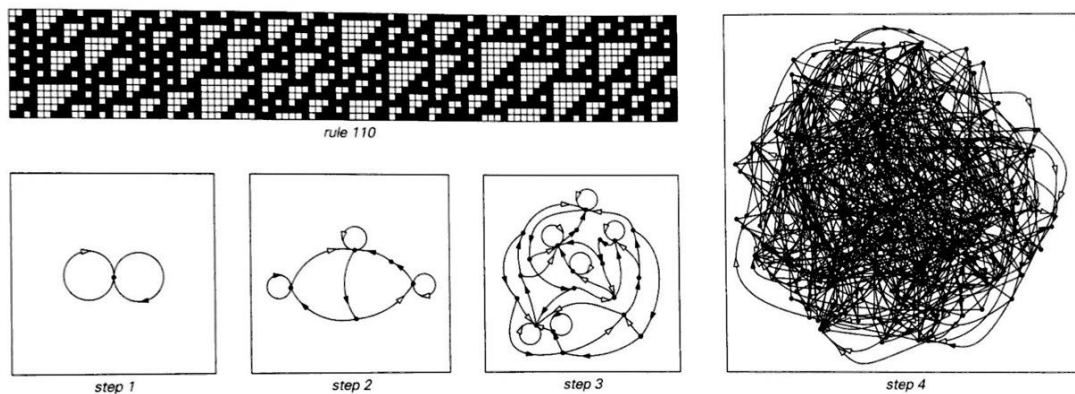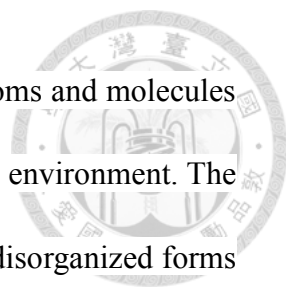
Figure 4 Wolfram (2002), Cellular automata rule 110 network demonstration

In the rule 110 demonstration, Wolfram claims that the system "quickly organizes itself to produce a set of definite localized structures, which then move around and interact with each other in complicated ways" (229). Following this principle, networks that represent possible sequences of black and white cells seem to have an increases of nodes at an exponential rate at successive steps in the evolution of certain cellular automata patterns. According to Wolfram, this kind of rapid increase in network complexity is a general characteristic (279). Steven Levy in *Artificial Life* points out a further interpretation of cellular automaton: "this was a physical

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interpretation of what happened in natural reproduction. The new atoms and molecules that made up the new entity, the offspring, necessarily came from the environment. The idea – the idea of life really – was to gather those materials in their disorganized forms and integrate them in the highly complex organization of a living being" (43-44). Interacting with neighboring cells, the self-reproducing structure changes the cells' states. In the computer science world, the studying of cellular automaton is to promote artificial life.

From these examples of simple programs giving rise to complex behavior, Wolfram wants to further look at natural systems and search for everyday implications. "So the fact that we may be able to interpret a system as achieving some purpose does not necessarily mean that the system was really created with that purpose in mind" (831). *Tokyo-Ga* is a conceptual system filled with sparkles, intuitions and random encounters. It assembles cellular automata, that from random starting points, gradually generate pattern. Although the process is not exactly the same – in complex system there is a hierarchy of control or rules to keep the information flow. In documentary making, there is still arrangement (e.g., arranged interviews with the actor and crew members that worked with Ozu for many years). But it is an interesting comparison, for randomness is actually a tradition in Wenders's films. The director has long been suspicious of manipulating images and thinks that story is against the image's will:

> My thesis is that for me as a film-maker, narrative involves forcing the
>
> images in some way […] I dislike the manipulation that's necessary to
>
> press all the images of a film into one story; It's very harmful for the

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images because it tends to drain them of their "life." In the relationship between story and image, I see the story as a kind of vampire, trying to suck all the blood from an image. (*The Logic of Images*, 53)
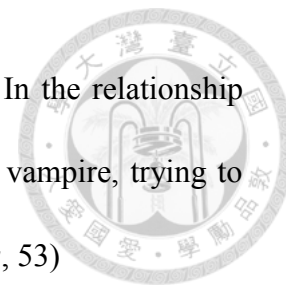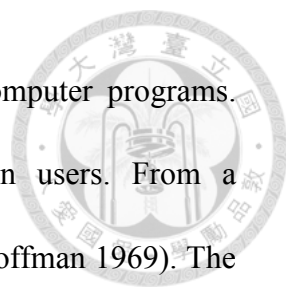
Wenders craves for an artificial structure and order where images connect themselves without too much intervention from the director. Such a non-intervening manner gives birth to randomness, and make patterns emerge from images without a coherent story. Through complexity theory we may be able to comprehend how narrative can emerge from random shooting.

Distributed Agency and Automated Actors
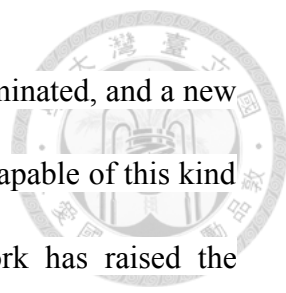
Christopher Keep (1999) criticizes the cyborg concept in Haraway's description by saying that it is as much a creature of the imagination as of technology, and is "too easily reducible to a hypermasculinized and newly unified subject" (172). In Keep's view, we need less finished concept. I agree with Keep and argue that distributed agency from a posthumanist view is a suitable replacement.

Werner Rammer in an article (1996) provides a historical review and explains how agency understood in forms of human-machine dichotomy has developed into posthumanist distributed agency as follows: In the traditional view, as in Kant's definition, human action is characterized by the capacity of free will, the moral autonomy from external forces whereas machines, as Reuleaux points out, follow forced movements. However, the development of technology has changed the nature of technical systems, and consequently changed this fundamental dichotomy between

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human and machine. From a technological view, "agents" are computer programs. They are automated to execute actions and respond to human users. From a sociological view, agents are persons who act under certain roles (Goffman 1969). The human-technology relationship changes when machine, media, and sign processors are turned into more active agencies. In the 1980s, Actor-Network Theory was introduced to push the tendency from one single actor to many loci of agency, from homogeneous agency to hybrid constellations, from hierarchy to interactivity.

In the world of cognitive science, the psychologist Edwin Hutchins (1996) proposes the concept of "distributed cognition." By studying how the Polynesian sailors performed navigation in the Pacific Ocean even though they had no sophisticated nautical skills, and how a navigation team managed to maneuver their long ship into a small harbor when their nautical system was damaged during wartime, Hutchins argues that the cognitive action was organized as a distributed process performed by different practices and interactions. Hutchins's work demonstrates how human action is distributed among instances of plan, control and practice. Another philosopher in cognitive science, Andy Clark (2008), proposes the notion "new systemic wholes" as "the way to argue for cognitive extensions and blurring of the mind-world boundary," this is done "not by casting doubt on the presence of genuine interfaces but by displaying special features of the flow of information across those interfaces and by stressing the novel properties of the new systemic wholes that result" (33). That is to say, it is through distribution that the wholes are transformed from the old ones to new systemic wholes. Interface mediates agents and tools and blurs the

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boundaries between the two. As a result, boundary or distance is eliminated, and a new whole or new bodily structure is formed. Clark thus calls creatures capable of this kind of incorporation "profoundly embodied agents" (34). Clark's work has raised the meaning of distributed agency from cognitive level to a philosophical level.

To conclude, agency is not ahistorical, arithmetic or unchanging. It can be understood in Hayles's notion reflexivity: "the movement whereby that has been used to generate a system is made, through a changed perspective, to become part of the system it generates" (1999a, 8).

A posthuman agency is distributed and unstable. *Tokyo-Ga* draws a complex map where actors in this abstract but real network system interact with one another. Wenders's encounter with Tokyo is made through materials and cultural landscapes: alleys, underground, wax food models, show windows, Disneyland, and even rubbish bins under sakura trees. He went to the exact same alley that Ozu once shot, and used the exactly same lens that Ozu once used. However, imitating Ozu's filmmaking did not bring him the truth that he set out for.

Wenders set his camera on the small alley where Ozu's scene took place. He first uses his own way of filming. And he filmed a second time, using the 50-millimeter lens with the very slight telephoto effect that Ozu used for his shot. Wenders found that they are two totally different worlds. Reflecting on the second try, Wenders's monologue goes: "Another image presented itself, one that no longer belonged to me."

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Figure 5 Wim Wenders, *Tokyo-Ga* (1985) alley scene – first shot
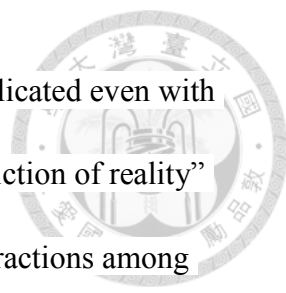
Figure 6 Wim Wenders, *Tokyo-Ga* (1985) alley scene - second shot

On one hand, this scene shows the pure change of equipment can give the image a different life. On the other, using the exact same lens and filter, Wenders feels frustrated that he failed to imitate Ozu:

> Film which actually and continuously dealt with life itself, and in which the
>
> people, the objects, the cities, and the countrysides revealed themselves.
>
> Such a depiction of reality, such an art, is no longer to be found in the
>
> cinema. It was once. MU, nothingness, what remains today.
>
> (*Tokyo-Ga*, 34:21 - 34:41)

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Wenders thinks that the art in Ozu's films can no longer be replicated even with the same filming equipment and techniques. It proves that such "depiction of reality" and "art" exist not solely in techniques or the director, but in the interactions among elements. Distributed agency is also found in the camera or lens, and the distributed network constructs a system totally different from the centralized or decentralized ones. Just like what Wenders believes in the automation of images:

> In films – or at least in my films, because of course there are other ways of going about it – in films the images don't necessarily lead to anything else; they stand on their own. I think a picture stands on its own more readily, whereas a word tends to seek the context of a story. (*The Logic of Images*, 53)

Wenders's camera and the Tokyo landscape 20 years after Ozu's is governed by another system and leads to what Galloway (2004) calls protocological technology, characterized by the Deleuzian concept of control: control implemented "not by individual sovereigns, nor itemized and hierarchical disciplinary institutions, but by atomized, free-floating control executed through computers and other self-organizing cybernetic systems" (Franklin 2011, 9). Each actor or end-point (computer science term) is self-deterministic and automatic.

From Materiality to Informational Pattern

Desiderio (2011) stresses the existential experience in *Tokyo-Ga* from a phenomenological point of view, saying that "Wenders articulates a heightened anxiety

over the ontology of the image. The film self-reflexively and exhaustively explores that ontology, commenting on both simulacra and the post-modern culture spawning the hyperreal" (33). If we look at this anxiety of the ontology of the image from a posthumanist view, it actually indicates belief in images standing as automatic elements that is able to communicate itself with the environment and keeps the film as a system in a changing and living state. The ontological anxiety towards Mu (nothingness) actually points to the virtual and to information patterns.

The anxiety of existence is shown by an early scene where Wenders visits Ozu's grave, only to find that the headstone has only one Japanese character inscribed: "Mu," nothingness. Film critic Nora Alter writes about this scene:

> One can never film nothingness but only suggest it, as it were, by a reference to a presence. Wenders's search for Ozu leads to such a suggestion of determinate absence: a gravestone inscription that is real but refers to a nothingness, which cannot, by definition, be represented. Similarly, all cinema's search for reality is figured by images that may in some sense be real and artistically striking but can only suggest a reality without any objective reliability. (121)

Figure 7 Wim Wenders, *Tokyo-Ga* (1985) graveyard scene

Linking the act of searching for reality in *Tokyo-Ga* with general representation of imagery, Alter denies the possibility of finding any reality. However, the absence, both the absence of Ozu and absence of reality, I propose from a posthumanist view, is presence in the form of informational patterns. What remains today in Wenders's understanding is nothingness, but only in the sense that abstract but real, directed by informational patterns.

In *How We Became Posthuman*, Hayles introduces two notions, "information narratives" and "bodies of information." She takes William Gibson's novel *Neuromancer*, and the films *Terminator*, *Blade Runner* and *Hardware* as instances to highlight the displacement of presence by pattern and advantages of pattern over presence (36). Besides sci-fi works, Hayles also uses literary works such as William Burroughs's *Naked Lunch* and Italo Calvino's *If on a Winter's Night a Traveler* as examples to show how the textual body does not function to delineate the textual corpus, but rather is artificial and cybernetic. It is the fissures of narration but not the body of text that brings the narrative as a syntactic and chronological sequence into

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being (42). Hans Moravec has similar opinions in his artificial intelligence research in

Mind Children. Through a comparison of pattern-identity and body-identity positions,

Marovec argues that pattern-identity defines the essence of a person while

body-identity lies only in the continuity of body stuff (117). In the transformation of

the semiotic square model raised by Hayles, there is a shift from presence and absence

to pattern and randomness, and when randomness erupts into the material world,

mutation, which is the synthetization between randomness and presence, achieves its

potency as a social and cultural manifestation of the posthuman (249). The

informational pattern in *Tokyo-Ga* relies on the absence of Ozu and enables the forces

of randomness and pattern-identity.

Ozu is nowhere but everywhere. Agency is distributed by the involvement of the

subject with the process of documenting. This documentary thus refigures our

perception of Ozu as a closed system into an open one: we are taught to experience

Ozu in everyday scenarios in Tokyo. As a consequence, our sense of Ozu is formed out

of an experience of absence.

From a posthumanist view, agency is regarded as embodied, heterogeneous, and

fluid. Hayles (2005) describes agency as destablizied – "machines acting as agents, and

humans with their agency rooted in machinic processes" (177). Ozu reached truth or

reality through his machinic operation – film making. Such truth is what Wenders has

been searching for and trying to reconstruct in his own films. Using the same lens does

not help, because agency of the machine is fluid and its patterns could not simply be

duplicated. However, Wenders, through his own machinic practice, made this

documentary a network system and enabled the complexity of Ozu to emerge from it.
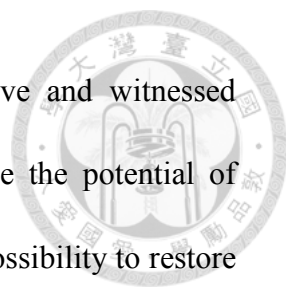
3D Technology and Mediated Experience

Pina (2011) is a three-dimensional documentary film made by German director Wim Wenders about the contemporary choreographer Pina Bausch, who is famous for boundless imagination and physical marvels in choreography. Wenders has planned filming this documentary for over twenty years since the 1980s, but Pina passed away when he finally started making this film. It was a big loss for both the director and the world. Facing not only the problem of Pina's absence, he also has concerns about theatrical effects. Wenders writes in *Pina: The Film and the Dancers*: "The camera's ability to capture events onstage, a choreography, was limited. It automatically became more 'graphic' than onstage, more abstract and less corporeal… There was, so it seemed to me, a fundamental misunderstanding, or lack of understanding, between dance and film" (6). The major problem for Wenders was how to let viewers have the same muscular and emotional experience as in a real theatre by watching the body movements on a flat screen.

As a result, the digital three-dimensional technology is adopted. If we take a look at the "IMDB Top 10 3D documentaries," it is not hard to find that most 3D documentaries feature space (*Hubble, Space Station, A Beautiful Planet*) or nature (*Under the Sea, Deep Sea, Into the Deep, Born to be Wild*). *Pina*, ranking ninth, seems unique because it is the only one featuring performing art.

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The key feature of performance is the irreplaceability of live and witnessed moments. Dolan (2001), for example, theorizes performance to be the potential of being together. *Pina*'s production group seems to have tried every possibility to restore the liveliness of performance. Their official website states: "Yet we wanted the 3D rig as close as possible to them. The use of a long, telescopic crane gave us this possibility…We could thus capture incredibly close and dynamic images, giving the viewer the sense of being onstage with the dancers. 3D loves depth – that is why the solos of the dancers outside the theatre space are a perfect complement to the dance performances on stage." We can see that the endorsement of 3D technology is all about depth and the shortening of the distance. Siri Hustvedt (2016) also comments on the 3D effects, saying that "the viewer's emotion is born of a profound recognition of himself in the story that is being played out onstage before him. He engages in a participatory, embodied mirroring relation with the dancers, which evades articulation in language." However, the digital 3D theatre is undeniable different from a traditional theatre. The question is: can we use traditional performing art theories like Dolan's to look at digitized performances? I argue that the 3D technology brings not intimacy, but a more mediated experience to understand our relationship with dancers and the stage. Matthew Causey (1999), for example, gives a clear answer to the question above: No. In his analysis of theatre in virtual space, he strives for a new ideology to avoid overlooking the mediated experience in a "hypermediated, simulated, televisual culture" (183). He thinks that the traditional performance ontology of liveness, immediacy and

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presence fails in accounting for postorganic performance.[9] Actually, with or without digitalization, liveness and immediacy in performance can always be an illusion. For example, Herbert Blau (1987) in his reflections on performance, *The Eye of Prey,* questions immediacy:

> There is nothing more illusory in performance than the illusion of the
> unmediated. It can be a very powerful illusion in the theater, but it *is*
> theater, and it is *theater*, the truth of illusion, which haunts all
> performance whether or not it occurs in the theater, where it is more than
> doubled over. (164-65)

Jonathan Crary (2000) also proposes a new perception that is coincident with new technologies such as projection, display, and recording, a more mediated perception that "cannot be thought of in terms of immediacy, presence, and punctuality" (4). To analyze the 3D technology used in *Pina*, I would like to follow Causey's and Crary's new ontology, believing that mediation is a crucial part of performances with digital intervention, for it is clear that through digital technologies, filmmakers make kinesthetic choices and selective disengagement. Susan Kozel (2007) looks at camera-mediated telematics in performance and points out that an active tuning out has the effect of intensifying facets of experience, for example, a shift of attention to breath, or attention to ambiguous space (144). Such phenomenological epoché is a well-known technique of mediation. Kozel (2007) also mentions another kind of experience, the experience of immersion. She points out that "immersion in a telepresence experiment

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[9] The term "postorganic" is taken from anthropologists, meaning an area of research that explores the cultural and structural impact of digital technologies and mediascapes.
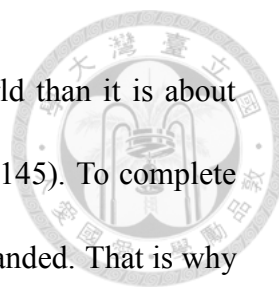
is less about being at the center of a seamless, realistic digital world than it is about modes of perception within a carefully constructed attentive field" (145). To complete such mediation, greater flexibility of input and visual display is demanded. That is why 3D technology is adopted.

Mark Hansen in *New Philosophy for New Media* uses new media artist Tamas Waliczky's work as an example to comment on 3D effects. Waliczky's new media art works *Focusing* (1998) and *The Forest* (1993) are examples of the use of depth on a

Figure 9 Tamas Waliczky, *The Forest* (1993)   Figure 8 Tamas Waliczky, *Focusing* (1998)
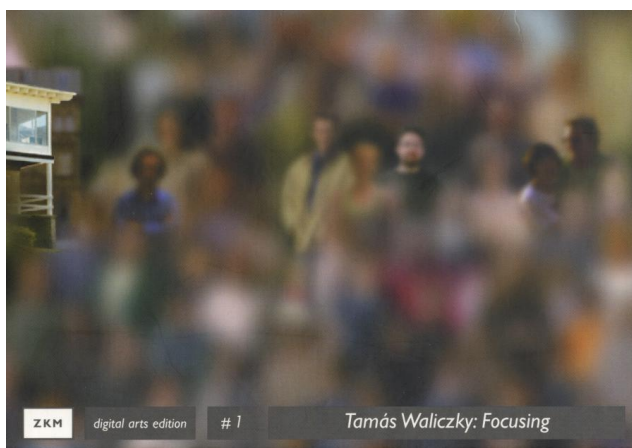
2D screen to create illusion of 3D space. Both works are interactive installations that allow viewers to control their seat to move it higher or lower, allowing the image they see to change the depth in accordance with respectively with their movement and viewing angle. Hansen argues that "the effect evoked is a sense of limitless space in which the viewer can find no way out" (114). In *Pina*, there is a stage scene of a dancer balancing himself with twigs on his body. The stage setting is shadows of trees on a fabric. This scene fades out in the moving shadow patterns. With the digital 3D effect, the audience find themselves surrounded in this three-dimensional maze of tree shadows for a moment. It is true that the trick in *Pina* is a little bit different from

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Waliczky's new media art work – *Pina* realizes depth through the camera and post-production technology while Waliczky's *the Forest* does it through the movement of the viewer's seat. Still, these works have something in common: instead of bringing the audience close to live experience, the 3D effects used in both works are aiming to enhance distorted sensory experience.
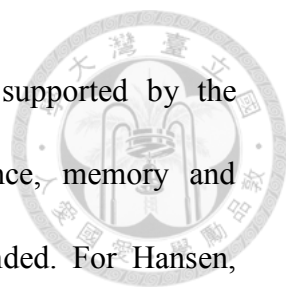
Figure 10 Wim Wenders, *Pina* (2011) stage scene

Figure 11 Wim Wenders, *Pina* (2011) stage scene

Such mediation is an expansion of vision, or in John Johnston's terms, "machinic

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vision." "Machinic vision" emphasizes disembodied perception supported by the informational infrastructure of "a distributed system of sentience, memory and communication" (Hansen 2004, 98). The disembodiment is extended. For Hansen, there are two ways to understand this expansion: human transcendence and reconfigur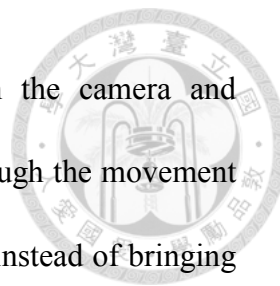ation of vision. Following Johnston and going further, Hansen wants to include both human body and visual expansions, and make a "technical expansion of intelligence" with Bergsonian affectivity (101). For Hansen, new media artists are facing the same problem as machine vision researchers like Hansen and Johnston trying to figure out how to change the way people watch and the final visual effect they get in order to give the viewers new experience and perception. For me, Wim Wenders in this documentary *Pina* is also trying to do the same: rather than eliminating the effects of mediation, 3D technology creates machinic vision to expand the human sensory field, in the same way as Hansen points out for Tamas Waliczky's works, it expands the interface between the human viewer and the artist's virtual world.

To sum up, characterized by high resolution graphics displays and extension beyond the perceptual field, 3D technology generates the experience of connection in both internal and external dimensions, and works as sensory extension. With the lure of a more immersive environment in the performance's world, it is actually a deliberate choice that works as a technique of attention to shift psychological and physical temporalities towards a more mediated and complex experience.

Space and Structural Coupling

Next, I am going to discuss how spaces and landscapes change as Wenders brings

Pina's work from the theatre to different landscapes, and how spaces interact.

The opening scene of the film is the city scene of Wuppertal, where Pina Bausch

lived and her dance company's theatre is located. In a later part of the film, Wuppertal

and its public transportation, Suspended Monorail, become stages for dancers.

Figure 12 Wim Wenders, *Pina* (2011) opening scene

Figure 13 Wim Wenders, *Pina* (2011) dancing scene in Wuppertal

Figure 14 Wim Wenders, *Pina* (2011) dancing scene in Wuppertal

In *Closer: Performance, Technologies, Phenomenology*, performer and critic Susan Kozel talks about architectural space in live performances that use digital technologies. The spaces including buildings, stage, walls, and chairs, and even the performer's physical body like the arc of his or her leg. Kozel argues that these spaces stir up, coexist, and intertwine (117). In *Pina*, the noise of a busy street, the passengers' existence on Suspended Monorail are real life elements and seem incompatible with the performance and the performer's body. Through these frictions between spaces and bodies, interweaving is set in motion by performances. In this context, such disequilibrium and gaps are more important than stability and continuity.

In digital ontology, cybernetics proposes seminal ideas of feedback loop, human-machine interfaces and circular causality. Maturana's phrase for the interaction between self-organizing systems and the surrounding medium is "structural coupling." "Coupling" implies an inherent nature of finding the match between the two elements. I argue that the motion and friction between spaces – the city, the mountain, the monorail, and the performing body – is a process of coupling. Different environmental elements such as space and the performer's body as space go through a continuous

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process of restructuring and exchange of information. They match and separate and rematch. Through the dynamics of spaces, for example the singing of birds in addition to music, the dust dancing with the performer's body, and the neon light reflected on performer's face, etc., a different artistic effect is generated from the motion and friction in the coupling.
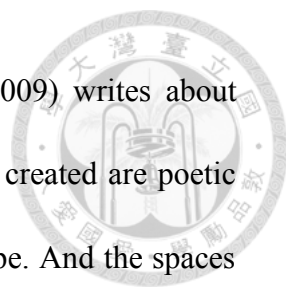
Figure 15 Wim Wenders, *Pina* (2011) outdoor scene
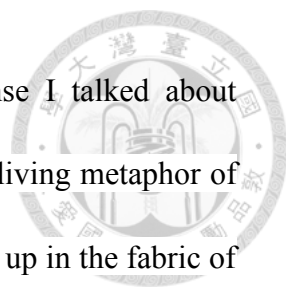

Figure 16 Wim Wenders, *Pina* (2011) outdoor scene

Pina in her past theatre works actually has worked with restructuring of spaces. In one of her choreography works, *Le sacre du printemps and Vollmond*, she brought outdoor elements to an indoor theatre. Apart from using icebergs and rocks on stage, the dancers also wade through and roll on a stage covered in peat. This shows a wish of

Pina to blur the boundaries of the stage. Critic Norber Servos (2009) writes about spaces in Pina's choreography works, pointing out that "the spaces created are poetic with the outside often brought in, the stage expanded into a landscape. And the spaces are physical, affecting the dancers' movements. Water and rain allow the body to be seen through the clothes; earth makes every movement a feat of strength; the dancers' steps are traced in a layer of fallen leaves." Rainer Behr, a dancer from Pina's company, also says in an interview that "the elements were very important to Pina, whether it was sand, earth, stone, or water." Using public trams, city streets, mountains and lakes as stage, Wenders makes environmental elements as new elements to participate in the old choreographies and to enhance momentums through their interaction. The process is just like what happens in the shift from print literacies to digital ones: more autonomous elements lead to a more open system and to greater potentiality. The work thus becomes a new work and varies each time it is performed. To embrace the environmental elements is a distributive touch that makes the dancing more lifelike: with noise, time, and reality that once was not included in a theatre, interrupted but also continues to evolve. Traditional performances couples with theatre stage. Landscape and outdoor elements are new elements that enable a new process of coupling. Through this new coupling, Pina's work is vitalized with a new life.

Hustvedt (2016) comments that, "this indoor/outdoor theme is further enhanced by the charming repetition in the film of a sequence of close-to-the-body gestures that mime the changing of the seasons." In Hustvedt's view, such new elements generate new perception – perception that feels the changing of season. It is a way to show what

exactly the new coupling is – it resembles the extension of sense I talked about regarding 3D technology. Just like how Kozel sees human-being as living metaphor of physical, social, and digital network: "body is always already caught up in the fabric of the world and there are traces of the other in me … [my] connective tissue does not stop at the boundary of my skin; it is a lattice that embraces my interactions, or choreographies, with people, animals, devices, memories, and thought … Performance occurs in these interstitial spaces, both everyday performances and artistic performances" (278-79). Coupling between bodies as space and different environmental elements makes the work more open, changeable, and new.

Facialization as an Interface

There is a set of interview scenes in which the interviewees' talking dubs their close-up clips of their faces. The documentary crew interviewed dancers in Pina's company to talk about what Pina and her works are to them. Each interview scene emerges after a clip of the dancer's performance. The sound of their talking dubs video clips of the faces, with very minor facial movements. I would like to compare this set of scenes with Hansen's examples of facialization and close-up, and then relate this to interface and informatics as style.

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Figure 17 Wim Wenders, *Pina* (2011) interview scene

Figure 18 Wim Wenders, *Pina* (2011) interview scene
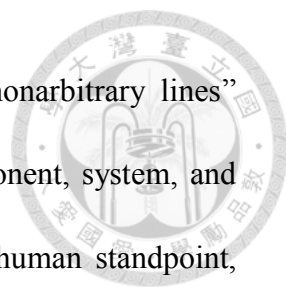
Figure 19 Bill Viola, *Quintet of the Astonished* (2000)

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Figure 20 Luc Courchesne, *Portrait No.1* (1990)

Hansen (2004) uses examples of new media arts (Figure 19 and 20) to argue that the digital face-image (DFI), or close-up, can generate affectivity and enable us to rethink human and informatics relationships, pointing to the fact that the DFI "opens up potential for machines to utilize the human face in order to interface more effectively with humans" (224). Hansen's start point is the face as "a virtualization that operates through the medium of embodied affectivity," and as mediator to humanize codes to enable human connections to codes and computers (149).

In *The Language of New Media,* media theorist Lev Manovich noticed the resemblance between cinematic representation and the way users access cultural data through computers (79). He makes an analogy between cinema and interface: "If the Human Computer Interface (HCI) is an interface to computer data, and a book is an interface to text, cinema can be thought of as an interface to events taking place in 3D space" (xxxvi). The issue of interface is also discussed by John Haugeland (1998) and Andy Clark (2008). For Haugeland, the goal of interfacing is to uncover the underlying

principles "for dividing systems into distinct subsystems along nonarbitrary lines" (211). For Clark, the interface indicates that "the notions of component, system, and interface are all interdefined and interdefining" (32). From a posthuman standpoint, this study argues that facialization works as an interface interdefining the watcher and cultural "codes" – the dancers' memories, experience, and thought.

The out-of-sync effect of the image and their voice evokes a slightly uncanny feeling and consequently makes the audience pay extra attention to every minor movement on their faces, trying to catch every clue to their personality, age, race, and their personal memories. In Hansen's (2004) words, "affection here serves as the very medium of contact" (141). The dancers' memories about Pina are digital codes behind that face, accessible only through the audience's imagination. Unlike Hansen's example where the facialization works as human-machine interface to shorten the distance between the two sidesand generate intimacy, the interview scenes in *Pina* work in a converse way – to alienate the viewer's perception. By doing so, it brings the audience from traditional narrative to a technological level where narrative becomes pure "codes."

Galloway in *The Interface Effect* (2012)uses American TV series *24* as an example to put forward the idea of "informatics as style." Galloway points out that the interrogations and tortures in *24* are never about punishment, but merely a technique of information retrieval. "The body is a database, torture a query algorithm," Galloway writes (112). Another interesting point is about montage and the CCTV alike windowing screen.

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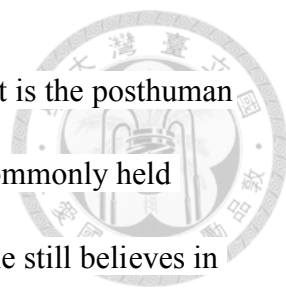
Figure 21 Fox, *24* Season 5 (2006) windowing

Comparing it to the computer interfaces, Galloway argues that this "windowing" – more than an image framed within the screen – is one of the great aesthetic leaps of GUI in cinema (115). The interview scenes of *Pina*, though they do not feature multi-window frames, have similar functions with the ones in *24*. They demonstrate the computational logic of information retrieval, or in Galloway's words, the fact that "narrative and visual style can embody the cultural logic of computation" (110). In *Pina*'s case, facialization is the aesthetic interface linking the audience as the user, and each dancer's narrative as data or cultural codes.

Posthuman Effectivity in the Body Movement

Pina is a documentary which addresses a very specific activity: dancing art. The core of dancing art is body movement. In previous sections of this chapter, we have looked at digital technology, environmental elements, and facialization. Then, how about body movement itself? How do we see kinesis from a posthumanist view?

Based on Wenders's *Pina*, the question I want to engage is: what is the posthuman

body? Kozel (2007), as a performer, expresses that although it is a commonly held

belief that virtual technology demonstrates the futility of the body, she still believes in

the idea that consciousness of technology is drawn out of the body and extending the

body (99). Furthermore, both Noland (2009) and Hansen (2004) find that the body has

the capacity for virtuality as a transcendental force, in which recursive interaction

between body and artwork is opened. To describe this kinetic force, Carrie Noland

(2009) uses the term "gesture" to describe "the organized forms of kinesis through

which subjects navigate and alter their worlds" (4). Studying corporeal performance of

gestures, Noland concludes that "kinesthesia allows us to correct recursively, refine,

and experiment with the practices we have learned. The knowledge obtained through

kinesthesia is thus constitutive of – not tangential to – the process of individuation" (4).

We can see that body do not have to take a certain corporeal form, but can dynamically

participate in the structural coupling of spaces as catalyst.

Therefore, the posthuman body is an interface of flows and exchanges, is fluid

and unfixed, and able to enhance the zone of interactivity. Just as Kozel writes, "my

body may not exist, [nodding to Godard's provocation,] but as connective tissue I live

an even greater space of potential, an expanded corporeality that is permeated by

interstitial spaces that I reach across in hope and in vulnerability […]" (278). Here I

use two scenes from *Pina* to illustrate this point.

Figure 22 Wenders, *Pina* (2011) dancing scene

The first example is the scene where two performers – a man and a woman – use

the forced perspective of the camera to create a visual illusion of a powerful and

muscly female figure. In this very moment, two bodies merge into one. The next

moment, the two go back to where they were, an interactive loop. The boundaries of

the body are changing throughout the performance.
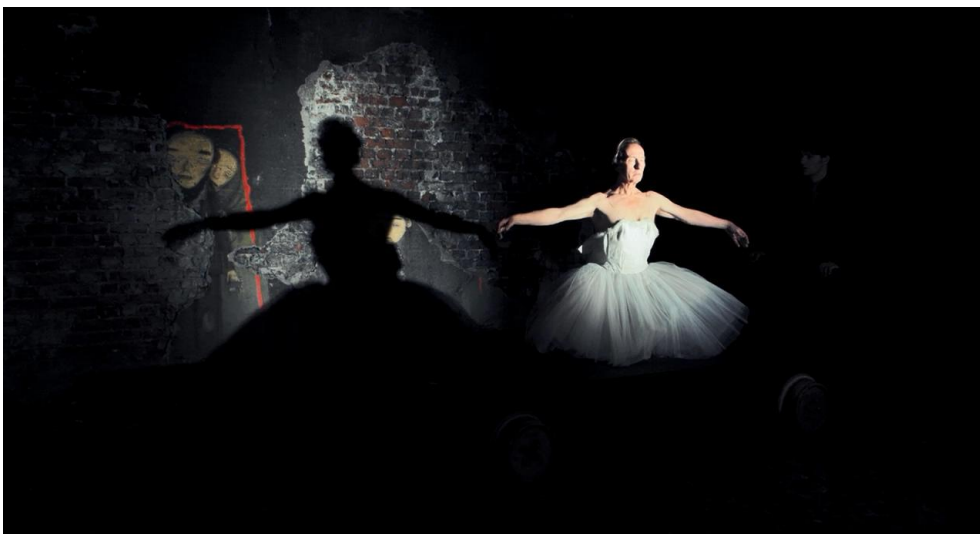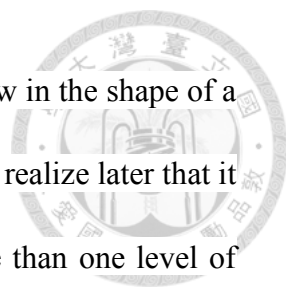
Figure 23 Wenders, *Pina* (2011) dancing scene

The second scene is in a dark room with graffiti, where a shadow in the shape of a beautiful ballerina gradually appears, but only leaves the audience to realize later that it is actually an old man in tutu. The dancer's body has created more than one level of narrative, and kept interacting with the space which at the same time gives and changes meaning.

Wenders described his first encounter with Pina Bausch's choreography to *Filmmaker* magazine, saying that he was weeping like a baby when he first watches *Café Müller*: "My brain didn't know what was happening. My body seemed to understand much better."[10] In dancing art, instead of use comprehension, bodies interfacing with each other, enabling communication with virtuality – the meaning of the artwork that could not be fully interpreted by pure thoughts.

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[10] The magazine quote is from webpage article by Aldredge (2013).

Chapter Three

Notebook on Cities and Clothes: The Paradox of Control
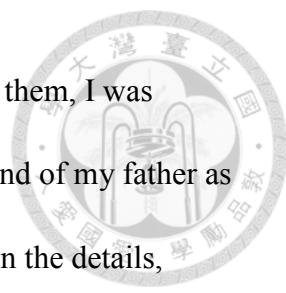
Misfit and Resistance

Notebook on Cities and Clothes (1989) is a documentary where Wim Wenders

talks with Japanese fashion designer Yohji Yamamoto as he prepares another season

debut in Paris. In this documentary, Wenders and Yamamoto ponder about cities,

fashion, identity, and cinema in the digital age. This documentary is concerned with the

transformation of meaning and the concept of place in the shift from the era of

celluloid to that of video and digital representation (Varga 2008, 21). Originally

shooting a short film in the context of fashion funded by the Centre national d'art et de

culture Georges-Pompidou, Wenders decided in halfway to make it a documentary for

the general public. Wenders expressed that he was not interested in the world of

fashion, but only in "the world." But he then realized that he can examine fashion as

any other industry, such as film production. Just as the title of the documentary

indicates, this documentary is about fashion, and it is also about cities. Meanwhile,

both fashion and the city in some way imply something about the world.

Let us start from "clothes." Wearing a shirt and a jacket labelled Yohji Yamamoto,

Wenders had a strange feeling:

> From the beginning they were new and old at the same time. In the mirror
>
> I saw me of course only better, more me than before. And I had the
>
> strangest sensation, that I was wearing, yes I had no other words for it, I

was wearing the shirt itself, and the jacket itself. And in them, I was

myself […] This jacket reminded me of my childhood and of my father as

if the essence of this memory were tailored into it. Not in the details,

rather woven into the cloth itself. The jacket was a direct translation of

this feeling, and expressed father better than words. (7:45 – 8:40)

Regarding this point, Yamamoto expresses in his autobiography *My Dear Bomb*

that clothes need the process of aging, and such a process is its life.[11] Both Wenders

and Yamamoto finds that agency is distributed from the wearer to the clothes or cloth

itself. It is interesting to further investigate this relationship between body and clothes

from a posthumanist view.

Japanese philosopher Kiyokazu Washida 鷲田清一 writes down his

philosophical reflections on fashion in the book *The Unmatched Body: What is

Fashion?* ちぐはぐな身体：ファッションって何?. In Washida's opinion, fashion

starts with breaking laws.[12] Washida argues that we as humans are very sensitive and

resistant about breaking boundaries, for example, we feel united as human beings when

alien species invade us; we find our excrement noxious once it is outside our body; we

have certain rules to distinguish edible and inedible things. Breaking boundaries thus is

taboo. However, the ultimate form of fashion is Hihuu 非風, meaning impropriety or

anti-rightness. He mentions Yamamoto's design as the top example of Hihuu, a kind of

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[11] See *My Dear Bomb* (traditional Chinese version published in 2013), "正當你活著並且變老之際，布料也活著並且老化。將布料放上一、兩年讓它老化，它會自然收縮，布料經過時間的淬煉更顯魅力。織線有自己的生命，它們在度過寒暑后更臻成熟。只有經歷這種過程，布料原本的魅力才會顯現出來" (64); "布要如何垂墜、擺動、落下？如果你留意這類問題，加之仔細觀察，布料自己就會開口說話：「這就是我想要成為的衣服。」的確，布料會自己開口說話" (73).
[12] See page 54, "服を着崩す——ファッションの発端."

fashion design which subtly mixes simple and basic forms, and a tricky anti-rightness style over the surface of body.[13] He sees clothes of real fashion to be unmatched, loose, unprepared, and inside-out.[14] These designs point to breaking boundaries and limits of sex, time, shape of body, and regulated rightness. People normally find ambiguous and unable-to-categorize things dangerous and scary. But fashion, in Washida and Yamamoto's opinion, thrives in such blurred areas.

In the title "*Notebook on Cites and Clothes*," there is not only clothes, but also the city. The City in this documentary certainly refers to Paris. Paris, in my opinion, is a huge metaphor of art, and a way of construing the world, just as fashion is. The City and fashion as two main components work in a parallel relation and both point to a random and destructive force towards control.

Figure 24 Wim Wenders, *Notebook on Cites and Clothes* (1989) driving scene

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[13] See page 57, "能の古い言葉に「非風」（正しくない型）というのがあるが、山本耀司さんは、服のもっともベーシックな基本ともっともトリッキーな「非風」とを身体の表面で危うく交錯させると絶品のデザイナーだ."

[14] See Chapter 3 Unbalanced Beings (ふつりあいな存在). These "unbalanced beings" include "ちぐはぐな服", "だぶだぶの服", "用意をしない服", "裏返しの服", etc.

At the beginning, Wenders questions identity. In the digital age, identity becomes

feeble because everything is a copy, and the notion of the original becomes obsolete.

Identity is "out," but fashion is always "in." Thus, identity and fashion, according to

Wenders, are two contradictory terms. The image of this scene is divided into two parts:

the moving car on a highway as background, and a screen showing pre-recorded

moving highway images. It seems to echo the monologue about the digital age that

everything is a copy. In the small screen, from time to time, images are distorted,

blurred by noise, or even played in reverse. On the other hand, the larger background

image is smooth and clear. This is like using the image itself to say: don't trust the

digital image.

This division, or "screen on the screen" appears more than once in the

documentary. Later in talks with Yamamoto, the small recording machine's screen also

appears, with a different space as background.

Figure 25 Wim Wenders, *Notebook on Cites and Clothes* (1989) interview scene

Figure 26 Wim Wenders, *Notebook on Cites and Clothes* (1989) interview scene

Figure 27 Wim Wenders, *Notebook on Cites and Clothes* (1989) interview scene

Each clip contains more than one scene, more than one set of time and space. Two kinds of images mix together. One tends to be more stable and realistic, another more disturbed and anxious. This cinematic design is just like what Washida points out about Yamamoto's fashion design – Hihuu – a mixture of the stable, the docile, as well as the chaotic, the rebellious.

Yamamoto expressed his fondness of Paris in *My Dear Bomb*: "I like Paris because of the air of freedom. The faith is in each irregular pebble on the street:

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everyone can be whatever they like to be" (76).[15] Such freedom is embodied in the

misfit – one can be as messy as he or she wants to be at a formal event. But this is not

acceptable in Tokyo, or most cities of the world. That is why Yamamoto does not like

Tokyo, because everyone seems to fit in perfectly.
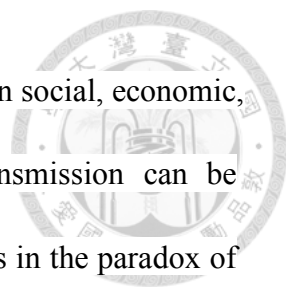
This meditation by the director and Yamamoto on the meaning of cities and

clothes in the age of electronic data and computerized image shows that artists like

them have fully realized that the society is filled with control, and being a misfit or

resistant is to break the control.

The Paradox in Control

Gilles Deleuze provides the most influential model of control in his "Postscript on

the Societies of Control." Moving from Michel Foucault's disciplinary society, control

society under Deleuze's theorization is grounded in the intersections of technology and

knowledge. Intertwined with computers, information technologies, and electronic cards,

Deleuze's theorization accounts for a broad set of socioeconomic logics undergirding

the current global capitalism.

Wendy Chun engages Deleuze's control society in a sympathetic critique,

describing it as "arguably paranoid" (9) because it appears to overestimate the

technical potential of computers. Galloway's (2004) "protocol" metaphor signals a

tendency towards engagement with the mechanisms of control. These accounts of

control show that whether or not following Deleuze's control society model, the logic

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[15] Translated by the thesis author from original text "之所以喜歡巴黎，是因為那裡的自由氣息。滲入街道圓石的信念是：每個人都可以隨心所欲，其他的去死."

of control has grounded a informatics capitalism, having an impact on social, economic, and political practices. Information storage, processing, and transmission can be instrumentalized to direct forms of life. For me, the real problem lies in the paradox of control. Breaking control means to practice the contrary of control, isn't it a new form of control?

As previously mentioned, Washida sees fashion as breaking control:

> Clothes contain social norms (behavioral pattern, sex, personality, morality, etc.) about self-image. We feel reluctant wearing these norms on us, and will gradually dress against the norms. On our bodies, we confront questions such as "how rebellious is enough to attract others' attention?", and "how much effort should we put in resisting the rigid social norms?" through our bodies. But this resistance is not for the purpose of purely resisting. This behavior is to confirm who we are. It is a just-in-the-bottom-line behavior, an inevitable practice.[16] (54-55)

A vivid example is Yamamoto's experience working in Pina Bausch's theatre. In *My Dear Bomb* he talks about a fashion show he set up:

> Once a spectator entered the theater itself, they were met with another sight. In the first row in front of the large, curved stage I'd lined up dancers, tall and short, men and women, all in a random arrangement that

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[16] Translated by the thesis author from original text "…大抵の服というのは個人のイメージについての社会的な規範（行動様式、性別、性格、モラルなど）を縫いつけている。その着心地が悪くて、僕らはそれを勝手に着崩してゆく。どこまでやれば他人が注目してくれるか、どこまでやれば社会の側からの厳しい抵抗にあうか、などといったことを身体で確認していくのだ。が、それは抵抗のための抵抗としてなされるのではない。自分が誰かを確認したいという、ぎりぎりの行為、のっぴきならない行為として行われるのだ."

left an uneven impression. I'd dressed them in costumes that didn't fit

them, and the zippers had been left unzipped. These dancers, too,

remained frozen in their poses. That was the fashion show that I offered

that evening.[17] (154)
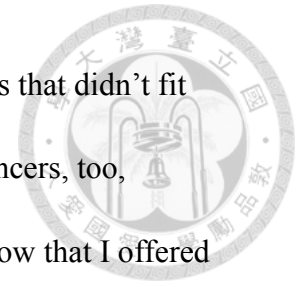
Similarly, Yamamoto in the documentary also expresses that he finds virtue from

asymmetric and breaking harmony. With randomness, asymmetry, misfits, and the

"Hihuu" style as elements in his design, he opens up a posthumanistic bodily force. He

reflected on Pina's performance when he did the fashion and clothing work for the

company: "The supple movements of Pina's body would easily absorb even the kicks

and punches of the men who had been trained to kill their opponents with a single

strike" (Yamamoto and Mitsuda 2010, 157). Randomness gives rise to interactivity and

interpassivity.[18]

But one important point that can be seen from the above Washida's argument is

that he denies the paradox of breaking control. The paradox that the behavior of

breaking boundaries is another way to confirm the existence of boundaries. Washida,

rather, views the resistance to social norm "inevitable" and effective, as a confirmation

of self-identity, not something still under the mechanisms of control. Wenders, in his

own cinematic practices, is also doing the same: he feels reluctant to plant a storyline;

with story, his images are being controlled. However, many have noticed the paradox

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[17] Quote from *My Dear Bomb* English translation published in 2010.

[18] Regarding "interpassivity", see Liao (2007) page 24: "...互動 (interactivity) 與互卸 (interpassivity) 兩種思考框架的區分。互動是一般行動主體在複數化的情境中互相發力、受力形成的過程，互卸則是隱藏在施力過程背後的暗影偏移，以虛擬受力為本 (受態未必能施發為動態)，包括種種代理、迴避、影射、曲折關係。"

behind this resistance: rejecting story can form a new kind of story. Just as film critic

Frank Schnelle (1993) points out in his review of Wenders's film *Far Away, So Close*:

> The great paradox in this film: on one hand Wenders seems to be doing
>
> everything in his power to resist telling anything like a story. On the other
>
> hand, he weaves a multitude of destinies and episodes into a monstrosity
>
> of a story. (9)

There are many artists are trying the same thing but trapped in the same paradox.

John Hughes (2004) in his consideration of technology and culture notices artists react

strongly against the systematic order and control in technology. Artists like Robert

Motherwell, Willem de Kooning, and Barnett Newman all try to stress chance and

disorder and "want[ed] their spontaneous art to be an antidote for the dehumanizing

impact of highly automated, controlling technology" (141).

A noticeable example is the composer, painter, and poet, John Cage, whose

artistic compositions are highly experimental and are often called for free

improvisation. Cage shows strong abhorrence towards rigid order and control. For

example, in his musical composition *Europeras* performed in Frankfurt, Germany in

1987, he let each group of performers play or sing in his or her own timeline without

imposing order and system. Cage suggested that there is no need to construct order or

system, because variations and patterns spontaneously appear, like timeline

conjunctions. Comparing syntax to oppressive government, in his poetry writing, Cage

uses free and innovative linguistic strategies in his anarchic poetry works because he

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believes such manner overwhelms intentionality, dissolves social regulation, and

fosters individual responsibility.

LECTURE ON NOTHING

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I am here             ,           and there is nothing to say        .
                                                      If among you are
those who wish to get  somewhere          ,          let them leave at
any moment         .                    What we re-quire              is
silence            ;           but what silence requires
           is          that I go on talking      .
                                                Give any one thought
              a push              :          it falls down easily        .
;           but the pusher       and the pushed          pro-duce        that enter-
tainment            called          a dis-cussion        .
              Shall we have one later ?

                                    IV
Or                 ,    we could simply de-cide              not to have a dis-
cussion        .                    What ever you like .          But
now                      there are silences              and the
words        make              help make                    the
```

Figure 28 John Cage, *Lecture on Nothing* (1969)

Hayles (1994b), in the analysis of Cage's works, pays special attention to "chance

operations," the phrase that Cage's often uses to refer to his own verbal, visual or

musical works. She concludes three major strategies that Cage uses: intersecting

worldlines, temporal asymmetry, and informational incompressibility. By the definition

of dictionary, chance is "an opportunity, a risk or hazard; a gamble," while operation,

by contrast, is "a process or series of acts performed to effect a certain purpose or

result" (226). This oxymoronic phrase "chance operations," therefore, refers to

combination of conjunction and human cause. This contradiction between randomness

in chance and purposefulness in operations, as Hayles suggests, is inherent in such

artistic practice. To put such manner in scientific context especially Shannon's

information theory, Hayles argues, all of these strategies lead to maximum information,

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chance, noise, and randomness (238). Hayles thinks that this attempt to break control, though oxymoronic, is enough to show complexity in its flow, and entangle with causal determinism "with an open and unpredictable future" (240).

Hayles notices this paradox of control, but is holding a positive attitude towards it. Control is inevitable, paradox is also inevitable. Hayles believes that it is still significant to embrace complexity and randomness. But whether it will have a positive influence or not on loosening the control structure is still unforeseeable.

Waldrop (1993) may have pointed out something significant in complex system theory and its social implications. She quotes Doyne Farmer's opinion that "[i]t's now pretty clear that the totalitarian, centralized approach to the organization of society doesn't work very well," and that "[e]volution thrives in systems with a bottom-up organization, which gives rise to flexibility […] But at the same time, evolution has to channel the bottom-up approach in a way that doesn't destroy the organization. There has to be a hierarchy of control – with information flowing from the bottom up as well as from the top down" (294). In Waldrop and Farmer's view, control has to be there, but the dynamics of complexity at the edge of chaos may be the ideal for this behavior, which means Hayles may be right. Therefore, practices like Wenders's resistance to story, Yamamoto's dislike of harmony, and Cage's breaking linguistic structure are worth a try. Just as Hayles believes, through this chance operation, we are closer to an open future.
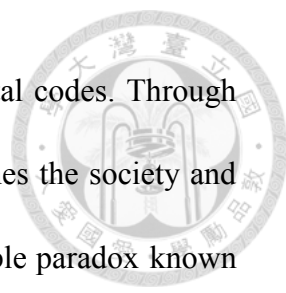
Conclusion

Understanding what virtualities reside in the forces unleashed by cybernetic arrangements may well mean unlocking how technological concepts translate into new categories of social experience, or how a machine logic or architecture may insinuate itself into the relations of power that flow through us and connect us one to another.

-- David Norman Rodowick (2001) *Reading the Figural*, 228

Analyzing *Tokyo-Ga*, *Pina*, and *Notebook on Cites and Clothes*, this study focuses on a few important concepts: distributed agency, complex system, informational pattern, machinic vision, cybernetics, interface, gesture, and control. This project aims at pointing out the complexity in the logic of technology. In this section, I will conclude what logic of technology I found with the help of a posthumanist view in Wim Wenders's three documentaries. Through film analysis, I argue that in *Tokyo-Ga*, environmental elements as automated actors are in an abstract but real distributed network and contribute emergent power to complexity; the absence of Ozu and the melancholy brought by the doomed impossibility of searching for truth is actually a form of informational pattern. Agency is distributed, and gives rise to pattern from the random journey through constant interaction with the surroundings. Analyzing the documentary *Pina*, I argue that 3D technology and outdoor stages enhance mediated experience of performance and extends human perception. Facialization works as an

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interface that connects the audience as users and memories as digital codes. Through *Notebook on Cities and Clothes*, I propose that the power that pushes the society and life forward lies in misfit and resistance. Though there is an inevitable paradox known as "chance operation" in breaking control, such artistic practice is beneficial to an open future.

From the analysis above, I suggest the logic of technology as following: first, the network is distributed and directs to a protocological technology where agency is distributed, machines and other elements in the documentary are automatic and self-deterministic; second, mediated by new media and digital media, the cinematic experience tends to be a technical expansion of intelligence in a distributed system. It can also be concluded as what Hayles (1999b) summerizes about the hypertext:
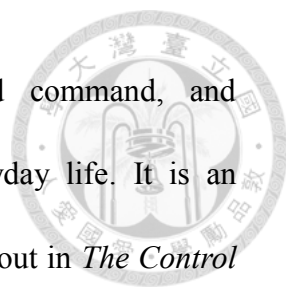
> To summarize: first, there is no central representation; second, control is distributed throughout the system; third, behaviors develop in direct interaction with the environment rather than through an abstract model; and fourth, complex behaviors emerge spontaneously through self-organizing, emergent processes. (213)

Hughes sees technology as "a creative process involving human ingenuity" and which can be traced back to the root *teks*: to fabricate or to weave in Greek, suggesting a process of making (3). In the same light, this thesis also views the making of documentary film as technology, just like scientists using tools. It allows me to stress the aesthetic and complex dimensions of technology, which, according to Hughes, have

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been neglected in the twentieth and twenty-first centuries' technology trainings.

The key logic of technology is complexity, and complexity underlies the sense of an emergent technological being. Being complex, uncontrollable, and autonomous, technological being can no longer be conceived in terms of Western modernity's instrumental rationality, but is something has its own life and its own inscrutable logic. This project argues that technology stands as "being," which is a informatic view of life, and also a view of life as a network. Hayles in her book discussing contemporary technogenesis *How We Think* (2012) also expresses technology is like evolution in general, but not about progress which indicates moving in a positive direction, but is about adaption, the fit between organisms and environments (81). Therefore, the scenario is much more complex than Darwinian model. Such a system should be seen as lifelike, as autonomous system which governed by its own internal processes, and evolves its own patterns and organizations.
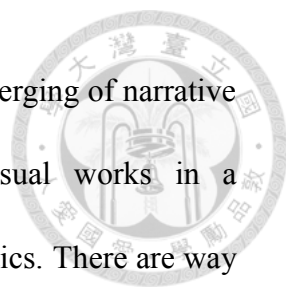
Under such logics, protocol is a functioning of distributed control. Just as the French philosophy group, Tiqqun, points out in *The Cybernetic Hypothesis* (2001): control is "the guiding metaphor for all human activity" (55). It has injected into our lives like gravity and oxygen. The exercise of power is no longer from above or from below, but is heterogeneous and distributed. Control becomes one of the most important topics in the context of paradigm shift brought by new technologies. Through a friction-free and distributed-network-shaped space of expressions and communication, we are not freed from power relations. Simulating the Web where the architecture of power is built through surveillance and social control, the issue of

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control tends to encompass industrial automation, distributed command, and informatics capture, is reorganizing the time and space of everyday life. It is an inevitable result with digitalization, like what James Beniger points out in *The Control Revolution*, "a complex of rapid changes in the technological and economic arrangements by which information is collected, stored, processed, and communicated, and through which formal or programmed decisions might affect social control" (vi). But with new potentials of power, there are also new opportunities for criticism and resistance.

Complexity is a matter of unpredictability. And technology may have achieved a complexity beyond humanity to predict or control. Although there is no guarantee that the dynamic transformations between humans and technics are moving towards a positive direction, the demand for increase information-intensive environments and openness is growing and will be the driving force for technological innovation. In this control-freedom paranoid mind-set, I hold a positive opinion on freedom as autonomy to locate ourselves in this society. Openness may not equal to democracy, but it enables communication protocols towards other freedom – open source culture for example – and more.

Finally, a short reflection on the methodology of this study: The current project is a bold experiment which adopts a posthumanist view to analyze neither science-related nor human-animal themed documentary films. But the writer believes that such analysis is not only a way to understand documentary itself, but also a creative way to

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reflect on technology in literary work. This practice of seeing the emerging of narrative as networks opens up possibilities to rethink cinema and visual works in a technological way which previously remains in the system of aesthetics. There are way literary studies that use the posthumanist view as methodology, or to look for the logic of technology through a posthumanist philosophical inquiry. Examples are Hayles's book (2005) investigating how literature has transformed itself from inscriptions to dynamic images and sensory modalities; Chaoyang Liao's investigation (2007) on the posthumanist representation in Hong Kong film *Kung Fu Hustle*; Seb Franklin's research (2013) on Beckett's novels and its cultural cybernetics. They all reach another level in understanding technology than traditional literary studies approach. Posthumanism is not perfect nor a finished area of theory, but its resourceful philosophical inquiries are useful to connect developments in science studies and the paradigm shift in the literary world.

Works Cited

Aldredge, Michelle. "The Epiphany of Dance: Wim Wenders' Stunning Farewell to

Pina Bausch." Gwarlingo. 2 May, 2017.

<http://www.gwarlingo.com/2013/the-epiphany-of-dance-filmmaker-wim-wender

s-says-farewell-to-pina-bausch/> (2013). Webpage.

Aston, Judith, and Sandra Gaudenzi. "Interactive Documentary: Setting the Field."

Studies in Documentary Film 6.2 (2012): 125-39. Print.

Badmington, Neil, ed. *Posthumanism*. New York: St. Martin's P, 2000. Print.

Badmington, Neil. "Theorizing Posthumanism." *Cultural Critique* 53 (2003): 10-27.

Print.

Beniger, James R. *The Control Revolution: Technological and Economic Origins of

Information Society*. Cambridge: Harvard UP, 1986. Print.

Blau, Herbert. *The Eye of Prey: Subversions of the Postmodern*. Bloomington: Indiana

UP, 1987. Print.

Bolter, J. David, and Richard A. Grusin. *Remediation: Understanding New Media*.

Cambridge: MIT P, 2000. Print.

Bromley, Roger. *From Alice to Buena Vista: The Films of Wim Wenders*. Greenwood

Publishing Group, 2001. Print.

Causey, Matthew. "Postorganic Performance: The Appearance of Theater in Virtual

Spaces." *Cyberspace Textuality: Computer Technology and Literary Theory,* Ed.

Marie-Laure Ryan, Bloomington: Indiana UP, 1999, 182-201. Print.

Callon, Michel. "The Sociology of an Actor-Network: The Case of the Electric
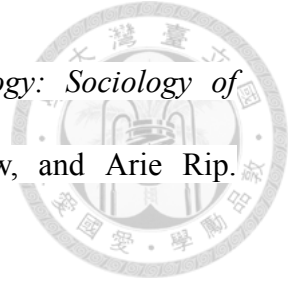
Vehicle." *Mapping the Dynamics of Science and Technology: Sociology of Science in the Real World*. Ed. Michel Callon, John Law, and Arie Rip. Houndmills: Macmillan, 1986. Print.

Chun, Wendy Hui Kyong. *Control and Freedom: Power and Paranoia in the Age of Fiber Optics*. Cambridge: MIT P, 2006. Print.

Clark, Andy. *Supersizing the Mind: Embodiment, Action, and Cognitive Extension*. Oxford: Oxford UP, 2008. Print.

Clark, Andy, and David Chalmers. "The Extended Mind." *Analysis* 58.1 (1998): 7-19. Print.

Corner, John. *The Art of Record: a Critical Introduction to Documentary*. Manchester: Manchester UP, 1996. Print.

Covino, Michael. "Wim Wenders: A Worldwide Homesickness." *Film Quart* 31.2 (1977): 9-19. Print.

Crary, Jonathan. *Suspensions of Perception: Attention, Spectacle, and Modern Culture*. Cambridge: MIT P, 2000. Print.

Kozel, Susan. *Closer: Performance, Technologies, Phenomenology*. Cambridge: MIT P, 2007. Print.

De Bromhead, Toni. *Looking Two Ways: Documentary Film's Relationship with Reality and Cinema*. Aarhus: AKA-Print 1996. Print.

Deleuze, Gilles. "Postscript on the Societies of Control." *October* 59 (1992): 3-7. Print.

Deleuze, Gilles, and Félix Guattari. *A Thousand Plateaus: Capitalism and Schizophrenia*. Trans. Brian Massumi. Minneapolis: U of Minnesota P, 1987.

75
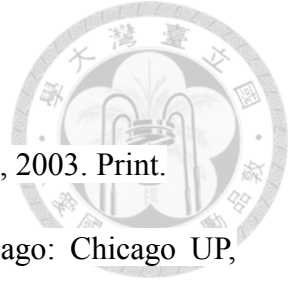
Print.

Dennett, Daniel Clement. *Freedom Evolves*. London: Penguin Books, 2003. Print.

Derrida, Jacques. *Writing and Difference*. Trans. Alan Bass. Chicago: Chicago UP, 1978. Print.

---. "Economimesis." *Diacritics* 11.2 (1981): 3-25. Print.

Desiderio, Matthew John. Wandering: Seeing the Cinema of Wim Wenders through Cultural Theory and Naturalized Phenomenology. Dissertation, Temple University, 2011. Print.

Dieckmann, Katherine, and Wim Wenders. "Wim Wenders: An Interview." *Film Quart* 38.2 (1984): 2-7. Print.

Downey, Allen B. *Think Complexity: Complexity Science and Computational Modeling*. O'Reilly Media, Inc., 2012. Print.

Floridi, Luciano. "Against Digital Ontology." *Synthese* 168.1 (2009): 151-178. Print.

Franklin, Seb. "The Limits of Control." *Cultural Politics* 7.2 (2011): 311-20. Print.

---. "Humans and/as Machines: Beckett and Cultural Cybernetics." *Textual Practice* 27.2 (2013): 249-68. Print.

---. *Control: Digitality as Cultural Logic*. Cambridge: MIT P, 2015. Print.

Fukuyama, Francis. "Our Posthuman Future." *Farrar, Straus and Giroux* (2002): 101. Print.

Galloway, Alexander R. *Protocol: How Control Exists after Decentralization*. Cambridge: MIT P, 2004. Print.

---. "Black Box, Black Bloc." Culture and Communication. 2 May,

2017.<http://cultureandcommunication.org/galloway/pdf/Galloway,%20Black%2

0Box%20Black%20Bloc,%20New%20School.pdf> (2010). Webpage.

---. "What is New Media? Ten Years after the Language of New Media." *Criticism*

53.3 (2011): 377-84. Print.

---. *The Interface Effect*. Cambridge: Polity, 2012. Print.

---. "The Cybernetic Hypothesis." *Differences* 25.1 (2014): 107-131. Print.

Galloway, Alexander R., and Eugene Thacker. *The Exploit: A Theory of Networks*.

Minneapolis: U of Minnesota P, 2007. Print.

Galloway, Alexander R., Eugene Thacker, and McKenzie Wark. *Excommunication:*

Three Inquiries in Media and Mediation. Chicago: U of Chicago P, 2013. Print.

Graf, Alexander. *The Cinema of Wim Wenders: The Celluloid Highway*. London:

Wallflower P, 2002. Print.

Graham, Elaine L. *Representations of the Post/human: Monsters, Aliens, and Others in*

Popular Culture. New Jersey: Rutgers UP, 2002. Print.

Gray, Chris Hables. *Cyborg Citizen: Politics in the Posthuman Age.* New York:

Routledge, 2001. Print.

Goffman, Erving. 1969. *Strategic Interaction*. New York: Routledge. Print.

Hansen, Mark B.N. *New Philosophy for New Media*. Cambridge: MIT P, 2004. Print.

---. "Media Theory." *Theory, Culture & Society* 23.2-3 (2006): 297-306. Print.

---. "Living (with) Technical Time from Media Surrogacy to Distributed Cognition."

Theory, Culture & Society 26.2-3 (2009a): 294-315. Print.

---. "System-Environment Hybrids." *Emergence and Embodiment: New Essays on*

Second-order Systems Theory. Eds. Bruce Clarke and Mark B.N. Hansen. Durham:

Duke UP, 2009. 113-42. Print.

Haraway, Donna. "A Cyborg Manifesto: Science, Technology, and Socialist-Feminism

in the Late Twentieth Century." *Simians, Cyborgs, and Women: The Reinvention

of Nature*. New York: Routledge, 1991. Print.

Haugeland, John. "Mind Embodied and Embedded." *Having Thought: Essays in the

Metaphysics of Mind*. Ed. John Haugeland. Cambridge: Harvard UP, 1998. 207-40.

Print.

Hayles, N. Katherine. "Boundary Disputes: Homeostasis, Reflexivity, and the

Foundations of Cybernetics." *Configurations* 2.3 (1994a): 441-67. Print.

---. "Chance Operations: Cagean Paradox and Contemporary Science." *John Cage:

Composed in America* (1994b): 226-41. Print.

---. *How We Became Posthuman: Virtual Bodies in Cybernetics, Literature, and

Informatics*. Chicago: U of Chicago P, 1999a. Print.

---. "Artificial Life and Literary Culture." *Cyberspace Textuality: Computer

Technology and Literary Theory*. Ed. Marie-Laure Ryan, Bloomington: Indiana

UP, 1999b. 205-23. Print.

---. *My Mother Was a Computer: Digital Subjects and Literary Texts*. Chicago: U of

Chicago P, 2005. Print.

---. *How We Think: Digital Media and Contemporary Technogenesis*. Chicago: U of

Chicago P, 2012. Print.

Holland, John. *Emergence: From Chaos to Order*. Hampshire: Oxford UP, 2000. Print.

Hui, Yuk. "The New Politics of the New Media." *The Digitized Imagination: Encounters with the Virtual World*, ed. N. Rajan, New York: Routledge, 2008, 90-101. Print.

---. "What is a Digital Object?" *Metaphilosophy* 43.4 (2012): 380-395. Print.

Hughes, Thomas P. *Human-Built World: How to Think about Technology and Culture*. Chicago: U of Chicago P, 2004. Print.

Hustvedt, Siri. "Pina: Dancing for Dance." The Criterion Collection. 10 March, 2017. <https://www.criterion.com/current/posts/2634-pina-dancing-for-dance>   (2016). Webpage.

Hutchins, Edwin. *Cognition in the Wild*. Cambridge: MIT P, 1995. Print.

Ihde, Don. *Bodies in Technology*. Minneapolis: U of Minnesota P, 2002. Print.

Johnston, John. "A Future for Autonomous Agents: Machinic Merkwelten and Artificial Evolution." *Configurations* 10.3 (2002), 473-516. Print.

---. "Friedrich Kittler: Media Theory after Poststructuralism." *Literature, Media, Information Systems*, ed. Friedrich A. Kittler, New York: Routledge, 2012, pp 1-26. Print.

Keep, Christopher J. "Disturbing Liveliness of Machines: Rethinking the Body in Hypertext Theory and Fiction." *Cyberspace Textuality: Computer Technology and Literary Theory*. Ed. Marie-Laure Ryan, Bloomington: Indiana UP, 1999. 164-81. Print.

Kember, Sarah, and Joanna Zylinska. *Life after New Media: Mediation as a Vital Process*. Cambridge: MIT P, 2012. Print.

Kilbourn, Russell JA. *Cinema, Memory, Modernity: The Representation of Memory from the Art Film to Transnational Cinema*. New York: Routledge, 2013. Print.

Kittler, Friedrich A. *Optical Media*. Trans. Anthony Enns. Cambridge: Polity, 2009. Print.

---. *Literature, Media, Information Systems*. New York: Routledge, 2012. Print.

Kolker, Robert Phillip, and Peter Beicken. *The Films of Wim Wenders: Cinema as Vision and Desire*. Cambridge: Cambridge UP, 1993. Print.

Kouvaros, George. "As If It Were for the Last Time: Wim Wenders — Film and Photography." *New German Critique* 42.2 125 (2015): 81-95. Print.

Latour, Bruno. *Science in Action: How to Follow Scientists and Engineers through Society*. Cambridge: Harvard UP, 1987. Print.

---. "On Recalling ANT." *Actor Network Theory and After*. Eds. John Law and John Hassard. Malden: Blackwell, 1999. 15-25. Print.

---. "Is Re-Modernization Occurring - And If So, How to Prove It?: A Commentary on Ulrich Beck." *Theory, Culture and Society* Vol.20 2 (2003): 35-49. Print.

---. "Networks, Societies, Spheres: Reflections of an Actor-Network Theorist." *International Journal of Communication* 5 (2011): 15. Print.

Law, John. "Notes on the Theory of Actor-Network: Ordering, Strategy and Heterogeneity." *Systems Practice* 5 (1992): 379-93. Print.

---. "After ANT: Complexity, Naming, and Topology." *Actor Network Theory and After*. Eds. John Law and John Hassard. Malden: Blackwell, 1999. 1-14. Print.

Levy, Steven. *Artificial Life: The Quest for a New Creation*. New York: Pantheon

Books. 1992. Print.

Lévy, Pierre. *Becoming Virtual: Reality in the Digital Age*. Trans. Robert Bononno. New York: Plenum Publishing, 1998. Print.

Liao, Chaoyang. "Disabilities, the Cybernetic Body, and Global Risk: Posthuman Representation in *Kung Fu Hustle*." *Chung Wai Literary Quaterly*, 36-1 (2007): 19-66. Print.

Light, Andrew. "Wim Wenders and the Everyday Aesthetics of Technology and Space." *The Journal of Aesthetics and Art Criticism* 55.2 (1997): 215-29. Print.

Manovich, Lev. *The Language of New Media*. Cambridge: MIT P, 2001. Print.

Mariniello, Silvestra. "Experience and Memory in the Films of Wim Wenders." *SubStance* 34.1 (2005): 159-79. Print.

Maturana, Humberto R., G. Uribe, and S. Frenk. "A Biological Theory of Relativistic Colour Coding in the Primate Retina: A Discussion of Nervous System Closure with Reference to Certain Sisual Effects." A*rchiva de Biologia y Medicina Experimentales* 1 (1968): 1-30. Print.

Maturana, Humberto R., and Francisco J. Varela. *Autopoiesis and Cognition: The Realization of the Living*. Berlin: Springer Science & Business Media, 1991. Print.
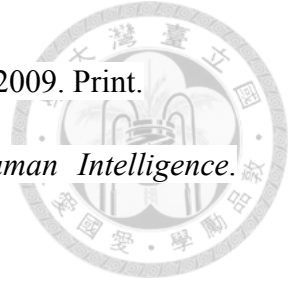
McLuhan, Marshall. *Understanding Media: The Extensions of Man*. 1964. Cambridge: MIT P, 1994. Print.

Miah, Andy. "Posthumanism: a Critical History." *Medical Enhancements and Posthumanity* 1 (2007): 28. Print.

Mitchell, Melanie. *Complexity: A Guided Tour*. Oxford: Oxford UP, 2009. Print.

Moravec, Hans. *Mind Children: The Future of Robot and Human Intelligence*. Cambridge: Harvard UP, 1988. Print.

Nichols, Bill. *Representing Reality: Issues and Concepts in Documentary*. Bloomington: Indiana UP, 1991. Print.

---. *Blurred Boundaries: Questions of Meaning in Contemporary Culture*. Bloomington: Indiana UP, 1994. Print.

---. *Introduction to Documentary*. Bloomington: Indiana UP. 2001. Print.

Noland, Carrie. "Digital Gestures." *New Media Poetics: Contexts, Technotexts, and Theories* (2006): 217-44. Print.

---. *Agency and Embodiment: Performing Gestures/Producing Culture*. Cambridge: Harvard UP, 2009. Print.

Ostrow, Saul. "Preface." *Literature, Media, Information Systems*, ed. Friedrich A. Kittler, New York: Routledge, 2012, pp ix-viii. Print.

Rammert, Werner. "Where the Action is: Distributed Agency between Humans, Machines, and Programs." *Paradoxes of Interactivity* (2008): 62-91. Print.

Rodowick, David Norman. *Reading the Figural, or, Philosophy after the New Media*. Durham: Duke UP, 2001. Print.

Rusty, R. L. *High Techné: Art and Technology from the Machine Aesthetic to the Posthuman*. Minneapolis: U of Minnesota P. 1999. Print.

Saito, Hiro. "An Actor-Network Theory of Cosmopolitanism." *Sociological Theory* 29.2 (2011): 124-49. Print.

Schmidt, Erwin M. "3D Producer Erwin M. Schmidt Talks about the Production Process: New Possibilities with Digital 3D Technology." Pina Official Website. 20, Jun. 2016. <http://www.pina-film.de/en/about-3D.html/> (2011). Webpage.
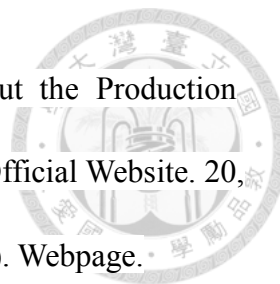
Schnelle, Frank. "In Weiter Ferne, So Nah." *Epd Film* 09 (1993): 6-9. Print.

Servos, Norbert. "Pina Bausch: Talking about People through Dance." Trans. Steph Morris. Tanztheatre Wuppertal - Pina Bausch. 4 Apr, 2017. <http://www.pina-bausch.de/en/pina_bausch/index.php> (2009). Webpage.

Shannon, Claude Elwood. "A Mathematical Theory of Communication." *ACM SIGMOBILE Mobile Computing and Communications Review* 5.1 (2001): 3-55. Print.

Simondon, Gilbert. *Du Mode D'existence des Objets Techniques*. Paris: Aubier, 1958. Print.

Stiegler, Bernard. *La Technique et le Temps, Vol.2: La Désorientation*. Paris: Galilée, 1996. Print.

Tiqqun. "L'Hypothèse Cybernétique," *Tiqqun* 2 (2001): 40-83. Print.

van Loon, Joost. "Virtual Risks in an Age of Cybernetic Reproduction." *The Risk Society and Beyond: Critical Issues for Social Theory* (2000): 165-82. Print.

Varga, Darrell. "The Diary Films of Wim Wenders." *Quarterly Review of Film and Video* 26.1 (2008): 20-27. Print.

von Neumann, John. "The General and Logical Theory of Automata." *Cerebral Mechanisms in Behavior* 1.41 (1951): 1-2. Print.

Waldrop, Mitchell M. *Complexity: The Emerging Science at the Edge of Order and*

Chaos. New York: Simon and Schuster, 1993. Print.

Ward, Paul. *Documentary: The Margins of Reality*. London: Wallflower P, 2005. Print.

Wark, McKenzie. *Gamer Theory*. Cambridge: Harvard UP, 2007. Print.

Wenders, Wim, dir. *Tokyo-Ga*. Chris Sievernich Filmproduktion, 1985. Film.

---. *Notebook on Cities and Clothes*. Axiom Films, 1989. Film.

---. *Pina*. Neue Road Movies, 2011. Film.

Wenders, Wim. *The Logic of Images: Essays and Conversations*. London: Faber & Faber, 1991. Print.

Wenders, Wim, Sean Whiteside, and Michael Hofmann. *Emotion Pictures: Reflections on the Cinema*. London: Faber, 1989. Print.

Wiener, Norbert. *Cybernetics or Control and Communication in the Animal and the Machine*. Cambridge: MIT P, 1961. Print.

Winston, Brian. *Claiming the Real II: Documentary: Grierson and Beyond*. London: BFI, 2008. Print.

Wolfe, Cary. *What is Posthumanism*? Minneapolis: U of Minnesota P, 2010. Print.

Wolfram, Stephen. *A New Kind of Science*. Champaign: Wolfram Media, 2002. Print.

Yamamoto, Yohji, and Ai Mitsuda. *My Dear Bomb*. Trans. James Dorsey. Leguit: Ludion, 2010. Print.

鷲田清一. *ちぐはぐな身体：ファッションって何?*. Tokyo: 筑摩書房, 2005. Print.

山本耀司, 滿田愛. *My Dear Bomb*. Trans. 陳品秀. 臺北市: 行人文化實驗室, 2013. Print.