

**MIRROR AFFECT: INTERPERSONAL SPECTATORSHIP IN INSTALLATION ART
SINCE THE 1960S**

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ART SINCE THE 1960S

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This dissertation traces the genealogy of interpersonal spectatorship in contemporary installations that encourage viewers to affectively relate to one another by watching themselves seeing and acting individually or as a group. By incorporating reflective surfaces, live video feedback, or sensors in their works, contemporary artists around the world have been challenging what had come to be a binary relation between the beholder and the art object, thereby, heightening viewers' awareness of the social and spatial contexts of aesthetic experience. Starting with the 1960s there has been not only an increasingly sharp departure from the autonomy of the art object on the part of artists, but also a rejection of prevailing self-focused and private modes of art spectatorship on the part of viewers of art.

Situated between theories of relational aesthetics and new media theories of interactivity, my dissertation examines the social, cultural, and technological factors that have contributed to the production of installations that act as affective interfaces between multiple viewers. I argue that contemporary artworks with mirroring properties have triggered a shift towards increasingly public and interpersonal forms of art spectatorship that are consonant with the emergence of new modes of perception and sociability shaped by enhanced surveillance, unavoidable multitasking, and online networking.

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PREFACE

This thesis is the outcome of many years of reflection on the complex relations between contemporary art practices, exhibition spaces, and more or less unitary networks of art participants. During my doctoral studies, I have gradually moved from an interest in the shifting meanings of site-specific installations to an interest in the variable affective and cognitive ties developed between spectators in response to works that enhance the public dimension of art encounter and call for interpersonal awareness.

I am grateful to the members of my PhD committee for their invaluable guidance and unwavering support throughout the period of my graduate studies. I am deeply indebted to my advisor Terry Smith for encouraging me to develop my critical thinking and for teaching me to consider both the broad picture of art transformations and the particular conditions of art production and reception in different parts of the world. He has introduced me to the complexity of contemporary art currents and has been highly supportive of the interdisciplinary nature of my studies. I am thankful to him for his words of wisdom and encouragements during my preparation for conference presentations, as well as for his astute advice throughout all stages of my work on the dissertation. I am grateful, too, to Josh Ellenbogen for expanding my knowledge of the correlations between perception, art, and technology. His vivid portrayal of changes in visuality in the 19th century has been highly inspiring for my research. My deepest gratitude also goes to Barbara McCloskey who has considerably helped me establish and reevaluate the

objectives of my project. Her rigorous comments and thought provoking questions have considerably helped me sharpen my arguments and reflect on the political implications of installation artworks with reflective properties. I am thankful, too, to Adam Lowenstein, for enhancing my understanding of theories of posthumanism and affect, as well as for his thoughtful comments on crossovers between cinema and art spectatorship. Last, but not least, my gratitude goes to Gao Minglu who acted as a member of my PhD committee for a period of several years. While health problems prevented him from attending my defense, he has been supportive of my research and has challenged me to consider the connections between mirroring acts and imaginary projections.

My research has been greatly facilitated by numerous grants and fellowships (Andrew Mellon Predoctoral Fellowship, Cultural Studies Predoctoral Fellowship, Dissertation Development Grant, Frick Fine Art Grant, Marstine Family Foundation Grant, U.S. National Committee Scholarship, Wilkinson Travel Grant) that allowed me to travel to Bregenz, Chicago, Karlsruhe, Kassel, London, New York, Paris, Stanford, CA, Venice, Vienna, and Zurich. The significant role of interpersonal spectatorship in art reception has become apparent to me, as I visited international exhibitions and I observed the behavior of visitors in relation to installations that trigger reflective processes. My research goals and outcomes crystallized while consulting documentation on mirror-based works in the archive of the Generali Foundation (Vienna), the library of the Kunsthaus Bregenz (Bregenz), the archive of MoMA (New York), the media library of ZKM (Karlsruhe), and the Special Collections of Stanford University. I am also thankful to the dedicated staff members of the Frick Fine Arts Library, University of Pittsburgh, Ray Anne Lockard and Marcia Rostek in particular, for ensuring that I have access both to on-campus and off-campus books and journals.

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1.0 INTRODUCTION

As we walk through contemporary art museums, we notice that more and more artworks enhance our awareness of belonging to a shared spectatorial space. We actively observe not only the objects on display, but also our movements and the reactions of other visitors. Installations that include mirrors, live video feedback or sensors frame contexts for seeing ourselves seeing and at the same time acting as a group. They call our attention to the social dimension of perception and invite us to develop affective affiliations towards other visitors. Such works ask us to watch other visitors engage in mirroring processes or discover the interactive potential of installations. Under these circumstances, individualistic aesthetic rituals give way to collective modes of observation and behavior. What has led artists from the late modernist period onwards to challenge the autonomy of the isolated, self-involved art viewer by calling his/her attention to the social dimension of the display context? How do works that stimulate mirroring acts help us re-negotiate spatial and temporal coordinates? Do we feel at ease in such environments even though we know that others are also watching us? Can reflective installations, which foster spontaneous encounters between strangers in public spaces, compensate for the physical distance people experience in online social networks?

1.1 RESEARCH RATIONALE

The significant role of interpersonal art spectatorship became apparent to me while traveling to international exhibitions and observing the behavior of visitors in relation to installations that catalyze intersubjective awareness and performative impulses. Artists from different cultural contexts, including Michelangelo Pistoletto, Dan Graham, Olafur Eliasson and Rafael Lozano-Hemmer, have created works that stage mirroring processes in order to reveal the social grounds of perception, cognition, and identity construction.

My dissertation traces a history of the transformations in art practices over the last five decades in particular those that encourage viewers to relate affectively and perceptually to one another. I have chosen to focus on installations that trigger reflective processes because they best display a key marker of the historic change from modern to contemporary art: the shift from the autonomous art object and the isolated viewer to the artwork as translucent frame or responsive medium that both provokes and sets on display the variability of spectatorial responses. I aim to elucidate the artistic, social, and technological conditions that have led to the production of artworks that act as reflective interfaces for affectively connecting multiple viewers.

Collective art spectatorship is by no means a contemporary invention. Artifacts have been used in ritualistic processions, which entail a large audience, for thousands of years. They have stood for publicly acknowledged symbols of political, social or cultural power at least since antiquity. Moreover, one can easily recall the images of bustling crowds of people craning their necks to contemplate the paintings of 19th century Salon exhibitions. As ideas concerning the autonomy of the art object consonant with bourgeois idealism took stronger hold, however, artworks were isolated from each other in gallery settings and the visual encounter with them became an increasingly private affair. This spectatorial mode primarily developed during the first

half of the 20th century in conjunction with the emergence of abstraction and the growing dominance of the painting medium. It implies a binary relation between the viewer and the art object, one that is not open to external influences, but is directed towards retrieving the artist's message or his/her aesthetic experience.

However, there are also exceptions to this type of spectatorship, which has come to be primarily associated with the viewing of modern art. Marcel Duchamp's *Large Glass* (1915-1923) had an environmental quality since it encapsulated the image of its surroundings, blurring the differences between figure and ground, presentation and representation. Similarly, *To Be Looked at with One Eye, Close to, for Almost an Hour* (1918), his other major work functioning as a reflective interface, invited the beholder to peer through a lens, which condensed within its space the viewers' close and distant perceptual field. One can also identify instances of collective and interpersonal spectatorship in the case of Dada events such as the Dada International Fair of 1920, which denounced the prevailing cult of art associated with "an aristocratic worldview,"¹ or in the case of Surrealist exhibitions such as Exposition Internationale du Surréalisme of 1938 for which Marcel Duchamp initially envisioned a system of lights that would switch on and illuminate the paintings as visitors approached them, hence setting both the viewer and the artwork in the limelight.² Continuities between these earlier challenges to aesthetic autonomy and the developments of the 1960s, which interrogate the seclusion of the art object and the spectator within an abstract ideal sphere, speak to the crisscrossing trajectories of modern art and contemporary art.

¹ Wieland Herzfelde, "Introduction to the First International Dada Fair." Translated and introduced by Brigid Doherty. *October*, no. 105, Summer 2003, p. 102.

² Marcel Jean, with the collaboration of Arpad Mezei, *Histoire de la peinture surréaliste* (Paris: Seuil, 1959), pp. 281-282.

In recent decades, there has been an impressive influx of participatory art theories such as Nicolas Bourriaud's "relational aesthetics,"³ Grant Kester's "dialogical aesthetics,"⁴ or Mark Hansen's "embodied aesthetics."⁵ Some of these focus on social interaction between museum visitors or community members engaged in convivial activities while others center on viewer-object or viewer-environment interaction. However, neither of these theories explores less explicit forms of perceptual and affective interaction between art participants collectively engaged in observing the impact of their presence and actions upon art objects. Bourriaud's seminal theory of "relational aesthetics" primarily focuses on works that lack long-lasting material components and consist of social ties between viewers who engage in effective verbal exchanges or collaborative acts. I argue that temporary affective connections between art participants are equally important because they heighten their sense of belonging to collectivities and enhance social responsibility. In this context, the ties of art history with communication studies and social psychology need to be consolidated in order to improve the analysis of spectatorial responses and group interaction.

While a lot of attention has been given to collectivities that share common purposes, less research has been conducted on groups coalesced by affective relations between individuals, who may or may not actively seek to reach common goals. At a time when the effect of virtual social networks has become overwhelming, we need to take into account art projects that trigger less conspicuous forms of interpersonal relations and map out earlier transformations in art, which have been conducive to shifts in aesthetic relations. Through the critical examination of

³ Nicolas Bourriaud, *Relational Aesthetics* (Dijon: Les Presses du Réel, 2002).

⁴ Kester has formulated this theory in relation to community-oriented art practices. See Grant Kester, *Conversation Pieces: Community and Communication in Modern Art* (Berkeley and Los Angeles, CA: University of California Press, 2004)

⁵ Hansen is critical of the idea that interaction with virtual representation leads to disembodiment. He argues that perceptual acts are always embodied even if they related to the sensing of things belonging to virtual spaces. See Mark Hansen, *New Philosophy for New Media* (Cambridge, Mass.: MIT Press, 2004).

installations that engender affective mirroring processes, I will propose an original art historical model of changes in spectatorship since the 1960s. More broadly, my dissertation research will reveal new perceptual modes shaped by technology, as well as multiple ways in which individual and social consciousness are molded by cultivated states of distraction, increased mediation, and sustained attention.

1.2 INSTALLATION ART BETWEEN RELATIONAL AESTHETICS, INTERACTION, AND PARTICIPATION

Nicolas Bourriaud's theory of relational aesthetics is by far the most prominent attempt at establishing a conceptual framework for the analysis of participatory art practices in the last two decades. In spite of its broad definition as an inquiry into art practices from the point of view of "the inter-human relations which they represent, produce or prompt,"⁶ this theory has been associated with a well-bounded range of art projects prevalent in the 1990s. These works asked participants to join small-scale social events and break into the closed circles of art professionals in order to open them up to critical interrogation. Liam Gillick, Dominique Gonzalez-Foerster, Philippe Parreno, and Rirkrit Tiravanija are some of the key artists whose work exemplifies Bourriaud's concept of "relational art." Although he acknowledged the correlations between these artists' convivial art practices and participatory art trends from the 1960s, he claimed that the stakes of art projects from the 1990s were entirely different.⁷ According to him, they were inspired less by a desire to challenge prior art conventions and call for major social

⁶ Bourriaud (2002, 112)

⁷ Ibid. (2002, 30)

transformations and more by an impulse towards staging provisional encounters between people in order to offer alternatives to instrumental social interactions that are characteristic of the prevailing order of capitalist societies based on service industries.

I believe that the ties of relational art practices with art tendencies from the 1960s are stronger than Bourriaud is willing to admit. Ten years after the glory days of Tiravanija's invitation to free kitchen soups or water bars assembled in galleries, such projects seem more utopian than the interventions of prior generations of artists such as Graciela Carnevale or Michelangelo Pistoletto, who revealed that art spaces were not private spheres isolated from the dominant social systems, but public settings that expose the conflicts subsistent in society at large. In her seminal article "Antagonism and Relational Aesthetics,"⁸ Claire Bishop highlighted some of the problematic aspects of Bourriaud's theory. According to Bishop, this approach perpetuates the misconceived ideals of a democratic space of encounter, fully freed from social and professional hierarchies and tensions. She proposed that art critics analyze the profile of participants in relational art events and inquire into a broader range of responses to them rather than merely praise their conviviality. Similarly to Rosalyn Deutsche,⁹ Bishop persuasively argued that the possibility of dissent is a key condition for the existence and proper functioning of public space. Not only did Bourriaud overlook the tensions that exist between different groups of art participants, but he also neglected to explain how the features of the spaces in which such projects are enacted affect their impact upon participants.

In my thesis, I plan to broaden the scope of relational art practices to include works that Bourriaud excluded from this category either because they imply less immediate relations between participants or because their participatory potential depends on technological interfaces.

⁸ Claire Bishop, "Antagonism and Relational Aesthetics," *October*, 110, Fall 2004, pp. 51-79.

⁹ Rosalyn Deutsche. *Evictions. Art and Spatial Politics* (Cambridge, Mass.: MIT Press, 1996)

Works which trigger perceptual and affective exchanges between viewers thanks to their reflective qualities or to their capacity to respond to external sensorial stimuli produced or activated by participants have been purposefully left out of his typology. Bourriaud seems to consider visual participation to be inferior to the modes of engagement triggered by relational art projects because it consolidates the mechanisms of the society of spectacle instead of attacking its ocularcentrism. In explaining how Minimal Art differs from convivial art projects from the 1990s, he emphasized that it catalyzed “ocular ‘participation’” instead of enhancing bodily awareness and stimulating personal reflection about how one relates to the space of the work.¹⁰ Yet, the perception of Minimalist sculpture depends both on the visual observation of the artwork’s configuration and on the physical presence and movement of the viewer within the exhibition space. Vision may have become the main object of manipulation in the society of spectacle, but it is ultimately embodied. As will be discussed in the first chapter of this dissertation, the body image of the viewer becomes a component of the reflective surface of Minimalist art objects. Hence, the body of the participant stands for more than a fixed visual coordinate since its movements can affect the image of the work and the way it is perceived.

Perceptual relations can be as important in triggering intersubjective exchanges between people as invitations to perform similar tasks, such as dancing or eating together, which may or may not be accepted by gallery visitors. Bourriaud is skeptical of participatory modes that do not generate immediate encounters since he sees convivial activities generated by relational art as a

¹⁰ Bourriaud contrasts Felix Gonzalez-Torres’s *Untitled (Arena)*, 1993 with Minimal Art in general. Gonzales-Torres’s work consists of a square area demarcated by a series of bulbs hanging from the ceiling. The bulbs frame a potential dance stage for the viewer, who is invited to put on headphones and listen to a waltz. Bourriaud emphasizes the fact that while the encounter with Minimal Art is impersonal and implies visual engagement, the encounter with Torres’s arena is a highly personal experience, intimately connected with participants’ “history and behavior.” He disregards the fact that Minimalist objects invite not only visual correlations between different abstract components, but also physical movement. Moreover, the perception of Minimalist objects, or, for that matter of any artwork, is not autonomous from viewers’ prior experience. (2002, 59)

strategy for undermining the alienation of individuals in contemporary societies. But all social relations are ultimately mediated. They are not autonomous from the specific context of interaction and do not merely depend on a temporal interstice offered as a gift to participants who choose to suspend the hectic rhythm of their daily lives and step into art galleries where they can ideally collaborate with others. Active responses to relational art depend on the dynamics of the groups of art participants present on the exhibition site at a particular time. Intersubjective perception precedes actual engagement in communal cognitive and performative acts. Bourriaud is wrong to minimize the role of perceptual relations in fostering conviviality. Throughout my dissertation, I will provide examples of works that generate forms of sociability through mediated perceptual acts such as mirroring processes and expose the contingency between ourselves and our surroundings. Like the relational art practices described by Bourriaud, these installations can contribute to convivial connectivity and enhance our understanding of the mechanisms of control and segregation embedded in society.

The 1990s will go down in art history not only as the decade of the theory of relational aesthetics, but also as the decade of the rise to prominence of installation art.¹¹ These two aspects of contemporary art are by no means unrelated. The large size of installations, which frequently take over the space of an entire gallery transforming it in a *mise-en-scène* for collective spectatorial acts,¹² has further consolidated the shift from a self-focused art experience to an intersubjective experience. Bourriaud's disregard for reflective or responsive installations that forge connections between viewers is not a mere oversight. He defined the relational aesthetics

¹¹ In an article for *New York Times*, Roberta Smith remarked: "Installation Art, the love child of late 60s idealism, may be turning into the spoiled brat of the 90s." See "In Installation Art, a Bit of a Spoiled Brat," *New York Times*, Arts & Leisure Section, January 3, 1993, p. 3.

¹² James Meyer stated: "More and more, we are accustomed to installations that are keyed not to the individual body and its perceptual grasp, but to an increasingly grandiloquent architecture. See James Meyer, "No More Scale: The Experience of Size in Contemporary Sculpture," *Artforum*, Vol 42, no. 10, Summer 2004, p. 223.

artist as “a producer of time,”¹³ who creates intervals for relating to others in a space that lacks specificity. His theory emphasizes the primacy of temporal relations over spatial relations, hence conflicting with the definition of installation art, which stands out as a quintessentially spatial medium because it re-configures the art gallery environment.¹⁴ In Bourriaud’s view, relational works go beyond medium specificity. However, their emergence is not autonomous from the transformations engendered by installation art, which coalesces the space of the artwork with that of the art venue.

The examples of relational installations that Bourriaud provided are characterized by evanescence. He movingly described Felix Gonzalez-Torres’s piles of candies commemorating the death of his lover.¹⁵ The sweets gradually disappear as gallery visitors pick them up as keepsakes of a stranger to whom they feel somehow connected. Bourriaud possibly perceived the potential permanence and stability of installation art as disruptive factors, which strengthen the objecthood of art and overshadow its participatory dimension. Consequently, he avoided bringing into discussion installations, which are solidly anchored in the gallery space. Yet, works based on reflective materials do encompass time and repeatedly undergo transformations as viewers enter or leave the gallery.

The concepts of space and time are intimately intertwined. Space may seem static, but it is constantly being re-shaped by the way we relate to it individually or collectively. In applying the theory of relational aesthetics to installations, one cannot treat spatial coordinates as

¹³ Bourriaud (2002, 110)

¹⁴ In one of the earliest attempts at mapping the entire history of “installation art” (starting with its initial overlap with the notion of “assemblage” or “environment” and continuing with its consolidation as a medium tightly related to the coordinates of the gallery space), Julie Reiss stated that “in creating an installation, the artist treats an entire indoor space (large enough for people to enter) as a single situation, rather than as a gallery for displaying separate works. The spectator is in some way regarded as integral to the completion of the work.” Hence, the material of this medium is represented by the exhibition space and the bodily presence of the viewers. See Julie Reiss, *From Margin to Center: The Spaces of Installation Art* (Cambridge, Mass.: MIT, 1999), p. xiii.

¹⁵ Bourriaud (2002, 51)

invariable factors of lesser significance. Bourriaud minimized the role of space since he prioritized the function of convivial works to enhance social ties over their role as visual and physical signs, which mediate these encounters. He wanted relational art projects to be as transparent interfaces as possible so that the threshold between living situations and art dissolves almost entirely. I consider that the production of intersubjective relations and the production of space are deeply interconnected and cannot operate independently from each other. In my analysis of installations, I take the exhibition context, the objects on display, and visitors' responses to them to stand for the outcome of the artistic process.

In spite of the democratic ideal of relational aesthetics theory, Bourriaud defended the exclusive ground of the art context since he sensed that this is the only way in which artists can continue to propose strategies of escape from the society of spectacle, which threatens to take over the most mundane social situations and transform them into consumer products.¹⁶ With this goal in mind, he sought to define relational art practices in opposition to the way mass media models interaction between people. He asserted that artists plan convivial encounters in order “to rid themselves of the straitjacket of the ideology of mass communication.”¹⁷ In contrast to Jack Burnham's theory of “system aesthetics,”¹⁸ Bourriaud's approach is human-centered and does not allow for the merger of human networks with non-human networks (e.g. ecosystems, information systems). He is intent on restricting the space of intersubjective relations to small communities of people, situated in close proximity to one another over an extended period of time.

¹⁶ Guy Debord, *The Society of Spectacle*, trans. Donald Nicholson-Smith (New York: Zone Books, 1994)

¹⁷ Bourriaud (2002, 44)

¹⁸ See Jack Burnham, “System Esthetics,” *Artforum*, Vol. 6, no. 1, September 1967, pp. 30-35 and “Real Time Systems,” *Artforum*, Vol. 8, no. 1, September 1969, pp. 49-55.

While Bourriaud contended that art participation should be defined in sharp opposition to mass culture experience, Boris Groys argued that it is no longer possible to maintain this distinction between art spectatorship and media spectatorship, especially in the context of installation art. In “Politics of Installation,” he portrayed the art participant as a passerby, who is constantly on the move in the midst of crowds of people convivially engaged in exploring large exhibition spaces transformed into installations.¹⁹ Groys maintained that art visitors tend to be better aware of the fact that they belong to communities of spectators than cinemagoers due to the visible mediation of their experience. According to him, the one difference that “advanced present-day art” can preserve in terms of spectatorship is that of enabling participants “to adequately perceive and reflect the space in which they find themselves or the communities of which they have become part.”²⁰ Mirror-based installations and responsive environments trigger precisely this type of highly mediated collective experience. They enact intersubjective encounters and showcase the new coordinates of the gallery space transformed by the artist. In certain cases, artists who design this genre of installations will invite participants to take their time and observe the way the works encompass their image or frame loose relations between different groups of visitors. In other cases, visitors will feel compelled to move around the exhibition area in order to identify new trajectories that will help them discover a wide range of interactive possibilities offered by responsive or reflective interfaces. The former participatory experience resembles the one described by Bourriaud in the context of his theory of relational aesthetics since it creates a more intimate space of encounter, whereas the latter more closely resembles the mode of spectatorship described by Groys in terms of a stroll in a bustling

¹⁹ Boris Groys, “Politics of Installation Art,” *e-flux*, no. 2, January 2009. Available online at: <http://www.e-flux.com/journal/view/31> on February 10, 2009.

²⁰ *Ibid.*

metropolis. As I will explain, the origins of these artworks are to be found in practices from 1960s when artists challenged not only the autonomy of the art object, but also that of the spectator.

Although I share Groys's opinion concerning the collective dimension of installation art spectatorship, I do not fully agree with his claim that artists involved in this genre of art practice authoritatively impose preset rules of interaction and privatize the public space of galleries by colonizing large exhibition areas.²¹ Artists cannot act so independently from art institutions. They have to negotiate with curators the way their works are displayed. Even in the case of large-scale exhibitions, they are allocated a very specific space for their installations. Even when these works are not site-specific, artists have to modify their works to adjust them to different exhibition venues. As far as participatory rules are concerned, some artists are indeed autarchic legislators, whereas others (especially new media artists) would like participants to derive new rules of participation as a result of their interaction with the installation or with each other. Either way, the space of installation art does not depend only on constraints imposed by the artist. The mere presence of multiple visitors belonging to different age groups or coming from different social backgrounds does not guarantee a democratic environment. The dynamics between art participants commonly involved in spectatorial acts brings to the surface power relations that precede their convivial encounter in the galleries.

Bourriaud is as reserved about including new media art in the sphere of relational aesthetics as he is about including installation art. He believes that the participatory possibilities granted by technology-based art projects are more limited and essentially different from the ones offered by convivial art practices. *Relational Aesthetics* comprises examples of works utilizing

²¹ Ibid.

video technology such as Julia Sher's *Security by Julia* (1988 to present) or Dan Graham's *Present Continuous Past(s)* (1974), but provides no relevant discussion concerning the way new media environments or digital art trigger connections between users. Even when referring to Graham's installation, Bourriaud did not underscore the performative implications of the closed-circuit television system, which establishes a perceptual framework for intersubjective observation. He considered that the significance of such works is limited to unveiling the control of surveillance technology over the human body and did not indicate that they also offer possibilities for manipulating the live or delayed video, thus playfully subverting their authoritarian function.

Bourriaud tried to stay away from the use of terms associated with the description of participatory tendencies in new media. He explained that certain relational aesthetics projects have been wrongly called "interactive."²² According to him, they imply different kinds of connection, one that greatly contrasts with those established between an art participant and a technological interface that provides feedback. In a study that delves into the history of electronic media, Frank Popper explained the distinction between the terms "participation" and "interaction." He specified that while "participation" became a recurrent concept in art criticism of the 1960s, which focused on the active engagement of the art audience "on both the contemplative (intellectual) and the behavioral level," "interaction" is a term that has been mainly associated with a two-way exchange of information between spectators and technology-based artworks.²³ Popper also added that the use of the latter notion was being extended in the U.S.A. in the early 1990s to comprise technologically mediated exchanges between the artist and

²² Bourriaud purposefully wants to keep relational art practices apart from interactive art. He asserts that Felix-Gonzalez Torres's work was "mistakenly called 'interactive.'" (2002, 89)

²³ Frank Popper, *Art of the Electronic Age* (New York: Harry N. Abrams, 1993), p. 8.

the spectator.²⁴ I believe that these two notions have come close to fully converging in recent years since the development of Web 2.0 technology has changed the way we envision media use. While we tended to think about interaction with technology in terms of a binary feedback loop mechanism before this genre of technological interface became available, we are now thinking about it in terms of an open-ended network to which we can all contribute content and through which we can form connections with numerous others.

Under these circumstances, “interaction” has drifted away from binary exchanges of information between pre-determined entities and has come closer to the notion of “connectivity” with others normally associated with “participation.” Technological platforms for social networking such as Facebook or Second Life create encounters similar to the ones inspired by relational art practices. In specially designated spaces in virtual life, users can gather to dance or share a meal. New media theorist Mark Hansen remarked that these online networks render the technological apparatus and the information feedback processes as invisible as possible because they prioritize the relations formed between users: “connectivity emerges as an end in itself, distinct from the actual sharing of the (traditional) media content transmitted in these networks.”²⁵ These transformations in social relations have been foreshadowed by changes in contemporary art practices, which have increasingly favored intersubjective relations between multiple viewers starting with the 1960s.

In the 1990s, Bourriaud rightly identified the contemporary tendency towards transforming interhuman relations into consumer products provided by a constantly expanding service industry. However, his radical opposition to mass media and technology, which he is still

²⁴ Ibid. (1993, 8)

²⁵ W.J.T. Mitchell and Mark B.N. Hansen eds., *Critical Terms for Media Use* (Chicago and London: The University of Chicago Press, 2010)

trying to keep at bay from relational art practices,²⁶ does not provide a viable alternative to this trend. In attempting to restrict the impact of technology upon art practices and living situations, Bourriaud considers that artists need to avoid using technology to create aesthetic representations or forge connections. Instead, he suggests that they should import only their operational vocabulary or syntax into their art practices, just as Impressionist artists started to frame pictorial compositions differently under the influence of photography, which permitted the representation of scenes of daily life from oblique angles. Bourriaud's call for a critique of technology to avoid the transformation of art into "an element of *high tech* deco"²⁷ is reminiscent of the anxieties voiced by art critics in the 1960s in response to art and technology projects. While these concerns are understandable to a certain extent since the society of spectacle has created a demand for showy electronic or digital infrastructures they should neither deter artists from creating technological interfaces that foster convivial social encounters nor prompt art critics to draw rigid boundaries between art and new media practices.

Bourriaud's relational aesthetics theory has become a cornerstone of critical thinking on contemporary art precisely because of its subsequent applicability to multiple art genres. Recently, Edward Shanken has proposed a hybridization of mainstream art discourse and new media art discourse,²⁸ which have grown apart precisely because of fears that technology-based art practices do not enable viewers to reflect on the consequences of their interactions with media platforms. He has suggested that the theory of "relational aesthetics" represents a significant point of convergence of these two different discourses even though it was originally conceived as

²⁶ See the remarks of curator Nicolas Bourriaud in a discussion with artist Michael Joaquin Grey and ZKM Chairman Peter Weibel. The conversation was moderated by Edward Shanken at Art Basel (June 19, 2010). Available online at: <http://www.art.ch/go/id/mhv/> on July 5, 2010.

²⁷ Bourriaud (2002, 78)

²⁸ Edward Shanken, "New Media and Mainstream Contemporary Art: Toward a Hybrid Discourse?", unpublished paper delivered at Transforming Culture in the Digital Age, Tartu, Estonia, 15 April 2010. Received from the author via email.

a critical tool for counteracting the production of high-tech artworks. My dissertation takes up the challenge proposed by Shanken and traces the various points of rupture and contiguity between contemporary art and new media, whose paths have repeatedly crossed and diverged since the 1960s. I believe that the forms of spectatorial participation generated by these genres of art practices have represented one of the main points of contention between them. Video works such as Bruce Nauman's *Live-Taped Video Corridors* (1970) have been associated with mainstream art practices given the fact that they imply a more private dialectical encounter between the viewer and the camera eye whereas multi-channel closed-circuit video systems such as Frank Gillette and Ira Schneider's *Wipe Cycle* (1969) prominently appear in genealogies of new media art since they entail more public aesthetic experiences which are open to collective participation. These distinctions are no longer applicable. Both installations and new media art practices can trigger both public and private encounters with art. They can foster connectivity not only between the singular viewer and the reflective or responsive interface, but also between multiple groups of participants.

1.3 MIRROR AFFECT

By mirror affect, I understand a relation of affiliation between self and others mediated by reflective images or by similar behavioral acts, which virtually collapses the distance between individuals at a perceptual level. In this intersubjective sphere, viewers contemplate the potential for interaction or for identification with co-participants who are simultaneously engaged in the act of mirroring. However, the ultimate convergence between one's personal experience and the experience of others remains an unfulfilled desideratum. This perpetually delayed conjunction

between concurrent sensations enhances the affective dimension of the encounter with others. While the mirror seems to guarantee the coincidence of the seeing subject with his/her reflection, it actually unveils the instability of the context of the reflective act. In the case of large-scale installations, which encompass the moving reflections of multiple viewers and their surroundings, mirror images elude the control of the viewer. By mirroring acts, I understand more than an encounter with one's self image, be it a reflection, a video projection, or an avatar. Instead of adopting a Lacanian perspective on the formation of selfhood, which emphasizes the primacy of subjectivity in identity formation,²⁹ I highlight the role of intersubjective relations in the development of a sense of self.

Theories of affect have developed across a wide range of disciplines. In the field of psychology, Daniel N. Stern proposed the notion of "affective attunement" to define the act of sharing feeling states by replicating certain qualities of the behavior of others and introducing significant variations upon them to underscore interpersonal understanding.³⁰ He observed that after infants reach the age of nine months, mothers start communicating with them in a different way. Not only do they imitate their gestures in order to enhance empathic relations, but they also translate their performative acts into a different sensorial register. For example, when a child rattles a toy the mother would move her head almost to the same rhythm to provide an affective response.³¹ Unlike Lacan, Stern focused on the role of interpersonal exchanges in shaping the awareness of individuated existence on the part of infants. He pointed out that "affective

²⁹ Jacques Lacan, "The Mirror Stage as Formative of the Function of the I, as Revealed in Psychoanalytic Experience," *Écrits: A Selection*. Translation by Alan Sheridan. (London: Tavistock Publications, 1977), pp. 1-7.

³⁰ Daniel N. Stern, *The Interpersonal World of the Infant: A View from Psychoanalysis and Developmental Psychology* (New York: Basic Books, 1985)

³¹ Stern also considered using the term "mirroring" to define this relationship. However, he thought that it does not truly capture the behavioral variability implicit in affective exchanges and it emphasizes temporal simultaneity rather than sequential acts. Only if the response of the interlocutor adds something to the communicative thread, rather than being a mere imitation of the original signal, can it convey the fact that the feeling state has been truly understood and reciprocated.

attunement” in parental relations prepares individuals for the empathetic encounter with art, which will stir in them sensations that imperfectly match the ones virtually experienced by the figures portrayed in a painting.³²

Philosopher Gilbert Simondon went one step further in defining affect by comparing it to a transformative process situated on the threshold between the conscious and the unconscious, which greatly contributes to the formation of collectivities. Just as Stern emphasized the variability implicit in “affective attunement,” Simondon underlined the elusiveness of affect, which to him is not a state, but a transitional stage preceding the registration of emotion. Similarly, he believed that affect is not to be equated with a purely subjective manifestation of feelings. Highlighting the intersubjective dimension of this notion, he stated that “instead of talking about affective states, one should talk about affective exchanges, exchanges between the pre-individual and the individual field of the subject.”³³ In their theory of “becoming animal,”³⁴ as well as in their reflections on the non-imitative character of art,³⁵ Gilles Deleuze and Félix Guattari embraced similar views, associating affect with a process of seeking affiliation with non-human others. Moreover, in his writings on cinema,³⁶ Deleuze described affect as an interval between a disquieting perception and an impulse for action. According to him, affect implies a connection to a multiplicity because it arises from a process of imperfectly reflecting a

³² Ibid., pp. 160-1.

³³ Gilbert Simondon, *L'individuation psychique et collective* (Paris: Aubier, 1989), p. 106. Personal translation.

³⁴ Gilles Deleuze and Félix Guattari, “1730: Becoming Intense, Becoming Animal, Becoming Imperceptible,” *A Thousand Plateaus: Capitalism and Schizophrenia*. Translated by Brian Massumi. (Minneapolis: University of Minnesota Press, 1987), pp. 256-341.

³⁵ Deleuze and Guattari argue that the process of art creation is a becoming, which entails an affective connectivity to the object, plant, or animal, which stirs the creative impulse. Hence, the artwork is not an imitative representation, but reflects the transformation undergone by the artist as he/she selects the quintessential aspects of the subject matter and forcefully expresses them in a painterly or sculptural medium. See Gilles Deleuze and Felix Guattari, “Percept, Affect and Concept” *What Is Philosophy?* Translated by Hugh Tomlinson and Graham Burchell. (New York: Columbia University, 1994), pp. 163-199.

³⁶ Gilles Deleuze, *Cinema 1. The Movement Image*. Transl. Hugh Tomlinson and Barbara Habberjan (London: The Athlone Press, 1986)

collectivity with which one cannot fully identify. He defined affect in terms of “a center of indetermination”³⁷ in which one feels caught between sensation and motion, interiority and exteriority, contemplation and action. I rely on his explanation of this convergence between non-coincident planes of being in the world in order to account for the ambivalent experience of art audiences watching themselves and others in large mirror screens or simultaneously interacting with responsive systems. While they collectively participate in the reception of such art projects, viewers become engaged in producing variable acoustic and visual effects, affectively tuning their behavior to the responses of others.

The amount of art scholarship on affect (as a notion distinct from emotion) is surprisingly limited. In *Empathic Vision*, Jill Bennett drew analogies between affective and traumatic experiences staged by contemporary artists, arguing that both of them go beyond representation since neither can be fully externalized.³⁸ Analyzing affective relations in the context of Maria Abramovic’s performances, she conceptualized audience reception in terms of a dialectical relation between the body of the performer, which concomitantly stands for the subject and object of the performative act, and the embodied viewer hesitating between an empathic relation to the artist’s corporeal presence and a contemplative relation to the bodily experiences she stages. In this study, I will concentrate less on the dialogue between the artist and viewer via the art object or the art process and more on the intersubjective relations that arise between spectators empathically communicating with each other within an all-encompassing art environment or via an interactive platform. Affect escapes visual representation, yet one can

³⁷ Ibid., p. 65.

³⁸ Jill Bennett, *Empathic Vision. Affect, Trauma and Contemporary Art* (Stanford, CA: Stanford University Press, 2005)

catch glimpses of its impact upon art participants who watch each other's reactions in response to art contexts, fostering perceptual connectivity or collective behavior.

The persistent dominance of models of art spectatorship that restrict aesthetic experience to the relation between the singular viewer and the singular art object, along with the idea that affect escapes visual representation, may have distracted art critics from more fully exploring the affective character of art encounters. In contrast, new media theorists have actively sought to identify art practices that showcase affective relations, partly as a result of their desire to counteract ideas about the disembodied effect of technology and partly as a result of their interest in unveiling the potential convergence between the actual and the virtual. In *Parables for the Virtual*, Brian Massumi examined Stelarc's performances in which viewers control the movements of the performer's body through the use of technology. He outlined the shift from a focus on individual performance to collective performance, which brings out the intersubjective dimension of corporeal experience.³⁹ New media theorist Mark Hansen is also interested in the way technology enhances our ability to reflect on the limitations and possibilities of our body sensorium. He defined affect as a process that takes precedence over perception and enables one to envision the virtuality of his/her body [that is, its potential for movement, expression, and self-perception].⁴⁰ Hansen's approach to this notion is anchored in self-reflexivity more than in intersubjective reflection. His philosophical inquiries are astute, yet his analyses of new media projects tend to be confined to an identification of the theoretical concepts that inform their design.

³⁹ See Massumi's reflections on Stelarc's performance *Fractal Flesh. Split Body: Voltage-In/Voltage-Out* in *Parables for the Virtual. Movement, Affect, Sensation* (Durham & London: Duke University Press, 2002), pp. 120-121.

⁴⁰ Hansen (2004, 142)

Starting from an understanding of affect as a process of gaining sense of the mutability of one's bodily sensations and one's relations to others, I will trace the emergence of art practices that mediate perceptual reflection and prompt loose social connections through mirroring acts.

1.4 MIRRORING ACTS: METHODOLOGY AND TERMINOLOGY

Mirroring acts are usually conceived as visual processes through which an individual defines himself/herself in relation to a self-reflective image. However, they can also be conceived as mental processes through which an individual can envision how other people perceive him/her or how he/she relates to the world. The subjective and the intersubjective dimension of one's existence are in permanent dialogue with one another and inform one's understanding and dynamic construction of identity. In the 1960s, psychoanalyst R.D. Laing examined the interpersonal nature of self-cognition and perception. He argued that we are constantly assessing our behavior and thoughts based on the ideas we form about how others perceive us: "All 'identities' require an other: some other in and through a relationship with whom self-identity is actualized."⁴¹ Artists such as Robert Morris⁴² and Dan Graham⁴³ were familiar with his writings during the 1960s and 1970s. Numerous contemporary art practices from the last five decades have singled out these recurrent negotiations of selfhood at the level of perceptual exchanges between viewers mediated by reflective interfaces or at the level of virtual communicative acts

⁴¹ R.D. Laing, *Self and Others* (Baltimore: Penguin Books Inc., 1971), p. 82.

⁴² According to Maurice Berger, Robert Morris read R.D. Laing's book *The Divided Self*. See Maurice Berger, "Wayward Landscapes," *Robert Morris. The Mind/Body Problem*. (New York: Solomon R. Guggenheim Foundation, 1994), p. 28.

⁴³ Dan Graham references R.D. Laing's theories as a source of inspiration for the performance *Two Consciousness Projection(s)*, 1972. See "Mark Francis in Conversation with Dan Graham," Birgit Pelzer, Mark Francis, Beatriz Colomina. *Dan Graham* (London; New York: Phaidon, 2001), p. 16.

catalyzed by responsive environments. In the latter case, the interface may not be materially or visibly present and the behavior of participants becomes more clearly part of the artwork. They activate sounds or visual signs through the movements of their bodies, which are integrated in open-ended network of variable signals.

I am interested not so much in the feedback between the participants and the interface, which is equivalent to an act of mirroring between people and prosthetic-like environments that virtually extend the possibilities of their bodies, but in the loose connections established between co-participants paralleling each other's gestures or emotions as they engage in similar activities. I call these "mirroring acts" because they imply a relation of semi-autonomous interdependence between self and others, which resembles that between one's bodily presence in front of a mirror and his/her reflection. While one can adjust his/her posture or move closer or further away from a reflective surface, his/her interactions with the images it produces are limited to the flat visual field encompassed by its frame. Similarly, one's experience inside sensor-based installations will be quasi-dependent on the reactions of co-participants interacting with the same environment. The sensorial stimuli that they produce will ultimately be part of a variable system, which is modeled by individual and collective behavior. Even if participants do not actively collaborate to bring about transformations, the outcomes of their actions will commingle in a perpetually transforming network in which individual cause and effect cannot be easily traced.

Throughout my dissertation, I use the term "mirroring" to refer to three different affective processes through which viewers take the presence of others as a cue for their own experience: (1) observing others as a means of regaining sensorial balance in a disorienting space, (2) imitating other visitors' behavior in order to learn how to act upon an environment, and (3) imagining oneself in the position of others in order to relate to their experience empathetically. In

none of these cases does mirroring presuppose a one-to-one match between self and other. Affect does not describe a process of complete identification with others, which would ultimately suppress their individuality, but an imperfect correspondence, which does not reduce the potential for interaction or communicative exchanges. In order to analyze how real and virtual mirroring acts stimulated by installations raise our awareness of collective spectatorship, I adopt a phenomenological approach that enables me to investigate the impact of intersubjectivity upon personal experience. Even though phenomenologists such as Merleau-Ponty have dwelt upon the process of self-definition in relation to others,⁴⁴ their philosophy has mostly been associated with a purely subjective mode of perception. With the aim of making up for this misconception, I draw connections between phenomenology and theories of interpersonal relations in the fields of psychology and sociology.

Intersubjective modes of art experience have been repeatedly described in terms of the formation of small communities of participants.⁴⁵ I believe that the relations established between art viewers cannot be defined only in this way. A community habitually implies a series of repeated social exchanges over an extended period of time. Its members can usually share a set of collective memories and define themselves based on common characteristics, beliefs or goals. In order to discuss the volatile ties between art participants, I will employ the notion of ‘group’ instead of that of ‘community’ since it describes a collective entity that is more heterogeneous and more liable to unpredictable transformations. Group members are more preoccupied by immediate objectives whereas community members have a stronger feeling of a shared past and experience a more powerful commitment to a shared future. The social connections forged as a

⁴⁴ Maurice Merleau-Ponty, *Phenomenology of Perception The Phenomenology of Perception* (New Jersey: Routledge, 2006)

⁴⁵ Both Bourriaud and Groy use this term to describe convivial encounters between art participants. See also Claire Bishop ed, *Participation* (Cambridge, MA: MIT Press and London: Whitechapel Gallery, 2006).

result of mirroring processes are often incidental and temporary. Perceptual and affective relations are usually anchored in present conditions. They may or may not lead to verbal interaction between participants. However, this does not mean that they hold no potential for social agency.

I will employ Stanley Milgram's theory of the "familiar stranger"⁴⁶ to explain the relations between viewers who become inadvertently acquainted with each other in the context of installations that capture their mirror images or reveal the impact of their physical presence upon responsive environments. Milgram advanced this notion to describe the experience of individuals whose trajectories repeatedly intersect across the urban grid to the point that they recognize each other even though they have never struck up a conversation. He associated this genre of relations with that of commuters meeting on a daily basis at a train station. Museum visitors become familiar with each other over a shorter period of time, but the narrower confines of the environment in which they find themselves and the interfaces that mediate their encounter accelerate the process of visual familiarization and elicit a mode of connectivity that is similar to that established between commuters. Milgram explained that commuters observe each other and imagine stories about each other's lives, but prefer the status of anonymity as long as they meet under the same circumstances. In spite of the absence of verbal communication between them, he contended that "the familiar stranger status is not the absence of a relationship, but a special form of relationship, that has properties and consequences of its own."⁴⁷ Milgram pointed out that these incidental connections acquire potency when an emergency situation arises and familiar strangers establish a stronger relation of solidarity and offer help to each other. The same

⁴⁶ Stanley Milgram, "The Familiar Stranger: An Aspect of Urban Anonymity," *The Individual in a Social World* (Reading, MA, Melno Park, CA: Addison-Wesley Publishing Company, 1977), pp. 51-53.

⁴⁷ Milgram (1977, 53)

dynamics of interaction apply to museum audiences. Exhibition visitors remain anonymous to each other, yet feel compelled to act together in environments where rules of interaction are not immediately available or where sensorial stimuli are too vague or too strong to allow one to map the coordinates of the installation on his/her own.

Since my dissertation highlights the connections developed between “familiar strangers” in the exhibition environment, I rely on theories of group dynamics, group behavior and group creativity to explain the interpersonal character of art experience. Ideas about how collective encounters affect perception and action became particularly prominent in the 1960s. At the time, American and European psychologists and sociologists acquired a keen interest in the study of information dissemination and the contagious spread of similar behavioral tendencies in large groups of protesters. Whereas in the first half of the 20th century, collective behavior was mainly explained in terms of irrational impulses under the influence of Gustave Le Bon’s essay on the involuntary conduct of crowd members,⁴⁸ in the midst of social movements of the 1960s researchers were trying to come up with other ways of accounting for the emergence of concerted action in heterogeneous groups. Ralph H. Turner developed three different theories for elucidating collective behavior. Given the different origin of factors affecting group conduct, these three approaches correspond to the three layers of the human psyche: id, ego, and superego. The theory of “contagion” prioritizes subconscious drives which lead to impulsive group reactions, the theory of “convergence” explains group affiliation in terms of a collective awareness of shared opinions, and the theory of “the emergent norm” elucidates the development

⁴⁸ See Gustave Le Bon, *The Crowd. A Study of the Popular Mind* (London: T.F. Unwin, 1896).

and imposition of new rules of conduct when situations become uncontrollable and group coordination needs to be strengthened.⁴⁹

Throughout the 1960s, psychologists and sociologists proposed theories of group or crowd behavior that distinguished between an emotional basis and a cognitive or task-oriented basis for collective formation.⁵⁰ Turner reiterated these bipolar categories by differentiating between “active” and “expressive” crowds⁵¹ depending on how group members defined themselves in relation to crowd outsiders. In my analysis of installation artworks which trigger mirroring acts between museum visitors and their surroundings, I complicate this binary theory by showing the convergence between different types of crowd behavior. The boundaries between “active” and “expressive” crowds collapse as viewers connect to each other both by bringing changes to their surroundings through their actions and by modifying their self-images in an expressive manner. The performative gestures of art participants staging quasi-choreographic performances in responsive environments such as Howard Jones’s *Sonic Game Room* (1968) or Rafael Lozano-Hemmer’s *Body Movies* (2005), as well as their convivial gatherings around works with reflective properties such as Olafur Eliasson’s *The Weather Project* (2003-2004), which stimulated viewers to create geometric shapes out of their bodies and observe their reflections in the mirror-like surface of the Turbine Hall ceiling, eloquently indicate the interdependence between collective action and collective expression.

My research on intersubjective mirroring acts in art since the 1960s is also informed by theories of group creativity. The spontaneous encounter of visitors gathering around reflective

⁴⁹ Ralph T. Turner, “Collective Behavior,” Robert E. L. Faris ed., *Handbook of Modern Sociology* (Chicago: Rand McNally & Co., 1964), pp. 382-425.

⁵⁰ This type of thinking was also advanced by psychoanalyst W.R. Bion, who considered that there are basically two types of groups: “basic-assumption groups” established as a result of empathetic relations and “work groups” established as a result of shared tasks or interests. See Wilfred R. Bion, *Experiences in Groups, and Other Papers* (New York: Basic Books, 1961).

⁵¹ Turner (1964, 416)

interfaces can give vent to creative impulses. Group creativity approaches have been praised due to their analysis of interpersonal factors affecting inventiveness, but they have also come under attack due to the fact that they have consolidated the organization culture characteristic of corporations,⁵² which favor teamwork and tend to restrict individual innovation by controlling the creative process. In recent years, there has been an upsurge in research on group creativity.⁵³ Even though some skepticism remains as to the outcome of group endeavors to foster creative solutions, it is generally believed that interpersonal exchanges between members of heterogeneous work groups has a positive effect on the flow of creative ideas because they generate both a feeling of commitment to shared tasks and a stronger affiliation to group entities. In art of the 20th century, we can note a re-orientation from primarily individual acts of self-expression characteristic of Abstract Expressionism or Art Informel to group creativity either in the context of collaborations between artists or in the context of installations, which transform art viewers' reflections and gestures into unpredictable creative tools that complete the message of the artwork.

A smaller, yet in a sense equally significant role in my research is played by neuroscience theories. The discovery of mirror neurons has proved that intricate interconnections exist between areas of the brain, which were previously thought to hold distinct functions in the regulation of perception, cognition and emotions.⁵⁴ Brain imaging experiments have shown that whether we watch someone perform a certain action or we perform that very same action ourselves, the same neural area is activated during these two apparently distinct processes.

⁵² See William H. Whyte, *The Organization Man* (New York: Simon and Schuster, 1956)

⁵³ See Paul B. Paulus and Bernard A. Nijstad, *Group Creativity. Innovation through Collaboration* (Oxford: Oxford University Press, 2003) and Elizabeth A. Manniz, Margaret A. Neale, Jack A. Goncalo eds., *Creativity in Groups. Research on Managing Groups and Teams* (Bingley: Emerald Group, 2009).

⁵⁴ See Marco Iacoboni. *Mirroring People. The New Science of How We Connect with Others* (New York: Farrar, Straus and Giroux, 2008).

Marco Iacobini emphasized the key function of mirror neurons in consolidating cognition and enhancing interpersonal understanding: “Mimicking others is not just a form of communicating nonverbally; it helps us perceive others; expressions (and therefore their emotions) in the first place.”⁵⁵ The reflective acts engendered by contemporary installations contribute not only to perceptual exchanges of a voyeuristic genre, but challenge affective affiliations between strangers, who incidentally become part of convivial groups of spectators.

1.5 DISSERTATION OUTLINE

The first part of my dissertation follows a chronological outline since it examines the roots of departures from binary relations between viewers and art objects in the 1960s and 1970s, whereas the second part follows a non-linear trajectory, concentrating on installations from the last three decades that encourage viewers to observe each other or collaborate in order to affectively relate to their surroundings. My argument is organized around four different uses of mirrors: as framing devices for disclosing the selectivity of perception and representation, as screens for subtly channeling attention to institutional mediation, as intervals for disrupting ordinary perceptual rhythms, and as virtual portals to another space in which one can more easily interact with others, be they in close proximity or at a distance.

The first chapter Mirror Frames: Spectators in the Spotlight explores nascent forms of shared spectatorship fostered by artworks from the 1960s. It looks into the strategic ways in which artists Robert Morris, Lucas Samaras, Michelangelo Pistoletto, and Joan Jonas employed

⁵⁵ Iacoboni (2008, 111)

mirrors to challenge the autonomy of the art object. I contend that their use of reflective materials stems from a desire to bring about social transformations by revealing the relativity of optical processes and the limitations of self-focused perception.

The second chapter Mirror Screens: Wary Observers under the Radar analyzes the critique of visual spectacle, art institutions, and surveillance apparent in artworks from the 1970s. I posit that during this period artists frame spatial contexts that elicit mirroring acts to expose the subjugating effects of visual spectacle. Dan Graham's live video feedback installations fragment temporal and spatial boundaries to raise awareness of surveillance and Lynn Hershman's installations entice viewers to adopt a performative role in order to investigate the social construction of selfhood.

The third chapter Mirror Intervals: Prolonged Encounters with Others focuses on Anish Kapoor, Olafur Eliasson, and Ken Lum's large-scale installations that temporarily set crowds of museum visitors on display. My visits to Kapoor and Eliasson's retrospective exhibitions and my encounter with Ken Lum's public art project *Pi* have confirmed my intuition that large-scale mirror-based installations simultaneously inspire narcissistic and voyeuristic tendencies that subtly mediate the transition from introspection to affective collective engagement. I argue that such contradictory impulses are engendered by the increasing realization of the ubiquity of surveillance and by the emergence of technologies that facilitate multi-tasking.

The fourth chapter Mirror Portals: Engaged Users of New Media Spaces discusses Rafael Lozano-Hemmer, Christian Moeller, and Paul Sermon's environments that catalyze interaction with sensor-based platforms, which affectively interconnect multiple participants in real and virtual space. I argue that with the emergence of digital technology and the Internet, contemporary artists are envisioning new strategies for activating empathic relations between

viewers who mirror each other's gestures and movements in trying to discover telepathic modes of communication and interaction in new media environments.

Any process of self-definition implies an awareness of the co-existence of oneself with others. Works of art, which invite viewers to observe themselves in relation to their surroundings, constitute communicative frameworks that respond to our compelling need for seeking affiliations with others. I look into art practices that generate the formation of groups of spectators in order to identify a shift not only in art reception, but also in social relations, which have become increasingly temporary and unpredictable in the context of the expansion of online social networks. I argue that installations that put on display the behavior of visitors provide occasions for retrieving a sense of proximity to others. These small gatherings inside museums give vent to spontaneous collaborations between visitors and highlight the creative potential of any form of social interaction. By defining these encounters between people in terms of incidental group formation rather than in terms of cohesive communities of viewers, I highlight the plurality of experience and the volatility of intersubjective relations. I hope that by pinpointing the emergence of new modes of art spectatorship in conjunction with new communicative networks, I can broaden the current understanding of the web of relations between individuals and collectivities, and make a significant contribution to the critical discourse on social connectivity in both actual and virtual spaces. By adopting an interdisciplinary theoretical framework, I will analyze the ways in which technology, surveillance and increased mediation have shaped art production and reception in contemporary societies.

2.0 MIRROR FRAMES: SPECTATORS IN THE SPOTLIGHT IN THE ART OF THE 1960S

Although there is no consensus among art historians about an exact point in time when modern art transitions into contemporary art, there is a widespread sense that the transformations of the 1960s have proved deeply consequential for the current state of art practice. The 1960s have been repeatedly associated with the blurring of boundaries between art and life, the gradual dissolution of stylistic categories, and the increasing convergence between art and technology. These are important elements, but do not add up to a full picture. I believe that a historical account of the way in which artists elicited mirroring processes between artworks and viewers can cast new light on the changing conditions of objecthood and art spectatorship during that period and since.

In this chapter, I aim to show that the prevalence of reflective materials across different mediums, and the use of technological interfaces that react to the presence of viewers, contributed significantly to dispelling the modern myth of the gallery visitor deeply absorbed in introspective aesthetic contemplation and establishing new interpersonal modes of art experience. I will discuss the precursors of these artistic tendencies, which became prominent in 1960s, and I will outline the wide range of artistic, socio-cultural, and technological factors which led to the proliferation of collective modes of spectatorship. By relying on theories of collective behavior, group dynamics, and interpersonal perception and cognition, I will analyze

the plurality of responses to art practices that generate mirroring processes between viewers and their surroundings. Instead of focusing on ideal modes of spectatorship that match the artists' intent, I will single out the unforeseen visual and convivial effects of artworks with reflective qualities. In this context, I will underline viewers' awareness of belonging to a collective body of art participants engaged in exploring diverse ways of relating to the artworks. The notion of a network of viewers or users brought together by an art object that acts as an interface or by an environment they commonly inhabit does not emerge in conjunction with the world wide web, but precedes its widespread utilization by several decades. Caroline Jones claims that "the old economy of maker/receiver shifted ineluctably around 2000, toward a "hive mind" of users and servers," yet one can note that this transformation in terms of art spectatorship was already evident in the 1960s across several different mediums as artists were highlighting the perceptual and behavioral ties between art viewers sharing in the aesthetic experience of performances or environments.

This chapter is subdivided into four sections, which dwell on different types of art practices in the 1960s that heighten viewer's awareness of the presence and behavior of other viewers in the exhibition space: 1. works based on reflective materials that mediate the transition from sculptural objects to environments; 2. performances that stage mirroring acts between different types of representation or between performers and audience members; 3. art and technology projects based on electronic or cybernetic devices activated by the physical presence of participants, and 4. works based on video feedback and closed-circuit television (CCTV) systems that incorporate the image of spectators in live or delayed information channels. While these categories of analysis are configured around different mediums (sculpture, performance, responsive environments, and video art) they do not imply clear-cut distinctions between the

reflective processes elicited by the works discussed in each section. The correspondences between modes of spectatorial engagement elicited by such works as Robert Morris's *untitled (mirror cubes)* (1965-1971), Joan Jonas's *Mirror Pieces* (1969-1970), James Seawright's *Electronic Peristyle* (1968), and Les Levine's *Contact* (1969) are so rich that they escape the confines of medium specificity. By explaining that these transformations in spectatorship are not restricted to a unique genre of art practices, I intend to show that they reflect a significant turn in contemporary art spectatorship. What may at first sight seem an investigation into a niche of art history centered on art practices, which inspire mirroring acts, has in fact much higher stakes because it will unveil the emergence and development of collective modes of participation.

By reflective processes, I do not understand merely visual acts of cognition and recognition, but an affective rapprochement between self and others. In the context of the works I examine, visitors do not only look at each other's images as reflected in mirror and video interfaces set up by artists, but also feel compelled to emulate the interaction of others with the artworks or come up with their own creative ways of responding to them. This is the equivalent of an act of mirroring since it implies paralleling or reacting to the responses of co-spectators exposed to the same sensorial stimuli or facing similar behavioral choices.

The outdoor exhibitions and theatrical events staged in Japan by the Gutai group in the mid-1950s, along with John Cage's interest in spontaneous creativity and Allan Kaprow's happenings and environments from the late 1950s, paved the way towards the opening up of the visual field of the artwork to variation and unpredictable transformation in relation to viewers' more or less deliberate performative acts in the exhibition space. Starting with the 1960s, artists' predilection for reflective materials, such as mirrors, Mylar, Plexiglas, or polished stainless steel, fostered the tendency towards rendering visible viewers' interaction with the artworks. While the

mirror has always been closely associated with art practice, it is only during this period that it is widely employed reflective media rather than just a tool for improving the accuracy of visual representation. Larry Bell, Joan Jonas, Yayoi Kusama, and Lucas Samaras are just a few of the artists who repeatedly employed this medium to absorb the image of spectators within the visual field of the artwork. This change in spectatorship was also foreshadowed by works from the beginning of the 20th century, which announced the contestation of the autonomy of the art object and introspective modes of engagement with art.

Given the plethora of artworks based on mirrors in the 1960s, I have chosen to limit the discussion of such practices to those that contribute to collective reflective acts, which affectively connect viewers. Hence, there are at least two conspicuous absences from this chapter: Robert Smithson's mirror works and Art & Language members' conceptual inquiry into the relation between presentation and representation via the integration of small-scale mirrors into exhibition contexts. These practices did not focus so much on the interpersonal aspects of mirroring acts, but examined how reflective surfaces make us think about the nature of space and time and the mental formation of images. *Four-Sided Vortex* (1965-1967) invites viewers to gaze into a mirror abyss formed by reflective panels covering the interior of an inverted truncated cone. Since the scale of the object is restricted, visual observation is not directed towards others engaged in similar self-reflective perceptual processes. Beholders are confronted with the disintegration of their self-image in a kaleidoscopic world. For his *Yucatan Mirror Displacements* (1969) series, Smithson embedded square mirror panels in soil layers or vegetation areas. They collapsed material boundaries and leveled down differences between contrasting spatial and temporal coordinates. Far from privileging human vision or the role of man in relation to nature, these visual displacements emphasized the interconnectivity of all

components of our surroundings. Similarly, the experiments of Art & Language members with mirrors undermined the centrality of the viewing subject, but did not open up perceptual acts to the observation of others. According to Ian Burn, mirrors could stimulate productive mental reflection as long as one did not look into them. Commenting on his *Mirror Piece* (1967), composed of a mundane bathroom mirror and 13 sheets of photocopied texts including his observations on the qualities of mirrors, he stated “When I first made a mirror/piece, I couldn’t look at it and I didn’t like it, but my ideas told me it was alright. [...] the looking interfered too much with any thinking about it.” Burn’s mirror pieces, as well as those of other Art & Language members such as Michael Baldwin and Mel Ramsden who placed mirror panels on canvas and displayed them as paintings, were not so much interested in exploring spectatorial conditions and encouraging interpersonal observation, but wanted to direct viewers’ attention primarily to the reflective qualities of all artworks and the parallelism between mirrors and consciousness.

I contend that artists’ interest in triggering interpersonal acts of mirroring in the 1960s was engendered by three key factors: the desire to contest self-focused modes of art creation and reception, the widening availability of technological devices for recording both audio and video material, and the feeling of doubt permeating society under the impact of the grassroots social movements, international protests against the Vietnam war, and violent riots against dictatorships or colonial powers. Under these circumstances, one witnessed a growing realization of the interpersonal construction of identity and the otherness inherent in each and every person.

The use of mirrors consolidated the departure from the autonomy of the art object, which in its turn brought into question the autonomy of the viewer interacting with reflective artworks or responsive environments. Just as self-reflection can never be autonomous from the body,

perceptual processes are contingent upon the spatial context and the motion of viewers. Mirrors unveil this interdependence and collapse differences between human agency and objecthood by blurring the boundaries between figure and background since they show all visual elements in sharp focus. In this sense, they act as “floodlight consciousness” rather than “spotlight consciousness,” which purposefully highlights areas of interest. In addition to this, mirrors question the distinctions between two-dimensional and three-dimensional modes of representation, thus challenging medium specificity. As artists experimented more and more with mixed media, mirrors represented important tools for rendering the differences between painting and sculpture ambiguous. Mirrors were used both as canvas-like surfaces (e.g. Pistoletto’s *Mirror Paintings*) and as sculptural environments (e.g. Samaras’s *Room #2*) and embodied contradictions because of their concomitant reality as objects and virtuality as screens.

The paradoxical character of mirrors is also conveyed by the fact that they simultaneously denote certainty due to their tautological implications and relativity since the reflected images we perceive fail to coincide with the idea of reality we entertain. In collective memory, the period of the 1960s is remembered as a time of great social and political transformations. However, it was also a time of great uncertainty because the tensions subsistent in Western societies violently came to the surface. In *Sixties Going on Seventies*, Nora Sayre pointed out that while the gains of this period were not to be minimized no ultimate resolution could be found to the conflicts of this decade, but continued to manifest themselves in the 1970s. According to her, the most important outcome of the 1960s was the growing realization that the histories of different groups converged into the present. In her view, the encounters generated by the tumultuous uprisings were deeply consequential in the sense that: “people of different backgrounds discovering what each other’s experiences were. I think that was the nature of the

Sixties.” The tendency of artists such as Joan Jonas to stage mirror-based performances that stimulate spectators to ponder the subjugating effects of the gaze and the fluidity of interpersonal relations obliquely reflected the proliferation of exchanges between previously segregated groups.

The first section of this chapter, entitled “Shared Spaces of Spectatorship: from Reflective Object to Reflective Environments,” focuses on the way Minimalist sculptures open the way towards considering the external factors that shape spectatorial experience, such as the parameters of the exhibition space, the position of the viewer or the time needed for grasping the work. It is anchored around the art practice of Robert Morris, who utilized mirrors to re-direct viewers’ attention from the object on display to the context of display, as well as around the environments of Lucas Samaras, who challenged the material boundaries of the artwork to an even further extent by constructing mirror rooms and corridors that physically and mentally situate viewers in a kaleidoscopic realm in which all visitors are on display. The second section “The Mirror as Social Interface in the Art Practice of Michelangelo Pistoletto and Joan Jonas” explores the manipulation of reflective surfaces as a strategy for stimulating awareness of power relations in society. Not only does it center on a discussion of performances, such as Pistoletto’s theatrical interventions with the *Zoo* collective and Jonas’s choreography of *Mirror Pieces* with groups of male and female performers, but it also highlights the use of mirrors as quasi-theatrical devices that encourage beholders to define their position in relation to images of 1960s riots and rallies or anonymous figures who stand for different social classes or gender groups. The third section “Mirroring Others: Collective Encounters with Art and Technology Projects” concentrates on technology-based art projects that catalyzed acts of interpersonal cognition and group behavior by inviting viewers to respond to the transformation of cybernetic systems. Even

though these works did not necessarily entail reflective materials, they still engendered acts of mirroring as they encouraged participants to watch and possibly imitate the interaction of others with responsive light or sound environments. Rather than focusing on individual artists, this section is organized around three exhibitions that are highly representative of collaborative projects between artists and engineers in the 1960s. Ralph T. Coe's "Magic Theatre," the Los Angeles County Museum of Art's "Art and Technology Program," and Experiments in Art and Technology (E.A.T.)'s "Pepsi Pavilion" staged convivial spectatorial experiences that highly contrasted with introspective encounters with art. The fourth section of this chapter, "Video Mirrors: Beyond the Camera Gaze," dwells on the strategic use of CCTV systems for emphasizing the fact that any act of watching or performing in front of the camera should imply a certain amount of responsibility and awareness not only of oneself, but also of others. It examines changing views on the function of mass media and the way communicative processes influence individual and collective self-definition. Anchored around the CCTV works of Marta Minujín, Les Levine, Frank Gillette and Ira Schneider, this section sets forth the increasing drive towards connecting with others, even if only at a cursory level, and the growing interdependence between the public and private sphere of reflection and action, which become almost contiguous with one another. The conclusion of this chapter will highlight the overlap between different modes of collective spectatorship elicited by the four categories of art practices described in each section and will reiterate the reasons that these changes in the definition of art experience become so prominent in the 1960s.

The art practices discussed in this first chapter in terms of mirroring processes are not restricted to one geographical area in particular. Although the concentration of works that elicit collective spectatorship via reflective interfaces is apparently higher in the U.S. during this

period - probably because new technological devices are more easily available and challenges to self-focused spectatorial modes are stronger in response to the tradition of Abstract Expressionism— similar trends can be observed in other cultural contexts. European and Latin American artists affiliated with international movements such as *Nouvelle Tendance* widely employed reflective materials in their works to emphasize that art does not merely mirror the artist's subjectivity, but can engage a broad audience that can creatively interact with artworks in multiple ways. Before American artists started to create installations based on CCTV systems on a wide basis, Argentine artists Marta Minujín and Rubén Santantonín employed this technology in staging multimedia environments. The transformations in art spectatorship announced by the crystallization of art practices triggering awareness of other viewers' presence have global relevance and show the strong impact of communicative networks on the branching out of social relations that resemble more and more rhizomatic patterns rather than dialectical ones.

2.1 FROM REFLECTIVE OBJECTS AND SELF FOCUSED VISION TO REFLECTIVE ENVIRONMENTS AND COLLECTIVE AWARENESS

“The difference in sensibilities between traditional sculpture and some of the newer work might be the difference between the cold, isolated intellectualism of Sherlock Holmes and the physical, interactive violence of James Bond. You *watch* Holmes, but you *feel* Bond.”⁵⁶

John McCracken

As Minimalism consolidates in the 1960s, reflective surfaces become prevalent in sculpture. More or less transparent, they re-direct viewers' attention from the internal relations of sculptural

⁵⁶ John McCracken in Barbara Rose, *A New Aesthetic* (Washington, D.C.: The Washington Gallery of Modern Art, 1967), p. 57.

objects to external relations that depend upon the exhibition space and the position of the observer. Although most artists who construct such works are interested in the subjective dimension of perception, the seriality of Minimalist objects that escape the confines of a base highlights the multiplicity of viewpoints and often reveals the presence of multiple observers whose shadows or reflections are inevitably captured by the polished surface of geometric shapes. As a device that ideally reflects literal images and depends on external points of reference, the mirror is a fitting material for Minimalist sculptors. It has the potential of destabilizing the image and rendering the perceptual experience highly complex.

Robert Morris has employed mirrors in his sculptures in order to slow down perception by relativizing spatial boundaries. His artistic approaches are so diverse and complex that he cannot be categorized as a Minimalist sculptor even though his writings tend to focus on phenomenological theories and on the re-definition of sculpture in relation to the questioning of objecthood. Not only do many of his works include mirroring surfaces, but they also frequently have a tautological character as they refer to the process through which the objects were created as *Box with Sound of Its Own Making* (1961) or to the artist himself engaged in parodic acts of self-disclosure as in *I-Box* (1962).

Untitled (Pine Portal with Mirrors) (1961) is Morris's first work that includes reflective surfaces. As a doorway that leads to no enclosed space other than the one virtually framed in the mind of the viewer, it enacts a behavioral act that is not goal-oriented. It is a portal between two narrow temporal intervals and between two states of bodily consciousness. By covering the interior of the frame with mirror panels, Morris suspends the moment of passage. Its duration is prolonged either as the beholder repetitively passes through the portal in order to furtively catch a glimpse of the moving reflection or as he/she comes to a stop to examine the space contained

by the object. Under these circumstances, one finds himself/herself in an ambivalent situation in which cognition is delayed and one feels entrapped between the physicality of his/her body and its image. Within the mirror interior of the portal, the body is exposed as a contained object, outside its frame it is seemingly liberated from the gaze of others waiting for their turn for this virtual rite of passage. Oscillating between inscribing the object within their perceptual field and being literally contained by the object, viewers acquire a sense of their bodily image and physical presence.

In his early artistic career, Morris used mirrors to stage situations in which viewers were faced with mutually exclusive alternatives. In his second mirror-based work *Pharmacy* (1962), he created an optical conundrum. A glass plate with a red bottle painted on one side and a green bottle on the other is fixed between two parallel mirror disks. The viewer moves between these two poles that seem to communicate with each other, yet fail to perfectly mirror each other. The experience is as frustrating as that of Alice in Wonderland when she has to decide whether to drink the magic potion in the bottle without knowing what effect it may have upon her body. The visual signifier is a “pharmakon”⁵⁷ as it can cure or poison. The observer either opts for one side of the installation or moves between the two trying to come to terms with the relativity of perception and with the multidimensionality of an otherwise seemingly flat object.

This ambiguous relation established between the viewer and the object corresponds to the dialectics of self-consciousness envisioned by Morris. In “The Present Tense of Space,” he relied on George H. Mead’s theory of mind and self to discuss the contrasting characteristics of “temporal space” perception and immediate object perception.⁵⁸ The first experiential mode

⁵⁷ The term is used in conformity with Jacques Derrida’s theory on the “pharmakon”, as presented in *Dissemination* (Chicago: University Press, 1981), p. 89.

⁵⁸ Robert Morris, “The Present Tense of Space,” *Art in America*, Vol. 66, no. 1, January – February 1978, pp. 70-81.

corresponds to the “I” or the present tense of self-consciousness, more exactly the awareness of the constantly shifting idea of self in relation to the environment, the latter corresponds to the “me,” the more consistent idea of self that depends upon prior cognitive acts that help one assess the current situation. Morris believes that mirror surfaces upset the balance between the “I” and “me” as they simultaneously point to immediacy and temporal duration: they can prompt a dynamic perceptual mode in which one gains a sense of his/her surroundings by shifting his/her visual focus or a static perceptual mode in which one assesses the image in a contemplative manner from a fixed point of view. Morris argues that:

Mirror spaces are present but unenterable, coexistent only visually with real space, the very term “reflection” being descriptive of both this kind of illusionistic space and mental operations. Mirror space might stand as a material metaphor for mental space, which is in turn the “me’s” metaphor for the space of the world. With mirror works the “I” and the “me” come face to face.⁵⁹

Morris made this statement in 1978 after he had moved away from making mirror-based works with more sculptural qualities that place the viewer in an ambiguous reflective context to mirror environments that require the viewer to take his/her time to explore multiple perceptual possibilities without trying to disclose an ultimate pattern or shape. Hence, the beholder is invited to abandon the past tense of spatial experience and relinquish certainty.

This perceptual mode contrasts greatly with the one conventionally suggested for visualizing high modernist sculpture that elicits ambiguous perceptual relations due to the inherent characteristics of the object. In an analysis of David Rabinowitch’s sculptures, art critic Kenneth Baker suggests that the viewer needs to seek confirmation of his/her visual experience when confronted with a sculpture that defies regular geometric patterns. He argues that the beholder should fix the characteristics of the object into consciousness after having observed them as only in this way can one have a conclusive and satisfactory visual experience. Such a

⁵⁹ Ibid. p. 80.

theory is rooted in the idea that vision can ultimately guarantee access to the truthful image of an object as long as one demystifies the illusionistic aspects. Baker maintains:

The obvious question is: how do you know when you are seeing such an aspect? The answer is: you find out whether you see it by acknowledging that you do. If you say to yourself, or imagine saying to someone else, "I see something happening here that I couldn't see before."⁶⁰

He goes on to explain that one should maintain his/her autonomy as a subject of the perceptual act and ultimately surpass the state of doubt: "The conviction that you do see the fluctuating appearances the work presents is equivalent to the conviction that you could get someone else to see them too."⁶¹ Shared spectatorship is encouraged as a means of validating one's experience. The other is seen as a reflective consciousness that should perfectly mirror the visual experience of the beholder in order to validate its accuracy as eventually beholders are supposed to concur about the perceptual impact and the formal characteristics of high modernist sculpture.

In the case of Minimalist sculpture, perceptual acts are open ended; the relativity of subjective perception is not sanctioned. While generally envisioned as a personal act, the beholder's experience of Minimalist art is never entirely autonomous because it is conditioned by his/her corporeal presence and surroundings. Morris describes the perception of "new sculpture" in terms of democratic forms of spectatorship. He contrasts it both with the perception of old sculpture that requires the decoding of internal structural relations and techniques and with the perception of "objects," sculptural works that engender an intimate experience due to their small scale and high-finishes.⁶² There is no superior reading of "new sculpture" just as there is no abstract undifferentiated visual field. The beholder is not expected to have his or her

⁶⁰ Kenneth Baker, "David Rabinowitch: The Claims of Experience," *Arts Magazine*, Vol. 49, Issue 5, January 1975, p. 55.

⁶¹ *Ibid.*, p. 56.

⁶² In "Notes on Sculpture, Part II," Robert Morris discusses the contrasting features of small-scale sculptural objects and large-scale sculptures with "new sculpture" that parallels the dimensions of the human body. See *Artforum*, Vol. 5, no. 2, October 1967, pp. 20-23

perceptual impressions confirmed by others, but imagine multiple ways of seeing. Morris contends that “new sculpture” does not stimulate didactic approaches to art, but liberates the viewer by simultaneously engaging him or her physically and mentally. He concludes his third “Notes on Sculpture” essay by delineating its democratic potential:

Such work which has the feel and look of openness, extendibility, accessibility, publicness, repeatability, equanimity, directness, immediacy, and has been formed by clear decision rather than groping craft would seem to have a few social implications, none of which are negative. Such work would undoubtedly be boring to those who long for access to an exclusive specialness, the experience which reassures their superior perception.⁶³

Initially Morris was skeptical of the effect of mirrors since they appeared to present a matter of fact image of space reduced to a two-dimensional format, hence consolidating the autonomy of visual representation secluded within its illusionistic field. His reservations transpire at the level of *Pharmacy* (1962), which presents the viewer with an absurd optical situation that suppresses the feeling of control one imagines to have over a static image. In his preface to the Leo Castelli catalogue for the exhibition *Mirror Works, 1961-1978*, Morris confessed that his views upon reflective surfaces had been fraught with ambiguity:

The mirror, that most insubstantial of surfaces, has appeared periodically in my work for some 17 years. At first, I begrudged its appearance, attempted to suppress it, then ended by accepting it. In the beginning I was ambivalent about its fraudulent space, its blatant illusionism. Later its very suspiciousness seemed a virtue.⁶⁴

Morris was fascinated by the disruptive possibilities of mirrors. They level down stark differences between the subject of perception, his or her surroundings, and the object, but also bring out subtle incongruities, thus undermining visibility. His strategic use of mirrors is grounded neither in narcissistic nor in voyeuristic drives, but in his desire to get beyond the hard-edged boundaries of the visual field and underscore the fluctuating qualities of physical presence.

⁶³ Robert Morris, “Notes on Sculpture. Part 3. Notes and Nonsequiturs,” *Artforum*, Vol. 5, no. 10, June 1967, p. 29.

⁶⁴ Robert Morris in *Robert Morris: Mirror Works, 1961-1978* (New York: Leo Castelli Ink, 1979), p. 5.

Morris's best-known mirror-based sculpture *Untitled (mirror cubes)* (1965-1971) testifies to his interest in suppressing the autonomy of the art object and perception. By placing four 3 x 3 x 3ft cubes covered by mirror panels at an equal distance from each other, Morris framed a situation in which there is no unity of experience despite the strong gestalt of the individual objects located in the gallery space. On the one hand, mirrors imply visual integrity since they tend to have regular geometric forms and ideally reflect the literal image in front of them. On the other hand they segment the visual field and fragment the body depending on the distance of the beholder from their surface. The mirror cubes reflect each other and break the unity of the visual field. The beholder cannot perceive all the images reflected by the cubes' facets or control the way his/her self-reflection appears in this environment. At any moment, someone else can step into the perceptual field and transform it.

In discussing the conditions of visibility and invisibility loosely framed by Morris's cubes, Annette Michelson observed that "each object was dissolved as it was defined, through reflection."⁶⁵ She posited that this work is transgressive because it integrates the presence of the viewer into the object, questions the seclusive space of the sculpture in the art gallery, and underlines the continuum and presentness of perceptual experience. The differences between container and contained, as well as between body and space, are eroded. The cubes visually enclose the institutional space in their reflections while being physically contained within it. Their presence is seemingly masked as the contours of the white modern art gallery become highly visible.

⁶⁵ Annette Michelson, "Robert Morris – An Aesthetics of Transgression," *Robert Morris*. exh. cat. (Washington, D.C.: Corcoran Gallery of Art, 1969), p. 35.

The mirror cubes embody Morris's theory about "the less *self*-important object"⁶⁶ discussed in "Notes on Sculpture. Part II." Their literal shape is secondary to the reflective possibilities they offer, but not completely insignificant as it imposes limitations upon self-perception. It is worth inquiring whether Morris also envisions a less *self*-important subject of perception that abandons a self-oriented experience driven by the impetus for constituting a stable bodily image. Narcissistic impulses are partly thwarted in *untitled (mirror cubes)* as one can contemplate only his/her legs while moving past their fluctuating images and can catch merely a glimpse of the reflection of other people's moving bodies.

Morris envisions situations in which physical bodies do not follow a hierarchical structure: the object is never more important than the subject of perception. The experience of his works is never solely visual because he envisions multiple reflective and projective acts that stimulate the observer to create analogies between his/her physical presence in space and the mass and scale of the object. Morris suggests that Minimalist sculptures generate an impulse towards movement because they mirror the human body in a very loose manner. Even though they do not have anthropomorphic qualities, they respect human scale and occupy space in a similar way to living bodies. In "Notes on Sculpture IV," Morris explains:

The specific art object of the '60s is not so much a metaphor for the figure as it is an existence parallel to it. It shares the perceptual response we have towards figures. This is undoubtedly why subliminal, generalized kinesthetic responses are strong in confronting object art.⁶⁷

Viewers mentally project what it would feel like to be in the position of the object or to do things with these objects. Reflective surfaces greatly contribute to heightening this impression of paralleling the presence of the work on display. They also indirectly unveil the potential

⁶⁶ Robert Morris, "Notes on Sculpture, Part II," (1967, 23)

⁶⁷ Robert Morris, "Notes on Sculpture. Part IV: Beyond Objects," *Artforum*, Vol. 7, no. 8, April 1969, p. 51.

similarities or contrasts between the reactions of multiple viewers. Yet, Morris never elaborated on the concept of collective or interpersonal spectatorship in his writings. He seems to imply that the perceptual act needs to be autonomous from the presence of others, yet dependent on the object and its surroundings.

Critical of Morris's theory of anti-form according to which artists abandon the concern for creating pre-determined geometrical configurations, Allan Kaprow points out that visitors' perception of sculptural objects is never completely autonomous from previously observable visual and spatial patterns or from the topology and social dimension of the exhibition environment. Arguing that the departure from literal geometric shapes and rigorous boundaries between the object and the container is rooted in the space framed for happenings and environments from the mid-1950s and early 1960s, he underlines the fact that spectators are not an invisible presence in the gallery. Kaprow persuasively argues that "Their particular shape, color, density of numbers, proximity to the painting(s) or sculpture(s) and relation to each other when there are more than one person will markedly affect the appearance and "feel" of the work(s) in question."⁶⁸ He also maintains that the artist is never oblivious to the type of space in which the work will be exhibited which is conventionally assumed to be the white cube. Kaprow believes that the geometric configuration of the gallery is as important as the shape and location of the object since it frames the perceptual experience.

However, Morris has in mind a more dialectical relation between the viewing subject and the object. The experience he portrays is more inward even though it is by no means introspective, as the viewer cannot completely identify with the non-anthropomorphic sculpture. While he advocates for the contemplation of external relations to the object, he is more reserved

⁶⁸ Allan Kaprow, "The Shape of the Art Environment. How anti form is "Anti-Form," *Artforum*, Vol. 6, no. 10, Summer 1968, p. 33.

about the perceptual effect of multiple viewers within the visual field of the object, almost as if coming to terms with such a possibility would be synonymous with accepting that there are competing foci of attention within the exhibition environment that disrupt the parallelism between the spectator and the Minimalist sculpture. The role of the spectator is limited to envisaging relations to the object, but not to other viewers. As Roald Nasgaard, the curator of the *Structures for Behavior* exhibition held at Art Gallery of Ontario in 1978, affirms, the spectatorial experience needs to remain private even when it departs from a purely contemplative attitude. By stating that in viewing his sculptures “a companion gets in the way,”⁶⁹ he castigates the presence of other spectators as an interference with the observation of the object. Minimalism leads to a re-definition of spectatorship, which is oriented towards behavioral relations rather than towards a purely optical analysis of the formal characteristics of the object, but it does not entail a radical interrogation of individualist sense experience. Other spectators sharing the same visual and physical space presumably need to remain invisible even when the reflective surface of many Minimalist sculptures discloses their presence.

Check (1964) is Morris’s only work from the 1960s that produces more than a merely accidental encounter between spectators. In this performance, he dissolved the boundaries between spectators and performers. Morris placed 700 chairs in a large room following no logical layout. No clear-cut aisles separated the seats; instead a corridor was left between the chairs and the walls. As the performance started, forty people acted in this liminal space and then dispersed into the audience only to re-assemble in smaller groups upon a signal. Surrounded by performers, audience members were set on display. They were put in check position as if on a giant chessboard where the differences between the white camp and the black camp are erased.

⁶⁹ Roald Nasgaard in “Introduction,” *Structures for Behavior. New sculptures by Robert Morris, David Rabinowich, Richard Serra and George Trakas* (Ontario: Art Gallery of Ontario, 1978), p. 45.

As performers virtually trespassed the safe boundaries of their territories, they could no longer easily tell who had a pre-established performative role in this event and who became a performer incidentally. In discussing Morris's performance, Maurice Berger states "*Check* was organized around strategies of infiltration and displacement."⁷⁰ As the title implies, spectators seemed to be brought under control although they apparently occupied a central position in the panopticon at the very beginning of the performance. In this situation, they felt compelled to check their position in relation to others in order to deal with the shifting rules of this performance. *Check* upset the assumed balance between performers and spectators and in this sense indicated the state of disorder inherent in society in the 1960s, a time at which regulated behavior and identity formation were questioned.

Morris's retrospective at the Tate Gallery in London in 1971 drew attention to shared spectatorship. It provoked spontaneous engagement and active participation, completely transgressing museum regulations. Visitors were invited to perform athletic exercises. People had to walk along inclined beams, drag cylindrical and cubical shapes along inclined platforms, or climb up vertical tubes. Reviews of the exhibition included interviews with enthusiastic participants that described the euphoric reactions engendered by Morris's environments. One of the spectators remarked that this stage-like setting "produced an electric social atmosphere; individual exhilaration [became] group exhilaration, people wanted to do things together."⁷¹ Expressing his consternation, one of the museum attendants declared in an interview: "We wanted people to participate, the trouble is they went bloody mad!"⁷² The exhibition was closed

⁷⁰ Berger (1994, 25)

⁷¹ Quotation available in Maurice Berger, *Labyrinths: Robert Morris, Minimalism, and the 1960s* (New York: Harper & Row Publishers, 1989), p. 121.

⁷² As quoted in Barbara Reise, "A Tail of Two Exhibitions," *Studio International*, Vol. 1982, no. 935, July-August 1971, p. 30.

after a couple of days partly because the objects of interaction needed repairs, and partly because they triggered an utterly chaotic atmosphere within the museum.

No other works by Morris come close to this playful environment. Only his series of labyrinths probably enact similar spontaneous encounters between museum visitors. Art critic Edward Fry remarked in *Arts Magazine* that visitors of the labyrinths had to deal with a state of disorientation even when they knew the structure of the maze-like environments as “all who enter must cope without preparation with the physical problem of meeting others along the narrow passageway.”⁷³ Yet, since the labyrinth corridor is quite narrow, the duration of such encounters is limited and the participatory experience tends to be more individualistic.

Morris’s transition from a practice oriented towards objects with strong gestalts, which demand a highly personal perceptual experience, to environments that imply a fragmentation of the perceptual field and an increased awareness of the public dimension of experience was mediated by his experimentation with film in late 1960s. From the very beginning of his career, his work had focused on processes and self-reflexivity. In his film projects, this inclination becomes more apparent than ever. The mirror often parallels the camera as it instantaneously, yet momentarily, registers the live images unfolding in front of it. In a 16mm film from 1969, Morris manipulated a rectangular mirror to capture panoramic images of the landscape. For *Finch College Project* filmed the same year, he set a camera on a platform revolving about twice per minute to record a 360° perspective upon the gallery space. While he was attaching square mirrors to one wall, an assistant was re-composing a magnified photograph of a movie audience out of square panels on the opposite wall. The camera registered these simultaneous actions; its continuous rotation upset the parallelism between reflection and representation. As soon as the

⁷³ Edward Fry, “Robert Morris: The Dialectic,” *Arts Magazine*, Volume 49, no. 1, September 1974, p. 24.

grid compositions on the two walls were complete, Morris and his assistant removed the pieces while the camera kept rolling. The traces of cement indexical of the installation process were left on the walls. Subsequently, Morris placed the film in a projector located on the very same turntable where the camera stood. Following the movements of the projection across the wall, spectators could not fully identify with the point of view of the camera lens since their perceptual field escaped the boundaries of the small film frame. In talking about this work in a 1970 interview with E.C. Gossen, Morris underlined the incongruities between environment perception and film perception: “It isn’t quite the same; the image is a little different in size when it’s seen through the projector. You get the trapezoidal shift of the image nearing a corner, so you don’t get the rectangle. It changes the terms about how films are seen.”⁷⁴ Moreover, viewers could not identify with the movie spectators in the photographic image because they were constantly in motion, highly conscious of the distance between themselves and the projection. Their shadows were engulfed in this environment. In addition to this, when more visitors were present within the gallery they became conscious of the collective dimension of their spectatorial experience which impeded more immersive perceptual modes that resemble cinematic spectatorship. Morris redirected viewers’ attention from the object of vision and from the observation of the technological apparatus to the shifting parameters and duration of perceptual processes. He suggested that new means of art production lead to the formation of new experiential modes.⁷⁵ Morris was intent on revealing both the process of making his works and the discontinuous mechanisms of perception.

⁷⁴ E.C. Gossen, “The Artist Speaks: Robert Morris,” *Art in America*, Vol. 58, no. 3, May-June 1970, p. 106.

⁷⁵ In the interview with Gossen, Morris also mentions that “when new structures of perceiving or making are brought in then that gives you as major a break as you can have in art.” *Ibid* (1970, 106).

For *Untitled (Threadwaste)*, 1968, Morris covered the floor of the gallery with industrial materials, such as strings, copper tubing, or asphalt pieces. To break the continuity of the optical field and to hinder the identification of orderly patterns, Morris inserted low rectangular mirrors in this highly tactile mélange. Hence, the environment impedes immediate visualization by displaying competing visual foci due to the fracturing of space triggered by reflections. In “Notes on Sculpture. Part IV: Beyond Objects,” Morris associated the perception of landscape-like formations with “scanning,” a term used by Anton Ehrenzweig in *The Psycho-Analysis of Artistic Vision and Hearing*⁷⁶ to refer to the intricate intercalations between conscious perception, memory, and dream-like vision. In this case, the wholeness of the visual field is sensed intuitively as a result of the correspondences and dissonances between subsequent perceptual acts. Such a shift in goal-oriented perceptual mechanisms brings to mind McLuhan’s affirmation in *The Medium Is the Massage* that “The contained, the distinct, the separate – our Western legacy – are being replaced by the flowing, the unified, the fused.”⁷⁷ McLuhan believed that cognitive processes were changing as a result of technology based on electric circuitry and people were no longer inclined towards fitting what they perceived into pre-established categories. The fluctuation of sense experience mirrored the indetermination and instability inherent in the environment.

At the end of the 1960s, Morris argued that one can note a shift from objecthood to environments in sculpture as a result of a shift in perceptual modes, from a type of vision oriented towards a specific goal to a type of vision that is more entropic and does not allow for

⁷⁶ Anton Ehrenzweig, *The Psychoanalysis of Artistic Vision and Hearing. An Introduction to a Theory of Unconscious Perception* (New York: George Braziller, 1965), p. 173.

⁷⁷ Marshall McLuhan, Quentin Fiore, *The Medium Is the Massage. An Inventory of Effects*. (New York, London, Toronto: Bantam Books Inc., 1967), p. 145.

rigorous mental control.⁷⁸ This transformation is more visible at the level of Morris's mirror-based installations from the second half of the 1970s in which he placed multiple reflective screens diagonally or parallel to each other to disrupt the homogeneity of the perceptual field, relativize the notions of distance and proximity, and render spatial depth and boundaries ambiguous. In a couple of these works, intersecting wooden beams connect large mirror panels.⁷⁹ Even though these components seem to correspond to a material representation of perceptual axes, Morris subverted linear perspective, as the beams appear to indefinitely prolong beyond the 'vanishing point' in the reflections. Since the mirror screens in these works tend to measure at least 7ft in height and 8ft in length, the experience is more public than private. In spite of the fact that most of the photographic documentation of these projects focuses solely on the components of the installation or on lonely observers, one cannot avoid thinking about the encounter between multiple spectators mediated by the mirror interface.

Less interested in the critical examination of the specificity of the sculptural medium than Morris, Lucas Samaras made a major contribution to the shift from objecthood to environments via the use of mirrors. He created works with contradictory qualities that instill doubt and fear, but also lure spectators dangerously close to their surfaces. Whether small scale or large scale, covered by pointed tacks or so visually confusing that they become quasi-invisible, his sculptures engender disorientation and ambiguity even though they frequently expand optical possibilities. Just like Morris, Samaras's practice transgresses established art styles. Left out of the *New Realism* exhibition of 1962 that would have qualified him as a Pop artist, and sympathizing with

⁷⁸ In "Notes on Sculpture. Part IV: Beyond Objects," Morris affirms "The art under discussion relates to a mode of vision which Ehrenzweig terms variously as scanning, syncretics, or dedifferentiated – a purposeful detachment from holistic readings in terms of gestalt-bound forms. This perceptual mode seeks significant clues out of which wholeness is sensed rather than perceived as an image." (1969, 53)

⁷⁹ See *untitled*, 1977, four mirrors each 6 x 12 ft and painted plywood (Louisiana Museum) and *untitled*, 1977, four mirrors and 12 x 12 inch timbers (Portland Center for the Visual Arts, Oregon).

Minimalist sculptors without however joining their camp, he remained an outsider to clearly labeled tendencies of the 1960s. He became well-known during this period for his razor-slit canvases and his pin-covered boxes, which suggest states of psychic enclosure, as well as imminent outbursts of repressed feelings. Samaras's works are frequently multi-layered; they contest the flatness of drawings and paintings due to their palimpsestic textures and shadows that render the demarcations between interior and exterior extremely fuzzy. In speaking about what he loses by calling himself an artist, Samaras nostalgically avowed: "I lost a certain formless fantasy, a vast monologue, a selfness, in becoming an assembler, an articulator, an artificer, an abecedarian, an artist."⁸⁰ The artist expressed his skeptical outlook on purely optical sensations, as well as on strictly demarcated two-dimensional or three-dimensional objects.

Mirrors constitute a persistent element throughout his practice and complicate even more the perceptual experience. Before incorporating reflective surfaces in his boxes, Samaras repeatedly referred to them in his writings, first in his notes for a happening from 1961, which was supposed to take place in a setting with a mirror wall and transparent chairs, then in a short story called "Killman" from 1963 in which the protagonist has a cube-shaped bathroom fully covered in mirrors.⁸¹ In 1964, he came across plastic mirrors while looking for materials for his boxes and became interested in the way he could manipulate them to deform images.

Samaras's experimentation with reflective surfaces mediated his departure from fully enclosed objects and catalyzed his interest in the design of enterable environments. He used mirrors in boxes composed of hinged partitions, such as *Box #40* (1965), which often resemble half-open books or empty photographic frames. They are like forms emptied of their contents

⁸⁰ Lucas Samaras in *Lucas Samaras*, exh. cat. (New York: Whitney Museum of America Art, 1972), no pagination.

⁸¹ Samaras mentions his earlier exploration of the impact of mirror environments upon human consciousness in his letter to the Albright-Knox Art Gallery from 1969. See Ethel Moore ed., *Letters from 31 Artists to the Albright-Knox Art Gallery* (Buffalo: The Buffalo Fine Arts Academy, 1970), pp. 36-40.

that become self-referential. The numerous tacks attached to their facets emphasize emptiness and impose distance, arousing sensations of optical and tactile vulnerability. In some of Samaras's works, mirroring processes are more loosely implied. In his series of large drawings based on X-ray, skulls or skeletal hands covered in camouflage patterns are paired to black and white shadow-like projections connotative of perpetually delayed encounters with one's own otherness.

Due to his complex exploration of reflections and his constant manipulation of his own image, Samaras's practice has been frequently interpreted in terms of narcissistic drives. In a catalogue essay, Donald Kuspit describes him as someone who has "mirror hunger"⁸² and assertively states that for Samaras "the self is not a social construction."⁸³ Nonetheless, in many cases the artist's works imply reflective processes expressive of a desire for sociability. Samaras is not resistant to being called a narcissist, but he takes mirroring acts to stand for much more than an erotic encounter with oneself or for a need for coming to terms with an alien environment that is not an adequate substitute for the maternal womb as Kuspit implies. In Samaras's writings, the mirror image is an impetus for creation or a trigger for re-enchantment with reality that helps one see things as if for the first time. For him, self-reflections represent multiple undiscovered others that contribute to a perpetual re-definition of his relation to the world. He does not contemplate himself in the mirror, but re-negotiates his identity.

Samaras is deeply aware of the human need for sociability and is perpetually concerned about his inability to entertain social relations. In his notes from 1961, he earnestly pleaded with himself to acquire self-confidence: "Samaras begin to have an affection for your body. Live in a

⁸² Donald Kuspit, "The Aesthetics of Trauma," Marla Prather, *unrepentant ego. The Self-Portraits of Lucas Samaras*. (New York: Whitney Museum of American Art, 2004), p. 49.

⁸³ *Ibid.* p.50.

house with mirrors. Man cannot live without people or his reflection. Samaras begin to love Samaras.”⁸⁴ It is quite clear that his reflection represented for him a compelling social instrument that imposed correctives upon his behavior. Samaras expressed the same earnest desire for being someone else in his blank verse poem *Diurnal* recording his thoughts and activities between 2008 and 2009: “I/ look/ in/ the /mirror /and /I /say /don’t /look, /but /I /look /thinking/ I’ll/ find/something/ or/ someone.”⁸⁵ Narcissism has been a mask for Samaras’s unrepentant dissatisfaction with his inability to consolidate social relations just as his mirror boxes with tacks are both defensive shields and instruments for temporarily inscribing the image of others into his works. His participation in happenings organized by Allan Kaprow, Claes Oldenburg, and Robert Whitman further confirmed his yearning for belonging to a community, especially as he explained that his engagement in these projects had partly to do with a feeling of “comradeship”⁸⁶ towards other artists. Samaras maintained that he disliked strictly pre-established roles that did not leave any room for personal creativity. This belief also discloses his abhorrence of strictly defined social categories. Instead, he prefers open-ended modalities of identity construction that are based on fluid, self-reflective processes and lack an ultimate teleology.

In the early 1960s, Samaras sketched out ideas for happenings, but he seemed to refuse to see his plans come to fruition, as if an actual performance of his invented roles or actions would actually spoil their fantastic dimension and loose meaning. In terms of psychological theories of self-recognition, the artist’s persistent, yet unsatisfactory, dialogue with his own

⁸⁴ Samaras in Kim Levin, *Lucas Samaras* (New York: Harry N. Abrams, 1975), p. 69.

⁸⁵ Lucas Samaras, “Diurnals,” *Lucas Samaras: Paraxena*, exh. cat. (Athens: Hellenic Ministry of Culture, 2009), p. 147.

⁸⁶ In his interview with Alan Solomon, he affirms that his participation in happenings had to do both with his interest in theatre and “with a sort of comradeship; we were all a group of people who somehow liked each other, so that being in a Happening was pleasing, in retrospect, from a friendship point of view.” See “An Interview with Lucas Samaras,” *Artforum*, Vol. 5, no. 2, October 1966, p. 41.

reflections corresponds to psychologist Boulanger-Balleyguier's theory about the initial unbridgeable gap between the mirror image as Other and one's own self-perception. She asserts that:

The mirror enables us to situate ourselves in the other's place and to observe ourselves from the other's point of view; hence, our interest in reflections never weakens throughout life. However, the hiatus between this point of view of the Other and our self-perception can be so great that we refuse to recognize ourselves in the projected image.⁸⁷

Samaras rejects a conciliatory relation between his mirror image and the way he perceives himself. This actual desire to maintain a hiatus between the two is catalyzed by his avowed inability to relate to others in an adequate manner. By refusing to fully identify with his reflection, Samaras leaves room for a dialectical negotiation of selfhood with his incongruous, apparently constantly shifting mirror image.

Samaras's unflinching decision to keep reflections at bay from his self-perception is also observable at the level of his construction of mirror corridors or rooms that enhance the impression of unsurpassable distance between one's physical presence and one's virtual projection. Beginning with 1963, the artist created drawings of reflective environments, which to a great extent replicated the geometry of his sculptures on a larger scale due to the ambiguous relations between positive and negative spaces. Samaras observed that containers are rich metaphors and are pervasively present in art practices from the 1960s. In his catalog essay for the 1972 Whitney retrospective of his works, he stated: "Art has gone through many disguises in the past ten years, and the box, the cube, the container (or their absence – cavity/excavation) have played a substantial role."⁸⁸ The reflective spaces he mapped during this period were never

⁸⁷ Geneviève Boulanger-Balleyguier, "Les étapes de la reconnaissance de soi devant le miroir," Jacques Corraze ed., *Image spéculaire du corps* (Toulouse: Privat, 1980), p. 139. Personal translation.

⁸⁸ Samaras (1972)

fully sealed off or completely open; they include doors, window openings or shelter-like semicircular compartments.

Samaras's first mirror room construction dates back to 1966. It was designed for Pace Gallery. Titled *Room #2*, it is his second environment. Two years earlier, he had transplanted the very contents of his living and working space into a room with fake walls in the Green Gallery. While his first environment reconfigured a personal space to which Samaras was closely attached, his second environment was highly abstract. *Room #2* creates the illusion of an infinite absolute space that exists beyond three-dimensionality might look like. Viewers are invited to step into a rectangular space covered in mirror panels both on the outside and on the inside. At the center of it stand the virtually camouflaged skeletons of a mirror table and chair. Samaras is wary of transcendental approaches. These sculptural elements are not to be seen as shadows of the actual objects or as universal ideas of what such shapes stand for. Instead, they serve as markers of a livable space, which is nonetheless incongruous with the alienating reflective surroundings that interfere with an intimate mood. The grid pattern formed by the mirror panels generates labyrinthine visual corridors due to the virtually expanded space of endlessly repeated reflections. The mirror table and chair heighten the confusion between materiality and immateriality.

Viewers cannot feel at ease within this environment. The encounter with the mirror image is impeded because one cannot easily withstand either the infinitely regressing space in which one's body appears to recede or the extreme proximity of multiple reflections that prevent the imaginary escape into the virtual depth of the visual field. Spectators are immediately aware of the effect of the room, yet they find it difficult to focus solely on their reflections. Narcissistic impulses are undermined as participants become more enchanted with the observation of the

environment than with self-contemplation. However, they are fully aware of their physical presence within its space as they note the impact of their movements upon the constantly varying reflections that can become flatter or deeper depending on the distance of the body from the room edges. In his notes on *Room #2*, Samaras remarked: “Narcissism was there in this lonely crystalline space, but not to the degree it was expected. The geometry, the abstractness, the shafts and splinters of light had the edge over the echoing bodies.”⁸⁹ In a sense, the artist replicated his personal experience in front of the mirror as he refused to accept his complete identification with his self-image for fear that this would imply a complete annihilation of the social or performative facet of his identity.

Samaras envisioned active spectators that become immediately acquainted with the effect of their movements upon the mirror images and playfully manipulate their reflections. Participants were expected to consciously overlook the flatness of the mirror and explore their otherness. In discussing his plans for *Room #2*, Samaras enthusiastically anticipated the performative actions it would trigger and talked about multiple viewers engaged in constructing a half-real, half-virtual composition:

I suppose people paint with their bodies when they enter the room; you know, they inspect themselves, “paint” themselves; they scribble. Then they go away and the scribble goes away too, so that they don’t leave their marks. Kind of an instant erasure.⁹⁰

Thus, Samaras anticipates the type of reactions triggered by many digital art projects that require participants to manipulate their reflections or shadows to set in motion images or graphic signs.⁹¹

The fractal-like environment in which mirror edges are projected further and further away into

⁸⁹ Ibid.

⁹⁰ Samaras (1966, 43)

⁹¹ In 2004, Camille Utterback created a series of works in which the movements of visitors are tracked by a surveillance camera. The images are transmitted to a computer program that generates painterly lines and dots. Participants paint with their bodies abstract-expressionist compositions. Only one person at a time can interact with the digital environment, but his/her actions become part of an endlessly morphing canvas that incorporates traces of bodily movements of multiple participants.

the distance banishes any sense of cohesion. As boundaries are repetitively multiplied, all physical elements within the room fuse. The sculptural objects are absorbed into this reflective membrane; they almost disappear in the mirror maze. Participants become the main focus of display as they move through the room. Their bodily presence is instantaneously unmasked. Painterly as the quality of reflections may appear, it is never entirely illusionistic as the reflection is not merely a perspectival construction; the images are real, the space in front and behind the viewer has depth.

Samaras dismantles objecthood and the limitations of two-dimensional representation. While in Morris's sculptures the exterior edges of mirror panels are blatantly visible, in Samaras's environments, one is submerged into a world in which spatial dimensions are relativized. Viewers cannot control the reflections that surround them on all sides. Samaras wants to keep participants neither too close nor too far away from the flat surface of mirrors so that they are not tempted to fragment reality into neatly framed representations. He refuses the confines of object-oriented perception in the same manner as he refuses to acknowledge that his reflection is his actual image. Hence, he rejects the role of passive observer of the theatre of the world and contests his isolation from society. In Samaras's opinion, distance is necessary for active process-oriented perceptual modes to be enacted:

To see something is to draw it into the center of your consciousness but to do that is to leave no distance between it and you. I get a stifling, suffocating feeling sometimes that I am not living in three-dimensional space with plenty of room but in one which is smack flat two-dimensional with illusive, fake extension and no-behind.⁹²

Samaras refuses to contain the flow of images. Mirror surfaces are supposed to interfere with usual visual patterns and break apart the safe boundaries of two-dimensional planes. Their

⁹² Lucas Samaras, "An Exploratory Dissection of Seeing," *Artforum*, Vol. VI, no. 4, December 1967, p. 27.

ubiquity entices active behavior as the field of vision becomes quasi-elastic, bouncing forward or backward with every change in the immediate spatial context.

In Samaras's subsequent environments, kinetic involvement becomes more important. In 1967, he constructed a tripartite mirror corridor that folds back on itself twice. While the length and width of each passageway are the same, the height varies, gradually decreasing as participants advance. As the mirror ceiling slopes down, it enhances visitors' awareness of their movement through space and eventually compels them to bend their bodies in order to reach the end of the tunnel. Samaras's environment plays upon the ambiguity between the depth of the reflective field and the narrowness of the physical space. Paradoxically, the perception of virtual infinitude becomes claustrophobic. As if to further upset visual balance, Samaras used glass bolts to affix the mirror panels to the walls of the corridor. Thus, he contrasted the sensation of spatial regression to spatial condensation. Images become part of a never-ending series of reflections in Samaras's corridor environment when viewers look ahead, yet are reduced in scale and compressed in the glass bolts.

In addition to disrupting spatial perception, *Corridor #1* (1967) subverts the notion of a private aesthetic experience. Viewers are vulnerable not only to the incongruities of the reflective maze, but also to the gaze of others. They become deeply conscious of the fact that they lack control over their surroundings and over the image of their bodies. If they want to turn back upon finding out that the corridor diminishes in size they may realize that there are other people behind them moving along the same path. A space that previously seemed to hold out the promise of a private encounter with one's self-reflections turns out to subject the participant to a public performance. In describing another corridor environment created by Samaras at the end of the 1960s, Kim Levin describes the experience of walking through another corridor built by

Samaras in Philadelphia in the late 1960s in the following way: “When you look sideways, there is an endless row of yourself marching in step; another person in front or in back multiples into another rank of marchers.”⁹³ Hence, one becomes part of a group of spectators watching each other react to unexpected visual and spatial constraints. In discussing about the enchantment with interactivity elicited by new technological developments, Ann-Sargent Wooster argued that “the idea of theatricality in sculpture” was equivalent to a sequence of individual perceptual acts since “the audience at any moment is essentially one person at a time” just as in the case of the operation of computer-based works or video disks.⁹⁴ However, it is evident that sculptural environments do not entail only binary forms of interaction and enable viewers to concomitantly inhabit their space and explore its visual and haptic effects.

Samaras’s *Room #3* (1968), exhibited at documenta IV, violated the safe boundaries of the museum and aggressively disclosed the myths of the autonomous art object and the private visiting experience. Both the exterior and the interior of this environment are paneled with mirrors, yet the illusion of infinite depth is dispelled, as large mirror tacks appear to violently pierce through the floor, ceiling, and walls. Samaras found it ironical that the curators of documenta IV selected the most dangerous mirror environment out of the projects he submitted.⁹⁵ Visitors can only enter *Room#3* through a small door. Once inside, they run the risk of hitting themselves against the tacks and can retrieve some sense of orientation if they share the space with other people who have already charted the interior topology of the mirror cube. No

⁹³ Levin (1975, 71)

⁹⁴ Ann-Sargent Wooster, “Reach Out and Touch Someone: The Romance of Interactivity,” Doug Hall and Sally Jo Fifer, *Illuminating Video: An Essential Guide to Video Art* (New York: Aperture, 1990), p. 282.

⁹⁵ In commenting on his project for documenta IV, Samaras mentioned: “It was pretty lethal. Like sending a torture machine to the land of torture. It wasn’t even a Trojan horse; it’s an entirely different use of a gift. For them to see and go into and hurt themselves. But I don’t think they saw my vengeance. Actually, the fact is they selected that room themselves; they had a choice.” This statement reveals the institutional critique implicit in his projects. See Samaras in Levin (1975, 71).

autonomous sculptural objects are set on display in the room. Audacious participants simultaneously engage in moving across this obstacle course compartmentalized by sharp tacks and illusive reflections.

Unlike Yayoi Kusama's mirror rooms from the same period, Samaras's environments do not allow for complete perceptual immersion and utter self-obliteration.⁹⁶ They do not grant visitors the opportunity to enter into a fantasy world secluded from physical menaces in which they can fully merge with their surroundings. Samaras maintains the tension between corporeal presence and optical projection. Thus, he alerts viewers to the distance between themselves and their perceptual field. His mirror rooms and corridors are never sealed off; the doors are always left open, constantly exposing the participants to the gaze of others.

Larry Bell is another artist who started by creating reflective sculptural objects and gradually acquired an interest in the framing of environments with loose transparent boundaries. His metal-coated glass cubes exist both as objects and perceptual mediums that channel vision towards the surrounding space. They simultaneously situate the viewer within the object and outside it, caught between an immersive and a voyeuristic experience. The subtly tinted surface of Bell's glass cubes acts both as a physical barrier and an invitation to an optical and kinesthetic experience as visitors tend to employ the cubes as visual interfaces.

Critics of the 1960s focused on the multisensorial responses to Bell's cubes, but shied away from directly specifying that they call one's attention to the social environment of the aesthetic experience. They usually highlighted the relations between the individual beholder, the object, and the abstract museum environment, envisioning three perceptual possibilities:

⁹⁶ Yayoi Kusama constructed her first mirror environment in 1965. It was entitled *Infinity Mirror Room (Phalli's Field)* and consisted of a room covered with mirror panels only on the inside and filled with thousands of phallic-like shapes overlaid with red polka dots. See Francis Morris ed., *Yayoi Kusama* (New York: Distributed Art Publishers, 2012).

observing the exterior surface of the cube, one's self-image incorporated in the object, and the entropic interior void in which colorful reflections seem to acquire a material shape. Only a couple of them actually indicated that the cubes encapsulated the images of other visitors. While examining the ephemeral character of images projected against the surface of Bell's sculptures, Barbara Haskell states in her essay for the exhibition *200 Years of American Sculpture* from 1976 that these works "are constantly changed by people passing back and forth, and fluctuations of light and shadow."⁹⁷ In the same exhibition catalog, Marcia Tucker discussed "shared space" in contemporary three-dimensional artworks, but restricted her argument to the environment shared by the individual beholder with the artwork.⁹⁸ Bell's cubes dislocate the self-focused aesthetic experience. Their elusive image corresponds to the transience of perceptual processes that always depend upon the experiential context.

Like Morris and Samaras, Bell began to construct sculptural environments in the second half of the 1960s. His large-scale works maintain the see-through qualities of the glass cubes, but present more loose demarcations between the interior and the exterior. In 1969 Bell created *Standing Walls* for the Walker Art Center, a maze-like environment made up of parallel grey and clear glass panels framing a central corridor. Despite the fact that the walls follow a logical layout, the optical experience is disorienting due to the ambiguous perception of depth and flatness. Since the upper edges of the glass panels are situated far beyond eye level, spatial boundaries are relativized. In this transparent, yet highly segmented environment, spectators take note of each other's physical presence. Their visibility tones down the ambiguity of the quasi-invisible environment.

⁹⁷ Barbara Haskell, "Two Decades of American Sculpture. A Survey," *200 Years of American Sculpture* (New York: Whitney Museum of American Art, 1976), p. 295.

⁹⁸ Marcia Tucker, "Shared Space. Contemporary Sculpture and Its Environment" in Haskell (1976, 215-247)

In assessing the transformations in sculptural practice of the 1960s, Barbara Rose argued that it was increasingly difficult to identify cohesive trends based on the formal characteristics of the objects. She posited that there had been a turn towards a “new aesthetic” influenced by the use of translucent and reflective materials and by the shift away from mimesis and references to transcendence.⁹⁹ As artists shifted spectators’ attention from the restricted impermeable field of the sculptural work to the immediate spatial and temporal condition of perception, they challenged the idea of the autonomous art viewer absorbed in aesthetic contemplation. As we have seen in this section, the environments of Morris, Samaras, and Bell worked to transgress stable subject-object relations and to disclose the limitations of self-focused perception.

2.2 THE MIRROR AS SOCIAL INTERFACE IN THE ART PRACTICE OF MICHELANGELO PISTOLETTO AND JOAN JONAS

“[...] each person is always *acting* upon others and *acted upon* by others. The others are there also. No one acts or experiences in a vacuum.”¹⁰⁰

R.D. Laing

In collective memory, the period of the 1960s is remembered as a time of great social and political transformations. Anti-colonial movements, Civil Rights demonstrations, Vietnam war protests, and student riots stand out as significant markers of this turbulent historical context. The art domain was also a site of contestation during the 1960s. Artists challenged the autonomy of the art object, the dominance of stylistic representations, and the private character of aesthetic experience. Yet, changes that retrospectively appear radical and decisive took time to fully sink

⁹⁹ Rose (1967, 11)

¹⁰⁰ Laing (1971, 80-81)

in. In terms of art and social practices, the 1960s were a period of both continuity and transformation. Mirrors epitomize this temporal ambivalence. They instantaneously reflect changes, but remain impervious to the relativity of the world unfolding in front of them. It is not perhaps by chance that mirrors were prevalent in painting, sculpture, and performance in the 1960s since they evoked the conflicting tensions subsistent in Western societies confronted with the clash between the ideals of the Enlightenment and the heavily prejudiced attribution of civil rights.

Italian artist Michelangelo Pistoletto and American artist Joan Jonas employ reflective materials to call viewers' attention to the ways in which perception and value systems are shaped by interactions with others. Through their use of mirrors, they underline the co-existence of multiple vantage points upon reality and expose the dynamic relations between individuality and collectivity. Pistoletto and Jonas invite viewers to engage in reflective processes not only to playfully undermine the autonomy of art, but also to show the interdependence between perception, representation, and power structures. Their mirror-based pieces are both liberating and imprisoning. On the one hand, spectators adopt performative roles by manipulating their reflections; on the other hand, they discover that their acts are contingent upon the angle of the mirror and the presence of other viewers. In this section, I aim to discuss the strategic ways in which Pistoletto and Jonas open up the space between viewers and artworks or viewers and performers by using mirrors as social interfaces in order to stage chance encounters and trigger a re-negotiation of selfhood in relation to multiple others. By relying on Umberto Eco's semiotic analysis of reflective acts, as well as on theories of phenomenology and interpersonal perception, I will explore the social critique implicit in these artists' mirror-based works. In Jonas and Pistoletto's works, mirroring processes frame connections between spectators and undermine

self-focused perceptual modes, calling for an enhanced awareness of the fact that identity formation is based on complex interconnections with others.

The contingent social relations mapped by these two artists are universal in character, but also held a more specific meaning in the context of the 1960s when the grassroots movements and the increasing use of electronic media unveiled the intrinsic correlations and overriding interdependence between different social classes or racial groups. Critics have warned against the utopian view that this decade represented a time of epochal changes that were enthusiastically welcomed and accepted by everyone. Theorist Frederic Jameson explained that while the sixties are associated with the liberation of the oppressed, their consequences were not immediate since “to speak is not necessarily to achieve a Hegelian recognition from the Other.”¹⁰¹ He maintained that this historical period extended almost into the mid-1970s due to its heterogeneity and prolonged effects. Pistoletto and Jonas’s mirror works destabilize the rhetoric of the self-centered gaze that subjugates others. Viewers inscribed within their frames observe each other as they waver on the threshold between identity and alterity, contemplation and performance. For Pistoletto and Jonas, the mirrors constitute inadvertent channels of communication. Through their works, they challenge spectators to consider the effect of interpersonal relations on the formation of subjectivity. Their works obliquely reflect the proliferation of exchanges between previously segregated groups under the impact of the 1960s events.

Pistoletto’s art practice has been closely identified with mirroring processes. In addition to using reflective surfaces, such as gold and silver flat planes of color, polished steel panels, and

¹⁰¹ Jameson believes that the 1960s period extends up to 1974 and encompass feminist movements and uprisings in Latin American countries. See Frederic Jameson, “Periodizing the 60s,” in Sohnya Sayres, Anders Stephanson, Stanley Aronowitz, Frederic Jameson ed., *The 60s without Apology* (Minneapolis: University of Minnesota Press, 1984), p. 184.

aluminum plates, the artist has organized collective art projects that encourage participants to improvise and ponder the effects of their actions upon others. He has framed spectatorial conditions that stimulate viewers to consider their relation to more than one protagonist, object, or type of representation, hence breaking the duality of subject-object parallelism and drawing attention to the social dimension of acts of viewing.

Pistoletto first employed the mirror as an auxiliary device that could help him depict mimetic representations devoid of the emotional surcharge and the effervescence of individual expression characteristic of *l'art informel*, the prevailing style of his student days. He was in search of retrieving a sense of objectivity and the absolute veracity of mirror reflections seemed to serve as an ideal epistemological tool. While looking into the mirror to paint his self-portrait, Pistoletto became highly conscious of the temporal coincidence of his reflection, his physical presence, and his painted image. In order to emphasize the immediacy between these three ontological indices, Pistoletto decided to paint life-size portraits against reflective backgrounds that would instantaneously capture his silhouette. The reflection served as a trace for the pictorial representation. Nonetheless, the artist was not so much interested in the accuracy of figurative details as in the feeling of presence conveyed by the portrait. In some of these paintings, Pistoletto barely sketched the facial features of the subject or depicted him with his back turned to the audience. The figures appear remote, but at the same time close to the viewers whose reflections are incorporated into the luminescent background as they approach the canvas. In discussing these works, Pistoletto remarked: “the true protagonist was the relationship of instantaneousness which was created between the spectator, his own reflection, and the painted

figure.”¹⁰² These paintings underline the inexorable passage of time and encourage viewers to contemplate their own presence within the same spatio-temporal context. The invitation to mirror others inherent in each and every one of us is even more literal in paintings such as *Silver Self-Portrait* (1960) composed of two wooden panels: one representing the artist, the other covered in a flat coat of reflective color welcoming museum visitors’ reflections. The mirror-like qualities of these works are highlighted by the way they are displayed within exhibition settings. Without frames, casually placed against gallery walls, they challenge the formal distancing between the viewer and the art object.

While Pistoletto’s self-portraits challenged primarily dialectical modes of identification, his practice gradually opened up to encompass interpersonal relations between more than just two subjects of perception. His series of *Mirror Paintings* (1962 – present) illustrate this transition from a focus on dyadic forms of identity formation to an interest in the social construction of subjectivity as a result of interaction with representations of multiple group members. These works also mediate the artist’s transition from the pictorial medium to mixed-media. Instead of painting human figures on reflective backgrounds, Pistoletto attached cutout silhouettes drawn on semi-transparent paper onto the surface of large steel plates. Many of these oil and crayon sketches were based on photographs taken by his friend Paolo Bressano. After having enlarged the pictures to life-size scale, Pistoletto copied parts of them onto very thin paper, frequently obliterating details that would emphasize the individuality of the photographed figures. Through this collaborative endeavor with Bressano, Pistoletto consciously chose to diminish his authorial control and paralleled the objectivity of mirror-like images to the

¹⁰² Michelangelo Pistoletto, “Minus Objects” in *Michelangelo Pistoletto. A Minus Artist*. (Florence: Hopeful Monster, 1988), p. 12.

presumed veracity of photographs.¹⁰³ The intersubjectivity implicit in this creative act corresponds to the interpersonal relation established between the reflections of the viewers in the steel plates and the sketched silhouettes.

One can identify at least five categories of activities exemplified by the protagonists of the *Mirror Paintings*: solitary acts of reflection, everyday acts or mundane encounters between people, visual acts that range from voyeuristic contemplation to aesthetic immersion, creative acts such as drawing, dancing, or taking photographs, and political acts typically represented by groups of people engaged in demonstrations. By superimposing these scenes on the reflective screens, Pistoletto framed a meaningful context for the interpretation of the mirror images. The reflections of spectators are no longer merely self-referential because they become part of a quasi-narrative structure that renders them interpretable due to their correspondence or incongruity with the sketched silhouettes. In one of his essays, Umberto Eco subjects mirror images to a rigorous semiotic analysis and decides that they cannot qualify as signs because they do not signify in the absence of an object or subject of reflection. However, he admits that there are situations in which catoptric images can become part of semiotic systems and hence become interpretable. Eco explains that the human inclination towards believing in the otherness of the mirror image despite its congruence with reality places it “on the threshold between perception and signification.”¹⁰⁴ In front of Pistoletto’s *Mirror Paintings*, viewers are virtually cast into performative roles. Once their reflections enter the semiotic field of the drawn silhouettes, they

¹⁰³ In the artist’s interview with Julian Stallabrass, he explained that the photographs were the only representations that in his view could get as close as possible to reflections: “For me it was necessary after these individualistic solutions [referring to action painting] – the gesture, the cut, the sublimation of the end – to find something more objective. So my mirror paintings traced photographs onto very shiny, polished metal.” See Julian Stallabrass, “Reflections on Art, Poverty and Time: An Interview with Michelangelo Pistoletto.” Retrieved from www.cittadellarte.it on 02/05/10, p. 6.

¹⁰⁴ Umberto Eco, *Semiotics and the Philosophy of Language* (Bloomington, IN: Indiana University Press, 1986), p. 210.

turn into participants in the episodic actions depicted by the artist, actualizing them and even extending them into the future through their movements and acts of imagination.

The *Mirror Paintings* have been frequently interpreted in terms of the ontology of presence¹⁰⁵ and the intertwining of perceptual modes associated with two-dimensional and three-dimensional mediums.¹⁰⁶ In analyzing these works from the point of view of the blurring of boundaries between art and life, critics have generally considered two types of mirroring processes: the viewer's visual reflection in the steel plate, which completes the open-ended composition, and the viewer's mental reflection on the virtual analogies between his position in front of the *Mirror Painting* and the position of the sketched silhouettes. I would like to suggest a third type of mirroring elicited by these works. Pistoletto's series can be interpreted as a social interface that generates reflective processes between gallery visitors who do not only project themselves inside the realm defined by the collage of figures, but also mirror the activities of other visitors similarly engaged in interacting with the works. The reflective qualities of the *Mirror Paintings* render viewers aware of the public character of visual experience in gallery environments. The incidental encounters between apparent strangers portrayed in works such as *Two People Waiting in Queue* (1962) indicate to museum visitors that they are part of a similar social context in which they need to acknowledge the presence of others even if they may not end up interacting with them. Pistoletto considers that art can be conceptualized in terms of communicative acts through which viewers discover correlations between their experience and the experience of others. According to him, its "meta-message" is "*there is community between*

¹⁰⁵ See Angela Vettese, "Into the Looking Glass," *Io Sono l'Altro. Michelangelo Pistoletto*, exh. cat. (Torino: Galleria Civica d'Arte Moderna e Contemporanea, 2000), pp.10-33.

¹⁰⁶ For a discussion of *Mirror Paintings* on the basis of the blurring of boundaries between the virtual immersion in the perspectival field of painting and the more dynamic engagement with the observation of sculpture from multiple points of view, see "Michelangelo Pistoletto. Mirrors to Monuments" in Barry Schwabsky, *The Widening Circle. The Consequences of Modernism in Contemporary Art* (Cambridge: Cambridge University Press, 1997), pp. 115-126.

us.”¹⁰⁷ He explains that our interest in artworks does not simply arise from seeking sensorial pleasure or satisfying our desire for knowledge, but is an outcome of our need for communion with others.

The reflective screens of Pistoletto’s works stimulate viewers to define themselves both in relation to the static silhouettes populating the virtual realm and in relation to the people with whom they share the perceptual field of the *Mirror Paintings* and the exhibition space. This invitation to neighborliness dissuades gallery visitors from primarily narcissistic modes of perception. Several *Mirror Paintings* directly address the conditions of spectatorship inside museums. *The Visitors* (1962-1968) is a diptych that juxtaposes the silhouette of a fashionably dressed woman, who seems to have abruptly come to a stop in front of an artwork, to that of a middle-aged man absorbed in examining what could be a gallery checklist. In slight contrapposto, the two figures appear to be aware of each other’s presence, yet are reluctant to face each other as if they could only communicate virtually via the art object that has captured their interest. Against the background of the galleries, this *mise-en-abîme* representation stages an encounter between museum visitors that occupy the space between the two protagonists. Viewers vacillate between the role of subjects and objects of perception. They could be witnesses to the depicted scene or they could be the focus of attention of the two virtual visitors. In either case, viewers feel compelled to envision the wider museum context that permeates the space of the reflective panel. While watching Pistoletto’s *Visitors*, they themselves may be the objects of the voyeuristic gaze of other museum visitors. This chain of real and virtual interpersonal relations hints at the fact that our idea of self is socially constructed. In *The*

¹⁰⁷ Michelangelo Pistoletto in Dave Hickey, “A Voice in the Mirror: Critical Reflections in the I/Eye of the Artist.” Selections from the Conversations and Prose of Michelangelo Pistoletto, *Mirror – Works*, exh. cat. (Institute for the Arts: Houston, 1983), p. 9.

Phenomenology of Perception, Merleau-Ponty argues that we must reflect on how our personal actions affect others in order to avoid solipsism and maintain a sense of ethical responsibility: “We must therefore rediscover, after the natural world, the social world, not as an object or sum of objects, but as a permanent field of existence: I may well turn away from it, but not cease to be situated relatively to it.”¹⁰⁸

These improvised theatrical situations, in which the viewer looks towards a couple or a larger group of people situated within the mirror plane, hinder binary forms of identification. They keep one alert to multiple analogies between himself/herself and others. Philosopher Paul Woodruff argues that in order to be a good watcher of performances or of the spectacle of everyday life one needs to avoid identifying with others up to a point at which he/she loses self-awareness or turns a blind eye to others’ distinctive features. According to him, a responsible observer abides by the following rule: “ethics and art make the same demand: pay attention to others for their own sake.”¹⁰⁹ Since the roles impersonated by the silhouettes in *Mirror Paintings* are often ambiguous given the fact that their faces are hidden or not fully contoured, viewers need to consider multiple interpretative alternatives. They are faced with the impossibility of fixing the identity of these strangers and ponder the potential affinities between themselves and others.

Even though the characters that populate the virtual realm of Pistoletto’s series may be anonymous, they belong to specific socio-cultural contexts. Their poses, clothes, or the activities in which they are engaged betray some of their attributes. Despite the abstract background against which they are placed, these figures are not completely free from regulated spaces. The

¹⁰⁸ Merleau-Ponty (2006, 412)

¹⁰⁹ Paul Woodruff, *The Necessity of Theatre. The Art of Watching and Being Watched* (Oxford: Oxford University Press, 2008), p.182.

transparency of their surroundings is illusory and so is the autonomy of their actions. In “Pistoletto’s Staged Subjects,” Claire Gilman adroitly contrasts the engaged modes of viewing these works to the passive modes of spectatorship defined by Guy Debord in *The Society of Spectacle*.¹¹⁰ She also notes that “It is this belief in a world inhabited by free subjects that the mirror panel invokes.”¹¹¹ However, engagement cannot be equated with complete freedom from power structures. Neither the sketched figures nor the viewers are situated in a completely neutral space. The relations between them do not fully escape social or institutional frameworks. In Pistoletto’s opinion, one can attain freedom only by consciously choosing the role he/she can play in the power structures. In a conversation with Denys Zacharopoulos, Pistoletto states that “being free doesn’t mean escaping your role. The freedom is finding your own role; because if someone assigns you a role, then you are a victim.”¹¹² He thinks that one cannot act outside socio-economic systems and maintains that in order to maintain a dose of freedom one needs to remain individually responsible for his/her actions and seek affiliation with smaller activist groups or communities. Some of the *Mirror Paintings* summon the viewer to adopt a position rather than simply remain on the threshold between reality and virtuality.

The works displayed by Pistoletto at the Walker Art Center in 1966 inserted museum visitors in the midst of political demonstrations and social protests. *Vietnam* and *No to the increase of the tram fare* (1965) incite viewers to choose their role in these manifestations. Depending on their solidarity with the marching silhouettes or their opposition to their cause, viewers could insert their image in the reflective field or they can seek to escape its frame. In

¹¹⁰ Debord (1994)

¹¹¹ Claire Gilman, “Pistoletto’s Staged Subjects,” *October 124*, Spring 2008, p. 54.

¹¹² Pistoletto in “Denys Zacharopoulos in conversation with Michelangelo Pistoletto,” Michelangelo Pistoletto, Monika Faber and Lorand Hegyi ed., *Zeit-Räume*. (Vienna: Museum Moderner Kunst Stiftung Ludwig, 1995), p. 155.

either case, viewers cannot remain innocent by-standers in front of these works since this would imply fully relinquishing their freedom by refusing to choose a role. *No to the increase of the tram fare* presents communist demonstrators of different professions and ages walking in front of museum visitors. They appear to completely ignore their presence. While half of the protesters are shown in profile, the other half have their faces turned away from the viewers. It is up to the observer whether to picture himself/herself as part of the crowd or not. The banner is the only part of the drawing that directly faces the audience. The situation depicted in *Vietnam* is much more confrontational because the protesters appear to be walking towards the viewer, seemingly breaking away from the steel plate surface. In both cases, the text on the banners carried by demonstrators is incomplete. The viewer is stimulated to engage with the work to complete its message. The works created for the Walker exhibition expose the similarities and even the interconnections between socio-political events happening in US and Italy. *Vietnam* may illustrate the protest of Americans against the war, just as well as it may illustrate the demonstrations of Italians against it. In 1965, one year before the exhibition at the Walker Art Center, a group of Italian politicians and cultural personalities publicly protested against the Vietnam war crimes. Pistoletto emphasizes the universal dimension of the *Mirror Paintings*, arguing that they can refer to events that are separated in time and space, but that have similar consequences. In discussing the open-ended sphere of signification of *Vietnam*, Pistoletto observes: “The Vietnam painting is an immediate memory, like a day-old newspaper. In other wars today, Vietnam is still present.”¹¹³ Ultimately, his works remain contemporaneous even half a century after the anti-Vietnam war protests because they solicit the viewer to think of

¹¹³ Pistoletto in Stalabross, p. 7.

correlations between his present condition and that of demonstrators reacting to the pending problems of their time.

Beginning with 1967, Pistoletto's practice took a new turn towards increasingly interactive art projects that further dissolved the rigid distinctions between artist as individual creator and audience members as passive spectators. Yet, reflective processes remained a defining parameter of his work since the events and performances he staged reflected socio-economic structures and were meant to mirror the needs of different communities. Pistoletto sees the performative side of his practice as a natural development because both the *Mirror Paintings* and his theatrical acts solicit a similar type of spectatorial involvement for the work to become complete.¹¹⁴ Before an exhibition at Galleria Sperone in 1966, he announced that he was going to clear his studio of objects and explore new creative means that challenge exchanges between people: "Mine would no longer be a relationship between one real thing, which was myself, and several abstract phenomena, which were the objects, but rather this was finally to become a relationship between real things, between people only."¹¹⁵ Between 1967 and 1969, he initiated three different types of events that questioned the idea of singular authorship and contested the neutrality of the gallery space: events that called for the participation of younger artists who had no space where to create or exhibit their works, events at which gallery visitors or audience members were invited to invent a role for themselves or take active part in performances, and events that took the form of processions and were usually collectively organized in small towns and villages where people were well acquainted with one another.

¹¹⁴ Pistoletto declared that the *Mirror-paintings* could not survive without an audience, they could not be taken for themselves. They created and recreated themselves according to the movements and interventions that they reflected. Therefore, the step from "mirror paintings" to theatre – everything is theatre – seems only natural to me. The audience's participation in the painting developed further and became participation in various forms." See Pistoletto in Guido Boursier, "Far scattare nella gente meccahnismi di liberazione," *Sipario*, no. 276, April 1969, 17.

¹¹⁵ "Michelangelo Pistoletto in conversation, Genova, 1971" in *Azioni Materiali* (Cologne: Verlag der Buchhandlung König, 1999), p.33.

The first type of event is best exemplified by Pistoletto's proposal for a collaborative exhibition for the Venice Biennale of 1968. He intended to virtually lay siege to the gallery space allocated to him on this prestigious occasion. Instead of exhibiting art objects, Pistoletto planned to display everyday life practices. He invited younger artists to take a rest in the gallery during daytime and start their creative activities the moment when the exhibition closed in the evening. Once outside the confines of the gallery, they were supposed to design small objects that would then be placed in different locations around Venice. Their modest gestures would remain anonymous and were meant to represent a sign of appreciation for the people of Venice who would discover them on the following day. Pistoletto conceived this collaborative project as a foil for the competitive and grandiose environment of the biennial.¹¹⁶ He considered partnerships with other artists a strategy for conflating artistic ideas and enhancing creativity.

The second type of event widened the sphere of collaboration to include the audience. Asked to exhibit at Galleria Attico in Rome in 1968, Pistoletto transformed the exhibition space into a film set. He brought costumes and papier mâché objects from the Cinecittà Studio to encourage visitors to impersonate characters of their own imagination. In order to prepare viewers for this performative experience, he subdivided the gallery space into a small dark room which was the equivalent of a dressing room where visitors could choose their costume and a much larger room where they could confront their self-reflection in a large mirror that encompassed the reflections of numerous others and constituted a stimulus for social interaction and performativity. In *Le Jeu comme Symbole du Monde*, Eugen Fink suggests that the element of reflection is inherent in any playful activity. Analogously, mirroring acts can trigger ludic

¹¹⁶ In the invitation launched to other artists for participating to the 34th edition of the Venice Biennial, Pistoletto describes the process of art creation as a reciprocal gesture: "To give a part of myself to whomever wants to give a part of themselves. It's the work I'm interested in." See "A Letter" in Pistoletto (1988, 24).

attitudes. Fink defines reflections as “intersubjective” images because their virtual space is open to multiple viewers who “can mutually control their perceptions.”¹¹⁷ Pistoletto alternated an intimate space with a highly public one to surprise visitors and help them surpass inhibitions and communicate with each other. He decried the fact that people had become more and more self-involved and had grown attached to material possessions, disregarding the value of interpersonal activities.¹¹⁸ The mirror set in the larger room of Galleria Attico was not a narcissistic device, but an interface for consolidating a feeling of belonging to a temporary community of event participants. With the aim of rendering people conscious of the potential for interaction, Pistoletto also employed mirror-like screens in performances such as *Pistoletto’s End* (1967) and *Who Are You?* (1970). In both events, performers held thin reflective plates to capture blurry images of the audience and collectively produced improvised acoustic effects by shaking the plates.

A third type of event was organized by Pistoletto with the *Zoo* collective he founded in 1968 together with actor and playwright Carlo Colnaghi, as well as people from other artistic domains. The name was meant to designate their state of imprisonment in art and social systems that conditioned their activities. It was inspired by a remark of Colnaghi who jokingly noted that he felt “exactly like a lion in a cage.”¹¹⁹ He implied that he had internalized the rules of society to such an extent that he could no longer make free choices. *Zoo* members were under no illusion that they could completely escape hierarchical structures or institutional frameworks. In their plays, they imitated the stratification of society in order to present a strikingly realistic

¹¹⁷ Eugen Fink, *Le Jeu comme symbole du monde* (Paris: Les Editions de Minuit, 1966), p. 99. Personal translation.

¹¹⁸ For more information about his alternation between private spaces and public spaces in gallery settings, see “Between” in Pistoletto (1988, 22)

¹¹⁹ See Michelangelo Pistoletto’s account of the foundation of *Zoo* in Germano Celant, *Identité italienne. L’art en Italie depuis 1959* (Paris: Centre Georges Pompidou, 1981), p. 260.

picture of how political systems are imposed and enforced. However, the fictional authoritarian regimes that they constructed were all destined to failure. Hence, the Zoo members conveyed an archetypal image of the ebb and flow of power. To the gigantic mechanism of social control, the collective juxtaposed the workings of a small community of artists and friends that took turns at initiating group activities. While performing in Corniglia, Zoo members delimited the space of their events by drawing a circle with chalk. Thus, they demarcated a zone of play where creative impulses could be released. Alternatively, each participant impersonated the Minus Man – a provisional ruler of the group who had the right to propose imaginative plots that would unfold over a strictly predetermined period of time. In addition to staging improvised theatrical acts, Zoo members gradually became part of the local community of Corniglia, a village where they spent approximately four months. They helped with everyday tasks and brought village people together in the evening to consolidate their sense of belonging to a cohesive group united by shared affective experiences. Pistoletto did not believe that the objective of Zoo should be to annihilate all sense of distance between performers and spectators. He considered that the contrast between the two groups could be constructively used to stage a relation of imperfect mirroring that unveiled that each of them was imprisoned in a much larger socio-political infrastructure. Zoo organized these events during a period of instability due to the economic recession that started in Italy at the end of 1965. Workers from the construction sector organized massive strikes in 1966 and students repeatedly manifested against the Vietnam war and university reforms during the period 1967-1968. Zoo events framed reality just as reflective surfaces, exposing the incongruities between ideal conceptions of harmonious societies and inevitable conflicts and power battles to which all social groups are exposed. In the *Minus Man* book, a hybrid between a diary and a memoir, Pistoletto described the Zoo as an autopoetic

system that mirrors the social infrastructure, yet refuses to become completely subordinated to it: “The spectators were permeable whereas we were impermeable. I’ve made a monstrous device, an indestructible device that has the ability to reproduce itself and the characteristic of reproducing itself, as plants and animals reproduce. I’ve made reflecting people.”¹²⁰ Like the mirror surface, the Zoo remained “impermeable.” It could not allow the barrier between itself and spectators to completely collapse because this would imply being unable to accurately portray the concatenations of power structures. Moreover, too much proximity would impede the recognition of Otherness and would restrict the possibilities of engagement for audience members. Germano Celant rightly observed that the Zoo collective strived to maintain its inner diversity in order to give the public the chance to identify with its members at multiple levels:

the group – like a tribe – tried to create another way of life for itself and became something like a caravan of itinerant actors, ready to use every form of expression available to them (music, dialogue, performance, song, dance) to provide a sort of mirror for the audience that perceived them.¹²¹

Pistoletto believes that interdisciplinarity along with interpersonal relations between people contributes to the proliferation of creativity. Once the artistic act is perceived as an exchange between people with different aptitudes rather than an individualistic act, artists feel that they can more freely express themselves and spectators find it easier to respond to their projects in creative ways. Not only did Pistoletto create channels of communication between himself and other artists by inviting them to work and exhibit together with him, but he also prompted spectators to become performers or recognize their multiple voices and roles in the performances of Zoo members. The collective’s playful acts evoked universal conditions while nonetheless being rooted in local contexts.

¹²⁰ “The Minus Man. The Unbearable Side” in *A Minus Artist* (1988, 36). The pagination of the *The Minus Man* differs from that of *A Minus Artist* in which this piece of writing is integrated.

¹²¹ Germano Celant in Pistoletto, Faber and Hegyi ed., (1995, 156)

The aesthetic similarities between the practices of Pistoletto and Jonas are strong. Both utilize reflective surfaces as props in their performative acts and rely on archetypal symbols such as the circle of infinity to suggest temporal continuity and simultaneity and to underline the unity of concepts that exists across different cultures. Jonas's practice is inspired by as diverse sources as Beat Generation poetry, Haitian sand painting, Greek folk rituals, Kabuki theatre, and Judson Dance Group performances. Pistoletto's approach is reminiscent of more locally specific practices such as religious processions and outdoor theatre, which are still carried out in some places in Italy. Both of them are skeptical of the use of the term 'performances' to describe their work. Pistoletto argues that this concept denotes an individualistic activity that contradicts the message of his events oriented towards creating a space of encounter with others¹²² and Jonas prefers the use of the term "piece," which is more closely associated with musical compositions and more accurately describes the improvisational compositions she stages. Both artists have challenged viewers and performers to define themselves in relation to multiple others, engage in impromptu communicative acts, and ponder the nature of representation. Equally doubtful about the possibility of liberating oneself completely from the confines of society, Jonas and Pistoletto perceive their performative roles as reflections of social roles and often restrict individual expression, aiming instead to unveil behavioral patterns or stage quotidian activities. Even though their use of mirrors may call to mind narcissistic acts, neither of them aims to direct viewers' attention to themselves for their own sake. Jonas and Pistoletto have used the image of their bodies as instruments for heightening viewers' awareness of their own bodies, as well as for calling their attention to the interpersonal construction of self-representation. While they do not

¹²² Pistoletto explained: "The word performance, as far as I am concerned, is inappropriate, because my work is not based on individual expression but on the idea of encounters, dialogues with other players in the artistic field, in locations which are not specifically devoted to art." Pistoletto in Marco Farano, "From the Mirror Paintings to the Year One: a Chronicle," *Azioni Materiali* (1999, 247)

fully blur the boundaries between performers and spectators, they are interested in triggering engaged modes of spectatorship that encourage one to reflect upon the way he/she is viewed by others. At the end of the 1960s, Pistoletto and Jonas's practices mirrored the larger societal transformations brought upon by numerous protests against segregation and marginalization that rendered people dramatically aware of the wide range of differences between them. They obliquely suggested that these differences could turn out to serve as a unifying factor between different social, gender or ethnic categories.

In the early performances by Jonas, the mirror fulfilled multiple symbolical and instrumental functions, being simultaneously a mystical object that granted viewers access to a hidden realm and a cinematic device for constructing sequential images. *Oad Lau* (1968)¹²³ played upon the idea of duality. Based on folk wedding rituals observed by Jonas in Crete, it staged the encounter between a couple and a group of spectators that served as witnesses to their union. The protagonists wore costumes covered by rectangular mirrors and held hands while slowly moving at a distance from the viewers. The reflections created a communicative path between the couple and the audience. For the ritual to be completed, both parties needed to acknowledge each other's presence and recognize the role played by each of them in this staged ceremony. Even if the plane of action remained remote, spectators became a part of the performance as their images were superimposed over the bodies of the performers. The oneness of the couple contrasted with the diversity of the audience. The small mirror panels further accentuated this aspect by fragmenting the image of others. In describing *Oad Lau*, Jonas mentioned that it gave one the chance "to see one's self as other," as well as to see oneself

¹²³ The name of this piece comes from Moroccan and means "watering place."

“among, as one with, the others.”¹²⁴ Viewers remained afar from the performers, yet their image and role remained intrinsically linked with that of the mysterious couple.

Jonas is fascinated by the open-ended character of the process of perception and self-definition in relation to others and has repeatedly returned to this theme in her practice whether through the use of mirrors as social interfaces or through the combination of different modes of communication and representation that show the relativity of our sense experience. In the outdoor performance *Jones Beach Piece* (1970), the artist explored the way in which distance affects the perception of others and the dissemination of audio-visual signals. A quarter of a mile away from each other, performers and spectators appeared as part of a large-scale pictorial landscape. The relation between them was not strictly based on the opposition between subjects and objects of perception. Both camps were equally remote from the gaze of others. The focus of perception was the transmission of acoustic and light signals. Performers situated closer or further away from the viewers knocked wooden blocks to unveil the disjunction between the almost instantaneous visual observation of the performative action and the delayed transmission of the sound. To enhance the sensation of disorientation, Jonas climbed on a stair and manipulated a mirror to direct the rays of the sun towards the audience. Douglas Crimp pointed out that this performance highlighted the relativity of perception. He argued that Jonas’s practice announced a departure from self-focused creative acts and traditional mediums. Exploring the rationale for which her performances have received little critical recognition in the 1970s,¹²⁵

¹²⁴ Jonas in Johann-Karl Schmidt ed., *Joan Jonas: Performance Video Installation, 1968-2000*, exh. cat. (Ostfildern-Ruit: Hatje Cantz, 2001), p. 70.

¹²⁵ His argument regarding the reasons for the lack of acknowledgement of Jonas’s work is contentious. While it is indeed the case that her performances emphasized the de-centering of subjectivity, it is too easy to exonerate critics who have ignored her practice by claiming that it is because of the non-individualistic nature of her performances that they had fallen into disregard. Her position as a woman acting not as part of a collective, but on her own in the late 1960s and early 1970s must also be listed as one of the factors for which her work was not timely acknowledged. Crimp stated: “The past decade [1970s] has seen an unquestioning return to conventional art forms

Crimp contended that Jonas's practice remained in the shadow because it was purposefully designed as the product of a de-centered subject that brings out the multiplicity inherent in oneself and others: "there is no centered self from which the work can be said to be generated or by which it can be received. Both the performer and spectator are shown to be decentered, split."¹²⁶ The incongruity between the signals produced by performers and the signals seen and heard by spectators was symptomatic of the fact that differences can no longer be defined in relation to a center of subjectivity and authorship. The asynchronous actions of performers indicated the dissolution of a sense of homogeneous individual or collective identity.

Spectatorial relations are even more intricate in *Mirror Piece I* (1969) and *Mirror Piece II* (1970) in which viewers are situated in closer proximity to the performers. Oblong mirror panels are used as props for reflecting fragmentary images of the audience. *Mirror Piece I* was staged both outdoors and indoors and was choreographed around the strained interactions between a group of fifteen women and two men. At the beginning of the performance, women faced the spectators while holding the long mirrors panels parallel to their bodies and moving slowly in geometric patterns. Occasionally, the two men disrupted the coordination between women's movements by lifting them up as if they had been inanimate mannequins and taking them away from the group to another area of the stage. Just as the mirrors constituted props for the women's performance, the female bodies constituted props for men's choreography. Either way, there seemed to be no complete freedom of movement for the women. The reflective panels could stand for the judging eyes of the audience and of society in general given the long history

and all the values attached to them, most particularly the value of "individualism." In such an atmosphere, Jonas's performances appear to be marginal, peripheral, *eccentric*. But it is precisely this eccentricity that gives Jonas's work its meaning, for it is about the lack of a center. By this I do not mean only that there is no structural center to any particular performance." See Douglas Crimp, "De-Synchronization in Joan Jonas's Performances," *Joan Jonas. Scripts and Descriptions (1968-1982)*. (San Francisco: University of California, Berkeley, 1983), p. 8.

¹²⁶ Ibid (1983, 8).

of prejudices against women and objectification of the female body. As in the myth of the Medusa, the beast, which in this instance may stand for the patriarchal society, can be petrified only by its self-reflection in Perseus's shield. In a reversal of the gender categories of the mythical protagonists, the women in *Mirror Piece I* held their mirrors pressed against their bodies as if they stood for an invincible armor that could subdue the objectifying gaze by redirecting it towards the viewers. As the performance ended, all women lay on the floor with the reflective panels placed upon their bodies. They appeared immersed in a realm of their own after having suspended the game of visual reflection to become absorbed in mental reflection.

Mirror Piece II included a somewhat similar set of choreographic movements. However, the relation between male and female performers was less tense. All performers manipulated mirror panels and used them as screens for projecting images of the audience. Yet, the relation between spectators and performers was still tense. Bruce Ferguson provided an astute analysis of how spectatorship was constructed in this performance in terms of the rhetoric of the gaze. In a photograph of *Mirror Piece II* he identified the images of Robert Smithson and possibly Richard Serra framed by a mirror panel held by a woman. He observed that their reflection is objectified and their individual position in the art world is de-centered: "they are made mute, no longer in the underinterrogated 'discursive fellowship' of men speaking."¹²⁷ Ferguson explained that despite this reversal of male and female gazes in this particular representation of the performance, the relations between the viewing and performing subjects were more complex given the fluidity of reflection and the relativity of subject-object positions.

Fascinated by the universal dimension of human behavior and rituals, Jonas does not convey a static picture of the rules of interaction between male or female performers or between

¹²⁷ Bruce Ferguson, "AmerefierycontemplationonthesagaofJoanJonas," *Joan Jonas Works 1968 – 1994*, exh. cat. (Amsterdam: Stedelijk Museum, 1994), p. 15.

performers and spectators. *Mirror Piece II* reflected the ambivalences of all social relations. At the end of the 1960s when the dynamic character of processes of self-definition in relation to others became more evident than ever against the background of activist groups' uprisings, this performance captures the changing equilibrium of power relations within society. In *Mirror Piece II*, performers manipulated not only mirrors, but also thin glass panels. Pairs of men, as well as pairs of women, strived to maintain these screens in balance. Some performers rolled on the floor while keeping a transparent panel between their bodies, others held a panel at an angle while pushing against each side of its surface. It was relatively unclear whether these transparent interfaces stood for structures of support that needed to be stabilized or for unbreakable barriers between people. Irrespective of their exact symbolical function, they indicated the precarious balance of society at the turn of the decade. Barely sustained by pairs of performers, the glass panels allowed the images of their bodies to overlap since, unlike mirrors, they let light pass through their surface. The intertwining of these reflections was a sign of the mutability of identity that is recurrently shaped by one's recognition of himself or herself in the image of multiple others.

Mirror Piece I and *Mirror Piece II* entailed multiple modes of mirroring between performers and spectators. They stimulated viewers to see themselves seeing, as well as to consider their position and perception in relation to that of the performers. Acting as interfaces, the mirrors catalyzed interpersonal relations. Even if these relations could remain merely in the realm of imagination, they were essential in raising awareness of the constant re-structuring of interactions between individuals and social networks. Just as in the case of Pistoletto's events staged with the Zoo, the space between performers and spectators was not fully permeable in Jonas's pieces. Both artists reflected on the incongruity of power relations and reveal the co-

dependence between different social groups. Discussing the complex spectatorial relation framed by *Mirror Piece II*, J.L. Dronsfield suggested that even though spectators appeared to become part of the performance thanks to the mirror reflections they remained in an inferior, passive position: “The audience is not made more active in seeing itself in this way, on the contrary it is powerless to do anything about it, for to look away would be not to see something essential about the piece.”¹²⁸ However, it is arguable that the spectators were in a “powerless” state, just as it is arguable that the performers were highly empowered subjects. The viewers may have had no control over their appearance in the mirror since the reflections depended on the movements of the performers, yet the performers could not fully control the images either since they were not able to observe the visual field encompassed by the reflections while holding the mirrors in front of their bodies. They could only guess at what was projected against the reflective screens as they moved. Performers’ perceptual field did not coincide with that of the mirrors especially since they tried to suppress individual expression and avoid direct eye contact with individual audience members. Moreover, spectators could avert their gaze from their self-reflections while continuing to watch what was happening on stage or slightly shift their position so that they could avoid entering the mirror frame. They were active viewers inquisitively surveying the way their bodily presence was framed in relation to the performance and to the reflections of other audience members. Neither performers nor spectators could claim control over the communicative process. Merleau-Ponty reflects on the conditions of mutual visibility and invisibility in intersubjective relations and concludes that: “it is indeed impossible to grant access to the world to the others’ perception; and, by sort of backlash, they also refuse me this access

¹²⁸ J.L. Dronsfield, “Place and Privacy in the Work of Joan Jonas,” *Joan Jonas*, exh. cat. (Southampton: John Hansard Gallery in association with Wilkinson Gallery, 2004), p. 28.

which I deny to them.”¹²⁹ The lack of coincidence between what performers saw, what spectators observed, and what the mirrors showed paralleled the incongruities between the way we perceive ourselves and the way others perceive us.

The fragmentation of the visual field through the interposition of the vertical reflective panels enhanced the jarring impression of disjoint between perception and representation. The background-foreground relations were also upset. At times, performers inclined the mirrors so that the images of spectators migrated to the top or the bottom of the panels, further complicating the interconnections between real and virtual space. In *The Phenomenology of Perception*, Merleau-Ponty addresses the different types of relations engendered by the orientation of the object. He maintains that depth “is the dimension in which things or elements of things envelop each other, whereas breadth and height are the dimensions in which they are juxtaposed.”¹³⁰ By setting the mirror panels at an angle, performers emphasized the virtual depth of the image and the collective dimension of the spectatorial act, whereas by setting them parallel to the audience they segmented the reflection and isolated individual viewers from each other. Spectators could take central stage as their image was brought into focus by the mirror or they could recede into the background as performers inclined the reflective screens backwards. Performers’ movement did not escape control either. It was conditioned by the heaviness of the mirror or of the glass panels that prevented them from freely interacting with one another. The reflective screens appeared to be the equivalent of overarching social structures that limited the encounter between performers who strove to balance them through their heavily controlled movements. The

¹²⁹ Merleau-Ponty in Claude Lefort ed., *Maurice Merleau Ponty. The Visible and the Invisible*. (Evanston: Northwestern University Press, 1968), p.10.

¹³⁰ Merleau-Ponty (2006, 308)

freedom of both performers and spectators was conditioned by these interfaces that unveiled the co-dependence between different groups.

Mirror Piece I and *Mirror Piece II* evoked the social and interpersonal construction of selfhood. Identity is defined based on more stable parameters such as social class, gender, or ethnicity, as well as on dynamic parameters represented by the relations we establish with other people. In *Interpersonal Perception* (1966), psychologist R.D. Laing contended that “self-identity (“I” looking at “me”) is constituted not only by our looking at ourselves, but also by our looking at others looking at us and our reconstitution and alternation of these views of the others about us.”¹³¹ The relation between performers and spectators in *Mirror Piece I* and *Mirror Piece II* could not be reduced to clear-cut subject-object relations of power. Members of each group did not seek to define themselves solely in relation to members of the other group. Spectators could imagine the way performers saw them, as well as the way other audience members perceived them via the mirror interfaces. Performers virtually interacted with the viewers by framing their image, but they also interacted with each other by seeking to bring the transparent panels into equilibrium. In addition to this, the audience and the performers were not two completely separate camps. Many spectators were themselves artists and the visual communication staged between them and the performers symbolically denoted the proliferation of creative exchanges and collaboration in the art world during the late 1960s and early 1970s. In an interview with Joan Simon for *Art in America*, Joan Jonas described the camaraderie between artists witnessing each other’s performance at the time:

The people I performed for in the ‘70s were all friends. My performance would change from night to night or from one month to the next as the result of making it for the audience. The art world then was almost

¹³¹ R.D. Laing, H. Phillipson, A.R. Lee, *Interpersonal Perception. A Theory and Method of Research*. (London: Tavistock Publications, 1966), p. 5.

like a workshop. We worked for each other, and we appreciated each other's work. We talked to each other about our work.¹³²

Jonas's performances presupposed an active interlocutor rather than merely a passive viewer or a voyeur. They could map pre-existing interpersonal relations between spectators and performers and could constitute a springboard for further collaborative or communicative exchanges between the two groups.

Mirror Piece I and *Mirror Piece II* did not simply provide a one-way channel of communication between the performers and the audience via the mirror interface. In addition to perceiving their reflections in the mirror, spectators became engaged in affective processes. They intuitively mirrored the body movements of performers. Having been virtually pulled into the midst of the actions unfolding on stage, they were more likely to imagine what it felt like to actually play a part in this piece. The heavy weight of the mirrors and the instability of the transparent panels handled by the performers led viewer to experience almost a physical sensation of unease. The relativity of the shifting perceptual field encompassed by the screens must have deepened the feeling of doubt and insecurity. In discussing the anxiety experienced by viewers while watching performers manipulate these heavy, yet fragile props, Jonas confessed that she purposefully wanted to achieve such a psychological effect: "I was never afraid that we were going to break a mirror, but the audience was. And I liked that tension."¹³³ The empathetic response of the audience stemmed from a desire to see themselves in relation to the performers. The tension was heightened by the fluctuation of reflected images and by the intertwining of reality and virtuality. Performers gently stroked spectators' mirror reflections. Spectatorial engagement was intensified by the contrast between visual and tactile stimuli and by the

¹³² Joan Simon, "Scenes and Variations: An Interview with Joan Jonas," *Art in America*, Vol. 83, no. 7, July 1995, p. 76.

¹³³ Joan Jonas in Simon (1995, 101).

unsurpassable distance between spectators and performers. Neuroscientist Marco Iacobini asserts that cognition is heavily dependent upon empathetic relations to others: “we understand other mental states by literally pretending to be in other people’s shoes.”¹³⁴ Spectators emotionally related to the performers in Jonas’s mirror pieces by mirroring their sensorimotor reactions in their mind’s eye. Despite their tender gestures towards the viewers’ reflections, performers did not return the viewers’ gaze, hence intensifying the conflicting effect of the performance. Just as Pistoletto left out individuating details when transferring the photographic images of *Mirror Paintings*’ characters onto thin paper foil, Jonas instructed performers to minimize self-expression and eschew individuating gestures. This virtual emptying of highly distinctive features undermined hierarchical relations within the group. It facilitated mirroring processes because viewers felt more inclined to perceptually and affectively relate to multiple performers, rather than seek identification with performance protagonists. Consequently, interpersonal relations took primacy over binary relations between self and Other.

Even in performances in which she acted by herself, Jonas suppressed her individuality. She transformed her self-image into a mutable signifier that gained meaning only in the performative context, or, perhaps better said, became a sign only as a result of viewers’ recognition. In *Mirror Check* (1970), Jonas subjected her naked body to the voyeuristic gaze of spectators. With the help of a round mirror, she closely examined her body. The incongruence between the fragmentary images perceived by Jonas and the image of her body perceived by viewers must have prompted interpersonal processes similar to the ones triggered by her earlier mirror pieces. One could not fully identify with the performer nor fully possess the image of her body. Anja Zimmerman remarked that while observing Jonas in *Mirror Check*, spectators could

¹³⁴ Iacoboni (2008, 73)

not refrain from thinking about the lack of coincidence between their body image and their mirror reflection: “It is not the reflecting body that can be seen in an act of being reflected which repeats itself. There remains a productive dis-illusion which reveals the illusions that underlie our gaze in the mirror at ourselves and from which there is no escape.”¹³⁵ Jonas’s performance rendered viewers aware of their own bodily presence and their vulnerability to the inquisitive gaze of others.

Jonas’s video *Left Side Right Side* (1972) similarly calls upon spectators’ consciousness of their position in relation to the performer. She watched her self-image in an oblong mirror, as well as on a monitor screen transmitting live images. Alternatively, she pointed to the left and right side of the two representations indicating the orientation of her body in relation to the two visual channels. The viewer cannot help but think of the way his/her body parallels the position of Jonas’s body while watching her experiment with the two contrasting reflections. The only way in which he/she can experience the orientation of her body in space is through the bilateralism of his/her own body. The juxtaposition of the monitor image to the specular image reveals our mistaken belief in the idea that the left and right coordinates of our bodies are reversed in mirror reflections. Umberto Eco explains that we remain under this misconception because we see our mirror image as a representation of a virtual Other facing us from within the catoptric realm. He maintains that “In front of a mirror we should not speak of inversion, but, rather of absolute congruence.”¹³⁶ The immediacy of the mirror image contrasts with the more mediated character of the video image that inverts the bilateral coordinates of our bodies. Viewers are faced with two hypostases of Jonas: the specular one in which her body image

¹³⁵ Anja Zimmermann, “The (Im)Mobile Trap of the Reflecting Surface. Self-Construction and Image-Construction in the Work of Joan Jonas” in Johann-Karl Schmidt ed. (2001, 103).

¹³⁶ Eco (1986, 206)

perfectly coincides with the one shown in the reflection and the televised one in which her body image is inverted. They are trapped between the option of thinking of her image as they would think of their own reflection in the mirror and the option of seeing her in contradistinction with themselves, performing in a parallel, yet incongruent, dimension with that of their own. These tense relations between the field of the spectator and that of the performer underscore Jonas's fascination with engaging the public in interpersonal acts. While watching *Left Side Right Side*, viewers continuously interrogate the position of their bodies. Occasionally, they can sense a trace of hesitation in Jonas's voice as she points to the left or right part of her face. Mirroring her incertitude, they can doubt their own ability to correctly identify the left/right side of their bodies that corresponds to that of the performer in the mirror or video image.

Pistoletto and Jonas employ mirrors in their works to engage viewers in dynamic reflective processes that show the interpersonal construction of meaning and identity. The tumultuous events of the 1960s, which prolonged into the 1970s, disclosed the hegemonic character of binary discursive formations based on antagonistic relations. Pistoletto and Jonas trigger encounters between groups of viewers and performers that destabilize firmly established hierarchical structures and engender a careful examination of the limitations of self-focused perception. Both of them realize that power relations cannot be abruptly abolished. Just as one repeatedly questions the veracity of his/her body image, power structures need to be perpetually subjected to interrogation.

2.3 MIRRORING OTHERS: COLLECTIVE ENCOUNTERS WITH ART AND TECHNOLOGY PROJECTS

The shock of recognition! In an electronic information environment, minority groups can no longer be contained – ignored. Too many people know too much about each other. Our new environment compels commitment and participation. We have become irrevocably involved with, and responsible for each other.

Marshall McLuhan¹³⁷

Art and technology projects represent the category of reflective works from the 1960s that encompassed the most diverse mirroring processes and that best illustrate the marked shift at the time from private to public in the character of aesthetic experience. As well, they are deeply anchored in debates over the re-definition of human relationships to technology during what was dubbed the “cybernetic age.” They are also key points of reference within the critiques of materialism and ocularcentrism.

For many of the artists engaged in such projects, transparent materials stand for impersonal mediums. This choice explicitly distances them from the overpowering subjectivity inherent in gestural styles such as Abstract-Expressionism and Art Informel.¹³⁸ For others, this choice serves to demystify technology without completely banishing its poetic potential. In some cases, glass and Plexiglas were preferred to other materials because they do not conduct electricity, thus ensuring a safe encounter with the playful effects of electronic circuits. Moreover, they were ideal mediums for rendering visible the flow of energy and enhancing the haptic dimension of technology-based works. In many works based on these materials, the image

¹³⁷ McLuhan and Fiore (1967, 24)

¹³⁸ For instance, artist Pohl Uli affiliated with Nouvelle Tendance, states that he uses acrylic glass in his practice because this material conveys a lack of controlling subjectivity. He says that thus his object helps him become anonymous (“je deviens anonyme dans mon objet”) and facilitates spectatorial engagement. See *Propositions visuelles du mouvement international. Nouvelle Tendance*, exh. cat. (Paris: Musée des Arts Decoratifs, 1964), no pagination.

of viewers is superimposed onto technological networks as they peer through transparent screens into electronic devices. At the same time, virtual mirroring processes are elicited as viewers discover how devices based on photoelectric cells seem to empathetically react to their physical presence or as they learn how to interact with the works by imitating the behavior of other participants. Similarly, mirrors are often used, both poetically for framing non-habitual visual experiences, and purely instrumentally for directing laser beams at different angles in the exhibition environment.

In these projects, many factors mitigated against the private experience of artworks favored by the preceding generation of artists and viewers. The departure from a private, dialogic relation to the artwork is stimulated by the expanded scale of the artworks that often occupy the space of an entire gallery, the dematerialization of the object that defies fixed physical boundaries, and its elusive image that depends upon light and time variables, as well as upon the presence of other viewers. These challenges to introspective experiences were also occasioned by transformations in the socio-cultural context as a result of technological developments. In *Technics and Civilization* (1934), Lewis Mumford noted that in the neotechnic phase of civilization (marked by communication at a distance thanks to electronic technology) one was increasingly preoccupied by the way he/she was perceived by others, acting out for the camera rather than contemplating his/her reflection in the mirror. Even though he is perfectly aware that this shift in self-definition cannot be easily proved, Mumford asserted:

The change is significant: not self-examination but self-exposure: not tortured confession, but easy open candor: not the proud soul wrapped in his cloak, pacing the lonely beach at midnight, but the matter-of-fact soul, naked, exposed to the sun on the beach at noonday, one of a crowd of naked people.¹³⁹

¹³⁹ Lewis Mumford, *Technics and Civilization* (New York: Harcourt, Brace and Company, Inc., 1934), p. 243.

In retrospect, Mumford's affirmation appears highly prophetic of Web 2.0 technological interfaces that enable users to fashion their image for the perception of others. The same interest in the way one is publicly viewed is noted in Marshall McLuhan's writings. Under the guise of a student's enthusiastic voice, he announced at the end of *The Medium is the Massage* (1967) that "with TV and folk singing, thought and action are closer and social involvement is greater. We again live in a village."¹⁴⁰ Art and technology projects disclose the same inclination towards public engagement, highlighting the reactions of the crowds to audio-visual effects enacted by participants through their movements. Consequently, the analysis of the reception of these works verges more on the observation of interpersonal relations than on introspective psychology. Since they are virtually set in a theatre with no fixed boundaries between the stage and the audience, art and technology exhibitions often invited viewers to reflect upon their behavior and experience in relation to others. Hence, museum visitors inadvertently belonged to a public collective body. Such social encounters mediated by art are best described in terms of group behavior rather than community since they are ephemeral, affective, and open-ended. One may choose to act on his/her own, collaborate with others in creative acts, or simply watch others as they interact with responsive environments. In all these cases, viewers acknowledge the presence of other visitors and accept to be part of the same field of perception and action.

The assessment of art and technology projects poses numerous problems precisely because of their loose formal parameters or potentially neutral message. As I will shortly show, art critics and theorists have questioned the aesthetic validity of such works, inquiring whether they have any meaningful content and whether they provide any significant commentary on contemporary society or technology. While for McLuhan it was not at all problematic that

¹⁴⁰ Marshall McLuhan, Quentin Fiore (1967, 157).

technology is self-referential since it is the source of further transformations within society no matter what the message it carries might be,¹⁴¹ the same logic cannot easily be followed in the arts domain. Even though Greenbergian formalism [according to which the value of modern painting (or better said of Abstract Expressionist painting in particular) subsists in its expressive form and not in its message] was still influential in art criticism in the 1960s, it could not be easily accepted that art and technology projects lacked external meaning, yet still had intrinsic value. As their form is the result of the assemblage of technological devices, some critics assumed that they lacked expressive force and hence fell in the category of kitsch, which in Greenberg's terms "is mechanical and operates by formulas" since it elicits "vicarious experience and faked sensations."¹⁴² The problem resides in the new challenges brought by art and technology projects to the definition of art as a form of expression of artistic subjectivity because they do not abide by the criteria of aesthetic autonomy and may not even require to be displayed in an art context to acquire added value. Moreover, their reception may represent a constitutive part of the work, the technological devices remaining inactive or completely stable in the absence of viewers that trigger transformations.

¹⁴¹ McLuhan's discourse in *Understanding Media* (1964) sometimes echoes passages in Greenbergian formalist theory since the author disregarded the content transmitted through the media. He believed that technology is highly influential because of the perceptual and mental patterns it imposes, which gradually contribute to broader socio-economic transformations. McLuhan has been criticized for disregarding the socio-cultural factors that engender the invention and development of new technology. See Marshall McLuhan, *Understanding Media. The Extensions of Man*. (New York, Toronto, London: McGraw-Hill Book Company, 1964).

¹⁴² Clement Greenberg, "Avant-Garde and Kitsch" (1939) in John O'Brian ed., *Clement Greenberg: The Collected Essays and Criticism. Perceptions and Judgments, 1939-1944. Vol. 1* (Chicago: University of Chicago Press, 1988), p. 12.

2.3.1 Evaluative criteria of art and technology projects

For the skeptics, many art and technology projects failed to provide an adequate response to technological developments as they represented a mere source of enchantment with the wonders of technology; for their advocates, they were not to be taken at face value, but understood as precipitators of fresh perceptual experiences and changing sensibilities. According to Jack Burnham, who wrote a pioneering historiographic account of transformations in the sculptural medium in the 20th century under the impact of transformations in scientific approaches, art that integrates viewers in technology-based systems responsive to their behavior is instrumental in preparing humans to come to terms with the idea that biological and non-biological complexes are largely interdependent and evolve in tight correlation with one another.¹⁴³ In his turn, Jonathan Benthall pointed out that these works raised questions about the changing condition of humanity. He stated that they represented valuable contributions as long as artists did not abandon aesthetic concerns and managed to provide an astute critique of the influence of technology upon society instead of merely celebrating its spectacular effects. According to Benthall, art needed to “provide a more complete and organized experience. We come to art as whole human beings in search of meanings, not as jaded ‘consumers’ in need of a forcible ‘aesthetic bath.’”¹⁴⁴ In light of this judgment, he criticized Nicolas Schöffer for privileging

¹⁴³ Jack Burnham argued that the blurring of boundaries between art and life announced the beginning of a cybernetic age in which human beings will no longer define themselves in radical opposition with technological systems and will adapt their biological functions to the new challenges posed by the development of artificial forms of intelligence. He rhetorically asks “Is it possible then – at least in the case of sculpture – that art is a form of biological signal? If man is approaching a time of radical change, one not controlled by natural selection and mutation, what better nonscientific way exists for anticipating self-recreation (not procreation) than the spiritually motivated activity of artificially forming images of organic origin?” See Jack Burnham, *Beyond Modern Sculpture. The Effects of Science and Technology on the Sculpture of this Century* (New York: George Braziller, 1968), 374.

¹⁴⁴ Jonathan Benthall. *Science and Technology in Art Today* (New York, Washington: Praeger Publishers, 1972), p. 110.

spectatorial excitement by staging events in which cybernetic sculptures reacted to the movements of performers rather than offering viewers a chance to ponder their relation to technology.¹⁴⁵

Less disapproving of the spectacular aspects of art and technology projects, Gyorgy Kepes considers that they can re-sensitize people who turn a blind eye to natural transformations, as well as to technological infrastructure. For him, these works could develop social responsibility towards the natural and urban environment.¹⁴⁶ While Kepes believed that people would intuitively respond to art and technology projects that had the potential to consolidate ecological awareness and enhance sensorial responses, Frank Popper contended that these works would have the envisaged impact only as long as viewers have received adequate aesthetic training. In assessing the role of projects that fuse art and science, he asserted that they could act as a stimulus for creativity on condition that spectators have previously been familiarized with technological devices and with interactive art practices.¹⁴⁷

For most investigators of art and technology projects then, their value stemmed either from a preliminary stage at which viewers had become acquainted with scientific and technological innovations (so that they did not simply become enchanted with the immediate sensorial effects of technology-based art projects) or from a reflective stage following the direct

¹⁴⁵ In the second half of the 1950s, Nicolas Schöffer staged 'spatiodynamic' spectacles in which cybernetic sculptures mechanically rotated and changed their configuration in relation to human movement and light and sound variations. Schöffer's works were often integrated into urban contexts, being designed in the immediate vicinity of significant buildings that were symbolic of the metamorphoses underwent by the cityscape under the impact of modern architecture. Such was the case of his 1956 cybernetic installation on the roof top of Cité Radieuse designed by Corbusier or his 1961 audiovisual spectacle staged on the façade of Palais des Congrès in Liège.

¹⁴⁶ See Gyorgy Kepes, "The Artist's Role in Environmental Self-Regulation," in Gyorgy Kepes ed., *Arts of the Environment* (New York: George Braziller, 1972), pp. 161-197.

¹⁴⁷ In his discussion of the relation between creativity and the interconnections between science, technology and art, Frank Popper concludes "the final stage in combining scientific, technological, social and artistic endeavor on a large scale will only be taken when basic educational changes have taken place, and the public is consequently able to adopt a more positive attitude to creative behavior." However, he does not actually explain what these educational changes should entail. See Popper, *Art – action and participation* (New York: New York University Press, 1975), p. 231.

experience of the work at which they reflected on the way technology models their perception and stimulates social responsibility. The anxiety experienced by the critics who sought to avoid acknowledging the value of the moment at which viewers encounter the works is rooted in the Cartesian opposition between the senses and reason and in the fear that the entertainment derived from interacting with technological complexes would preclude a thoughtful consideration of the full scope of concatenations between art and technology. In order to surpass these apprehensions, one needs to envision the experience of environments and objects responsive to human participation or reflective of their image in terms of acts that combine perceptual and conceptual misgivings or, as Merleau-Ponty poetically exhorts, to suspend faith in both the perceived things and in the mental world and hence allow for the cross-breeding of the visible and the invisible, the public and the private.¹⁴⁸

Critics sometimes considered the public dimension of art and technology projects an impediment to a truly engaged subjective experience. Alfred Frankenstein's comments on the "Magic Theatre" exhibition at the Nelson Gallery of Art in Kansas City in 1968 were a striking example of this viewpoint. He expressed his bewilderment at the distractive factor represented by the crowds of people visiting this art and technology display: "sensations are not likely to emerge and detonate within your mind when people are breathing down your neck."¹⁴⁹ However, the number of visitors to such exhibitions was also a significant evaluative criterion, as quantitative and qualitative factors were equally important for both curators and artists who stressed the democratic dimension of such works, which expanded and diversified art audiences. As in the

¹⁴⁸ In "The Visible and the Invisible," Merleau-Ponty states that one needs to question both the reality of what he/she sees and the reality of what he/she thinks in order to avoid materialism and transcendence: "It is a question not of putting the perceptual faith in place of reflection, but on the contrary of taking into account the total situation, which involves reference from the one to the other." See Lefort ed., (1968, 35).

¹⁴⁹ Alfred Frankenstein, "Magic Theatre in Kansas City," San Francisco Chronicle, Sunday, June 2, 1968.

case of world expos, in the framework of which art and technology works were sometimes presented, these exhibitions were considered successful based on the efficient use of available funding resources, the involvement of numerous artists, engineers, and technicians in the production of the exhibition, and the overall number of visitors. In terms of their art historical lineage, these projects were reminiscent of Constructivists' use of technology and their interest in the social impact of art. Yet, they were frequently devoid of a progressive ethos. Technology was not perceived as an instrument of Enlightenment, but as an unavoidable component of daily lives that needed to be rendered more visible to avoid its potential devastating impact in the future.

2.3.2 Environments and participatory responses to art in Europe during the post-World War II period

In the aftermath of the Nagasaki and Hiroshima bombings, the revolutionary dimension of science came under critical scrutiny. Art emerged as one of the possible means to re-humanize technology. In Germany, artists Otto Piene and Heinz Mack denounce the idea that scientific experimentation was solely to blame for militarism and should consequently be ceased. In 1957, they founded Group Zero in Düsseldorf, which aimed to encourage a more positive attitude towards technology, seeing it as working against nature, yet considering it as intimately linked to organic processes. At first, Piene organized events at which participants were given lamps with which they could project light beams against the surface of stencil screens to produce evanescent patterns on the walls. The visual effects were more or less influenced by the musical accompaniment to the piece that enriched the sensorial experience and possibly gave participants

a more vivid sense of belonging to an all-encompassing environment. In “Light Ballet” (1965), Piene described the collective character of these gallery events, emphasizing their therapeutic role in appeasing the anxieties of city-dwellers in the post-war period in Germany:

The solo turned into a group performance, with each member of the ensemble holding individual lamps and contributing different shapes and colors to the overall rhythm of the projection. Feelings of tranquility, suspension of normal balance and an increased sensation of space were reactions that viewers volunteered to me after finding themselves in the center of the event.¹⁵⁰

In the 1960s, this type of project lost some of its dynamic character as the ballet of light beams freely choreographed by participants was substituted by the dance of light produced by machines that could be activated by viewers by turning on a switch. This gives gallery visitors more of a sense of individual control over the duration of the light event, yet deprived them of the possibility of more freely experimenting with visual effects. The sense of collective engagement in an affective experience was retrieved in gallery performances, such as Piene’s *The Proliferation of the Sun* (1967), in which participants witnessed a multimedia spectacle and received instructions concerning the tempo of the work, or in outdoor events in which inflatable objects spontaneously reacted to wind currents. In his “Elements” essay (1969), Piene commented on the human component of his projects and observed that his environments could be expanded and displayed outdoors to attract wider and more active participation because “expansion means that works of art go to people, become more visible, communicate with more viewers/participants.”¹⁵¹

The same consequence of changes in scale was noted by art historian Frank Popper in his account of transformations in visitor participation engendered by environments. He argued that the dissolution of the art object was conducive to active physical and psychic participation. In

¹⁵⁰ Otto Piene, *Light Ballet*, exh. cat. (New York: Howard Wise Gallery, 1965)

¹⁵¹ Otto Piene, *Elements*, exh. cat. (New York: Howard Wise Gallery, 1965), no pagination available.

proposing a genealogy of art that stimulated spectatorial engagement, Popper maintained that Op Art and kinetic art had catalyzed the shift towards art and technology projects that solicited the viewer to respond in an active way to staged environments. Due to this genealogical framework, he tended to speak about the spectator more in the singular than in the plural, thus maintaining the dialectical relation between the beholder and art. However, he specified that even though the private dimension of the act of production and reception of art would remain important, “there will also be a need for frequent confrontation with other members of the artistic group or with members of the public.”¹⁵² In his account, he referred to game-like projects that involved collective forms of spectatorship.¹⁵³

The public character of the aesthetic experience was important for a number of groups active in Europe at the beginning of the 1960s. Groupe de Recherche d’Art Visuel (GRAV), active in France within the period 1960-1968, brought together artists from European and South American countries interested in designing environments that could generate spontaneous participation.¹⁵⁴ The group created a series of large-scale projects that disrupted habitual urban rhythms by inviting passers-by to generate luminescent effects by moving through labyrinths displayed in public areas.

For GRAV members, technology represented a means of annihilating the barriers between art objects and viewers and challenging the elitism of modern art. Among their stated goals, they listed the liberation of the public “from inhibitions and warping of appreciation

¹⁵² Popper (1975, 198)

¹⁵³ Popper discussed this kind of collective activities in response to art projects in the chapter “From Game Participation to Creativity” from *Art – action and participation*. He explored projects that encouraged spectators’ creative involvement. He gave Asdrubal Colmenarez’s work *Tacticles psychomagnetiques* (1971) as an example of this practice. The artist encouraged viewers to manipulate and alter objects attached to magnetic boards.

¹⁵⁴ The main protagonists of the group were Horacio Garcia-Rossi, Francois Morellet, Francisco Sobrino, Julio le Parc and Jean-Pierre Vasereley.

produced by traditional aestheticism, by creating a new social-artistic situation.”¹⁵⁵ Similar goals were shared by many other groups (e.g. Group N of Padua, Group T of Milan or the Spanish group Equipo 57) that explored the perceptual engagement triggered by moving objects or optical illusions. These groups were also critical of the cult of individual artistic genius and believed that creativity is inherent in human nature and viewers can become active partners in the artistic act. The members of Equipo 57 did not list the individual names of the artists in correlation with their works, presenting them instead as outcomes of their collective creative acts. François Morellet embraced the same ideal of the anonymous artistic act, but did not manage to persuade the other members of G.R.A.V. to forgo their individual signatures. He believed that the dissolution of the group in 1968 was the result of the members’ failure to adopt this goal: “the great dream was this utopian idea of abandoning all signatures and all distinctive signs of personality – collective works only.”¹⁵⁶

The collaborative production of artworks was a significant catalyst for the creation of large-scale projects that engendered collective forms of spectatorship. The more artists worked as part of a group, the more they were inclined to take into account the interactions between multiple spectators. These group art practices that were meant to stir creative acts in public settings coincided with the emergence of ideas about group interaction as a catalyst of creativity and with the development of theories of interpersonal psychology. In the 1950s, Alex Osborn claimed that brainstorming activities conducted in groups are more productive than individual brainstorming¹⁵⁷ and in the 1960s, R.D. Laing established a methodology for the analysis of

¹⁵⁵ GRAV, “General Propositions” (1961) in Burnham (1968, 251)

¹⁵⁶ François Morellet, “Le Groupe de Recherche d’Art Visuel” (February 22, 1972), *Mais comment taire mes commentaries* (Paris: Ecole Supérieure des beaux-arts, 1999), p. 56.

¹⁵⁷ See Alex F. Osborn, “Applied Imagination. Principles and Procedures of Creative Thinking” (New York: Scribner, 1953).

interpersonal communication.¹⁵⁸ While in recent decades psychologists have more thoroughly tested out these hypotheses about group creativity and have argued that intrinsic motivation is as important as group motivation in coming up with inventive ideas, it is generally believed, as Beth Hennessey explains, that “creativity is essentially a social phenomenon” since “creativity skills are modeled for us by others, and the generation of creative ideas and the process of bringing those ideas to fruition frequently come as a result of group efforts.”¹⁵⁹

Starting with 1961, members of GRAV, Group N, Group T, and Equipo 57 explored their shared interests and exhibited together under the umbrella name Nouvelle Tendance. They did not describe their affiliation in terms of a programmatic movement, but claimed that they shared similar aesthetic inclinations and interests in the social dimension of art. By purposefully avoiding a unitary set of goals, these groups contended that they had established an open-ended practice that would not fall into the trap of stylistic conventions. Yet, even though art critics and curators were aware of this desideratum, they described their practices in terms of mere exploratory stages in the search for a more cohesive aesthetic approach. In his remarks about the 1964 exhibition “Visual Propositions of the International Movement. Nouvelle Tendance,” Michel Faré asserted that the group “aims to evolve continuously without attaining a definitive character,” but added that “disorder is always fertile before establishing rules.”¹⁶⁰ He singled out three recurrent elements in their poetical treatment of geometric form: “movement, light, monumental space.”¹⁶¹ Demarco Hugo Rodolfo and Francesco Sobrino’s works in the exhibition encouraged viewers to move in front of reflective plates to examine a wide range of perceptual

¹⁵⁸ Laing (1966)

¹⁵⁹ Beth A. Hennessey, “Is the Social Psychology of Creativity Really Social? Moving Beyond a Focus on the Individual” in Paulus and Nijstad ed., (2003, 184).

¹⁶⁰ Michel Faré in *Propositions visuelles du mouvement international. Nouvelle Tendance* (1964, no pagination). Personal translation.

¹⁶¹ Ibid.

possibilities and acknowledge the relativity inherent even within perfectly stable systems. Other works, such as those designed by Giovanni Anceschi or Davide Boriani, were animated by small engines that rotated geometrical planes to render viewers conscious of the presence of virtual elements in their perceptual field. Nouvelle Tendance artists defined their practice in terms of a departure from creative acts based on subjective self-expression. The seemingly anonymous character of their objects was expected to generate dynamic spectatorial engagement. The presence of viewers was a pre-requisite for the completion of the works. A Nouvelle Tendance statement initialed K.G. affirms that the art of this group “is based on reciprocity” and depends on viewers’ “active participation.”¹⁶² The works of artists associated with this tendency vividly recall the Constructive sculptures of Naum Gabo and Laszlo Moholy-Nagy due to their kinetic components and transparent materials. Just like their predecessors, Nouvelle Tendance affiliates were intent on debunking their works of all symbolical connotations; yet, unlike the Constructivists, they set the reception of their art above all formal considerations and more vehemently denounced the elitism of stylistic concerns.

By rejecting their inscription within a stylistic category, artists from groups active in Europe in the 1960s were trying to respond to the pressures of the art market and art criticism. The situation appeared to be a bit more flexible in US during the same period. Engineer Billy Klüver, the founder of one of the most important art and technology groups (Experiments in Art and Technology), observed that in US artists experienced less pressure concerning stylistic allegiances:

The Americans didn’t have this intellectual overlay of critics and others that decided in which direction artists should go. In the 60s in Paris, you had to belong to a movement or a specific direction in art. [...]

¹⁶² K.G., “Qu’est-ce que la Nouvelle Tendance?” in *Propositions visuelles du mouvement international* (1964).

and so for my friends in Europe, the United States became the area of freedom, where you did not have to be concerned with any intellectual overlay.¹⁶³

Even though the influence of art critics upon new directions in American art cannot be so easily dismissed, especially during the period following Abstract Expressionism - a style closely associated with the dominant role of formalist critic Clement Greenberg - it is notable that artists working on art and technology projects in US in the 1960s were less inclined to form cohesive groups that reflected their aesthetic affinities or actively participate in the development of new coherent trends. Instead, they relied more on experimentation and joined collectives or exhibition programs that facilitated their access to technological devices and encouraged their collaboration with scientists and engineers. Frequently, their association with such group projects was short-lived and did not imply a commitment to an artistic movement or trend. American critics from the 1960s that focused on art and technology projects identified a series of congruent conceptual preoccupations of artists exploring the variable states of technological mediums. Jack Burnham suggested that this type of practice reflected a fascination with “system aesthetics,” which he associated with a departure from object-oriented visual practices and an interest in displaying evanescent processes, be they technological or natural.¹⁶⁴ In *Beyond Modern Sculpture*, Burnham expanded his theory and suggested that gradually artists would “deal less with less with artifacts contrived for formal value, and increasingly with men enmeshed *with* and *within* responsive systems.”¹⁶⁵ He thus implied that a system of information or sensorial impulses would engender the formation of a network of viewers or participants fully immersed in interdependent processes of perception and cognition.

¹⁶³ “Interview with Billy Klüver”. (1998) in Hans Ulrich Obrist and Thomas Boutoux ed., *Interviews. Volume 1*, (Milan: Edizioni Charta, 2003), p. 494.

¹⁶⁴ See Burnham (1967), (1969).

¹⁶⁵ Burnham (1968, 363)

2.3.3 Collaborative production and collective reception of art and technology projects in U.S.

There are at least three major types of frameworks in which art and technology projects developed in US throughout the second half of the 1960s can be inscribed: 1) group exhibitions that brought together artists to experiment with different materials (be they technological or not) in order to create surprising sensorial or psychic experiences; 2) museum programs encouraging artists to work with technological companies to come up with new ideas for art projects that can subsequently become part of an exhibition; 3) groups of artists and engineers who worked independently of a specific art institution or industrial corporation.

The first category is best exemplified by the series of exhibitions curated by Ralph T. Coe at the Nelson Gallery of Art and Atkins Museum of Art in Kansas City: “Sound, Light, Silence” (1966), “Light” (1967), and “Magic Theatre” (1968). Although these exhibitions were not uniquely dedicated to the display of art and technology projects, they included a significant number of works based on electronic circuits, photo sensors, and sound oscillation. Each of them exemplified Coe’s belief that art can offer alternatives to the accelerated tempo of modern lives. Moreover, they constituted important stages in the formulation of a theory of ‘psychic art’ that enhanced viewers’ awareness of mental processes rather than channeling their attention solely to optical experience. Coe selected the works in the exhibitions based on the type of participatory responses they could elicit. He proposed an overall theory of changes in contemporary art practices, suggesting that: “The end of art is no longer visual. The end of the voyage lies in the brain.”¹⁶⁶ His idea that art needs to compensate for the excessive orientation

¹⁶⁶ Ralph T. Coe, *The Magic Theater. Art, Technology, Spectacular* (Kansas City: Circle Press, 1970), p. 246

towards materialism and immediacy mirrors not only changing views of aesthetic experience, but also the transition from the machine age to the cybernetic age. In this context, the relation between body and mind is re-evaluated. As technological devices no longer simulated merely mechanical operations of the human body, but actual brain processes, the definition of humanity in terms of unique intellectual capacities came under scrutiny. In Coe's opinion, viewers needed to be oblivious to the presence of hardware in art and technology projects in order to become immersed in an intense psychic experience triggered by electronic circuits or other technological devices, yet fully contingent upon their mental abilities. He stated that curators needed to assume entrepreneurial roles when organizing exhibitions that include art and technology projects. For "Magic Theatre," Coe persuaded local manufacturing companies to donate materials for the artists. The fervent participatory responses to this exhibition may have been partly due to the fact that news about it spread even before the opening. Coe got members of local communities involved in the project when help was needed for the construction of larger environments. Some artists worked with engineers with whom they had previously collaborated to make their ideas take shape; others with advanced technological skills worked on their own. Coe saw the whole exhibition as the outcome of collaboration because visitors virtually completed the works in their minds by becoming psychically immersed in the "Magic Theatre" atmosphere:

The artists were to be part of a collective popular effort. The result would be beyond them or us. This was collaboration, not egotism. The genius resided in the whole more than any of the parts. This did not exclude the most adventurous use of individual minds, or individual roles. But the aggregate vision was what counted, the piling up of experience.¹⁶⁷

The second type of collaborative framework is represented by the Art and Technology program launched by the Los Angeles County Museum of Art (LACMA) in 1967, under the coordination of Maurice Tuchman and Jane Livingston. The curators sent a call for proposals to

¹⁶⁷ Ibid. (1970, 93)

numerous artists from US and abroad who might be interested in working in residence at an industrial corporation over a period of three months in order to implement and further expand their ideas for projects inspired by technology. The program developed over a period of four years and resulted in two exhibitions: one in the US pavilion at the Osaka Expo of 1970 and one at LACMA in 1971. The museum institution aimed to provide a meeting ground for artists and corporations in the hope that the residence program would be a springboard for more extensive collaborations. Curators paired artists with industrial companies based on the project ideas they submitted and the materials they required for their works. The artists and the corporations had to reach mutual agreement upon the general framework of the collaboration and sometimes even upon the specific project that was to be undertaken. Frequently, artists toured more than one industrial company or research laboratory in order to see what type of assistance or technological support they could receive. Numerous artists could not be paired with a corporation and were eventually left out of the program. However, their proposals were incorporated in the program report published by LACMA.¹⁶⁸ Just as in the case of other art and technology platforms, it was thought that the collaboration itself could be more important than the actual outcome of the project. This argument was informed by the quite widespread belief that artists could participate in the re-humanization of technology or at least draw the attention of engineers and scientists to the extensive consequences of technology.

The non-for-profit organization Experiments in Arts and Technology represents the third type of art and technology program. It was similarly based on the idea that the actual collaboration between artists and engineers should take precedence over the produced artifacts. The organization was founded after the staging of a series of art and technology events called 9

¹⁶⁸ See *A Report on the Art and Technology Program of the Los Angeles County Museum of Art, 1967-1971* (Los Angeles: Los Angeles County Museum of Art, 1971).

evenings (1966) at the Armory. Due to the malfunctioning of some technological devices during performances, the event received negative reviews. To underline the productive results of this collaborative endeavor, engineer Billy Klüver describes *9 Evenings* as: “a deliberate attempt by ten artists to find out if it was possible to work with engineers.”¹⁶⁹ Opposing the vilification of technology, he highlighted the mutual influence between artists and engineers and took the initiative of setting the basis of E.A.T. with the goal of providing a nonpartisan collaborative platform that was not under the direct influence of a specific corporation. Within this framework, artists were paired with engineers that had a manifest interest in this type of collaboration rather than working within an industrial company where they might or might not encounter people willing to dedicate their time to an art project. Klüver refused to establish specific collaborative principles since these could limit creativity. Moreover, E.A.T. encouraged artists and engineers to decide on their own when and where to meet and discuss at different project stages. Retrospectively assessing the role of E.A.T. in an interview with H.U. Obrist in 1998, Klüver asserted:

We never codified the artist-engineer collaboration in a building or in a separate laboratory environment. That might have helped the industry and engineers to understand what we were talking about; it could help to educate them. On the other hand, when you codify a process like this, you turn away artists and turn away creativity. We decided to concentrate on the collaboration between individuals.¹⁷⁰

From the very beginning, the impact of E.A.T. projects upon the audience was by no means negligible. Collaborators on *9 Evenings* wanted to attract a much broader audience than that of performances usually organized at the Judson Church, which tended to attract an art audience. In his notes, Klüver mentioned that more than 10.000 spectators had attended the

¹⁶⁹ Billy Klüver, “Theater and Engineering. An Experiment. Notes by an engineer,” *Artforum*, Vol. 5, no. 6, February 1967, p. 31.

¹⁷⁰ Klüver in Hans Ulrich Obrist and Thomas Boutoux ed. (2003, 499).

Armory events.¹⁷¹ The reactions of the audience become part of the event both purposefully and inadvertently. Images of 500 spectators were projected on screens by infrared television during Robert Rauschenberg's performance *Open Score*. In addition to this, the audience grew highly aware of the public dimension of the spectatorial experience during the extremely long intermissions between performances caused by technical difficulties. Simone Whitman, one of the participants in the project, noted the perplexity of engineers at the reactions of spectators who booed and hissed to express their dissatisfaction with the long delays. Unintentionally, *9 Evenings* was reminiscent of John Cage's performance *4' 33"* (1952) that turned the spotlight on the noises made by spectators. Faced with this rather unnerving situation that arose during the first two nights, Klüver remarked that a sort of balance needed to be reached not only between artists and engineers, but also between producers of such events and the audience: "There are three elements fighting. The artists, the engineers and the audience. These three will have to come to some resolution. It seems to me that this will take several years."¹⁷² His comment reveals the fact that the quality of the spectatorial experience represented an increasingly significant criterion for the evaluation of art and technology programs.

E.A.T. did not set out as an organization responsible for organizing exhibitions. Its members agreed that this agency was needed only as long as collaborations between artists and engineers were not an established practice. On the occasion of the MoMA exhibition "The Machine as seen at the end of the mechanical age" curated by Pontus Hulten in 1968, E.A.T. provided an additional incentive for collaborative practices by sponsoring a competition for works that demonstrated the value of interdisciplinary work. The first prize was awarded to

¹⁷¹ See Klüver's remarks in "Theater and Engineering," (1967, 32).

¹⁷² Klüver in Simone Whitman, "Theater and Engineering. An Experiment. 1. Notes by a participant," *Artforum*, Vol. 5, no. 6, February 1967, p. 30.

engineer Ralph Martel for his collaboration with artist Jean Dupuy on the design of *Heart Beats Dust*, a plastic case with red powder wired to a stethoscope that made dust particles rise in response to viewers' heartbeat. The competition jury was made up of engineers and scientists. The main evaluative criterion was the creative use of technology and the degree to which the collaborative process had been successful. Upon awarding the prize, the jury stated: "Evident is the realization that neither the artist nor the engineer alone could have achieved the results. Interaction must have preceded innovation."¹⁷³ The other prizes also went to projects that generated responses to spectators' presence, such as Wen-Ying Tsai's *Cybernetic Sculpture* (designed in collaboration with engineer Frank Turner) made of steel rods lit by stroboscopic lights, whose intensity varied in relation to the level of sound in the gallery, or Robin Parkinson's *Toy-Pet Plexi Ball* (designed in collaboration with engineer Eric Martin), which consisted of a plastic sphere that rolled on the gallery floor as long as visitors continued to make sounds. The interactive nature of these works and their dependence upon multiple factors in the museum environment supported the view that collaborative projects were likely to take into consideration the public character of visitors' experience.

The remaining part of this third chapter section focusing on collective spectatorship in the context of technology-based artworks from the 1960s will closely examine the expected outcomes and, where possible, the actual reception of projects developed within the three collaborative frameworks described above. It analyzes the mirroring processes triggered by works in the "Magic Theatre" exhibition (1968), the interactive potential of projects envisioned for the LACMA Art and Technology program (1967-1971), and the reflective environment of the Pepsi Pavilion designed by E.A.T. for the Osaka Expo (1970). This section provides more

¹⁷³ Jury statement in *The Machine as seen at the end of the mechanical age*, exh. cat. (New York: The Museum of Modern Art, 1968), p. 199.

details on transformations in evaluative criteria of aesthetic experience and looks into artists and curators' views on physical and psychic modes of spectatorial engagement.

2.3.3.1 When more is not a bore: collective participation in “Magic Theatre”

In organizing the “Magic Theatre” exhibition, Ralph T. Coe tried to consolidate the idea that art from the 1960s needed to enhance the psychic involvement of the spectator, thus offering an alternative to mundane media-saturated experiences. While for “Sound, Light, Silence” (1966), Coe’s first exhibition inscribed within this theoretical framework, he selected both works from traditional mediums and art and technology projects¹⁷⁴ in order to show that the message transmitted by them is more important than the medium, for “Magic Theatre” (1968) he mostly commissioned the production of art and technology projects, which might not have been completed without the support of the museum. Coe seemed to be familiar with McLuhan’s theories about the impact of new media. Even though he did not directly refer to his writings in the catalogue of “Magic Theatre,” he appeared to have a good grasp of McLuhan’s distinction between hot media and cool media.¹⁷⁵ Coe distinguished between psychedelic events that are so immersive that they do not allow for personal reflection and psychic events that stimulate engaged participation. In comparing “Sound, Light, Silence” with “Magic Theatre,” Coe stated:

The electric current that passed through M.T. [Magic Theatre] was cold. It was deliberately colder than Sound, Light, Silence. Intervals were more carefully modulated from the start. From this point of view we can see how close to or how distant it was from “the more commercialized psychedelic art.” The relationship is there, symbiotic, but unidentical.¹⁷⁶

¹⁷⁴ In “Sound, Light and Silence,” Ralph T. Coe included works from multiple media, such as Herbert Gessner’s kaleidoscopic geometric projections *Multiple Projection Wheel*, Howard Jones’s changing field of lights and mirrors *Area Two*, John McCracken’s sculpture *Green Slab in Two Parts*, Malcolm’s Moreley’s photorealist painting *SS Rotterdam*, and Andy Warhol’s film *Empire*.

¹⁷⁵ In *Understanding Media. The Extensions of Man*, McLuhan contended that there are hot media that catalyze only one type of sensorial experiences and overwhelm the user with information and cool media that are “low definition” and challenge the user to become engaged and fill in the information gaps with his personal views. See McLuhan (1964, 22-23)

¹⁷⁶ Coe, (1970, 171)

Coe equated the psychedelic with the commercial and the fashionable. He associated it with the type of experience that a spectator presumably had at a rock concert when he/she became intensely involved in the event without taking his/her time to ponder the effect of sensorial immersion upon his/her psyche. Coe used the same allusion to the cold flow of ideas in order to explain the reasons for which he decided to publish a catalogue for “Magic Theatre” two years after the exhibition. He considered that this time span had given him the chance to more fully evaluate the outcomes of the curatorial process: “For once let’s do the real catalogue after the show, not before it opens. Instead of ‘In Cold Blood,’ we’ll call it ‘In Cold Current.’”¹⁷⁷ Coe’s idea falls in line with the view that art and technology projects require beholders to ponder their perceptual experience after their immediate encounter with the work.¹⁷⁸ This also gave the curator the opportunity to analyze the actual reception of “Magic Theatre” by providing an account of visitors’ behavior, citing oral testimonies and responding to exhibition reviews. Spectatorial experience was an important criterion for the evaluation of the projects. As Coe’s analysis shows, it depended not only on the overall configuration of the “Magic Theatre” exhibition, but also on the number and age of viewers visiting the exhibition at the same time. Coe noted that “older visitors had to work harder at empathizing”¹⁷⁹ and observed that younger participants did not find it hard to unlearn some of the conventions of museum experience and interact with the art and technology projects.

¹⁷⁷ Ibid., p. 123.

¹⁷⁸ This connection between the publication of *The Magic Theatre* catalogue two years after the exhibition opening and the importance of reflecting on the meaning of art and technology works after experiencing them in the gallery context was acknowledged by art historian George Ehrlich in his review of the exhibition for *Art Journal* in 1969. Ehrlich wrote: “there is need to return, after the fact, to this experience. This need was recognized by Ralph T. Coe, the Director, when he elected to wait until the Theater was over to write, in detail about its history and its purpose.” See ““The Magic Theatre” Exhibition: An Appraisal,” *Art Journal*, Volume 29, Number 1, Autumn, 1969, p. 40.

¹⁷⁹ Coe (1970, 157)

All works in “Magic Theatre” invited the public to take part in mirroring processes, be they actual acts of self-reflection in translucent screens or virtual acts of reflection that implied taking the behavior or physical presence of other viewers as a reference point for one’s interaction with the environment. Coe considered that reflective surfaces were essential in catalyzing psychic engagement. In his catalogue for an earlier exhibition “Sound, Light, Silence,” he explained that these materials had an impersonal character that helped viewers transcend physicality and self-focused perception: “only impersonal materials possess the many-sided translucence, that everchanging aspect of magic vision in impersonal identity.”¹⁸⁰ According to Coe, the magic theatre experience presupposed two stages: an initial phase at which the viewer chose to personally engage in an act of mental reflection and a later stage at which he/she transcended the boundaries of his/her private world. Mirrors and glass become quasi-invisible when one focuses on the images they frame or on the perceptual/mental processes they stimulate. Artists’ inclination to use these materials was taken as a strategy directed against art objecthood and formalism, as well as against the materialism of contemporary culture. Coe spoke about viewers’ experience in relation to translucent mediums in quasi-spiritual terms. In his view, reflective materials ensured perceptual immediacy, paving the way towards psychic participation. Coe’s statements from the catalog essay for “Light” (1967), the exhibition preceding “Magic Theatre,” fully revealed his appreciation of transparent mediums:

The format should not be clogged: it is in the mind of the viewer that the multi-level art experiences ensue. [...] These psychic art experiences penetrate more succinctly into our consciousness through a crystalline form (fiber glass, lacquer, glass, bulbs, plastic, electronics) because there is little to impede the path of reaction. Beyond theatre lies the whole realm of art as communication.¹⁸¹

¹⁸⁰ Ralph T. Coe, *Sound, Light, Silence: Art that Performs* (Kansas City: National Gallery – Atkins Museum, 1966), no pagination.

¹⁸¹ Excerpts from the catalogue essay for “Light” (1967) in Coe, *The Magic Theatre* (1970, 67)

Seven out of the eight works in the Magic Theatre exhibition contained reflective surfaces such as mirrors, glass, and Mylar. These materials enhanced the public character of visitors' experience, unveiled the components of the environments, or were simply instrumental in producing certain optical effects. In some cases, they helped viewers envision multiple ways of visually framing images of their surroundings.

The first work encountered by visitors in Kirkwood Hall at the Nelson Gallery of Art was Chuck Ross's zigzagging screen of prisms that absorbed images of the changing exhibition scene. It was made up of 10 6ft tall acrylic prisms filled with distilled water. Set at different angles, these columnar components dissolved all sense of linear perspective. Since they both reflected and refracted light, they had a highly ambivalent quality and challenged one to contemplate the exhibition space from multiple vantage points. Initially, Ross proposed a more ample structure composed of 24 prisms. This arrangement would have had a more highly kinetic effect because it did not follow a linear axis. Coe expressed his concern about this change of plan since it undermined the participatory impact of the work. Eventually, he came to terms with the more contemplative aspect of Ross's prisms comparing the work to an all-encompassing consciousness: "Prismatic silence reigns. It stands like a facet of our collective spirit, since it is potentially capable of soaking up every aspect of environment with which it comes into contact."

¹⁸² Yet, the interactive potential of the work did not pass unnoticed. Art critics remarked the role of Ross's work in activating social awareness. In his review for *L'Oeil*, Stephen Bann noted the way in which this work simultaneously acted as an intense spotlight and a screen that dimmed the sharpness of images. He suggested that the position of these transparent prisms at the

¹⁸² Ibid., p. 170.

entrance in the exhibition was ideal since the prismatic wall literally set under the lens the participatory dimension of the entire exhibition:

One was conscious of the presence of other spectators situated at a distance on the other side, but the subtle light distortions did not allow one to locate them in space or identify them with precision. Thus, from the very beginning of the exhibition, each spectator was situated in a peculiar context in relation to others. In fact, the exhibition had been organized by the Performing Arts Foundation of Kansas City and was supposed to be more a spectacle than an exhibition, hence the very movements of spectators played a decisive role in the unfolding of this event.¹⁸³

A work that even more literally framed the behavior of visitors, encapsulating not only their image, but also the sounds that they produced was Terry Riley's *Time-Lag Accumulator*. Participants entered a soundproof glass-encased octagon subdivided into eight transparent capsules. The sounds were transmitted from the interior of the pavilion to a deck situated above it. Subsequently, they were broadcast to the exterior of the octagon either live or with varying delays. As a musician interested in informal performance settings, Riley wanted to create a sense of communication between the people in the octagon and those outside. In his initial description of the project, he mentioned that arrangements should be made for a sitting area around the octagon. Due to space restrictions, this idea was no longer implemented. Even the dimensions of the soundproof chamber were quite reduced. This stimulated interaction between participants entering the same capsule. The environment paradoxically symbolized both connectivity and disconnection, presenting the ambivalent consequences of living in multimedia societies. Participants in adjacent glass capsules could see each other act, but could not hear each other. Onlookers outside the octagon also had only a limited perception of what happens inside.

Time-Lag Accumulator provided an occasion for both acoustic and visual reflexivity. The exterior facets of the deck above the octagon had reflective qualities as they were made out of Mylar. The project thus reified the missed encounter between Narcissus and Echo. Yet, Riley's

¹⁸³ Stephen Bann, "The Magic Theatre" in *L'Oeil*, no. 164-165, August – September, 1968, p. 43. Personal translation.

visual and audio accumulator also impeded a completely self-involved experience as participants' attention was constantly directed towards others as a result of the highly transparent environment. McLuhan's interpretation of the Narcissus myth collapsed the antagonism between Narcissism and voyeurism, suggesting that the beautiful youth actually fell in love with the reflection of an imagined Other, that looked like him, but was different enough to stir his unreciprocated passion:

The real meaning of the legend of Narcissus is that he did not fall in love with an image of himself but rather the face of a seeming stranger. Zeus made him gaze into the watery pool which gave back a reflection of someone *like* him but different enough to be fascinating. Not replica but re-representation. This is precisely what happens when we project our bodily and psychological functions onto the world outside. We "amputate" them because we cannot gaze too long at a balefully realistic playback of ourselves. To some extent, the function of art is to provide some livable distance.¹⁸⁴

By projecting the sounds made by viewers outside the capsules, Riley set a distance between action, perception, and reflection. The words pronounced inside the octagon seemed to acquire an otherworldly quality as they reverberate outside. The environment concomitantly extended and amputated visitors' senses, as on the one hand it enhanced their sensorial abilities by enabling them to hear what was happening within the octagon and on the other hand it deprived them of control over the correlations between visual and acoustic referents since the sounds were mixed and broadcast in areas of the pavilion remote from the ones in which they originate.

Steve Antonakos's *Walk-On Neon* was another work in the exhibition that was based on transparent materials and encouraged visitors to adopt a performative role. Visitors were invited to climb on a stage with a see-through glass floor below and above which lay colorful neon tubes. The abstract light signs embedded in the platform resembled the trajectories of crisscrossing networks and swerving highways. They constituted a sort of map in non-Euclidian space since the tubes were situated at different height levels and change color at 3-6 minute

¹⁸⁴ Marshall McLuhan and Bruce R. Powers, *The Global Village. Transformations in World Life and Media in the 21st Century* (New York, Oxford: Oxford University Press, 1989), pp. 86-87.

intervals. Antonakos's work conveyed the image of a structure under slow transformation. According to Coe, the movement of viewers was supposed to mirror the slow rhythm of change of the installation: "Because switching patterns are sustained rather than flashing, the movement of spectators should be slow, sometimes ritualistic."¹⁸⁵ The transparent floor revealed the symbiotic relation between humans and their surroundings.

Stanley Landsman's environment was also based on the use of light and transparent materials and similarly showed the way spatial coordinates condition spectators' behavior. Antonakos's neon *mise-en-scène* focused more on physical impact by catalyzing movement whereas Landsman's *Infinity Room* favored psychic engagement since it paralleled the infinite possibilities of the mind to the virtual infinite expansion of space within a fairly small chamber framed by mirrors and thousands of low-intensity bulbs on all sides. This intimate 7ft high cubic environment that replicated the immensity of galaxies most closely matched Ralph T. Coe's theory of psychic art that invited viewers to fully engage in a quasi-spiritual experience. The room was constructed out of plywood boxes lined with mirrors on the inside and covered by glass plates. Within each box, bulbs were arranged along axial paths with enough space between them to allow for the formation of fully dark trajectories that Landsman called "allées." The artist asserted that these black corridors were more suggestive of infinity than the myriad patterns of light.¹⁸⁶ Landsman wanted to stage a private experience so that visitors felt that their consciousness mirrored the infinity of the room and stretched beyond perceptual selectivity. Only two to five visitors were permitted to enter the environment at one time partly for fear that the platform might collapse under their weight, partly because the presence of too many people might have diminished the intensity of the experience as argued by the staff of the Toledo Art

¹⁸⁵ Coe (1970, 176)

¹⁸⁶ Landsman in Coe (1970, 183)

Museum where the exhibition traveled next.¹⁸⁷ Psychic engagement was considered to be the primary mode of relationality to the *Infinity Chamber* as a result of its seclusive and secretive atmosphere. Its replication of a virtually abysmal space invited to contemplative mental states. In *The Poetics of Space*, Gaston Bachelard dwelt upon the tension between the physical limitations of a material object and the unbounded realms of thought in order to explain the immensity that lies within ourselves: “since immense is not an object, a phenomenology of immense would refer us directly to our imagining consciousness.”¹⁸⁸ By emptying the chamber of all objects and firmly sealing off the minuscule lights behind the glass panes, Landsman plunged viewers into an apparent physical void in order to call their attention to the absorbing stream of consciousness.

James Seawright’s *Electronic Peristyle*, another work based on transparent materials, served as a metaphor of continuous and discontinuous mental processes. A transparent sphere sheltering electronic circuits had the role of an artificial brain that transmitted and received information from 12 black columns surrounding it. This work lacked the mystical character of Landsman’s *Infinity Chamber*, where technological components, such as wires and light sockets, were carefully concealed so that they did not interfere with the viewers’ sublime experience. Thus, Seawright demystified to some degree the origins of the magic-like sound and light effects produced by the installation in order to encourage participants to wonder more about the impact they themselves could have upon the work than about its electronic nature. By moving around the sphere, visitors can break a series of light beams that linked the central unit to the columns via a system of lamps and mirrors. As the light flux got interrupted, the intensity of the low-frequency sound continuously emitted by the columns enhanced. *Electronic Peristyle* was

¹⁸⁷ See notes about the installation of the work at the Toledo Museum of Art in *The Magic Theatre* (1970, 224-225)

¹⁸⁸ Gaston Bachelard, *The Poetics of Space* (Boston, MA: Beacon Press, 1994), p. 184.

programmed in such a way that it could follow a cyclic mode based on visitors' interaction with the light beams that was reset each time all the 12 beams of light were broken consecutively or a continuous mode that produced sound variations even if visitors did not approach the work sufficiently to interfere with its light and acoustic rhythm. For some reviewers of the exhibition, James Seawright's work was too complex and impeded participation since it was difficult to decipher the impact one had upon its environment. Jane Livingston argued that *Electronic Peristyle* set up a highly mediated experience that impeded intuitive interaction: "The spectator was supposed to move around between brain and receivers, thereby interrupting the circuitry and – though this was unclear to me – himself "controlling" the sequentially programmed bombardments of sound (beeps and blips), air and blinking light."¹⁸⁹ By thinking about the spectator in the singular rather than considering the collective dimension of spectatorial experience, she did not account for the fact that visitors learn how to predict the type of responses they will receive from the electronic system by watching each other's interactions with it. Unlike Livingston, Stephen Bann was aware that the complexity of the work resided in its interdependent relation with the open-ended system of visitors moving in its vicinity:

In this case, the interaction between the spectator and the work implies committed reflection as it is not easy to identify the relation between cause and effect. In order to identify the process, one would need without doubt to observe with great attention his/her own movements and those of other assistants.¹⁹⁰

By reflecting upon the effect of other visitors upon this sensitive electronic brain, spectators gained a sense of how they themselves could influence its reactions. James Seawright's project did not trigger merely dualistic mirroring processes between the viewer and the object, but raised viewers' awareness of how they could jointly bring about changes to their surroundings.

¹⁸⁹ Jane Livingston, "Kansas City," *Artforum*, Vol. 7, no. 1, September 1968, p. 66.

¹⁹⁰ Bann (1968, 43). Personal translation.

In *Man's Rage for Chaos* (1965), Morse Peckham discussed the encounter with art in terms of dynamic behavior that was modeled by the audience and the spatio-temporal coordinates of the display. *Electronic Peristyle* staged a sensorial experience that was contingent upon viewers' exploration of various individual and collective kinetic possibilities. Peckham argued that while the perception of art in the modern period tended to be mostly associated with an orderly situation with rigorously established rules, encounters with art increasingly implied more variable parameters, encouraging viewers to understand their relation to art in terms of role-playing and adaptable behavior, as "generally speaking, perceivers learn from other perceivers, both consciously by precept and unconsciously by role model."¹⁹¹ At first sight, *Electronic Peristyle* may have seemed the embodiment of order since it metaphorically evoked the balance inherent in classical Greek architecture through its title and it blatantly exposed its networks of electronic circuits. Nonetheless, it created disorientation as viewers tried to guess their role in this system and could ultimately provoke a completely chaotic situation if too many viewers interacted with the light beams. Visitors' excessive interference with the light beams ultimately made the *Electronic Peristyle* come to a halt during the first opening days of the exhibition.

While James Seawright generated virtual mirroring processes between viewers who imitated each other's behavior, Robert Whitman employed reflective Mylar surfaces to stimulate actual mirroring acts in a theatrical setting. Approaching Whitman's environment, visitors could be under the illusion that they were about to step into a space of private experience as they entered through a slit in the curtains of a room draped in black cloth. Once inside, they discovered that instead of occupying the position of virtually anonymous spectators immersed in

¹⁹¹ Morse Peckham, *Man's Rage for Chaos. Biology, Behavior, and the Arts* (Philadelphia, New York: Chilton Company, 1965), p. 61.

their private world of experience, they were set on display as they gazed upon the surface of silver screens. On one side of the room, there were two wooden frames covered by Mylar, one circular and one square, while on the other side there was a rectangular wall made of the same material. The smaller screens vibrated in response to acoustic stimuli transmitted by loud speakers located behind the frames. Sound thus acquired visible form, expanding the surface of the Mylar sheets. Spotlight and incandescent light beams directed to the screens amplified this effect. Engineer Eric Rawson, Whitman's collaborator on this project, designed a cyclic light oscillation program that made reflected images become sharper or blurrier, more cohesive or more fragmentary depending on the tempo of light flashes. The large Mylar screen was also subjected to pulsating movements, as the pressure on its surface increased and decreased rhythmically as a result of a motorized plunger mechanism. Ralph T. Coe described his first encounter with Whitman's project as a perceptual experience verging on bodily and temporal dislocation that made him ponder his otherness in relation to others and possibly also in relation to his own inner self:

We were an incongruous group united by what happened to the mirror: as the oscillator worked, the speaker within the tub undulated the mylar. The surface began unearthly movement and then to pulsate. It was not noise but vibrations that counter. I watched myself become disjoined and then gradually and chillingly separate into two images. There I was, but I wasn't **there**. It was my alter ego, some other me. Or was it my primordial self – all the more divorced from the present by the mechanics involved? The transportation of image and its decay in the mirror did strangely affect one's self-consideration. It was cold, yet violent, distant, close and uncanny.¹⁹²

Depicting his response to the shifting mirror image that appeared to acquire a life of its own, independent of the subject of perception, Coe oscillated between the desire to retrieve the lost oneness between his reflection and his physical presence and the fascination with the idea that this equivocal game could offer him a chance to catch a glimpse of his innermost self. Interestingly, his account also emphasized the tension between the collective and the individual

¹⁹² Coe (1970, 90-91)

dimension of his experience. Coe first noted how the reflective surface encompassed not only his image, but also that of Whitman and Rawson witnessing the same pulsating effects. He subsequently proceeded to providing an account of more introspective observations that revealed that the strangeness of others also subsisted within his own being. The throbbing mirror was the instantiation of the other's gaze upon the beholder that failed to coincide with one's own self-perception. Merleau-Ponty evoked a similar situation in describing the feeling of lack of control one experiences upon realizing that he/she has no control over the way others perceive him/her: "What if I took not only my own views of myself into account but also the other's views of himself and of me? Already my body as stage director of my perception has shattered the illusion of a coinciding of my perception with things in themselves."¹⁹³ Within Whitman's environment, viewers saw themselves through the lens of reflective surfaces that dissolved the integrity of mirror images and provided varying degrees of distortion, hence fully submerging them in the relative paradigm of the phenomenal world.

The mirror room set up by Whitman was the most harshly criticized project in the "Magic Theatre" exhibition. Stephen Bann suggested that the visual pleasure that one took in while observing this environment was merely transitory and decried the fact that the artist did not envision a more unitary reflective space that would have been symbolic of the precognitive stage of consciousness experienced in the maternal womb.¹⁹⁴ Janet Livingston called Whitman's work "a sort of crude, exteriorized metaphor of body functions" and compared its illusionary effects to that of "a circus funhouse"¹⁹⁵ due to the lack of coordination of sound and light oscillations. Even Coe adopted a critical tone in discussing this environment in the catalog, arguing that out

¹⁹³ Merleau-Ponty (1968, 8)

¹⁹⁴ Bann (1968, 44)

¹⁹⁵ Livingston (1968, 66)

of all projects in the exhibition, this one came closest to “commercialism”¹⁹⁶ and psychedelic experience. He found that the persistent distortions interfered with psychic immersion and impede personal engagement.

At the other end of the critical spectrum stood Boyd Mefferd’s environment composed of strobe lights embedded in square openings in the carpeted plywood floor of a completely dark room. Much praised by Coe and art critics, this work offered a perceptual experience that defied the boundaries between objective and subjective vision. The flashes of light appeared to lack color at the moment they fired. Their overwhelming luminescence gradually gave way to the formation of colored afterimages on the retina because red, blue, green and orange plastic and glass filters covered each reflector case. This suspension of patches of color made viewers highly aware of the duration and instability of perceptual processes. The lights fired at irregular intervals in different floor areas, setting viewers in the spotlight. In his exhibition review, Alfred Frankenstein pointed out that visitors felt compelled to look towards others and ended up taking more interest in observing each other’s behavior than in studying the effects of the environment: “Mefferd’s room particularly attracted the local hippies, who sat on the floor in circles around the flashing squares of light, like so many Indians around a campfire. The human reaction to all these things was often a better shown than the show.”¹⁹⁷ The intermittent flashes primarily catalyzed virtual mirroring processes between spectators that went beyond a voyeuristic interest. By gazing at others, visitors gained a better idea about how their own bodily image might appear in relation to the flaring strobe lights. For anthropologist Sylvia Caiuby Novaes, this type of interpersonal mirroring processes is essential in the process of self-definition of both individuals and groups:

¹⁹⁶ Coe (1970, 171)

¹⁹⁷ Frankenstein (June 2, 1968)

The representation of self is associated with one's representation of the other and the representation of various others in given contexts. An interdependent relationship is established between the image of the self and the image of these various others.¹⁹⁸

Thanks to this collective experience elicited by Mefferd's project, visitors got a better grasp not only of their position or image in relation to others, but also of their relation to their surroundings. The physical presence of co-participants helped viewers overcome the feeling of disorientation triggered by the transient light effect. The bodies of others represented more reliable reference points in space than the transitory strobe flashes that undermined all sense of distance and proximity.

In his analysis of the work, Coe mainly concentrated on the introspective character of Mefferd's environment because he valued most its psychic possibilities. According to him, the lights expanded human consciousness by extending and transforming perceptual stimuli so that viewers retained in their minds the colored afterimages of the flares after the actual visual stimulus had disappeared. Coe argued that this reaction was a proof of the superiority of human psyche that overpowered the capacity of technological apparatus for generating visual representations: "By exercise of mental processes, one feels as if he is inside a lens. A camera taking pictures inside the room could only record an isolated fragment of the cumulative effect, proving that eye and mind go beyond camera receptivity."¹⁹⁹ This statement shows Coe's skepticism of the power of technology and goes against the grain of Muybridge's observations at the end of the 19th century in conformity with which photographs can more accurately capture images of movement than the human eye. Unlike Coe, Bann remarked in his review that Mefferd's environment could not convey a unitary experience because visitors could only catch

¹⁹⁸ Sylvia Caiuby Novaes, *Play of Mirrors. The Representation of Self Mirrored in the Other*. Translated by Izabel Murat Burbridge. (Austin: University of Texas Press, 1997), p. ix.

¹⁹⁹ *Ibid.*, p. 200.

fragmentary images of what was taking place in the strobe-lit room. For him, it was “the fundamental tension between movement and contemplation, exterior experience and interior experience”²⁰⁰ that made Mefferd’s project stand out from the rest of the exhibition. The contrast between individual participation and collective awareness also contributed to the affective impact of the environment, which generated perceptual instability. These effects were not fully anticipated by Mefferd who did not initially realize that his work would trigger cinematic-like sequences.

Many artists involved in the design of art and technology projects were not aware of the full scope of participatory effects triggered by their works. When Howard Jones was first asked by Coe to propose a concept for the Magic Theatre exhibition, he suggests the construction of a sonic environment in which visitors could create acoustic “portraits”²⁰¹ by superimposing their shadow over photoelectric cells that activated a wide range of sounds, varying from low tones and thumps to high-pitched noises and radio broadcasts. Only after the environment was completed did he realize that visitors were tempted to choreograph their movements in order to compose acoustic sequences. By moving their arms, participants diminished the amount of light that projects onto photocells located in aluminum units affixed to each wall approximately at shoulder height. Whenever photocell circuits were interrupted, sounds were emitted from speakers mounted on the ceiling. As the acoustic stimuli did not emerge only from one corner of the room, but suffused the entire environment, visitors became conscious of the fact that their movements did not have a direct impact only on the photocell unit they were facing but on the whole chamber. They could also act collectively in order to produce more sound oscillations. For art critic and curator Jane Livingston, Jones’s environment was too controlling. She maintained

²⁰⁰ Bann (1968, 44). Personal translation.

²⁰¹ Howard Jones in Coe (1970, 186-187)

that the room resembles “a distasteful pseudo-scientific laboratory presumptuously set forth in the name of art.”²⁰² Livingston disapproved of projects that too closely prescribed a certain type of interaction with the environment. Yet, her argument about Jones’s work was unconvincing. Participants did not simply act as they were required in order to produce a strictly pre-established effect, but could combine their efforts to vary the acoustic environment in inventive ways. As Coe observed, visitors “became collaborators of sound.”²⁰³ Art critics praised unpredictable outcomes of spectatorial engagement, as it was believed that they enhanced creativity. Participants needed to intuitively deduce and creatively apply the basic modes of interaction with the work. The desire to rationally control responsive environments arguably transformed viewers into guinea pigs of art and technology experiments. Only as long as the tension between cognition and perception was maintained could the viewer engage in free play.

Whether inadvertent or deliberate, collective modes of participation enhance the unpredictability of interactive outcomes. Within an exhibition such as “Magic Theatre” that inscribed the image and physical presence of visitors within the works, viewers not only watched each other interact with their self-reflection or with different sensorial stimuli, but they emulated the behavior of others or at least recognized some of their own conscious or subconscious impulses in others’ actions. Coe listed a considerable range of more or less bizarre reactions to the works on display. Visitors pointed at each other’s feet as they stepped on the neon-lit stage of Antonakos, they yelled or whistled in Riley’s sound-delay capsules, and frantically waved their arms in Jones’s sonic room. However, not all reactions were so dynamic and easily visible. Coe also described visitors who simply stood still over extended periods of time while staring at the infinity of light that lay beneath the glass panels of Landsman’s room or at the visceral flickering

²⁰² Livingston (1968, 67)

²⁰³ Coe (1970, 224)

of the strobe lights in Mefferd's environment. These different attitudes could be considered contradictory. Even though Coe was enchanted with this intense participatory engagement, he expressed his concern about the fact that the eclectic atmosphere of the exhibition impeded a more coherent experience. Since he was intent on primarily enhancing psychic involvement, he could not avoid feeling torn about the co-existence of diametrically opposite reactions. Yet, he was proven wrong. As Julia Kristeva affirmed, "the sense of strangeness is a mainspring for identification with the other, by working out its depersonalizing impact by means of astonishment."²⁰⁴ By contemplating the strange behavior of others, visitors were more conscious of their own strangeness even if the act of mirroring between themselves and others was incomplete. Coe referred to the comment of an anonymous visitor to make amends for the incongruous spectatorial responses. The participant stated that he took pleasure in the fact that his experience did not coincide with that of other viewers. Puzzled by Coe's anxiety about the lack of coordination between behavioral patterns, he exclaimed: "What's dreadful about that? [...] I don't want a coincidence with him. Another person can tell me what he feels if he wants, and I'll tell him what I feel. That way we share. Besides, there's unity in the thing itself."²⁰⁵

Coe's perplexity stemmed from his desire that viewers attain a state of transcendental oneness. For him, the plurality of experience could ultimately prove an obstacle if visitors' responses did not converge towards psychic participation. In the context of "Magic Theatre," collective spectatorship could not be understood as a concept that designates a stable, homogeneous group of viewers engaged in performing common acts or undergoing the same perceptual and psychic processes, but as a term that designates a dynamic group whose members

²⁰⁴ Julia Kristeva, *Strangers to Ourselves*. Trans. Leon S. Roudiez. (New York: Columbia University Press, 1991), p. 189.

²⁰⁵ Coe (1970, 159)

can act independently of each other while nonetheless being acutely aware of the fact that they share the same physical space and respond to similar sensorial stimuli. Theories of group dynamics gained ground in psychology and psychiatry together with theories of interpersonal relations in the 1960s. At the beginning of the 1970s, French philosopher Jean Maisonneuve reviewed the main tenets of this current of thought.²⁰⁶ He discussed the theories of psychoanalyst W. R. Bion, according to whom there were two categories of groups: “basic assumption groups” whose members are brought together by affective relations and “work groups” whose members focus on common tasks and cognitive acts.²⁰⁷ Both types of relations can be identified in the analysis of “Magic Theatre” reception. The environments of Antonakos and Mefferd highlighted affective affinities between viewers that explore more or less evanescent light trajectories while the acoustic chamber of Howard Jones, the audio-delay capsules of Terry Riley, and the cybernetic networks of James Seawright encouraged visitors to become engaged in individual and collective tasks in order to examine what impact they could have upon the works. Even though the second group of environments more clearly triggered task-oriented participation, it could also elicit collective affective responses. Before discovering that they could act together to heighten the intensity of sounds or send a delayed message to other visitors, participants observed the initial reactions of their neighbors and consciously or unconsciously mirrored their movements, trying to learn how to interact with the photocells or with the recording devices. Although Coe primarily valued psychic modes of participation that are private and introspective, he mentioned the contagious effect of visitors’ reactions:

When symbiosis occurs, when our psyches connect with artistic technology, the effect can be weird, unpredictable, and intensely exciting. When this does occur, the excitement communicates not only to the

²⁰⁶ See Jean Maisonneuve, *La Dynamique des Groupes* (Paris: Presses Universitaires de France, 1973), pp. 76-79.

²⁰⁷ Bion (1961)

private world of the individual, but by his expressions of participation it carries to the other spectators, in chain reactions which spread across the exhibition area.²⁰⁸

Visitors to “Magic Theatre” were united both by empathetic relations and by common cognitive acts. Hence, they did not belong to one category of groups in particular. Maisonneuve noted that Bion’s theory of group dynamics was limited because it did not account for the potential overlap between the type of social relations that consolidate basic assumption groups and work groups. He considered Bion’s theory too binary since it opposed affect to reason, disregarding the plurality of experience, which contributes to strengthening collective relations.²⁰⁹

Coe and art critics reviewing “Magic Theatre” tended to commit a similar fallacy when refusing to accept that mental reflection can accompany physical engagement and psychic immersion is possible even in public settings. In a virulent article in *The Kansas City Star*, Andrew A. Tapsony expressed his dismay at the participatory experience proposed by the exhibition proclaiming that: “A man who exists on the level of perception is a savage for whom, now, a show has been dedicated.”²¹⁰ Tapsony took Coe to task for having failed to provoke psychic engagement and having offered instead merely perceptual enchantment. Art historian George Ehrlich embraced a somewhat similar argument even though the tone of his review is much less hostile and he did not consider sensorial participation to be primitive. In his review for *Art Journal*, he contended: “Obviously I was stimulated by the Theater, but I was not involved in the way in which I was asked to be. Indeed, the “psychic aspect” which was advanced as the major thrust of the exhibit seemed to repel me as something of a carnival “come-on.”²¹¹ By

²⁰⁸ Coe (1970, 15)

²⁰⁹ Maisonneuve (1973, 82)

²¹⁰ Andrew A. Tapsony, “The Magic Theatre,” *The Kansas City Star*, Sunday, May 21, 1968 quoted in Coe, *The Magic Theatre* (1970, 165).

²¹¹ Ehrlich (1969, 40)

presenting the exhibition as an opportunity to escape the materialism of everyday life through psychic engagement, Coe reinforced the binary between physical and mental participation. The actual experience of “Magic Theatre” contradicted his theoretical claims. After the exhibition opening, Coe was more conscious of other forms of engagement; nonetheless, he was still inclined to prioritize mental reflection over perceptual and bodily engagement because he thought this stood at the basis of a truly valuable spectatorial experience in the art context of the 1960s. The blatant contradiction between Coe’s claims about a primarily psychic mode of self-involvement and the highly dynamic ways in which visitors chose to participate in the “Magic Theatre” was one of the most recurrent issues noted by art critics. Just as Tapsony and Ehrlich, Alfred Frankenstein observed that he could not relate to the works at a psychic level, at least not as part of a large crowd of viewers. Commenting on Landsman’s *Infinity Room*, he stated: “One would have loved to let one’s mind expand in that marvelous little room, but the social situation did not permit it.”²¹² Responding to this specific comment in *The Magic Theatre*, Ralph T. Coe admitted that the exhibition space was at times overcrowded and this made participants accelerate the pace of their visit, hence possibly compromising the profundity of their experience.²¹³ But being part of large crowds of people does not always impede personal reflection. After all, the 19th century idea of the flâneur does not imply complete self-forgetfulness. The modern concept of getting lost in the crowds is not to be equated with a state of reflective passivity. In *Self and Others*, psychiatrist R.D. Laing explained that the border between the public and the private is much looser than it is normally thought to be: “There is no necessary correlation between publicity, realness, and shareability. Persons can be most alone in

²¹² Frankenstein (June 2, 1968)

²¹³ Coe responded to Frankenstein’s remark in the following way: “But Al was correct in writing of the serious problem of presentation of M.T. art. In a sense the Kansas City showing was a sort of New Haven run; in another sense part of a continuum; at another level an experience in itself.” (1970, 156).

their experience of the most public of spectacles; and most together in the sharing of the most “real”, yet unqualifiedly private of events.”²¹⁴ Under the impact of movements of the 1960s, social concerns, as well as personal anxieties, which had been suppressed for a long time, gained visibility and dissolved the confines of the public and private sphere, showing their close interdependence. Similarly, at a personal level, people were more aware of the fact that they defined themselves in relation to others as a result of simultaneous processes of self-reflection and interpersonal reflection.

Visitors of Coe’s exhibition were more directly confronted with this ambiguous situation since they collectively engaged in both actual and virtual mirroring processes. Moreover, the convergence of the private and the public experience was favored by the way the environments were assembled in the Kirkwood Hall. Each of them was somehow isolated in its own space, either on a platform or in a separate room, yet the light and acoustic effects they generated were not always strictly confined to a separate exhibition area. The sounds of Seawright’s electronic temple situated in the center of the hall could intermix at times with the joyful exclamations coming from Riley’s *Time-Lag Accumulator* located across the corridor. As they walked from one work to another or formed lines to enter Landsman’s *Infinity Room*, visitors became part of the same perceptual field and were commonly exposed to the gaze of others, especially when the exhibition space was crowded. When they triggered transformations through their movements in Jones’s sonic room or in the space framed by Seawright’s installation, participants could concomitantly reflect upon their personal impact upon the acoustic environment and the way the effects of their actions intertwined with those of others in public space set up by the display.

²¹⁴ Laing (1971, 37)

Coe initially publicized the exhibition as a magic theatre of the mind that revealed the immensity and depth of viewers' private worlds. Visitors' participation proved that it implied more than that. The public character of experience within the exhibition was a prerequisite for affective modes of engagement and performative acts. The theatre of human behavior carried as much weight as the theatre of the mind. Coe included in the catalogue the comment of Betsy Broun, an art history graduate student, who told about the way her experience was greatly influenced by the presence of numerous other participants interacting with the works. Here is how she described changes in her perceptual relation to the works depending on the number of viewers present within the same environment:

I went up there before 10 o'clock, and it was nice, but when I saw it later when all the people were there, it had come alive. Especially things like the strobe floor room and the time-delay machine gained by all the fortuitous events going on in and around them. That was more stimulating to me than strict cause and effect. For example, in the strobe light room you couldn't see your own shadow like you could everyone else's. In that delay machine you didn't hear what you said as much as what went on before, unless you remained right there. It was like listening to someone divorced from you, or you divorced from yourself.²¹⁵

According to Broun, the presence of other visitors generated more interesting outcomes because it triggered unexpected modes of participation and encouraged one to reflect upon the way interpersonal relations shaped his/her perception of the world. Philosopher Paul Woodruff discusses human beings' compelling need for theatre in everyday life. He contends that we expect others to acknowledge our presence and watch our actions as it is in this way that we construct our self-identity and develop a sense of belonging to a certain community. "Magic Theatre" brought out people's fascination with social spectacle even in the absence of actual interaction between viewers. Visitors' reactions to the exhibition almost fully corresponded to Woodruff's broad definition of theatre as "something we human beings do, when all of us who are involved are alive and present, and at least some of us are paying attention to others for a

²¹⁵ Betsy Broun in Coe (1970, 157)

measured time and in a measured place.”²¹⁶ The significant difference is that the duration of the spectatorial experience in “The Magic Theatre” was not rigorously prescribed and spatial boundaries were not rigorously imposed.²¹⁷ The loose spatio-temporal coordinates did not impede theatricality. On the contrary, they enhanced the performative character of museum experience, at least in this particular case. The more visitors took their time to walk through the environments the more likely they were to be watched and watch others as they engaged in similar perceptual and cognitive processes.

Participants in Coe’s exhibition were simultaneously cast in the role of spectators and actors. Most art and technology environments on display constituted a translucent *mise en scène* for their actions. Visitor participation was not restricted to interaction with the works. It implied states of affective encounters with others that could stimulate one to reflect on the nature of humanity and social relations. Coe suggested that many viewers experienced ambivalent states. Caught between a desire for individual immersion and a quasi-instinctual need for belonging to the temporary community of participants, visitors found it hard to decide whether to adopt a contemplative attitude or take action. Some confessed that they were too shy to perform in this public arena, others were more confident about it as they watched the convivial atmosphere elicited by the reflective environments. Often, visitors merely envisioned what it would feel like to behave as less inhibited participants do. Betsy Broun stated: “I was too shy to do a **tour jete** [sic] in the middle of the sonic room, but then lots of people did, and that’s what made it so good.”²¹⁸ Similarly to theatrical performances, the exhibition stimulated acts of identification

²¹⁶ Woodruff (2008, 38)

²¹⁷ There were a couple of exceptions to this. For example, visitors could spend only a limited amount of time in Landsman’s *Infinity Room* when the exhibition space was crowded. When “Magic Theatre” traveled to the Toledo Museum of Art a much stricter set of rules was imposed in order to speed up visitor circulation.

²¹⁸ Quoted in Coe (1970, 157)

with others. Yet, most of these processes remained incomplete because their experience was more public in nature than that of spectators sitting in a dark theatre hall and thinking of what they themselves would do if they were one of the characters in the play. Visitors loosely mirrored each other's thoughts and movements, oscillating between a condition of absorbing reflection and an intense urge for externalizing their experience just as many others around them were spontaneously interacting with the environments.

Gilles Deleuze considered that affect arose from an unfulfillable desire to attain oneness with multiple others. He positioned it between perception and action in order to underscore the fact that it presupposed a state of suspension and indetermination.²¹⁹ The ambiguous feelings experienced by visitors of "Magic Theatre" originated in affective relations that were not easily externalized. In his theory on the movement image in cinema, Deleuze explains that "affect is impersonal and is distinct from every individuated state of things: it is none the less *singular*, and can enter into combinations or conjunctions with other affects."²²⁰ While interacting with Riley's acoustic environment or walking within the perimeter of Seawright's cybernetic system, visitors observed each other and even influenced each other's reactions, but their relations remained largely impersonal as affect almost always implied a sense of inevitable distance between oneself and others.

Envisioned as an exhibition that released the human psyche from all constraints, "Magic Theatre" stimulated viewers not only to peer into their inner worlds, but also to externalize their sensations and affectively relate to others. As the impact of technological interfaces increased, it

²¹⁹ Deleuze (1986)

²²⁰ Ibid., p. 99.

became more and more clear that personal experience is socially conditioned because it depends on our encounter with others as much as on our own perceptual and mental abilities.

2.3.3.2 When less is more: positive implications of “failed” collaborations in LACMA’s Art and Technology program

In 1966 Maurice Tuchman came up with the idea of a collaborative program between artists and industrial corporations from the West Coast. Convinced that both artists and engineers could considerably gain from exchanging creative ideas, he envisioned an open-ended platform of research and production of technology-based art projects. The museum was supposed to act as a mediator between the artists and the corporations and ensure that the two parties reach consensus about the contractual terms of their collaboration. Tuchman encountered many obstacles in setting the basis of this program. He worked hard on persuading the Board of Trustees of LACMA of the value of this exploratory endeavor. Only after securing the agreement of a couple of corporations willing to pledge \$7000 for the program could Tuchman proceed with his plans. He emphasized the fact that he did not want to merely organize an exhibition, but wanted to help artists gain access to technological materials and get in contact with specialists with whom they could establish long-term collaborations.

Unlike Coe, who set up the “Magic Theatre” exhibition based on a pre-established theme of psychic engagement, Tuchman did not aim to propose a certain perspective upon the role of technology or call for projects that entail specific modes of spectatorial participation. In retrospectively discussing the selection criteria for the program, he stated:

Artists will be approached largely on the basis of the quality of their past work and expressed interest in specific technological processes. Projects to be implemented will be chosen by the Museum on the basis of both potential esthetic stature and practical feasibility.²²¹

In Tuchman's view, artists who had already gained critical recognition were more likely to develop works that highlighted the value inherent in the fusion of art and technology. Their selection was not contingent upon their prior use of recent technological equipment or materials. On the contrary, Tuchman stressed the fact that most of the pre-existing art and technology endeavors had been largely unsuccessful because aesthetic aspects had been overshadowed by mere fascination with technological innovation. Hence, he declared that "If anything, we may have been prejudiced against those artists who had been deliberately employing the tools of new technology for its own sake."²²² Tuchman's skepticism informed his choice of artists who had already gained reputation such as Claes Oldenburg, Robert Rauschenberg, Tony Smith, Andy Warhol, or Robert Whitman. It is by no means an accident that their projects were the ones that reached completion and were included in the US pavilion at the Osaka Expo of 1970 and in the LACMA Art and Technology exhibition of 1971. Based on the detailed reports of their collaborations with corporations, it was quite clear that Tuchman, together with his curatorial assistants Jane Livingston and Gail Scott, strived to make their projects happen at all costs. Art critics rightfully remarked that Tuchman did not like to take too many risks in choosing the projects. Jack Burnham called the curatorial control over artists' selection "Machiavellian."²²³ David Antin suggested that the LACMA exhibition of 1971 did not manage to reflect recent

²²¹ Tuchman in *A Report on the Art and Technology Program of the Los Angeles County Museum of Art. 1967-1971* (1971, 11)

²²² *Ibid.* (1971, 17)

²²³ Jack Burnham, "Corporate Art," *Artforum*, Vol. 10, no. 2, October 1971, p. 66.

changes in art practices and views upon technology. Since it primarily set on display the works of Pop and Minimalist artists, he concluded that it was “inevitably a ’60s show.”²²⁴

Just as in the case of the “Magic Theatre” at the Atkins Museum of Art in Kansas, one can remark a lack of synchronicity between the exhibition and the museum publication, which provides an account of the curatorial process and the collaborations between artists and corporations. Instead of publishing a catalogue, Tuchman chose to release a comprehensive report on the Art and Technology program during the period between the Osaka Expo of 1970 and the LACMA exhibition opening of 1971. This genre of publication encompasses information on the hundreds of works initiated within the collaborative framework set up by the museum. The report underlines the open-ended character of the program and lays bare the wide range of proposed projects, the negotiations between the museum, artists, and corporations, as well as the reasons behind the failed collaborations. Reviews of the 1971 show at LACMA included substantial references to the report and acknowledged the fact that it was a highly atypical catalogue. Burnham asserted that it has the format of a “shareholder’s report,”²²⁵ hence revealing the heavy corporatist influence. Antin called it “ a 386 page piece of conceptual art released after Osaka”²²⁶ and considered that the review of this publication was more important than the review of the exhibition per se since it cast more light on the corporatist underpinnings for the program and the rationale for this curatorial initiative. In the analyses of both art critics, Tuchman appeared as a curator turned conceptual artist who did not succeed in putting together a coherent exhibition, but who managed to bring to the surface the machinations within corporate operations, after having used strong persuasive tactics to get industrial companies to sign

²²⁴ David Antin, “Art and the Corporations,” *ARTnews*, Vol. 70, no. 5, September 1971, p. 54.

²²⁵ Burnham (1971, 67)

²²⁶ Antin (1971, 23)

collaborative contracts with the museum and accept artists in residence. Art critic Max Kozloff argued that the LACMA program was primarily “an experiment in patronage”²²⁷ and art historian Jonathan Benthall maintained in his discussion of the 1971 exhibition that “the most interesting issues raised have been the ones of project management, finance, and artist-industry relations, rather than aesthetics.”²²⁸

In some of the reviews, it was implied that the large number of failed collaborations with corporations was in fact a positive sign, which announced that art and industrial companies needed to part ways in order to avoid the corruption of aesthetic and social interests. Kozloff found it ironical that the availability of larger than usual funding and technological resources did not make the art and technology program a success story. He asserted that: “There was a certain pleasure to be derived from the thought of the thousands of work hours and dollars expended on these fey and whimsical contraptions.”²²⁹ Many collaborative endeavors failed because the artists were not put in contact with specific engineers or scientists within each corporation who already had an interest in working on such exploratory projects. A couple of artists managed to meet corporation employees who understood the value of this collaborative platform, but most of them were perceived as inconvenient outsiders who got into the way of routine procedures and raised problems rather than find easy solution or use already available technological resources.

Some corporation members, such as the Executive Vice-President of Ampex, were displeased with the fact that artists did not manufacture the works on their own using the technological equipment available within the factory instead of expecting engineers to build the works based on the project concept. Others wanted artists to employ a specific type of

²²⁷ Max Kozloff, “The Multimillion Dollar Art Boondoggle,” *Artforum*, Vol. 10, no. 2, October, 1971, p. 72.

²²⁸ Benthall (1972, 101)

²²⁹ Kozloff (1971, 76)

technology recently devised by their company so that they could consolidate brand identity by associating the art and technology project as closely as possible with their recent innovations. Tuchman and his assistants mediated the tense relations between corporations and artists. Sometimes, they relocated artists to other companies in the hope that a better working relationship can be established.

Retrospectively investigating the proposals and actual projects developed within the LACMA program, Jane Livingston identified three categories of collaborative practices: one type of artist-corporation collaboration focused on the use of already available industrial materials in the manufacturing of the work, a second type based on lesser known technological devices with which both artists and engineers experimented in the process of conceiving the work, and finally a third type that had nothing to do with the actual technological resources available within the company, but which implied artists' subversive participation in information networks established between corporation employees or their active involvement in exploring open-ended scientific inquiries into perceptual experience. She pointed out that this last category was characterized by "a participatory, informational esthetic without primary regard for object-making."²³⁰ Nonetheless, the "participatory esthetic" identified by Livingston in relation to the collaborative production of the works also extended to the reception of the works. Many of the artists' proposals included information on the interactive potential of their projects. Participants became active components of the environments imagined by the artists.

A couple of artists proposed environments that elicited processes of self-mirroring thanks to the use of reflective surfaces. Avigdor Arikha wanted to construct a park pavilion covered by non-reflective black and white panels on the outside and composed of maze-like reflective

²³⁰ Jane Livingston, "Thoughts on Art and Technology" in *A Report on the Art and Technology Program* (1971, 44)

spaces on the inside. Robert Whitman suggested the construction of a mirror environment that would render the mundane encounter with one's reflection uncanny. Spherical mirrors with long and short focus made objects and people appear closer or further away than they actually were and made reflections acquire a quasi-physical presence since they appeared to hover in thin air. Optical images acquired an eerie quality and viewers' relation to their body image underwent a process of de-familiarization. Whitman worked in close collaboration with engineer physicist John Forkner for Philco-Ford, who took a great interest in the project and even involved a church group in the manufacturing of the mirrors when he faced serious time constraints before the opening of the US pavilion exhibition in Osaka.

A considerable number of proposals implied virtual mirroring acts. Artists wanted to stimulate viewers to discover the effect they could have upon technology-based environments that responded to their touch, movements or voices. They also encouraged them to reflect upon the way their perceptual experience or behavior compared to that of others. Some of the projects that entered this category were based on binary feedback between an individual viewer and an installation or environment, whereas others unveiled the impact of multiple participants upon a technological setup that reacted to their collective presence. Jean Dupuy submitted a series of proposals that required interaction with technological systems. He envisioned situations in which participants were asked to speak into a microphone and their voices were amplified up to a point at which they could actually break a glass object or were "converted into electrical impulses"²³¹ that could engender the formation of sparks on a metallic surface. Many of Dupuy's projects called participants' attention to their otherwise invisible influence upon technological and natural systems. Physical processes, which were usually taken for granted since they could not be

²³¹ See Dupuy's description of SPARKS in *A Report on the Art and Technology Program* (1971, 96)

directly perceived, were brought to the surface by human interaction. After a failed attempt at collaborating with Ampex, Dupuy was matched with Cummins Corporation and constructed an engine that transformed fuel into earth, fire, water, and gas upon being activated by participants. He demystified both nature and technology by showing the complex interconnections between them and the role humans played in the management of resources.

Frederick Eversley also proposed a project that unveiled the mutual influence between people and technological networks. He intended to construct an environment out of cholesteric liquid crystals that would change color depending on variations in room temperature. Participants' movements were supposed to activate a heat source that led to swift color transformations of plastic or textile surfaces impregnated with cholesteric crystals. The project description stated that visitors' "shadows will result in human forms in varying hues to be mixed with pre-programmed images appearing on the display surface, and in greater active participation of the spectators with the environment."²³² Newton Harrison's submission for LACMA was meant to enact similar visual transformations. He intended to design a forest of asymmetrically arranged transparent columns containing different types of gases. Electricity was to be diffused through each pillar to trigger flickering effects and enact color transitions. He thought of multiple ways in which participants could interfere with this luminous field by generating electronic discharges upon approaching the columns. Even though the full interactive potential of the work was not ultimately realized, it was quite clear that Harrison's collaboration with Jet Propulsion Laboratory staff and his assistant Keith Carter deeply affected his artistic practice and heightened his interest in the participatory implications of his projects:

²³² See the description of Eversley's project in *A Report on the Art and Technology Program* (1971, 101)

I'm now almost uninterested in offering single pieces of art. What I do comes out of interaction of all kinds. It might be interaction with something I have seen, but I find it's more productive to interact with human beings: they can talk back...I have ceased making art by myself.²³³

Other proposals similarly encouraged participants' active engagement in generating color fluctuations. Some artists, such as Erich Hartmann and John McCracken, refused to submit proposals before their residence period, as they felt that their projects needed to be born out of their encounter with people working in the corporation. Their works needed to be specific to the collaborative context of production instead of being simply inspired by the technological devices manufactured within the industrial company.

Rauschenberg was one of the artists in the LACMA program that most strongly declared his opposition to romanticized ideas about art's role in aestheticizing technology. He wanted to avoid didactic attitudes generally associated with art and technology projects that presumably offered a lesson about human-machine relations. According to Rauschenberg, designing responsive environments could be a strategy for diverting participants' attention from the technological implications of the work towards its perceptual effects. In collaboration with Teledyne, he created *Mud-Muse*, a basin filled with bubbling mud that reacted to the noises produced by participants. Instead of proposing a one-to-one feedback between the viewer and the fluid environment, Rauschenberg opened the field of his work to collective participation that turned out to be as effervescent as the mud gushing out from the tank. In his review of the LACMA exhibition of 1971, Antin mentioned that this environment had stimulated too much involvement. By making loud noises, groups of participants had had the mud spurt to the ceiling and splatter the floor. Eventually, this area of the exhibition was closed for a couple of days and was re-opened only after the interactive potential of the project was subdued since the mud

²³³ Harrison in *A Report on the Art and Technology Program* (1971, 125)

bubbles were made to respond only to controlled audio stimuli rather than to the live acoustic environment. Antin was critical of participatory works, which stimulated visitors to adapt their behavior to technological situations and act in a quasi-mechanical way in order to induce specific effects. He believed that this type of project indicated the controlling potential of technology and limited the response of the viewer instead of liberating it:

Nobody in the art world to my knowledge has blamed Rauschenberg for being overly suggestive. I do not mean by this to imply that the idea of interactive art is either trivial or futile. It is a profound idea that remains partially open and variable. It is not a question of democracy, but of seeking an appropriate ground for a human engagement. [...] The idea of using a human being as a power source and/or switch, which is about all that Rauschenberg is doing, is if considered seriously quite possibly humiliating. [...] In this context it is interesting to observe that interactive art is not inherently or necessarily technological. Yet with the exception of certain open-structured transient works they have almost always appeared in the context of technological art. For the art world it would seem that interaction with people is seen not as interaction at all but as manipulation, that is, technology.²³⁴

Antin mainly thought about the interaction between the viewer and the environment in binary terms without considering the public character of this experience and the fact that the reactions of multiple visitors to technology-based environments conditioned the perceptual and participatory experience as much as the technological basis of the project. Visitors could collaborate with one another to enact changes in the rhythms of the bubbly mud bath staged by Rauschenberg. The same anxiety towards the manipulative effect of art and technology projects could be sensed in Robert Whitman's collaboration with scientists. In his account of conversations on the optical effects elicited by the mirror environment, engineer Forkner remarked: "Commenting on the feedback room environment, one of our scientists remarked somewhat caustically that it would make the viewer nothing but a robot."²³⁵ The scientist implied that the viewer was somehow objectified since he/she was subjected to a series of optical experiments. Yet, visitors still had the freedom of choice. While their reflections were inevitably

²³⁴ Antin (1971, 26)

²³⁵ Forkner in *A Report on the Art and Technology Program* (1971, 340)

engulfed in the kaleidoscope of mirrors, they ultimately depended on the way they moved in relation to the optical apparatus, manipulating the way their images were framed by the reflective environment. Jonathan Benthall argued that the increasing interactive dimension of art and technology works during the 1960s was a sign of artists' retaliation against the machine age. According to him, visitors disrupted automatic processes: "This extra element of participation or 'feedback' breaks down the repetitiveness of purely cyclical machines, and gives the spectator (so it is contended) a more active function in the artistic process."²³⁶ The value of active participation stood in its potential to generate disorder in a stable mechanical system.

Another genre of interactive projects developed within the framework of the LACMA program was represented by experimental situations that trigger conceptual reflective processes. They could unveil correlations or divergences between the ways in which participants evaluated their bodily experience in a certain environment or they could underscore the more or less well-functioning networks that bonded corporation employees. In both cases, artists adopted the roles of psychologists and sociologists in examining how much participants mirrored each other in terms of their reactions to similar sensorial stimuli or in terms of the way they responded to questions concerning the corporatist culture to which they belonged.

Interested in participants' reactions to low intensity visual and acoustic signals, as well as to environments completely devoid of such sensorial stimuli, Robert Irwin and James Turrell set up a series of perceptual experiments in the laboratories of Garrett Corporation. Working in close collaboration with Dr. Ed Wortz, they studied the way in which viewers became highly aware of their perceptual possibilities and their bodily sensations in secluded environments where spatio-temporal coordinates were obscured and light and sounds were reduced to a minimum. Irwin and

²³⁶ Benthall (1972, 114)

Turrell rigorously documented all their activities and asked volunteers who underwent such perceptual experiments to respond to questionnaires concerning their awareness of sensorial transformations, temporal duration, and meditative states of mind. The artists emphasized the personal character of the experience, but they also wanted to investigate the similarities between different persons' reactions to the same perceptual conditions. Their collaborative coordination of the experiments enhanced their interest in testing out various sensorial possibilities to assess the degree to which they enacted comparable experiences. Wortz found it difficult to evaluate the individual role of each collaborator to the project: "The whole process was such an interactive process that it's difficult to sort out any one person's contribution."²³⁷ He explained that the experiments revealed both individual and universal characteristics of perception.

The project came to a halt when disagreements appeared between Irwin and Turrell. While neither of them was willing to comment on the end of the collaboration, Wortz hinted at the fact that the two artists did not share the same approach to communicating the outcomes of the experiments. Irwin suggested that some experiences were so personal that they could not be verbalized and explained to others. In discussing about the LACMA project in his interviews with Lawrence Weschler, he emphasized the distinctive character of individual perceptual and reflective acts. In his view, the collaboration was needed precisely because each participant acted as an imperfect mirror for the other's reactions. For Irwin, the experiments constituted a way "to find out how we each thought about things, what each of us saw that the others didn't, how we organized things differently."²³⁸ By contrast, Turrell was more prone towards considering the interpersonal dimension of these experiments. A sharp critic of the individualism of his

²³⁷ Wortz in *A Report on the Art and Technology Program* (1971, 139)

²³⁸ Irwin in Lawrence Weschler, Robert Irwin, *Seeing Is Forgetting the Name of the Thing One Sees. Over Thirty Years of Conversations with Robert Irwin* (Berkeley: University of California Press, 2008), p. 134.

generation, he possibly saw Irwin's refusal to share his perceptual responses as a sign of exacerbated subjectivity that impeded relations to others. Some of Turrell's statements recalled McLuhan's optimistic belief that technology could liberate human consciousness and show people that they were all facing similar problems and anxieties. He hoped that technological developments would heighten one's understanding of the technicity of his/her own mind and body: "The machines are just manifested thought. Technology isn't anything outside us. We just go about it very clumsily and very wastefully."²³⁹ No matter what the differences between Irwin and Turrell's approaches to the LACMA project were, they both thought that perception constituted a medium of expression that could not be simply restricted to a series of established sensorial stimuli because it implied participatory interaction with the environment and intense personal reflection.

While Irwin and Turrell created an experimental situation in which individual participants were exposed to unusual perceptual conditions in order to identify a wide range of responses to an environment, other artists in the Art and Technology program infiltrated pre-existing work groups and attempted to suspend quotidian activities and habitual forms of communication. James Lee Byars collaborated with the Hudson Institute, a nonprofit organization conducting research on public policy. During his residence, he distributed questionnaires to employees, challenging them to reflect on the rationale of their activities and the most important issues that they fail to address. Byars believed that this is a strategy for turning the tables on the employees who were usually in a position to raise questions rather than answer them. For example, he asked Herman Kahn, the head of the organization, "What's the most important question of the 20th century?" Byars mirrored the employees' activities in a half-

²³⁹ Turrell in *A Report on the Art and Technology Program* (1971, 140)

serious, half-comical way, suggesting that there were more important issues at stake in the world than the ones that they were considering. In order to frame the conceptual nature of his project, he repeatedly printed a statement reading “putting byars in the hudson institute is the artistic product” on a long tape of paper and distributed copies of his questions to visitors of the LACMA exhibition of 1971.

John Chamberlain undertook a similar project during his residence at Rand Corporation. He sent memos to employees asking them to provide answers in the absence of questions. His tautological message read: “I’m searching for ANSWERS! Not questions! If you have any, will you please fill in below, and send them to me in Room 1138.” By imperfectly mimicking the employees’ style of communication, the artist subversively set under the radar their habit of carrying out tasks or providing answers without thinking about the reason for which they were asked to do this in the first place. One employee thought that Chamberlain sent these memos in order to find out what other people thought about him. His/her answer suggested that artists needed to be primarily preoccupied with aesthetic concerns.²⁴⁰ The exchange of messages revealed that in the absence of a specific question or topic to be addressed by the respondent, people tended to ponder their interpersonal experience. In examining the chain of reflective acts that form the basis of social relations, R.D. Laing noted “Through my behavior I can act upon three areas of the other: on his experience of me; on his experience of himself; and upon his behavior. [...] I cannot act on the other himself directly.”²⁴¹ An outsider to the corporation, Chamberlain could not have a direct impact upon other employees, but could stir a conversation about his presence there. His other proposals for Rand Corporation were also meant to strengthen

²⁴⁰ The response to the memo read: “There is only one answer: you have a beautiful sense of color and a warped, trashy idea of what beauty and talent is.” The copy of the memo is included in *A Report on the Art and Technology Program*.

²⁴¹ Laing (1966, 22)

interpersonal relations and enhance affective bonds between staff members. Chamberlain suggested interrupting all phone communication within the corporation and inviting everyone to get out of the building and take photos of each other for one day.

In her comments on the LACMA program, Jane Livingston explained that participants in Byars and Chamberlain's projects, as well as in Irwin and Turrell's scientific study of perceptual responses, represented the medium of expression and did not simply respond to a predetermined situation.²⁴² Their reactions to the artists' propositions could not be fully predicted. The randomness subsistent in human behavior when one faced unexpected circumstances stood in opposition to the urge for order and the interest in closely regulated behavior associated with the machine age. Livingston commented upon the participatory dimension of collaborations with corporations, but did not discuss the ways in which visitors to the LACMA exhibitions could become part of the medium of art and technology projects through their active involvement.

The participation of large groups of exhibition visitors was sometimes viewed as an impediment to a truly participatory experience because it limited viewers' control over their personal interaction with technology-based environments. Tuchman commented on the relativity of aesthetic experience in the context of the Osaka Expo exhibition. He believed that the presence of large groups of visitors reduced the participatory potential of the works:

Much depended on one's particular vantage point – your neighbor was never seeing what you were seeing at the same time. This was true even though certain of the works, which had potential for individual participation, we forced to relinquish this aspect because of the enormous crowds at Expo.²⁴³

²⁴² Livingston stated: "Two assumptions are, in retrospect, implicit in these artists' projects. One is that the function of gathering and exchanging information is important as an end in itself; the other is that *participation should be made self-aware and be used as a form of esthetic endeavor*. [...] The artists referred to here further may be said to have regarded the people with whom they dealt as *themselves* "media," rather than viewing them as *personnel*, or as simply parts of a larger machine dedicated to the end of engineering and fabricating systems or objects." See *A Report on the Art and Technology Program* (1971, 46)

²⁴³ *Ibid* (1971, 29)

Yet, in certain cases the participation of numerous viewers facilitated personal engagement and even constituted a necessary condition for framing an affective and effective environment. In the description of Mefferd's *Strobe-Lighted Floor*, a project similar to the one designed by the artist for Coe's "Magic Theatre," Gail Scott affirmed that the presence of crowds of visitors would limit the amount of light that entered the environment in the US pavilion, hence enhancing the intensity of the perceptual effects of the flickering lights. She also added that while the artist had not specifically envisioned collective modes of interaction, visitors would observe how the bodies of their neighbors appeared "etched"²⁴⁴ against the background of the pavilion when strobe flashes fired.

Yet, participatory responses to the LACMA exhibitions of 1970 and 1971 did not constitute as significant a topic of discussion in reviews as did viewers' reactions to Coe's "Magic Theatre" partly because of the nature of the selected works and partly because of the dwindling enthusiasm for art and technology projects under the impact of the economic recession of the early 1970s. For art critics such as Burnham, Antin or Kozloff, it was by no means unexpected that the outcomes of the LACMA program were so sparse and feeble. Some of them even cherished the idea that so few projects actually provided a meaningful commentary on the impact of technology upon society because this was a further proof that artists' collaborations with corporations largely compromised their chances to reflect on the social implications of technological developments. Less was actually more for those evaluating the LACMA exhibitions since the failed promises of the Art and Technology program could prevent museums from encouraging collaborations between artists and industrial companies and could draw more attention to the social systems of art production and reception.

²⁴⁴ Ibid (1971, 227)

2.3.3.3 Between the Visible and the Invisible: Mirroring Acts in the Pepsi Pavilion

The Pepsi Pavilion designed by E.A.T. (Experiments in Art and Technology) for the Osaka Expo of 1970 called into question the aesthetics of spectacle by impeding visibility and challenging visitors to rely on multisensorial perception and social interaction in order to retrieve a sense of orientation. The pavilion exterior was enveloped in fog hissing from thousands of nozzles embedded in its structure. Its hazy boundaries constantly shifted depending on weather conditions and impeded visibility. Planned at the end of the 1960s, this collaborative project reflected social anxieties over the competition between humans and technology. At the dawn of the cybernetic age, superior mental capacities no longer seemed to be an exclusive attribute of humans and artists thought of ways of prosthetically expanding human abilities through the use of technology. E.A.T. members envisioned the interior space of the Pepsi Pavilion as an environment that could liberate human consciousness and enhance its capacities.

In 1968, David Thomas, the VP of Pepsi-Cola Corporation, approached artist Robert Breer about creating an art project for his company's pavilion at the Osaka Expo.²⁴⁵ Initially, Breer was skeptical about becoming involved in the project precisely because of its corporate dimension. Before making a decision, he consulted with members of E.A.T. Breer thought that this commission needed to be undertaken collectively by the group to facilitate negotiations with Pepsi-Cola Corporation and avoid compromises during the planning process. Nonetheless, the relations between E.A.T. and the corporation were fraught with tension during negotiations over financial and programming issues. The collaboration came to an end much sooner than expected

²⁴⁵ Pepsi-Cola Company initially planned a series of rock concerts for the Osaka Expo as it tried to attract young audiences. However, the budget was too low and the allocated space too small for this purpose. The pavilion was already under construction at the time when E.A.T. signed the contract with Pepsi-Cola Corporation. Takenaka Komuten Company designed the architecture of the pavilion, which was supposed to function as the Pepsi headquarters in the Kansai area.

when the corporation refused to pay artists to create sound and light programs throughout the entire period of the Osaka Expo.

The printed documentation of the Pepsi Pavilion resembled that of other art and technology programs and exhibitions from the same period. A book including mostly essays by art critics and reports by engineers was published two years after the exhibition.²⁴⁶ The collected writings dwell on the negotiations between E.A.T. and Pepsi-Cola Corporation, the rules of collaboration, and the alternatives considered by the group in the design of the Mirror Dome. The book also comprises accounts of the opening night, plans of the interior space of the Pavilion, and photos illustrating E.A.T. meetings and visitors' interaction with the reflective environment.

Over 70 artists, engineers and consultants were involved in the construction of the Pepsi Pavilion. The rule of thumb was that each person had a well-delimited role in the planning and design process. Billy Klüver was the executive coordinator of the project and tried to maintain balanced relations between the camps of artists and engineers. He underlined the fact that all E.A.T. members involved in the project needed to keep in mind their shared goals. In his account of the debates surrounding the project, Klüver explained: "Complications arose when engineering and aesthetic considerations became confused: when engineers wanted to be artists, when accountants wanted to be engineers, or when artists were intimidated by engineering."²⁴⁷ Nonetheless, conflicts of opinions obviously also existed within each of this expertise camps. In the initial stages of the planning process, Klüver encouraged everyone to think of the overall concept of the pavilion so that they could all develop a sense of common purpose. After a series

²⁴⁶ See Billy Klüver, Julie Martin and Barbara Rose ed., *Pavilion* (New York: Dutton & Co., 1972)

²⁴⁷ Klüver, "The Pavilion," in Klüver, Martin, Rose ed. (1972, xi)

of brainstorming sessions, each artist adopted a more specific task: David Tudor was in charge of the sound environment inside the Pepsi Pavilion, Robert Whitman decided to focus on the optical effects in the main interior space, Forrest (Frosty) Meyers designed exterior xenon projections, Robert Breer constructed mobile sculpture called Floats that meandered on the pavilion terrace, and Fujiko Nakaya explored several techniques for generating a veil of fog around the pavilion.

The Pepsi Pavilion support structure had already been built by the time E.A.T. starts working on the project. The artists had the task of designing its interior space in order to design an environment for art events. They disliked the architecture of the pavilion that poorly imitated the aesthetics of a geodesic dome covered with polyvinyl chloride facets. Hence, everyone welcomed the idea of making the pavilion disappear under a veil of fog at the suggestion of artist Forrest Myers. Not only did E.A.T. members conceal the exterior of the building, but they also did their best to mask its structure on the inside. Visitors gained access to the pavilion through a tunnel that led them to a lower level called the Clam Room, a dark shell-shaped environment where krypton laser beams were projected. They migrated from a futuristic exterior to a cave-like setting resembling the space of a primeval womb. Except for projections, the only light source in the Clam Room was a rather narrow glass disk through which light entered from the upper room. In the midst of the large crowds of people rapidly moving from one pavilion to another at the Osaka Expo, this space held the promise of a temporary dwelling and was reminiscent of the axis mundis uniting the earth and the sky. Two flights of stairs connected the Clam Room to the Mirror Dome, the main core of the pavilion where light and sound events were staged. This hemispherical environment was constructed out of Melinex sheets sprayed with aluminum and attached to a birdcage-like structure. The reflective surface was supported by negative air pressure. Artist Robert Whitman who had been experimenting with mirror for some

years proposed the concept for this room. Executive director of E.A.T. Billy Klüver was no stranger to the use of materials with mirror-like qualities as he had helped Andy Warhol design *Silver Clouds* in 1966, an installation of free-floating helium-inflated cushions constructed out of Mylar.

In the Mirror Dome, one presumably lost sense of the material boundaries of his/her body and of the fixed coordinates of the space he/she inhabited. The floor was subdivided into several concentric sections covered with materials of different textures, such as grass, wood, or gravel. Visitors could listen to audio signals coming from the floor with the help of handheld devices. The compelling visual effects engendered by the hemispherical mirror environment were paralleled by complex tactile and audio stimuli that contributed to an intricate multi-sensorial experience. The Pepsi Pavilion encapsulated critical attitudes towards visuality. By constructing mixed-media environments, artists from the 1960s questioned ocularcentrism and unveiled the relativity of vision. They combined acoustic and visual stimuli to stage interactive multi-sensorial experiences. In the Mirror Dome, visitors became conscious of the boundaries of their perceptual field. This reflective environment defied spectacular iconicity due to the unpredictable and temporary character of visual and audio effects that depended on the movement of visitors and the changing programs operated by E.A.T. artists. The Pepsi Pavilion returned viewers to what Merleau-Ponty called a pre-objective state²⁴⁸ in which they questioned the visible and abandoned their preconceived knowledge about their surroundings. Participants channeled their attention to the construction of perception and the impact of their corporeal presence upon the environment.

²⁴⁸ See Merleau-Ponty in Lefort ed. (1968, 156-162)

In *The Production of Space*, LeFebvre contended that spectacular spaces exacerbated visuality in order to dissimulate replication and subordinate viewers. He maintained that such environments were “made with the visible in mind: the visibility of people and things, of space and of whatever is contained by them.”²⁴⁹ The discussions over the design of the Pepsi Pavilion anticipated LeFebvre’s critical stance. E.A.T. members expressed their anxieties towards the prevalence of visual spectacle. Breer wanted to avoid the enactment of a dazzling multimedia environment²⁵⁰ and Robert Rauschenberg suggested that they should focus more on non-visual stimuli in order to frame “an invisible environment.”²⁵¹ Their desire to eschew matter-of-fact optical effects was reminiscent of Coe’s decision to select works that could engender subtle perceptual experiences and catalyze multiple senses in order to encourage visitors to become actively involved in the “Magic Theatre” at a psychic level. Negative attitudes towards visual spectacle proliferated at the end of the 1960s. The world exhibition preceding Osaka Expo was held in Montreal in 1967 and was criticized due to the large number of visual projections exhibited in pavilions. Architect Arata Isozaki, who was part of the design team of the 1970 edition of the world expo, envisioned an exhibition with more subdued visual effects. He called for developing “invisible cities”²⁵² in which architectural spaces had a nomadic quality, their configuration shifting from one period to another, thus challenging fixed iconic values. E.A.T. concealed the image of the dome by enveloping it in fog, yet also signaled its presence from afar. Visual stimuli were by no means suppressed in the Clam Room and the Mirror Dome, but they were rendered highly elusive due to their constant transformations. Many optical effects were

²⁴⁹ Henri Lefebvre, *The Production of Space* (Oxford: Blackwell Publishing, 1991), p. 75.

²⁵⁰ Breer argued: “the usual result of multimedia is scattered razzle-dazzle without articulation and form.” Quoted in Nilo Lindgren, “Into the Collaboration,” Klüver, Martin, Rose ed. (1972, 5).

²⁵¹ Quoted in Calvin Tomkins, “Outside Art,” in Klüver, Martin, Rose ed. (1972, 114)

²⁵² Quoted in Hajime Yatsuka, “Architecture in the Urban Desert: A Critical Introduction to Japanese Architecture after Modernism,” in *Oppositions Reader*, ed. Michael Hays (New York: Princeton Architectural Press, 1998), p. 265.

perceptible only over a short period of time or were so subtle that one could barely notice them unless he/she spent a longer period of time within the pavilion.

The prolonged duration of perceptual acts, which was such an important factor of psychic experience in Coe's "Magic Theatre" exhibition, also played a major role in one's experience of the Pepsi Pavilion. Both exhibitions stood under the sign of chronophobia, a fear of the impending acceleration of time that prevailed in the cybernetic age. Pamela Lee argued that in the 1960s numerous artists became intent on slowing down perceptual processes and altering the temporal flow of technologically produced images.²⁵³ E.A.T. members wanted to disrupt the rapid circulation of exhibition visitors who tried to see as much as possible in a limited amount of time. The astounding reflective effects of the Mirror Dome invited visitors to pause and reflect on their perceptual experience. Similarly, the dome-capped cylindrical sculptures which Breer designed for the pavilion terrace moved at such a slow pace that Pepsi-Cola executives asked the artist to increase their motor speed so that their movement could be more easily perceptible. The artist called this attitude a sign of "motion anxiety"²⁵⁴ and refused to accelerate their speed. By emphasizing sensorial ambiguity and delay, he hindered goal-oriented experience.

Engineer Billy Klüver described the Pepsi Pavilion as "an experiment in individual experience"²⁵⁵ and art historian Barbara Rose called it "a secular temple of the self, dedicated to the individual, both as part of and as separate from the crowd."²⁵⁶ The ultimate sign of this self-focused experience was a raised berm that extended from the sloping edge of the floor to the center of the pavilion. By walking along this platform, viewers could gain unique visual access to their reflections in isolation from others. Yet, as Foucault remarked, one cannot envision

²⁵³ See Pamela Lee, *Chronophobia. On time in the art of the 1960s* (Cambridge, Mass: MIT Press, 2004)

²⁵⁴ Quoted in Tomkins, "Outside Art," in Klüver, Martin, Rose ed. (1972, 159)

²⁵⁵ Klüver, "The Pavilion," in Klüver, Martin, Rose ed. (1972, x)

²⁵⁶ Barbara Rose, "Art as Experience, Environment, Process," in Klüver, Martin, Rose ed. (1972, 99)

individual freedom without considering its dependence upon social organization and spatial configuration, which equally contribute to self-definition. Visitors of the Pepsi Pavilion were constantly aware that others could easily observe their reflection and behavior inside the Mirror Dome. E.A.T. members hoped that the reflective environment would stimulate participants to adopt performative roles. They were quite dismayed to notice that instead of actively manipulating their reflections, many viewers took more interest in inspecting the floor area and the control console operated by artists. E.A.T. members wanted to avoid scheduling too many formal dance performances in the Mirror Dome since they thought that this type of events could inhibit visitors' performative gestures. They found out that some participants started to observe their movements in the reflective hemisphere only after observing the playful behavior of other people. On the opening night, engineer Larry Owens was surprised to see one of the Japanese project engineers imitating the gestures of the hostesses by waving three silk scarves and improvising a new choreography. As sociologist Nicole Sault pointed out, our body image was both an individual and a social construct: "despite the fact that we have material objects to show us reflections of ourselves, we are also social mirrors to each other, and we rely on the reactions of others to learn how we look and who we are."²⁵⁷ In the space of the Mirror Dome, acts of social mirroring proved to stimulate performativity as visitors imitated the behavior of others.

As interested as Coe in the potential of technology-based projects to enhance psychic abilities, E.A.T. members tended to associate the reflective environment with the vast space of the human mind. They used mirrors to frame spaces of self-projection that catalyzed introspective reflection, stimulating one to transgress his/her bodily boundaries and enter a parallel universe through the power of imagination. They called the inverted holographic images

²⁵⁷ Nicole Sault, "Introduction. The Human Mirror" in Nicole Sault ed., *Many Mirrors. Body Image and Social Relations* (New Brunswick, NJ: Rutgers University Press, 1994), p. 1.

that appeared on the hemispherical ceiling “real images.”²⁵⁸ For them, the actual visual signifiers were the ones viewers saw in their mind’s eye, not the ones that they could immediately perceive in front of them. The Mirror Room was a site of light reflections, as well as sound reflections. David Tudor set up eight acoustic channels that transmitted sounds of varying frequency through speakers located in different parts of the dome. Artists took a vivid interest in the propagation of acoustic stimuli as they felt that they could more directly replicate the mediated propagation of ideas whereas mirror images were more strongly dependent on the physical dimension. In *Expanded Cinema*, Gene Youngblood argued that in the 1960s and 1970s artists manipulated new media in order to simulate the actual workings of the mind.²⁵⁹ This tendency was symptomatic of the desire to prove the superiority of human consciousness over technology. In describing the Pepsi Pavilion, Youngblood observed: “Although it developed from the synergetic technologies of computer science and poly-vinyl-chloride (PVC) plastics, it is triumphantly non-technical as an experience.”²⁶⁰ In Youngblood’s description, the presence of the machine was completely concealed as visitors became immersed in the open-ended synesthetic environment. Barbara Rose drew similar analogies with an all-encompassing mind that enabled participants to overcome technology-related anxieties: “none of the repeated cycles, and boring predictable stop-and-go hardware of machine art was to be found in the Pavilion. The entire Pavilion was in a constant state of flux, its fluid and protean character an analogue of contemporary consciousness.”²⁶¹ The Mirror Dome clearly solicited the body as much as the mind since participants moved from one floor area to another to study their reflections from different angles.

²⁵⁸ Both Barbara Rose and Elsa Gamire use this term to refer to the inverted holographic images in their respective essays in the catalogue. Rose and Gamire in Klüver, Martin, Rose ed. (1972, 60-104; 173-206).

²⁵⁹ See Gene Youngblood, *Expanded Cinema*. (New York: Dutton & Co, 1970)

²⁶⁰ Ibid. (1970, 416)

²⁶¹ Rose in Klüver, Martin, Rose ed. (1972, 101)

Yet, these comparisons disclosed a tendency towards suppressing the presence of hardware as if this would detract viewers from discovering their individual psychic abilities.

E.A.T. members critically reflected upon the society of spectacle. The synesthetic environment of the Pepsi Pavilion undermined ocularcentrism and called for convivial participation. The Mirror Dome emphasized the individual dimension of the sense experience and the expansion of consciousness, but it also unveiled the fact that performative behavior was socially conditioned and perceptual acts were embodied even when they were triggered by reflective interfaces that mimicked the way images were formed in the virtual space of the human mind.

All three categories of art and technology platforms discussed in this section encompass projects that encourage viewers to externalize their experience and observe the way their participatory behavior resembles or differs from that of others. Collaborations between artists and engineers and spectatorial responses were frequently considered more important outcomes of exhibition programs than the actual works on display. Reflective surfaces and sensor-based environments represented dynamic systems of representation and information that triggered dynamic individual and group behavior. During the 1960s, the parallelism between spectators and cybernetic or electronic networks elicited both enthusiastic responses and skeptical attitudes. The contested terrain of interactions between humans and technology determined many curators, artists, and art critics from this period to long for psychic immersion in reflective environments or to hope that viewers could find creative or intuitive ways of intervening in the operation of technological systems.

2.4 VIDEO MIRRORS: TURNING THE CAMERA EYE ON THE ART VIEWERS

By the end of the 1960s, it had become increasingly clear that the condition of the art object was changing and art criticism needed to adapt to these transformations. Even though there was a pronounced awareness of the shift in visual and physical relations between the artwork and the viewer, there were few references in criticism to the social dimension of aesthetic experience, which increasingly implied an awareness of shared spectatorship. Like mirror-based Minimalist works, performances incorporating the spectators' reflections, and responsive art and technology works, closed-circuit video installations of the 1960s exposed the fact that the viewer is part of a public art environment, which he/she shares with others.

Art critical and scholarly discussions of video art have highlighted the dialectical relations established between the artist and the camera eye, or between the video performance artist and the viewer, but have rarely focused upon the mirroring processes between multiple viewers challenged by closed-circuit TV systems. In this section, I intend to outline some of the reasons for this lack of critical attention. This omission in the discourse is important because these types of installations represent precursors of contemporary digital environments, especially those, which encourage visitors to relate to each other via variable visual or auditory interfaces.

Throughout the 1960s, American social critics voiced their concerns about both the increasing power of organizations that suppressed individual creativity and the gradual loss of a sense of belongingness to well-knit communities in rapidly modernizing societies.²⁶² Some argued that official and non-official mechanisms of surveillance had destroyed the right to

²⁶² During this decade, David Riesman and William B. Whyte's views on the suppression of individuality in corporations and the estrangement of people from one another under the pressure of institutions became widely known; their books became bestsellers. See David Riesman, Reuel Denney, Nathan Glazer, *The Lonely Crowd* (New Haven: Yale University, 1950) and William B. Whyte's, *The Organization Man* (New York: Simon and Schuster, NY, 1956). Both books were re-published in the 1960s.

privacy, obliging individuals to seek refuge in the private realms of consciousness.²⁶³ In the opening chapter of *Naked Society*, a book describing how electronic technology had facilitated governmental and commercial control over American public life, Vance Packard expressed his distress as a result of the fact that surveillance was “inevitably exerting a significant impact upon the behavior patterns and value systems of the millions of citizens involved.”²⁶⁴ These anxieties about privacy, individuality and collectivity were also transparent at the level of critical responses to artworks. As I will show in this section, critics praised artists’ abilities to enhance self-awareness and commended their capacity to unveil the political realities or technological transformations to which all members of society were commonly exposed. It was widely believed that personal responsibility needed to be strengthened to avoid media manipulation or submissiveness to technology. Yet, it was also suggested that one must be alert to the shared conditions of humanity and the complex interdependence between individuals and their surroundings.

The 1965 commercialization of the Portapak, the portable video camera designed by Sony was a key point in the construction of subjectivity and collective identity. Although video technology predated this moment, the high price and large size of video equipment prevented artists from experimenting with it. Its democratic potential became more conspicuous as its availability increased and started to be used for the documentation of socio-political events and community activities. Shirley A. Whyte dwelt on the participatory character of video technology as a tool for self-empowerment and collective engagement that helped people “to see themselves in relation to the community and become conscientized [sic] about personal and community

²⁶³ See Vance Packard, *The Naked Society* (New York: David McKay, Inc., 1964) and Richard Sennett, *The Fall of Public Man* (New York: Alfred A. Knopf, 1977).

²⁶⁴ Packard (1964, 11)

needs.”²⁶⁵ As a visual instrument, which could immediately transmit information, but could also invite sustained reflection, video was perceived as a medium that could serve both public and personal interests.

The state of video art started to crystallize in the mid-1970s when numerous artists and critics such as Gregory Battcock, Douglas Davis, and David Ross sought to explore its commonalities with other mediums or to single out its more specific qualities by comparing it with art and technology projects, film or television. Today, Rosalind Krauss’s 1976 essay “Video: The Aesthetics of Narcissism” seems the most prominent attempt at establishing the specificity of the medium. She argued that artists primarily used video as a mirror-like device through which “consciousness of temporality and of separation between subject and object are simultaneously submerged.”²⁶⁶ Yet, in many of the examples of self-reflexive video works she provided, the artists did not simply portray themselves engaged in solipsistic acts, but constituted themselves as subjects in relation to the imagined gaze of others looking through the camera lens.²⁶⁷ Krauss conceded that there were some exceptions to the narcissistic tendency she singled out, but failed to take into account works based on video delay or closed circuit television that emphasized the mediated character of video representation and the way exhibition visitors viewed themselves from a temporal and spatial distance.

Krauss’s views on the specificity of video were repeatedly challenged at the time and have been since. In an immediate response to her article, Jeff Perrone argued that video works

²⁶⁵ Shirley A. Whyte, “Participatory Video: A Process that Transforms the Self and the Other.” Shirley A. Whyte ed., *Participatory Video. Images that Transform and Empower*, (London: Sage Publications, 2003)

²⁶⁶ Rosalind Krauss, “Video: The Aesthetics of Narcissism,” *October*, Volume I, Spring 1976, p. 59.

²⁶⁷ Vito Acconci’s *Centers* (1971), the most salient example of a video work she provided to support her theory about the inherent narcissism of the medium, came short of proving her argument. As the artist points at his self-image in the monitor for a period of more than 20 minutes, he is also directing his attention to a virtual viewer, hence seeking to define himself in relation to others. The plural noun in the title of this work also implies a process of displacement and de-centering and not only an immersive state of self-contemplation.

may reveal artists' personal narcissistic inclinations, but are not narcissistic constructions due to the inherent nature of the medium:

This has been remarked upon frequently: how narcissism and self-exposure seem to be natural to video. (Characteristically, Rosalind Krauss sees it as strictly formal: "How narcissism is built into video's *structure*." My italics.) [*sic*]. It is much closer to say that video brings out the exhibitionist in the artist.²⁶⁸

According to Perrone, narcissism can be part of the content of the work established by the artist, but it cannot be the message of the video medium. Curtis L. Carter also remarked upon the limitations of Krauss's theory, noting that the subject matter of video was not restricted to self-investigation because numerous works focused on perceptual relations to the environment or to abstract patterns produced with synthesizers.²⁶⁹ More recent critiques of Krauss's seminal article have addressed the participatory implications of the video works singled out by the art historian as instantiations of self-involvement. In discussing the feeling of presentness evoked by performances and videos, Anne Wagner emphasized that artists who observed how their image and gestures were reflected back by video cameras sought a dialogue not merely with themselves or with the technological apparatus, but also with the viewers who empathetically responded to his/her presence on the screen.²⁷⁰ Similarly, Christine Ross contended that while Krauss was right to reflect on the psychological processes elicited by the video camera's reflection of the artist's image, she did not take into account the "relational dimension"²⁷¹ of such works that call for a dialogue between the artist and the audience.

The interest in the participatory qualities of these early video works has been catalyzed by Nicolas Bourriaud's influential theory of relational aesthetics and by the changing scene of contemporary art practices, especially those that directly deploy the interactive character of

²⁶⁸ Jeff Perrone, "The Ins and Outs of Video," *Artforum*, Vol. 14, no. 10, Summer 1976, p. 54.

²⁶⁹ Curtis L. Carter, "Aesthetics, Video Art and Television," *Leonardo*, Volume 12, no. 4, Autumn 1979, p. 292.

²⁷⁰ Anne Wagner, "Performance, Video, and the Rhetoric of Presence," *October*, Vol. 91, Winter 2000, pp. 59-80.

²⁷¹ Christine Ross, "The Temporalities of Video: Extendedness Revisited," *Art Journal*, Vol. 65, no. 3, Fall 2006, p. 86.

digital technology or echo its modes of perceptual engagement in other mediums. It may be, however, that art historians are not simply reading too much into earlier works, but rather are unveiling the interest in audience responses that are latent in the works of the 1960s and 1970s. I will argue that, at the time, there was more than a binary relation between the perceptual situation configured by the artist and a presumably ideal spectator of closed-circuit video works and interactive real-time television programs. The pressing need to negotiate between the value of individuality and the interpersonal character of identity construction contributed to artists' fascination with creating video interfaces against the background of changing technological means of presentation and representation. Artists did not confine themselves to initiating a dialogue between the performing artist and the viewer or the work and the viewer. Many of them quite deliberately staged more or less accidental encounters between multiple viewers. By the 1960s, sociological studies on collective behavior and psychological studies on group dynamics had proved that the homogeneity of groups was illusory and the individual reactions of group members were not easily predictable. Numerous real-time video works showcased the fluidity of perceptual and social relations and presented the ways in which people cast themselves into the role of actors and spectators in public situations.

It is true that not all closed-circuit video works from the 1960s invited viewers to take part in collective experiences. Bruce Nauman's video corridors, for example, choreographed a private encounter with one's self-image.²⁷² One by one gallery visitors took turns at stepping into

²⁷² Nauman first employed a corridor as a prop for his videotaped performance *Walk with Contrapposto* (1968) in which he repeatedly walked between the two ends of a narrow passageway, deliberately exaggerating this classical posture used in traditional mediums to represent the human body in a static pose. In 1969, he displayed a similar prop and invited the viewer to move through it by calling it *Performance Corridor*. In later variations on these works, Nauman introduced video monitors into the corridors to confront individual viewers with images of themselves, which they would not be normally able to observe as they were shot from unexpected angles (e.g. *Live-Taped Video Corridor*, 1969). In other works, Nauman placed mirrors into the passageway instead of monitors,

narrow passages that restricted their movements and did not allow anyone else to share their unique perceptual experience. The isolated viewer became aware of his/her elusive bodily presence as video images appeared or disappeared from the monitors placed at the end of the corridor. He/she was faced with the impossibility of controlling his/her self-reflection in the electronic mirror. Caught between the perception of his/her body from within and the perception of video glimpses of himself/herself from remote angles, the viewer interacted with the monitor image while trying to maximize or reduce the distance from the camera eye. Hence, the viewer was challenged to participate in restoring the unity and balance of his/her physical being. In talking about the video corridors, Nauman openly confessed his skepticism about unencumbered playful situations: "I mistrust audience participation. That's why I make these works as limiting as possible."²⁷³ Although he provided no instructions for the behavior of the viewer, he placed constraints on his/her movements to limit perceptual and kinetic alternatives and to re-enact a perplexing visual experience he himself had experimented with before turning the camera eye on the gallery visitor. Thus, he framed an indirect mirroring process both between the viewer and himself and between the viewer and the video images. The spectatorial relation Nauman envisioned was purposefully private and was limited to binary projections between self and Other. It was defined by similar, yet non-coincidental positions between the camera and the monitor, the artist and the viewer, the physical and the visual.

There are several reasons why the dialectical character of art experience was vigorously defended by some artists and critics during the 1960s. First and foremost among them is the fact that the longstanding object-viewer relations were still deeply ingrained and alternatives to them

facing the viewers with fragmented images of their bodies (e.g. V-shaped corridors with mirrors exhibited in the San Jose exhibition of 1970).

²⁷³ Nauman in Willoughby Sharp "Nauman Interview" (1970) in Janet Kraynak ed., *Please Pay Attention Please: Bruce Nauman's Words. Writings and Interviews.* (Cambridge, Mass.: MIT Press, 2003), p. 113.

could only gradually develop. Art critics who noted the emergence of process-oriented art practices were more inclined to dwell on changes in the nature of the art object than discuss how viewers' encounter with art was being transformed. They were thus trying to maintain art in a sphere of its own, impervious to the corruptive influence of spectacle. In "Expanded Cinema," Gene Youngblood distinguished between art and entertainment based on the uniqueness and individuality of art experience: "Entertainment gives us what we want; art gives us what we don't know we want. To confront a work of art is to confront oneself – but aspects of oneself previously unrecognized."²⁷⁴ Art experience was defined as a dialectical process through which one became aware of his/her inherent otherness.

A second reason for the strong defense of the one-to-one relation between the viewer and the art process or object was the belief that personal involvement and agency were attainable only via intimate modes of communication. Early theorists of video art singled out intimacy as one of its most specific features. Douglas Davis argued that in its inceptive state video art implied "a mind-to-public rather than a mind-to-mind communication, a bored and formal audience, rather than an intense and informal one"²⁷⁵ due to its suspension of linear time. He also stood by the intimate qualities of video art at the level of the empathetic relations between the creator and the viewer. Davis praised Nauman for having managed to bring extremely private physical and mental states into public view by creating videotapes of his studio performances. He contended that "the most advanced thinking in contemporary art is public in potential"²⁷⁶ since it could indirectly engender social transformations. Nonetheless, he favored an intimate encounter with video art to stimulate personal engagement and avoid the complete blurring of

²⁷⁴ Youngblood (1970, 60)

²⁷⁵ Douglas Davis, "Video Obscura," *Artforum*, Vol. 10, no. 8, April 1972, p. 71.

²⁷⁶ *Ibid.*

lines between art and life. Contrary to Nauman's idealization of private spectatorial modes, Kaprow reckoned that neither traditional mediums nor technological ones could insure a perfectly autonomous aesthetic experience:

it is assumed that meditation and privacy are possible in a gallery situation; but it should be obvious nowadays that everyone is on display as a work of art the minute they enter a gallery. One cannot be alone. A gallery is not a retreat. Everything becomes art, not self-awareness.²⁷⁷

While Kaprow did not maintain that the public dimension of artworks was a new development in art practices, he implied that this aspect had become more conspicuous than ever at the time when video was emerging as a new art medium.

A further rationale for focusing on individual participation and turning a blind eye to collective modes of spectatorship in video practices was the desire to repudiate deterministic modes of staging perceptual experience in an art context. There was a fear that by seeking to elicit certain types of behavior instead of allowing the individual to become immersed in a private contemplative act, artists were conducting pseudo-scientific experiments on viewers and were transforming the galleries into laboratory-like settings. Robert Pincus-Witten's remarks about Bruce Nauman's environments are noteworthy in this sense:

Nauman now offers up a set of simplistic tests rooted in behavioral phenomenology; he has become interested in the exposure and experience of specific and isolated sensory phenomena rather than an integrative theory of function. Nauman has exchanged elitism for populism.²⁷⁸

In Pincus-Witten's opinion, artworks that generated public encounters in astonishing visual environments were too close to behavioral experiments and video works that entailed self-

²⁷⁷ Allan Kaprow, "Video Art: Old Wine, New Bottle." *Artforum*, Vol. 12, no. 10, 1974, p. 48.

²⁷⁸ Robert Pincus-Witten, "Bruce Nauman: Another Kind of Reasoning," *Artforum*, Volume 10, no. 6, February 1972, p. 31.

observation in narrowly prescribed settings lacked meaning because they acted only as a sculptural frame for the video camera.²⁷⁹

Last but not least, it felt desirable to maintain the dualistic and private character of video art spectatorship because it facilitated the humanization of technology. More attention was paid to the dialectical relation established between the electronic eye and the artist or the viewer than to the relation between different individuals who were put in contact with each other via technology. As it will be shown in this section, closed-circuit TV artworks were mostly analyzed in terms of how humans and machines can influence each other and not as interfaces between gallery visitors. In their encounters with video technology, individuals were meant to re-discover innate abilities that they had previously taken for granted. Artist Les Levine stated that what “we have achieved with technology in the US is the possibility that the human being is being given more of himself back to deal with on his own conscious level.”²⁸⁰ He thought that the essence of humanity consisted in self-awareness. Video technology could enhance consciousness, but it could not bring it into existence or substitute it.

Closed-circuit installations put into perspective the limitations of the binary model of art-viewer relations. Artists used multiple monitors to vary the transmission of visual images and heighten viewers’ awareness of changes in perceptual processes depending on shifting spatial and temporal coordinates. By confronting the spectator with more than one channel of information, they undermined his/her intimate identification with live images. Such systems were closed in terms of the flow of electricity, but were open to external influences, promptly encompassing all transformations in the immediate environment. They paralleled the seriality of

²⁷⁹ Pincus-Witten is referring to Bruce Nauman’s environments from the period 1971-1972 in which viewers’ bodies were submerged into monochromatic light.

²⁸⁰ Thelma R. Newman, “The Artist Speaks: Les Levine” *Art in America*, Vol. 57, no. 6, November-December, 1969, p. 87.

Minimalist sculptures and sometimes even their repetitiveness. Closed-circuit video systems also tied in with earlier modernist styles. Johannes Birringer remarked that these installations were “indebted to formal modernist concerns about the interplay of space and time, perception and illusion.”²⁸¹ Indeed, Les Levine’s closed-circuit video installations *Iris* (1968) and *Contact* (1969) were reminiscent of Cubist collages due to the juxtaposition of monitors showing the same image shot from different distances. Frank Gillette and Ira Schneider’s *Wipe Cycle* (1969) also recalled Neoplasticism due to the asynchronous character of delayed images. As the unity of the visual field was dismantled through the fragmentation of temporal and spatial frameworks in real time, the parallelism between the viewer and the monitor image was broken. The simultaneous presentation of incongruous views of the gallery environment highlighted the plurality of experience.

The viewer of closed-circuit installations had no control over the pattern or temporal rhythm of variations in broadcast images, but he/she could induce changes in live video representations through bodily movement. Neither autonomous nor completely dependent upon the video circuit, he/she became a transitory component in a visual system that kaleidoscopically mirrored the environment. While observing his/her personal influence upon the visual system, the beholder also became conscious of another variable: the presence of other visitors similarly exposed to the electronic eye. Hence, he/she was set in contact with “a reference group” – a term used by sociologists to define “any group to which an individual relates his attitudes.”²⁸² The viewer may not have felt that he actually belonged to this imaginary or real collective entity, but

²⁸¹ Johannes Birringer, “Video Art/Performance: A Border Theory,” *Performing Arts Journal*, Vol. 13, no. 3, September 1991, p. 70.

²⁸² Dorwin Cartwright, Alvin Zander eds., “Groups and Group Membership: Introduction,” *Group Dynamics. Research and Theory* (New York, Evanston and London: Harper & Row Publishers, 1968), p. 53.

was likely to aspire to be part of it since he/she could participate in modifying the video images in tandem with other spectators.

In the second half of the 1960s, the use of closed-circuit television (CCTV) became widespread in US. It was employed as an instrument for crime prevention and work supervision. Cameras were installed in banks, department stores, and restaurants to prevent theft. It was also thought that these devices could greatly increase educational efficiency since they provided a means for supervising the training of larger groups of students during practicum sessions. This technology also permeated the entertainment industry. The Candid Camera TV show enjoyed great success at this time. It tamed the threatening aspects of surveillance by presenting CCTV as a mirror on ridiculously mundane situations, which could instantaneously bring anyone into the limelight. Nonetheless, it also promoted self-discipline. As the show grew in popularity, shop owners installed “Smile, you’re on candid camera” signs under supervision monitors to make their clients better aware of the fact that their behavior was being carefully watched.²⁸³

Early American critical responses to artworks that incorporated CCTV technology rarely focused on their potential role in signaling out the damaging effects of surveillance. Instead, they emphasized the specificity of the video medium and the unique character of perceptual experience induced by such works. Taxonomies of video art proliferated in the 1970s.²⁸⁴ Closed-circuit video works figured prominently in artists and critics’ writings on video as a new

²⁸³ Since the cost of CCTV was still high in the 1960s, some of the cameras employed by shop owners were mere dummies. In this case, the sign served as a stronger warning than the apparatus. See Charles A. Sennewald and John H. Christman, *Retail Crime, Security, and Loss Prevention Crime. An Encyclopedic Reference*. (Oxford: Butterworth-Heinemann, 2008), p. 35.

²⁸⁴ See the video art categories proposed by Allan Kaprow in “Video Art: Old Wine, New Bottle” (1974), the taxonomy proposed by Ira Schneider and Beryl Korot in their introduction to *Video Art: An Anthology* (New York and London: Harcourt Brace Jovanovich, 1976), p. 3 and Wulf Herzogenrath’s classification of video areas in “Video Art in West Germany,” an article published in the same anthology, pp. 226-233. Gregory Battcock’s anthology *New Artists Video. A Critical Anthology* (New York: E.P. Dutton, 1978) also included several articles that presented video art taxonomies (e.g. David Ross, “A Provisional Overview of Artists’ Television in the US,” pp. 138-165).

medium, which underscored its correlations with sculpture and performance. They were most commonly listed under the category of video environments since they encompassed the visual field of the gallery in real-time. Unlike videotaped performances, they brought to the surface the most salient features of video: immediacy and instantaneity. Gene Youngblood included closed-circuit video works in the category of “teledynamic environments”²⁸⁵ due to the fluidity of the information flow channeled through the network of monitors. Fascinated by the powerful impact of these immaterial systems, he contended that “the physical environment is determined by the characteristics of the closed circuit video system.”²⁸⁶ In Youngblood’s view, artists who were designing such works called viewers’ attention to the nature of the communicative medium rather than to the information transmitted through it.

While the way CCTV broadcast information deeply affected the way its viewers’ interacted with their surroundings, this experience was also heavily dependent upon the material characteristics of the space in which the system was embedded, as well as upon the degree of viewers’ involvement in the communicative process. Allan Kaprow took a comprehensive approach to early closed-circuit video systems, giving attention both to the physical and the immaterial components of these networks. He was preoccupied not only by the way they expanded viewers’ self-consciousness, but also by the way they influenced viewers’ actions and connected them to others. In his video taxonomy, Kaprow placed closed-circuit video works in the category of “environmental open-circuit video,” which framed situations in which “people, machines, nature and environments interact, communicate, and perhaps modify each other’s behavior in real time.”²⁸⁷ He was concerned about the fact that the spectacular character of

²⁸⁵ Youngblood (1970, 337)

²⁸⁶ Ibid., pp. 337-338.

²⁸⁷ Kaprow (1974, 46)

innovative technological devices might impede one's engagement with the wider context of perceptual experience and interaction.

Works based on closed-circuit video also figured in art and technology taxonomies. Richard Kostelanetz included them in his classification of "artistic machines."²⁸⁸ He believed that they belonged to this group of art practices because both their form and content were heavily dependent upon the technological nature of the medium. In this case, video was not just an instrument that influenced the aesthetic aspect of these works, but had a direct effect upon their content by conditioning the information they transmitted. Although Kostelanetz listed closed-circuit video works under the category of "light art," these works also shared important features with another category of artistic machines. In the same fashion as "responsive machines," which reacted to changes in light and audio stimuli, real-time video installations were open to external influences since they instantaneously responded to the variable parameters of the display context. Acknowledging the hybridity of closed-circuit video works, David Ross maintained that they "may be thought of as performing sculptures, or epistemological puzzles that choreograph the interaction of the viewer and the work placing the viewer unwittingly in the performer's role."²⁸⁹ Unlike Kostelanetz, he aimed to draw sharper distinctions between video art and art and technology projects. He considered the latter to be inferior in quality and argued that most artists who created this genre of works produced no significant critique of technology. Yet, the performative character of closed-circuit video works, so astutely noted by Ross, actually made them resemble art and technology projects which challenged spectators to become actively involved in discovering various modes of interacting with responsive environments.

²⁸⁸ See Richard Kostelanetz, "Artistic Machines," *Chicago Review*, Vol. 23, no. 1, Summer 1971, pp. 116-133.

²⁸⁹ David Ross, "The Personal Attitude," Schneider and Korot eds., (1976, 247)

Both closed-circuit installations and art and technology projects are quite capable of generating collective modes of spectatorship. When a number of visitors are simultaneously present within the gallery, closed-circuit video works invite them to become aware of the interpersonal dimension of their experience by observing other people's behavior and, possibly, adapting their own attitude to that of others. In the case of art and technology projects, the stakes of social encounters may be higher. As discussed in the previous section, within responsive environments, viewers become engaged in collective cognitive processes as they watch others in order to understand how they can generate changes through their movements in relation to sensor-based works. The plural connections inspired by art and technology projects and closed-circuit video works, as well as their variability, made them correspond to Jack Burnham's concept of "system aesthetics": "The system, like the art object, is a physical presence, yet one that does not maintain the viewer-object dichotomy, but tends to integrate the two into a set of shifting interacting events."²⁹⁰ This alerts us to the fact that the binary relation between a contemplative viewer and a fixed object was not the only one contested in the 1960s. The variability of processes engendered by artworks raised viewers' awareness of the variability of spectatorial conditions and the elusiveness of networks formed between themselves and others. Strangely enough, Burnham did not discuss closed-circuit video works in his writings on "system aesthetics." Even though he was closely acquainted with the art practice of Les Levine, one of the foremost users of this technology during the 1960s, he did not refer to his multi-channel video systems, restricting the discussion of Levine's projects to the challenges the artist was bringing to the art market through the creation of disposable objects.²⁹¹ Burnham's reticence

²⁹⁰ Burnham (1968, 372)

²⁹¹ In 1962, Les Levine created a series of disposable artworks, which were plastic modules sold at \$1.25 per piece that one could purchase and arrange in any configuration he/she desired. Burnham found the disposables to reflect

toward Levine's video circuits was inspired by the formal characteristics of these installations, as they are composed of multiple monitors showing real-time images in bright colors.

Burnham was not the only theorist who noted that more and more art practices were shaped around dynamic systems, which posed serious challenges to art institutions. Argentine semiologist and sociologist Eliseo Verón remarked that the material of many experimental works of the 1960s was represented by “social systems” or “systems of communication.”²⁹² At this time, Argentine artists were indirectly addressing the controlling effect of the press, which had become increasingly repressive after the military coup of 1966. Following the convergence between art and technology explored by the Madi group in the 1940s, they staged events in which participants interacted with media-saturated environments or set up communication networks that infiltrated randomly chosen informal or domestic settings. In the aftermath of the Perónist period, state funding for the arts was quite low and did not offer artists enough leeway for experimentation with expensive technological equipment. Luckily, avant-garde art practices found the support of the Di Tella Arts Centres in Buenos Aires established in 1963. The awards granted by this institution to young artists whose works had blatant sexual content or incited the audience to playfully interact with environments caused a stir in Argentina. Describing the shocking impact of these practices, Andrea Giunta argued that the message delivered by Di Tella was that “the best, at that moment, was that which invaded the spectator's privacy, values, morality, and even compromised his or her body.”²⁹³ Marta Minujín, one of the first winners of the Di Tella award, repeatedly used closed-circuit television in her projects in the second-half of

Levine's interest in replicating the mechanisms of the art market by showing how the value of the art object increases the more people want to own it. See Jack Burnham, “Les Levine, Business as Usual,” *Artforum*, Vol. 8, no. 8, April 1970, pp. 40-43.

²⁹² Eliseo Verón, “La obra” (1967), *Ramona*, no. 9-10, 2000-2001, p. 46.

²⁹³ Andrea Giunta, *Avant-Garde, Internationalism, and Politics. Argentine Art in the Sixties* (Durham & London: Duke University Press, 2007), p. 159.

the 1960s. In 1965, she joined a group of artists working under the coordination of Rubén Santanatonín to design *La Menesunda*, a complex installation composed of multiple rooms in which visitors could experience different bodily sensations. Some spaces were extremely cold or warm; others were permeated with intense odors or were deprived of proper ventilation. Many of them had an astounding effect because participants were constantly exposed to an explosion of sensorial stimuli, stumbling upon rooms suffused with blasting sounds and glaring lights. *La Menesunda* was most likely the first installation to include a closed-circuit system. Visitors could observe their live image on a monitor placed between two TV sets presenting ordinary programs. At the very end of their trajectory across highly private or overwhelmingly public spaces, they had a chance to relive their experience by watching a recording of their journey. Overall, *La Menesunda* had a highly confrontational character. Participants were engaged in a collective ritual, which provoked many unexpected encounters. The installation simulated what it would feel like to be entrapped in a media environment with no public or private boundaries.

Minujín went on to integrate closed-circuit systems in installations and events that entailed multiple stages of development and brought together people from different professional or social backgrounds. In 1966, she organized *Simultaneity in Simultaneity*, a happening in several acts, which was part of a much larger project collaboratively produced with Allan Kaprow and Wolf Vostell. Continents apart, each artist came up with his/her own idea for a happening, which was then reproduced by the others in an entirely different cultural context. Minujín asked 60 well-known television and press representatives to come to the Di Tella Institute where they were filmed, photographed and interviewed over a period of several hours. The artist studied their behavior throughout this long recording session and observed their individual and collective reactions: “Some of the participants who knew each other moved

around in tight groups; others absorbed in the television were hoping that something would happen.”²⁹⁴ After eleven days, Minujín invited the same people to come once again to the same location. They found themselves immersed in an overwhelming media environment composed of a collage of film projections and television broadcasts from the previous event. Hence, participants felt torn between different moments in time and different modes of representations. Simultaneously, one thousand spectators, who had been randomly selected from a pool of Buenos Aires residents living on their own, switched on their TV sets as Minujín had instructed them. They watched the artist explain what actions they needed to take to correlate the images they saw on TV with radio broadcasts. In the meantime, they were subjected to a virtual media assault since other people tried to contact them by phone or send them telegrams. The overflow of information was invasive and disruptive; it suspended communication rather than facilitate it.

For *Circuit*, an installation created for the Montreal Expo of 1967 Minujín employed a somewhat similar media scenario. Volunteers who wanted to participate in this project had to respond to a newspaper questionnaire. Based on potential affinities, a computer selected three groups of people who had given similar responses. Minujín directed each group to a different location inside or outside a theatre where they could watch images of themselves or of other groups via closed-circuit television. Members of one group were also asked to respond to a series of questions while facing their own image on a TV monitor and their reflection in a mirror. Hence, they self-directed their behavior, having in mind a public audience because they became vividly aware that others could observe their reactions and hear their answers.

These multi-layered mirroring processes triggered by close-circuit television acquired political connotations in the context of the military regime in Argentina, suggesting a state of

²⁹⁴ Marta Minujín, “Simultaneity in Simultaneity,” in Inés Katzenstein ed., *Listen, Here, Now! Argentine Art of the 1960s: Writings on the Avant-Garde* (New York: MoMA, 2004), p. 240.

surveillance and imprisonment. One year later, a group of self-proclaimed avant-garde artists organized an Experimental Art Series, which confronted gallery visitors with catch-22 situations that brought the deteriorating social conditions into the public eye. Graciela Carnevale invited visitors to an exhibition opening only to lock them in the gallery without any possibility of escape. She described the happening as an investigation into the effects of social repression. Arguing that the violence of the military regime would breed even more violence over time, Carnevale unveiled the dangers that came with the refusal to take an active stance: “I think an important element in the conception of the work was the consideration of the natural impulses that get repressed by a social system designed to create passive beings.”²⁹⁵ The visitors remained imprisoned for an hour as passers-by watched them through a large gallery window. Their live group portrait behind the glass encasement served as a mirror image of the state of entrapment of Argentine society. Eventually, someone from the outside released them by breaking the window.

Narberto Julio Pùzzalo, another artist from the Rosario avant-garde group, enacted a much less violent situation, which similarly encouraged participants to symbolically take a glance at what lies beyond the looking glass in order to become conscious of their condition. He rigorously arranged a series of chairs so that they faced a large gallery window. Thus, he invited visitors to turn into spectators of the world they were actually part of and turn from a passive state of mind to a self-involved attitude. Long before Bourriaud’s theory of relational aesthetics of the 1990s, Argentine artists created “social interstices,”²⁹⁶ that is public events, which stimulated encounters between people and called for more awareness of social and political mechanisms that influence interpersonal relations. They used closed-circuit television and media

²⁹⁵ Gabriela Carnevale, “Project for the Experimental Art Series” in Katzenstein ed. (2004, 299)

²⁹⁶ Bourriaud (2002, 16)

networks to reveal the manipulation of representation and the perils of individual seclusion and self-repression under oppressive circumstances.

American artists employed similar tools to reveal how people can become submissive captives of the society of spectacle and lose a sense of individual responsibility. Les Levine is a prime exponent of the generation of artists that relied on systems of information to alert spectators to the state of social numbness and seclusion brought about by American commercial television, which was becoming more and more subservient to consumerist interests. He gained a reputation in the art world of the late 1960s for his numerous exhibitions and the unconventional way in which he produced his works. Known for placing orders for plastic objects or environments by contacting factories via phone, Levine did not hesitate to express his radical views about the mechanisms of the art market. In order to critically address the distribution of art as a profit-making business, he turned himself into an astute entrepreneur, publishing his own press releases and actively promoting his art practice. While his managerial strategies made one think that he was compliant with the existing system of art, the works he created seemed to transmit a different message. Many of them, such as his disposable objects, were collectible, yet part of an impermanent large series, which could not be owned in its entirety by one person. Others were site-specific events that encouraged viewers to become engaged in unique bodily experiences by exploring their perceptual and emotional responses to reflective environments or monochrome fields of color.

In 1966, Les Levine virtually redesigned the octagonal space of the Ontario Gallery of Art by converting it into a silver network of more or less solid architectural components. He spread Mylar across the ceiling, walls, and floors of the gallery, breaking its spatial unity and revealing its unconventional shape. The visual and physical experience of the viewers was

complicated even more by the presence of eight large bags of silver vinyl, which multiplied and expanded the reflections. Entitled *Slipcover*, the environment adjusted to the architectural coordinates of the exhibition space, but also significantly changed its configuration by radically transforming its Cartesian geometry. The bags inflated and deflated, forcing visitors to change their trajectories in relation to the pulsating movements of their malleable membranes. The elusive qualities of the environment were further accentuated by the projection of video images from a closed-circuit television system, as well as of slides from prior exhibitions held in the same gallery. The relativity of the spatial and temporal parameters of *Slipcover* rendered viewers aware of the evanescence of matter. Its mirror-like effects also enabled them to sense the mutability of self-consciousness, which perpetually adapts to external circumstances just as the Mylar foil takes the shape of the objects around which it is wrapped. Viewers became immersed in an open-ended adaptive system in which their reflections intertwined with past and present images of their surroundings. In an interview given in advance of the exhibition opening, Levine remarked that *Slipcover* started as a project whose subject was the octagonal room, yet held the promise of turning the gallery visitors into its subject:

[...] the most interesting part is that people will be the work of art, because everything is going to come off those walls onto people. People will have parts of paintings on their faces, and you're going to have people who have a Picasso right across their shirt, because everything will reflect off the walls.²⁹⁷

Gallery visitors formed a symbiotic relationship with *Slipcover* since they simultaneously acted upon it and were shaped by it. Thanks to the deflection of light against its reflective surface, they became as much an interface for the real time images and the pictures of prior exhibits as the silver environment.

²⁹⁷ Les Levine in Brydon Smith, "An Interview with Les Levine," *Slipcover*. Exhibition catalogue/newspaper. (Toronto: Art Gallery of Ontario, 1966), no pagination.

Interested in how one develops an emotional attachment to a certain place, Levine channeled viewers' attention to the invisible dimensions of space and the complexity of bodily relations. *Star Machine* (1967) invited the viewer to pass through a transparent corridor with bulging walls and experience the way space virtually twists and bends around moving objects even if one cannot actually see this. The spectatorial relation framed by this work was at once intimate and public. Visitors must have felt sheltered by the plastic capsule, but they were concomitantly exposed to the gaze of others. The title of the work suggests that participants instantaneously transformed into stars as they stepped into the transparent environment. The aura of the art object was transferred to the art viewer. Levine believed that this transformation is a direct result of the way people use media to flatter the spectator and turn him/her into an avid consumer. He found that the uniqueness of the art object can be substituted by the uniqueness of the experience offered by artists:

As another function of media is to fill the space with a kind of ego support system, it is reasonable that most art in the twentieth century has to act to support the ego of consumers. It does this by empowering the audience with permission to participate in its nature. It allows the audience to feel the same as it.²⁹⁸

Within Levine's environments, spectators found themselves in a privileged position. The dematerialization of the artwork placed them at the center stage of the gallery, granting them a chance to embody more than a contemplative role.

Although Levine did not allude to the cynical implications of *Star Machine*, preferring instead to expand upon its kinetic functions,²⁹⁹ his views upon the convergence between media spectatorship and art spectatorship confirm the idea that this work implied an indirect commentary upon the egotistic inclination of participants. In 1967, he also created a more

²⁹⁸ Les Levine in Ted Greenwald, "Interview with Les Levine," *Media Projects and Public Advertisements* (Luzern: Mai 36 Galerie, 1988), p. 4.

²⁹⁹ Asked about the role of *Star Machine*, Levine contended that it was a work about the physical perception of movement through space. See Les Levine in Elayne H. Varian, "Interview with Les Levine," *Schemata 7*, (New York: Finch College Museum of Art, 1967), no pagination.

complex environment, which staged a similar perceptual experience. Displayed outdoors on the plaza of the Time Life Building in New York, *All Star Cast* allowed more people to simultaneously interact with its space and become part of the work. While Levine was critical of the impact of consumer-driven media upon society, he was also deeply conscious of the democratic potential of new technology, which challenged new participatory modes. For him, closed-circuit television offered an opportunity for self-knowledge.

Levine's video installations from the late 1960s placed the viewer in the position of an actor self-directing his movements in front of multiple cameras. They replicated the conditions of visual experience in front of a television set, yet turned the tables on its private character by making the beholder aware of the fact that he/she is part of a crowd of spectators exposed to similar perceptual conditions, yet reacting in different ways. *Iris* (1968) invited viewers to use its technological apparatus as a visual prosthesis for increasing and decreasing the distance from oneself and others. In a large vertical box, Levine encased three cameras along with six monitors arranged in pairs. As participants approached the box, they could simultaneously observe their live images from three different distances. To further dislocate one's reflection from a dialogical relationship with an established idea of selfhood, Levine covered the monitor screen with colored acrylic sheets so that even images shot from the same distance appeared somewhat different depending on the color tone of the screens which virtually increased or decreased their visual depth. *Iris* stood for a cybernetic model of bifocal vision. The asymmetrical relations between the vertically disposed pairs of screens stimulated the spectators to find a way of synthesizing incongruous views just as they would merge the images observed with the left eye with those observed with the right eye. But instead of negotiating between two alternatives, they were faced

with a larger number of visual variations, which challenged the bilateral symmetry of the human body.

Iris was not, however, conceived merely as an optical machine for the analysis of formal visual characteristics. It was an instrument for catalyzing self-awareness and enhancing self-involvement both in the way one perceives himself/herself and in the way he/she reacts to the presence of others. Levine carefully staged the presentation of *Iris*. He organized a press conference and circulated a press kit offering additional information about the work. While he did not care much about the interpretation of his practice, Levine wanted to underline the potential for personal agency inherent in his works. He described *Iris* as an interface for creative engagement and contended that it answered to the needs of society during the 1960s: “This particular type of participation, in which you are consistently confronted with your images and your reaction to your image, is particularly vital today. [...] Hopefully, the spectator becomes aware of and gains an insight into the power of his own image.”³⁰⁰ To Levine, closed-circuit television offered a means for observing one’s physiognomic and kinetic reactions to the immediate environment in order to discover how he/she is shaped by it and how he/she could develop ways of controlling its impact rather than simply adapt to it. It was hoped that by giving participants a chance to self-direct their representation, artists could restore their agency.

McLuhan believed that one had to accept the way his/her message was being shaped by media since he/she had no actual control over its use.³⁰¹ In contrast, Levine considered that viewers could maintain a certain degree of autonomy from the technological medium by gaining a sense of heightened self-awareness while watching television. Closed-circuit video systems

³⁰⁰ Les Levine in David Bourdon, “Plastic Man Meets Plastic Man,” *New York Magazine*, Vol. 2, no. 6, February 10, 1969, p. 46.

³⁰¹ McLuhan (1964, 11)

enabled him to set up environments in which viewers related to their surroundings in more than just an optical way. Self-reflective visual observations could give way to changes in behavior and attitude. In trying to call into question the compelling effect of technology upon the human psyche, Levine did not completely escape the fallacy of determinism. Critics accused him of using viewers as guinea pigs for proving that humanity can prevail over technology. David Bourdon claimed that Levine talked about his works as a scientist awaiting to see the effects of his experiments: “When he says he only wants people to be themselves, Levine sounds like a jolly humanist. But he speaks of his audience in clinical terms, comparing them to “organisms” that he seeks to “collage with the environment.”³⁰² Intent on preserving the clear-cut distinctions between humanity and technology, such critics judged his works in terms of behavioral determinism, emphasizing either the effect of media on viewers or viewers’ conditioned response to media. Levine was less inclined to draw a sharp boundary between human and technological factors. In “Urban Guerilla Learning,” an epistemological manifesto of the cybernetic age, the artist described electronic media as interfaces for learning about oneself at a more rapid pace: “We are what we think we are, based on how machines read out our own perceptions of ourselves.”³⁰³ He considered that along with quick access to information about one’s environment came increased responsibility for one’s decisions and actions, which were informed by enhanced processes of self-awareness.

Levine’s *Contact: A Cybernetic Sculpture* (1969) exposed the viewer to a more complex network of information channels than its precursor *Iris*. Similarly based on closed-circuit television, it included two multi-channel video interfaces that transmitted programmed images

³⁰² David Bourdon, “Disposable Art,” *Life*, Vol. 67, no. 8, August 22, 1969, p. 67.

³⁰³ Les Levine, “Urban Guerilla Learning,” *Design Quarterly. New Learning Spaces & Places*, no. 90/91, 1974, p. 30.

and real-time images shot from different distances. On both sides of a large stainless steel box, Levine placed nine monitors and four cameras with different focal lenses behind colored acrylic bubbles. Even though viewers could see themselves from different distances, something would always remain hidden from their gaze as they could not perceive what was happening or was being shown on the other side of this kaleidoscopic electronic unit. While *Iris* seemingly unified incongruous images of oneself seen through bifocal lenses, *Contact* held no promise for such dialectical unity since the divisive relations between the two facets of the video interface disrupted the spatial and temporal oneness of the environment. Moreover, the anthropomorphic correlations of the prior installation were dispelled since the system was no longer characterized by bilateral symmetry. The nine monitors were disposed along three parallel rows that alluded more to an abstract technological pattern than to the human body.

Contact was designed as a surrogate for the television control room. Viewers embodied the role of the technical director of the 1960s, who rapidly juggled with images from different camera angles to edit and compose live sequences. However, they did not occupy a privileged position in the visual paradigm because they held no control over the way images got randomly shuffled between different monitors. Individuals could edit their own motions in front of the cybernetic network and possibly influence other viewers' behavior in more or less conscious ways, but they could not fully manipulate the images that appeared on the screens. The experience staged by *Contact* was much more public than the one generated by *Iris* because the visual field was broadened by the presence of a larger number of cameras and monitors. Consequently, the parallelism between the viewer and his/her body image was more radically questioned. The dichotomy between the left side and the right side of the video panel in *Iris*, which corresponded to the dialectical relation between the spectator and his/her reflection, was

displaced in *Contact* by the irregular constellation of information channels. In such an environment, the spectator was more prone to observe the presence of other visitors and reflect on the indeterminate factors that affected perception and cognition. In both cases, the system was open to input from the outside and engaged the viewers in a process of selection of different reference points that helped them appraise the overall perceptual situation.

Through these closed-circuit video systems, Levine created a framework for enhancing personal involvement in epistemological acts. He drew out a dialectical model for describing the processes entailed by closed-circuit environments. In his essay “For Immediate Release,”³⁰⁴ he contrasted information and knowledge with experience and consciousness. While the first two terms constituted external reference points, the latter corresponded to a personal expandable sphere. Levine insisted that these parameters of closed-circuit environments should not be confused. Viewers were expected to keep in mind the differences between indexical information and personal reflection, yet aim to attain a state in which their consciousness could mirror the environment as perfectly as possible in order to avoid miscommunication and distortion. Levine’s preoccupation with encouraging spectatorial engagement was informed by an interest in preventing media control and social passivity.

Iris and *Contact* entailed a double mirroring process between information and experience: on the one hand, viewers became information as their presence turned into reference matter once it infiltrated the video network, on the other hand, the information they received about themselves and others was experienced at a personal level which influenced their reactions and once again translated them into information. Speaking in the plural about the spectatorial relation set up between *Contact* and its audience, Levine asserted:

³⁰⁴ Les Levine, “For Immediate Release,” *Art and Artists*, Vol. 4, no. 2, May 1969, pp. 46-51.

It is a responsive mechanism and its personality reflects the attitudes of its viewers. If they are angry, the piece looks angry. *Contact* is made not only between you and your image, but how you feel about your image, and how you feel about that image in relationship to the things around you. The circuit is open.³⁰⁵

According to Levine, electronic media could catalyze the feedback between information and experience on condition that the balance between the two be carefully maintained through constant exchanges and frequent changes in reference points.

Artists' concerns about viewers' responses to process-oriented works in the 1960s paralleled by psychologists and sociologists' strenuous attempts to understand how the environment models the behavior of individuals and collectivities and how impersonal information is personalized and translated into meaningful experience at the level of consciousness. At the end of the 1950s, Michael Polanyi published *Personal Knowledge. Towards a Post-Critical Philosophy*, a book that revised epistemological theories which claimed that acts of cognition need to be impersonal to avoid the subjective corruption of knowledge.³⁰⁶ The author argued that any act of comprehension should imply personal involvement because this type of engagement favors cognition as long as one can also distance himself/herself from self-focused perspective. Levine's video installations played upon the same problematic translation of the personal into the impersonal and vice-versa. Viewers of *Iris* and *Contact* became highly conscious of their physical presence within the closed-circuit environments. Although they intently observed themselves, they were also cognizant of the public character of their experience, which sensitized them to the wider context of epistemological acts and rendered them aware of the interpersonal dimension of cognition. Levine hoped that by being personally engaged in these reflective acts, viewers could become more attuned to the personal or social

³⁰⁵ Les Levine in *Youngblood* (1970, 340)

³⁰⁶ Michael Polanyi, *Personal Knowledge. Towards a Post-Critical Philosophy* (New York: Harper Torchbook, 1964)

elements that triggered their reactions: “They’ll change as they note their responses to various situations presented on the tapes...If you see yourself looking self-conscious, for example, you’ll be forced to think why.”³⁰⁷ Similarly, Polanyi suggested that self-involvement is beneficial to cognition. In his view, it was wrong to assume that subjectivity is completely autonomous from external factors or that knowledge requires complete detachment from the personal sphere. Instead, Polanyi maintained that “we may distinguish between the personal in us, which actively enters in our commitments, and out subjective states, in which we merely endure our feelings. This distinction established the conception of the *personal*, which is neither subjective nor objective.”³⁰⁸ Interestingly, affect is defined at the intersection of the same polarities, presupposing both a state of heightened self-awareness and a realization that one’s experience is conditioned by the presence of others within the same environment. Levine’s *Iris* and *Contact* invited participants to second-guess their reflections in the electronic mirrors in order to become fully responsible for the translation of information into meaningful content. Personal knowledge was subsequently transferred into the public sphere, where it became once again part of the communication chain, which affected both the individual and the groups to which he/she belonged.

While some theorists and artists celebrated the increased focus on personal experience in the decades following World War II, others found this change detrimental to society in the long run. Reflecting on social transformations throughout the 20th century, Richard Sennett contended that electronic media triggered intense personal identification with public figures and undermined one’s ability to act autonomously. He feared that individuals were becoming

³⁰⁷ Les Levine in Johanna Branson Gill, “Video: State of the Art,” David Dunn ed., *Pioneers of Electronic Art* (Linz: Ars Electronica, 1992), p. 65.

³⁰⁸ Polanyi (1964, 300)

clustered into smaller and smaller groups of interest, being unable to understand the larger implications of their actions. Arguing that people could no longer seek refuge in the private sphere of family clusters or feel liberated while part of public crowds as the *flâneurs* of the 19th century, Sennett posited that “in an intimate society, all social phenomena, no matter how impersonal in structure, are converted into matters of personality in order to have meaning.”³⁰⁹ He believed that this inclination towards personalization had come to regulate social relations to such a great extent that individuals could no longer take distance from what they experienced in order to think about broader communal interests. Levine considered that personal involvement was a prerequisite for judging facts critically and making responsible choices. As reflective information systems, *Iris* and *Contact* favored self-involvement, yet also triggered heightened awareness of the relations between oneself and his/her environment. They exposed the interdependence between the personal and the public sphere. Seeing themselves as both subjects and objects of perception, viewers were simultaneously in the position of insiders and outsiders.

By the end of the 1960s, artists’ use of television monitors and video cameras was no longer such an isolated practice. However, video works were rarely present in galleries, not to mention museums. Very few art institutions embarked on the endeavor of supporting and promoting video art at this time.³¹⁰ Levine, for example, first presented *Iris* in his own studio, before sending it to art collector Robert Kordon in Philadelphia. Most video works were displayed in the context of art events, such as the Avant Garde Festival, or group exhibitions focused on the relation between art and technology, such as Pontus Hultén’s exhibition *The*

³⁰⁹ Sennett (1977, 219)

³¹⁰ In the late 1960s, group exhibitions including video art were organized at the Walker Art Center (“Light | Motion | Space,” 1967), Institute of Contemporary Arts, London (“Cybernetic Serendipity,” 1968) and MoMA (“The Machine as Seen at the End of the Age of Mechanical Reproduction,” 1968). The first video department was established at the Everson Museum of Art only in 1972.

Machine as Seen at the End of the Mechanical Age (1968). In this context, *TV as a Creative Medium* organized at the Howard Wise Gallery in 1969 represents a key reference point in the history of video art, being the first exhibition solely dedicated to works based on television. The common denominator for the artists in this show was the new medium. However, their views of the aesthetic potential of television and its impact upon society did not fully coincide. For some artists, the congruence between art and television paved the way for modes of communication, expression and participation that had not been explored before in any other medium; for others, it was a means of exploring how formal relations characteristic of traditional mediums could be replicated with the help of electronic circuits. To artists more skeptical of the effects of television, the exhibition offered the possibility to critically comment on the superficiality, blandness and increasing control of commercial television.

In the exhibition brochure, Howard Wise observed that the artistic use of this medium came rather late in comparison with the emergence and dissemination of television technology. Hopeful about the way it could influence international politics, social relations and education, he claimed that its delayed entrance in the art circle could be explained by the fact that artists had to adjust to its impact and gain extensive operational knowledge before being able to use it creatively:

Why has not art been affected by this all pervading influence? Perhaps quite simply, because, up until now the time was not right. Perhaps it had to await the maturing of the generation who were in their sub-teens in the 1950s, those who were “brought up” on TV.³¹¹

Wise implied that only a new generation of artists whose vision and consciousness had been shaped by television could fully envision its expressive potential. Although in his brief statement he focused mainly on the creativity of artists employing television to obtain previously unseen

³¹¹ Howard Wise, *TV as a Creative Medium*. Exhibition brochure. (New York: Howard Wise Gallery, 1969), no pagination.

visual effects, several works in the exhibition encouraged viewers to imagine creative ways of interacting with television.

Frank Gillette and Ira Schneider's closed-circuit installation *Wipe Cycle*, Nam June Paik's *Participation TVs* and Earl Reiback's *Electronic Beam* transformed visitors into performers, giving them a chance to experiment with televised images by altering the information input through the manipulation of their televised self-reflections. As they stepped out of the elevator, visitors encountered Gillette and Schneider's nine-channel TV collage, which instantaneously captured their live images and linked them to a visual network of delayed real time images and television programs. In the case of Paik's *Participation TVs*, visitors virtually became part of multi-colored visual environments. They watched how their images appeared in red, green and blue on three different monitors and underwent transformations as they intertwined with images of atmospheric effects, such as fog and clouds. Describing the convivial environment generated by the changing electromagnetic field, Jud Yalkut stated: "Sound modulations, hand clapping, singing, screeching, yelling, whispers, the ringing of a bell, all activate the neon tangles of fluorescent tracers, expanding and contracting the frequency modulations within involuted [sic] vortexes of electric color."³¹² Just like Paik, Earl Reiback displayed prepared TV sets, which altered the ordinary broadcasting operations. He exposed the inner workings of a TV tube by asking visitors to use a magnet to change the flow of electrons in the circuit. The public dimension of spectatorial experience tended to prevail over the private one in such contexts since visitors' presence was a prerequisite for the animation of the visual field, which could be collectively observed. Moreover, one person's experimental interaction with the

³¹² Jud Yalkut, "TV as a Creative Medium at Howard Wise," *Arts Magazine*, Vol. 44, no. 1, September-October, 1969, p. 20.

prepared TV sets could become a model for others, who may nonetheless choose to explore the nature of the medium on their own terms and discover different effects.

Social psychologists' interest in the way learning and performance are affected by the presence of others was revitalized in the 1960s after a lag of about three decades. Robert B. Zajonc conducted a series of experiments in order to assess whether people learn and fulfill tasks better in public. He concluded that while the presence of spectators has a beneficial effect upon the performance of an activity which is well known it can have a detrimental effect upon the performance of an unrehearsed operation, which is just being learned: "while learning is impaired by the presence of others, the performance of learned responses is enhanced."³¹³ However, he also observed that if more individuals are simultaneously involved in acquiring a new skill as a group, acting as co-performers and co-spectators of each other's actions, the pace of the learning process is increased. These ideas also permeated the field of creativity theories in the 1960s, as it was increasingly believed that individuals could come up with more innovative ideas by working in groups. The emergence of art collectives and group performances, along with the increasing number of art practices that encouraged gallery visitors to commonly engage in mirroring processes in order to discover how environments change under the influence of their actions, showed that creativity was no longer regarded solely as a result of individual self-expression. Moreover, there was an enhanced belief that even incidental groupings based on loose connections between individuals can trigger creative ideas. Rejecting the tradition of the composer who gives precise directions on how his/her musical pieces need to be interpreted, John Cage argued:

We have moved, one may say, from the time of the family reunion to the present time that brings people and their energies and the world's material resources, energies and facilities together in a way that

³¹³ Robert B. Zajonc, "Social Facilitation," Dorwin Cartwright, Alvin Zander eds., (1968, 69)

welcomes the stranger and discovery and takes advantage of synergy, an energy greater than the sum of several energies had they not been brought together.³¹⁴

In Cage's view, synergetic acts enhanced creativity, especially when they were not closely regulated. Welcoming a certain degree of randomness in all artistic endeavors and social relations, he emphasized the effect and affect of spontaneous gatherings and activities. In *TV as a Creative Medium*, the closed-circuit environments and the works that stimulated viewers to interfere with the ordinary flux of television broadcast engendered adventitious synergetic actions. Mutual observation helped visitors acquire an increased sense of orientation. By publicly interacting with electronic interfaces that mirrored their actions, the exhibition participants made operational knowledge about the TV installations available to others. Although they did not necessarily share this information on purpose, their behavior was influenced by the presence of co-participants, equally involved in learning how to transform the form and content of the television images.

Yet, not all works featured in *TV as a Creative Medium* brought self-mirroring processes or creative interaction with visual effects into the public sphere. Some artists seemed more circumspect about disrupting the intimate encounter with television because this might impede personal reflection. Paul Ryan's video work *Everyman's Moebius Strip* set up a dialectical relation between the viewer and the TV medium, which did not allow for any external interference with the dual communication feedback staged between the camera and the viewer. Individual viewers entered a private booth where a voice asked them to react to iconic figures, such as Richard Nixon or Black Panther Party activists, as well as to recall the image of family members or imagine what they themselves looked like under different circumstances. Spectator-

³¹⁴ John Cage, *A Year from Monday. New Lectures and Writings*. (Middletown, Connecticut: Wesleyan University Press, 1975), p. x.

participant boundaries were blurred as visitors' reactions were videotaped throughout this exercise in cognitive performance. The viewer was cast in the role of a witness to aural images and communicated his/her point of view through facial expression and bodily gestures. The reactions of every new participant were recorded over the behavior of the previous one so that the interpersonal dimension of this visual exchange remained restricted to the interactions between oneself and the mental images of others. Ryan considered that *Everyman's Moebius Strip* could enable participants to catch a glimpse of their inner self, which otherwise remained hidden from themselves even though it could be visible to others. He suggested that cybernetic models might be helpful tools for getting to know oneself and shaping one's behavior in order to avoid falling prey to forms of social control: "I've been talking about the Moebius strip model and the videotape machine lately as an extension of man as a cybernator: communicating with himself about his behavior, he enlarges his control over his behavior."³¹⁵ Ryan described the video-based work as a prosthetic device for modeling one's reactions and deciding which personal attitudes he/she wanted to externalize and which ones he/she wanted to keep secret.

Art critics highlighted the private character of *Everyman's Moebius Strip*. In her review of the exhibition, Stephanie Harrington remarked: "Each taping erases the previous one so the secret is between you and your image."³¹⁶ Nonetheless, Ryan's initial plans for *Everyman's Moebius Strip* entailed a less seclusive participatory experience. Although he was intent on insuring that visitors reacted to the audio messages in private, he wanted them to watch the videotaped material as a group. In a letter to Howard Wise preceding the exhibition, Ryan stated: "This composition would be repeated for two more people. Then the tape would have to be

³¹⁵ Paul Ryan in Yalkut (1969, 20-21)

³¹⁶ Stephanie Harrington, "TV: Awaiting Genius," *The Village Voice*, May 29, 1969, p. 29.

rewound and the three of them would watch it together.”³¹⁷ By envisioning a collective spectatorial experience, he possibly aimed to underscore the incongruence between self-perception and public perception. Had he not abandoned his original plans, *Everyman’s Moebius Strip* would have even more closely resembled *Especta*, the communication event staged by the Frontera Group in Argentine during the same year. After having answered a couple of questions in private, participants in this project were able to watch their performance on screen together with other members of the audience.³¹⁸

Ryan’s eventual decision to restrict the viewing of the tape to the individual participant, as well as art critics’ focus on the private character of the work, may reflect the growing belief of sociologists of the late 1950s and 1960s that people needed to embrace individualism more forcefully to counteract the strong trends towards group belongingness and the proliferation of organization mechanisms. Vehemently attacking the group ethic, William Whyte maintained that no matter what benefits enhanced social interaction might bring it precluded personal reflection and slowed down original thinking: “People very rarely *think* in groups; they talk together, they exchange information, they adjudicate, they make compromises. But they do not think, they do not create.”³¹⁹ Such skeptical attitudes towards group behavior were informed by the supposition that groups subdue individual genius and propagate uniformity. Whyte considered that organizations were trying to transform individuals into mere pawns on a chessboard in order to suppress internal tensions and enhance efficiency. He thought that this approach had a negative

³¹⁷ Paul Ryan letter to Howard Wise, March 2, 1969, Paul Ryan Papers 1943-2008. Smithsonian Archives of American Art. Available at: http://www.aaa.si.edu/collections/searchimages/images/image_9940_26132.htm on 09/05/2010.

³¹⁸ See description of Frontera Group’s *Especta* in Rodrigo Alonso, “Art and Technology in Argentina: the Early Years,” *Leonardo Electronic Almanac*, Vol. 13, no. 4, April 2005. Available online at: http://roalonso.net/en/arte_y_tec/primeros_anios.php on 08/30/2010.

³¹⁹ Whyte (1956, 51)

impact because general consensus was illusory. Moreover, competition between organization members could be lucrative since it could generate innovative ideas.

Ryan's *Everyman's Moebius Strip* isolated the visitor from others to give him/her respite from oblivious immersion in the information flow and elicit self-reflection through face-to-face encounters with televised images of famous or infamous figures. Conflict was unavoidable since there could be no perfect mirroring between one's mental image of himself/herself and his/her representation in the videotaped performance, just as there could be no perfect match between the imagined visual signifiers of politicians elicited by the recorded voice and their public/private personas.

Another work in the Howard Wise exhibition that was meant to tame technology and to unveil its affective power was Nam June Paik and Charlotte Moorman's *TV Bra for Living Sculpture*. The performance proposed a parallelism between the prosthetic function of musical instruments and electronic media. Holding a cello pressed tight to her body and having her breasts covered by two monitors, Moorman played an acoustic and visual composition. The TV images changed to the rhythm of the musical notes. Her body seemed to vibrate to the musical notes and communicate with the monitors. Moorman acted as both producer and receiver of sensorial stimuli. The translation of musical vibration into visual form corresponded to the mirroring between her intense sensory involvement and the affective experience of the audience. The performer's body and the electronic interface served as mirror images of the viewers' sensations, which could not be easily visualized or verbalized. In Paik's view, *TV Bra for Living Sculpture* showed that technology was responsive to human touch and reflected the creativity and personality of its producers or users.

Out of all the TV and video installations in *TV as a Creative Medium*, Frank Gillette and Ira Schneider's *Wipe Cycle* attracted most critical attention. Given its prominent location at the gallery entrance and its awe-inspiring perceptual impact, it set the tone for spectatorial interaction with the entire exhibition. In his exhibition review, Michael Shamberg enthusiastically noted: "Participation is the key to the show. The moment that a guest enters the gallery he falls under the eye of a video camera and finds his image being transmitted live from the center screen of a nine-TV set exhibit."³²⁰ Similarly to Levine's *Iris* and *Contact*, *Wipe Cycle* was composed of monitors broadcasting live images from the exhibition site and programmed images. However, Gillette and Schneider primarily highlighted temporal relations rather than spatial relations. While *Wipe Cycle* presented closed-circuit information from three consecutive temporal sequences Levine's installations featured a collage of short-distance, medium-distance, and long-distance images. Hence, formal relations between foreground and background characteristic of traditional mediums still seemed to occupy center-stage in *Iris* and *Contact* despite their process-oriented nature. *Wipe Cycle* was characterized by a larger degree of variability thanks to its temporal relativity and the frequent image alternation. The top and bottom corner monitors presented closed-circuit information with eight seconds or sixteen seconds delay whereas the remaining four monitors showed images from two television programs. Except for the central monitor, which alternatively broadcast television images or live images with an almost negligible delay of four seconds, all images migrated from one monitor to another according to pre-established cycles. The rhythm of the installation was rendered even more discontinuous by the suspension of the information flux through the interposition of a grey pulsating image that moved from one screen to another. The perpetual alternation of the channels

³²⁰ Michael Shamberg, "Television – the Medium. Taking Waste out of the Wasteland," *Time*, May 30, 1969, p. 74.

called viewers' attention to interpersonal modes of self-definition. The lack of temporal and spatial stability of video reference points prevented narcissistic contemplation and encouraged visitors to see themselves seeing as others would observe them from a distance. *Wipe Cycle* generated loose affiliations to more or less incidental groups of spectators, which constituted more significant points of reference within the kaleidoscopic environment framed by the installation. Kostelanetz described the feeling of disorientation instilled by the image oscillations: "The spectator feels caught in an intelligent watchful oblivious system whose incessant and variable observations remain compelling and mysterious even after their operation is explained."³²¹ Affective responses appeared to consolidate as cognitive processes were disrupted and sensorimotor activities failed to give the viewer control over the information flux.

Art critics tended to analyze individual responses to *Wipe Cycle* and neglected to take into account the potential presence of a larger audience, whose members interacted not only with the changing images on the screen, but also with each other via the electronic interface. Since the humanization of technology was perceived as the greatest issue faced by artists employing television and video in the 1960s, critical attention was mostly directed to the collaboration established between the spectator and the technological device. In retrospect, it is easier to envision the collective dimension of participation in closed-circuit installations because contemporary theorists have moved away from concerns about how individuals can bring new technological devices under control in order to thwart dehumanization and are more interested in exploring the way new media has changed not only individual perception and cognition, but also social relations.

³²¹ Richard Kostelanetz (1971, 124)

Some art critics of the 1960s were disappointed by the fact that visitors were not taking a more active part in influencing the information that was instantaneously absorbed by closed-circuit video networks. For others, participatory implications were superfluous or something of a mythical misconception generally associated with art and technology projects. In a review of *TV as a Creative Medium*, Barbara Rose bluntly stated “the exhibition managed to illustrate every current art-world cliché from “process art” [...] to the spurious concept of spectator involvement.”³²² Skeptical attitudes towards viewer participation may have been prompted by the fact that visitors’ reactions failed to meet artists’ expectations or depended on a much wider range of factors associated with the visiting experience than merely the configuration or interaction rules of the video environments. David Antin thought that there was an utter incongruence between the performative effect of *Wipe Cycle* envisioned by Gillette and Schneider and its passive reception. He considered that this failed attempt at engendering interaction was not restricted to this particular closed-circuit installation, but reflected greater limitations of technology-based artworks, which aimed to stimulate acts of spectatorial engagement:

What is attempted is the conversion (liberation) of an audience (receiver) into an actor (transmitter), which Schneider and Gillette must have hoped to accomplish by neutralizing as much as possible the acts of “taking” and electronic transmission. If they failed to accomplish this, they were hardly alone in their failure, which seems to have been the fate of just about every interactive artwork employing significantly technological means.³²³

Antin claimed that viewers felt too intimidated to act in front of complex technological apparatuses even if they did not actually need to directly manipulate the equipment. He

³²² Barbara Rose in Marita Sturken, “TV as a Creative Medium: Howard Wise and Video Art,” *Afterimage*, Vol. 11, no. 10, May 1984, p. 8.

³²³ David Antin, “Video: The Distinctive Features of the Medium” in Schneider and Korot eds. (1976, 176)

explained that the high cost of such video installations thwarted informal behavior and prevented visitors' experimentation with the visual possibilities offered by real-time video systems.

Theories of group behavior may explain some of the reasons for which visitors seemed to adopt passive attitudes in relation to *Wipe Cycle* as noted by Antin. Far from channeling private forms of interaction with the video camera as Ryan's *Everyman's Moebius Strip*, this video installation spontaneously exposed viewers to the public character of the gallery context. Without any forewarning, their images were enlisted in the information chain together with those of strangers partaking in a similar visual experience. Sociologists of the 1960s were trying to find ways of explaining the way individual behavior was shaped by the presence of larger groups of people, with whom one might not necessarily share any prior affiliations or beliefs. At a time when civil rights riots, as well as numerous other militant demonstrations, were reaching their intensity peak, researchers strived to explain unpredictable crowd behavior. Some of the principles they laid out in order to account for collective behavior can also stand at the basis of visitors' reactions to *Wipe Cycle*. Ralph H. Turner formulated three theories of group conduct to elucidate unexpected responses and unified actions: *contagion theory*, which served to explain the rapid dissemination of similar behavior within a group via spontaneous and uncontrollable imitation; *convergence theory*, which purported that group members adopt similar behavioral patterns because they share common inclinations even before they encounter each other; and *emergent norm theory*, which suggested that group members consciously seek to reach a consensus about their behavior when confronted with similar circumstances.³²⁴ The manifestations described by these three theories are not mutually exclusive. Each of them may be encountered at different stages in the evolution of a group or they may even be simultaneously at

³²⁴ Turner (1964, 382-425)

work within the same group as individual members follow the behavior of others due to different reasons.

Wipe Cycle did not simply reveal the responses of an ideal spectator engaged in a performative act, but unveiled the reactions of groups of visitors and the contingent relations between their members. The cyclic alternation of its nine channels was equivalent to the dynamic transformation of visitor behavior depending on the presence or absence of others in the immediate vicinity of the installation. Antin's observations about participants' lack of interest in transmitting new information to the network by engaging in performative acts may only be descriptive of the conduct of visitors at a certain moment in time under certain spectatorial conditions. Viewers of *Wipe Cycle* may have maintained a reserved attitude under the influence of other audience members equally hesitant to act; their attitudes may have also converged because they shared the same inhibitions about the instrumental use of expensive video equipment as Antin pointed out; alternatively, they may have felt unwilling to act since this implied breaking the conventional norms of behavior within art galleries so well-respected by other visitors who adopted a contemplative attitude. Whether visitors consciously or unconsciously mirrored the reactions of an entire group of spectators, their reactions to the installation were influenced by the public nature of the perceptual experience, set under the lens of a video camera and openly displayed on multiple monitors.

By becoming aware of the way their body image was perceived by others, they tended to focus more on their self-definition in relation to the shifting video sequences and the notion they previously held about their appearance. They pondered the reality or virtuality of video images from within their bodies and were more cautious about using them as prosthetic devices for altering the information input of the closed-circuit network. Drawing on the theories of social

psychologist Guy Swanson, Turner distinguished between the factors that inform the behavior of “the acting crowd,” which is characterized by a desire to take action in the name of a common interest that needs to be consolidated and shared with as many people as possible outside the core group, and “the expressive crowd,” which is characterized by affective experience, being involved in processes of self-definition via visual representation rather than performance.³²⁵ Judging by Antin’s account of participants’ responses to *Wipe Cycle*, one can conclude that exhibition visitors constituted an expressive group, whose conduct was primarily guided by the video images, which were treated as reflective screens and not as visual objects that could be manipulated to serve extrinsic goals. Turner believed that the behavior of “the acting crowd” was best defined in terms of the theory of the emergent norm, which prioritized conscious deliberation about group goals over emotional relations whereas the behavior of “the expressive crowd” resembled more processes of sympathetic contagion:

The emergent norm which governs the behavior of the acting crowd incorporates the response of the social objects as a crucial condition in defining appropriate behavior. In contrast, the feedback to which members of an expressive crowd attend is the response of the fellow crowd members and their own subjective experience.³²⁶

Wipe Cycle participants were in indirect contact with each other as they watched the fluctuations of the endlessly adaptable TV network. They were exposed to similar perceptual conditions and defined themselves in terms of dynamic relations established between the cyclic permutations of the live broadcast images and the flow of other visitors. However, the reluctance of many of them to perform was not a proof of lack of participation. It probably spoke to an affective state of kinetic suspension intensified by the presence of other visitors. The distinctions drawn between “the expressive crowd” and “the active crowd” resembled those between “basic-

³²⁵ See Guy E. Swanson, “A Preliminary Laboratory Study of the Acting Crowd,” *American Sociological Review*, Vol. 18, no. 5, October 1953, pp. 522-533.

³²⁶ Turner (1964, 417)

assumption groups” and “work groups” identified by Bion in his study of group dynamics discussed earlier in this chapter.³²⁷ Both sociological approaches tended to enforce the binary opposition between emotional affiliation and rational thinking to the detriment of a more comprehensive theory of group dynamics that would underline the key role of affect in determining the shift from an introspective to an active state or the smooth transition from collective awareness to collective engagement.

Wary of the effects of electronic media, some sociologists of the 1960s and 1970s feared that television would weaken community bonds and deter from collective action. Similar fears have been evoked in recent years in regard to online social networks, such as the ones used during protests against the Iranian elections of 2009, which succeeded in bringing significant social and political issues to the attention of a wide international public and helped trigger effective activist action until the state responded with an aggressive clampdown. Richard Sennett maintained that television challenged processes of identification with small groups or iconic figures, whose features and beliefs may well become the imaginary product of the viewer’s desire to mirror himself/herself in the image of others. In discussing the narrowing down of community affiliations and the weakening of communal agency, he affirmed: “What has emerged in the last hundred years, as communities of collective personality have begun to form, is that the shared imagery becomes a deterrent to shared action.”³²⁸ Sennett rejected the view that individuals stood anything to gain from affective relations to the image of others.

Yet, incontestable as the value of social agency may be, it is not impervious to the influence of emotional attachment to others. Whether triggered by a feeling of collective belongingness or by shared interest in a common cause, interpersonal relations reinforce

³²⁷ Bion (1961)

³²⁸ Sennett (1977, 223)

solidarity and ethical responsibility. The public viewing of *Wipe Cycle* stimulated viewers' awareness of the interdependence between information production, transmission and reception. According to Gillette, video undermined the autonomy of the artwork and proposed a network model of communication: "the place of *prime objects* in hierarchical aesthetic systems is filled, in the electronic media, by the concept of network."³²⁹ Together with Schneider, he undermined the dichotomy between the viewer and the televised image by paralleling the plurality of information channels in *Wipe Cycle* to the heterogeneity of groups of spectators taking part in the communicative exchanges triggered by the installation.

Some months before the Howard Wise exhibition, Gillette and Schneider had conducted an interactive video experiment in the Antioch College Library. It emphasized collective mirroring acts and performative interaction to a greater extent than *Wipe Cycle*. However, the environment the artists set up for this experiment was restricted to four participants who were asked to become witnesses to each other's presence while sitting in a room with four cameras over a long period of time. Closed-circuit information was fed into the room through a single monitor. The TV images were reflected in several oblong mirrors so that everyone involved could have access to them in a more or less direct manner. The four participants sat in the middle of the room with their backs turned towards each other so that they faced the channels of mediated information. The sketch illustrating the experiment published in the video journal *Radical Software* presents an aerial view of the participants facing the reflective interfaces. It is reminiscent of the first satellite images of the Earth from the 1960s, which made people more conscious of the vulnerability of the human condition and the interdependence between oneself and others. Gillette and Schneider noted that self-contemplative attitudes gave way to informal

³²⁹ Frank Gillette, "Masque in Real Time" in Korot and Schneider (1976, 219)

performative actions: “After an initial period of self-consciousness the subjects began to generate their own entertainment. During the session the subjects played with their mirrors and cameras, read poetry, drew, rapped, did summersaults.”³³⁰ The experiment proved that video is not a medium that only enhances introspection and leads to passivity and self-involvement, but can consolidate individual agency and build up collective awareness.

Allan Kaprow was critical of the Antioch project, claiming that Gillette and Schneider had focused too much on the technological assemblage and too little on the modeling of participants’ behavior, which represented the actual material of closed-circuit video works in his view.³³¹ His perspective was motivated by his antipathy toward attitudes that valued technology for technology’s sake attitudes, and that failed to underscore the human factor. Just as in the case of happenings, Kaprow suggested that the artists ought to have given more directions to participants in the experiment by imposing certain restrictions upon their behavior within the video environment. He admitted that such an approach may have seemed too controlling, but could have been more productive in illustrating the social implications of human interaction with technology.

In his own projects based on television, Kaprow set more restrictive conditions upon participants’ interaction with technology, refusing to allow the new medium to enforce its own communicative principles and turn into the sole message of the information exchange. In 1969, he produced *Hello*, a lively video happening broadcast during *The Medium Is the Medium* program on WBGH-TV. Kaprow abruptly switched video connections between four different locations in Boston where people would wait for their turn to say hello to live images of other

³³⁰ Ira Schneider and Frank Gillette, “An Interactive Experiment,” *Radical Software*, Vol. 2, no. 5, Winter 1973, p. 13.

³³¹ Kaprow (1974, 48)

people found in a different part of the city. The participants had been instructed to transmit short messages, such as “I can see you,” to acknowledge the visual presence of others with which they were momentarily set in contact via TV monitors. The rapid process of switching between different live broadcasts impeded the transmission of any additional information content, reducing the encounters between people to short-lived visual exchanges. It triggered an affective longing for sharing more than just a brief face-to-face contact with other participants involved in this fast changing network. In an interview conducted almost three decades after the broadcast of *Hello*, Kaprow declared that he had wanted to explore the notion of “communications media as non-communications.”³³² The broadcast showed that unless media becomes the object of rapid transformations and is used as a platform for dynamic exchanges it can lead to disconnection between people and passivity. Affective connection emerged out of the randomness of the information network rather than being actively sought out through a systematic approach. In discussing about affect and the self-reflexive processes elicited by the impact of new media upon biological and information networks, Patricia Ticineto Clough remarked “System self-reflexivity shifts from seeking homeostasis and equilibrium to seeking control and freedom in complexity in systems under far-from equilibrium conditions.”³³³ Through the elusive connections it set up, *Hello* mapped a non-linear social network, which thwarted the manipulation of the communication content and stimulated affective relations.

With the opening up of the privileged aesthetic field to external relations, art spectatorship underwent a gradual transformation from an ideal dualistic mirroring process

³³² Kaprow quoted in Kristine Stiles and Edward A. Shanken, “Missing in Action: Agency and Meaning in Interactive Art” (2000). Available at: http://artextra.com/Docs/Stiles_Shanken_Missing_in_Action.pdf on 07/20/2010.

³³³ Patricia Ticineto Clough, “Introduction,” in Patricia Ticineto Clough ed., *The Affective Turn: Theorizing the Social* (Durham and London: Duke University Press, 2007), p. 3.

between the consciousness of the viewer and the consciousness of the artist to an unpredictable and multi-faceted mirroring process between multiple participants collectively involved in information production through perceptual and/or kinetic interaction with the sensitive sculptural or electronic interface provided by the artist. In “The Video Public Sphere,” an article analyzing the overlap between the personal and the political, David Joselit suggests that more than any other medium “television fosters a particular form of spectatorship: it creates a split or multiple identification, in which there is an approximate reflection of the viewer’s experience.”³³⁴ Indeed, video technology forcefully set forth the interpersonal character of new spectatorial modes in the second half of the 20th century, but, as shown in prior sections of this chapter, it was hardly the only medium to call for an enhanced understanding of the plurality of experience and the intersubjective construction of identity.

³³⁴ David Joselit, “The Video Public Sphere,” *Art Journal*, Volume 59, no. 2, Summer 2000, p. 47.

3.0 MIRROR SCREENS: WARY OBSERVERS UNDER THE RADAR

“If we deeply and even unconsciously believe that our relation to the largest system which concerns us – the “Power greater than Self” – is symmetrical and emulative, then we are in error.”

Gregory Bateson³³⁵

While in the 1960s mirroring processes elicited by artworks were primarily a means of contesting the autonomy of the art object, enhancing the potential for interactivity, and expanding viewers’ awareness of perceptual and mental acts, in the 1970s they acquired more explicit political and social functions. Throughout this latter period, a significant number of artists used reflective materials and technological apparatuses to replicate the surveillance mechanisms and the conditions of the society of spectacle with the aim of rendering visible the objectification of human subjects and the manipulation of individual and collective consciousness. Interfaces with mirroring qualities were also utilized as oblique screens in which the economic basis of art institutions and the isolation of viewers from the context of art production and distribution were critically showcased. By setting on display the larger systems in which individuals were engulfed, numerous artists sought to inspire critical distance and cultivate asymmetrical relations between self and others, personally assumed roles and more or less imposed social roles. In this context, reflective processes were meant to disclose divergences

³³⁵ Gregory Bateson, *Steps to an Ecology of Mind* (San Francisco: Chandler Publishing, 1972), p. 336.

rather than encourage immersion in the prevailing order of things or transcendence of the immediate context.

In this second chapter, I will focus on the use of mirroring acts as an instrument for social analysis and critique in the art practices of Dan Graham and Lynn Hershman, two artists who hold similar interests in revealing how context produces content and overarching systems regulate behavior by impeding individuals to observe their mechanisms from a distance. Though they are part of the same generation, embrace similar political agendas, and design situations in which art viewers simultaneously occupy the role of subjects and objects of perception, their works have not been analyzed in tandem and have been only rarely exhibited within the same framework.³³⁶ While Dan Graham appears as a prominent figure in most art historical narratives dwelling on the 1970s due to his critical revision of Minimalism, Pop Art, and the self-referentiality of conceptual practice, Lynn Hershman's contribution during this decade is rarely acknowledged in such texts. She is primarily credited for the design of the first interactive laser-disk installation *Lorna* (1979-1984) and for her invention of Roberta Breitmore, a persona active between 1974 and 1978, who could be embodied not only by herself, but also by other individuals engaged in disclosing the constraints placed upon the existence of women in American society during the 1970s. I have chosen to delve into an extensive comparison of Graham and Hershman's practices in this chapter because reflective processes stand at the core of their works, which create interpersonal awareness and foster group alliances through shared social conditions, role-playing, and affective ties. In the introduction, I will succinctly outline the historical and social context of the 1970s, as well as enumerate a series of artworks, which

³³⁶ Generally, the works of Dan Graham and Lynn Hershman have been brought together within exhibition contexts focusing on the intersection between art and technology (e.g. "Future Cinema. The Cinematic Imaginary After Film," ZKM, Karlsruhe, November 16, 2002 – March 30, 2003) or on participatory tendencies in contemporary art (e.g. "The Art of Participation: 1950 to Now," SFMoMA, November 8, 2008 – February 8, 2009).

generated reflective exchanges during this decade. Moreover, I will draw a comparison between the artistic lineages and conceptual approaches of Hershman and Graham, with the aim of setting the scene for a close-up investigation of the way they relied on processes of duplication and variation to create shifts in perspective and generate two-way communication.

This second chapter will be subdivided into three sections, corresponding to analyses of Dan Graham's works in comparison with Lynn Hershman's *25 Windows: A Portrait of Bonwit Teller*,³³⁷ a site-specific project staged over a period of 6 days in 1976 within and beyond the window space of the upper-scale New York store that gives the title of this work. The installation had three parts, each of them addressing a seemingly distinct temporal interval, yet all merging at the level of the socio-political issues they raised and the ultimate intertwining of temporalities, which cannot be set apart from each other without narrowing down their interdependent relations. I am analyzing Dan Graham's works in a non-chronological order in order to foreground their thematic congruence with the three components of Hershman's *25 Windows*. Given the fact that his works have often relied on conceptual permutations and have organically developed from one another without however imposing a prescribed sequence of ideas, this particular structure does not interfere with a historically grounded interpretation. Moreover, Hershman's *25 Windows* also evoked non-linear correlations by enabling passers-by to experience it in various ways, depending on the component of the installations they encountered first: the windows constituting the axis of the past situated on 57th Street, those representing the axis of the present located on Fifth Avenue, or those illustrating a possible future axis along 56th Street.

³³⁷ From this point on, I will refer to this work by the shortened form of its title, *25 Windows*.

In the first section of this chapter, I will explore how Graham and Hershman enacted situations in which viewers faced the docility of their body images encapsulated in mirror reflections, verbal descriptions of behavior, or closed-circuit television systems. Starting from Michel Foucault's analysis of the tactics of discipline and surveillance,³³⁸ I will investigate how Graham's *Performer/Audience/Mirror* (1977) and the *Past and Illusion* component of Hershman's *25 Windows* blatantly partitioned and enclosed audience groups in order to showcase how individuals end up performing the roles of props in regulated systems. Both artists have tried to turn immersive reflection into active refraction by encouraging audience members not only to observe, but also to actively respond to their works through gestures, movements, and changes in attitude.

The second section of this chapter is dedicated to Graham and Hershman's subversive integration of multiple reflective frames within spaces of consumer spectacle in order to undermine the parallel identification between viewer and product. The comparative analysis of the artists' respective works, *Video piece for show case window in a shopping arcade* (1978) and the mid-section of the Bonwit Teller project entitled *Time, Identity and Transformation*, will highlight the way in which frequent shifts in point of view and temporal distortion upset the virtual simultaneity between the emergence of the object of consumption isolated from the process of production and the emergence of individual desire for consumption. I will argue that both artists attempted to catalyze motion, as well as personal and social change. Hence, they were restoring the "traffic" component of the arcades, whose gradual disappearance Walter Benjamin decried as the "trade" component was aggressively taking over, increasingly dividing

³³⁸ Michel Foucault, *Discipline and Punish. The Birth of the Prison*. Translated from the French by Alan Sheridan (New York: Pantheon Books, 1977)

and isolating the consumers from each other in order to enhance their alienation and submissiveness to consumption demands.³³⁹

The last part of this chapter looks into the modes through which Graham's installation *Public Space/Two Audiences* (1976) and the third subcomponent of Hershman's installation called *Reflections and the Future* elicited affective ties and interpersonal communication via slightly incongruent correspondences between the condition of oneself and that of others or between virtual projections and embodied performances. Relying primarily on Deleuze and Massumi's theories of affect, I will elucidate the manner in which these works set up alliances between strangers by creating a gap both between self-perception and the observation of oneself by others, as well as between the sense of affiliation to small groups and that of belonging to a broader social context.

By the middle of the 1970s, the high hopes of the prior decade, which stood under the sign of social movements and anti-war protests, had been partially stifled. The economic recession of 1974-5 in US lowered the morale even further. The failed utopianism of communes deepened the disappointment with the contemporaneous conditions. It led to a reconsideration of the way social and political transformations can be brought about and called for an exploration of the way the past becomes historicized and affects the present. It was increasingly feared that individuals would try to evade the constraints of socio-political systems by seeking shelter in the personal realm and becoming too numb to the social realities to respond to them in a responsible manner. The success of the Art Workers' Coalition, which gathered artists espousing different aesthetic creeds and protested against restrictive museum policies, turned out to be short-lived since art institutions continued to maintain their conservatism in terms of the selection of

³³⁹ See Walter Benjamin, *The Arcades Project*. Transl. by Howard Eiland and Kevin McLaughling (Cambridge, MA: The Belknap Press of Harvard University Press, 1999), p. 42.

artworks and served the interests of the boards of trustees. The group dissolved three years after its foundation in 1969 due to internal dissension. Disappointed with this outcome, Lucy Lippard remarked that by 1975 artists “were tired of waiting for the ‘70s to happen.”³⁴⁰ However, she was still confident that art practices, which carried political message, would eventually gain visibility in alternative exhibition systems founded by artists in public spaces and would have a greater impact upon non-art audiences. Under these circumstances, art practices which gave vent to mirroring processes provided a more extensive reflection of contemporary social exchanges and impeded personal immersion in self-focused aesthetic contemplation by directing the attention of the viewers to their position in relation to others, as well as to the social and economic systems conditioning their behavior.

Psychological, sociological, and anthropological theories of the 1970s pleaded for an opening up of individuals to a larger sphere of interaction with their environment. Hence, they acquired a better understanding of the network of relations, which shape identity and model behavior. Gestalt therapists upheld holistic principles based on which one needs to reflect primarily on his/her reactions to the present context, with which he/she forms an organic whole. Psychologist Joel Latner argued that “we are healthy when we are in touch with ourselves, our environment and the relationship between them.”³⁴¹ He focused on the way individuals respond to present conditions and group situations rather than on how the past informs their identity. Sociologists also warned about the danger of personal isolation and the growing rift between self and large social groups, which share mutual objectives and can take common action. As discussed in the prior chapter, Richard Sennett criticized the self-absorption of individuals in American society and maintained that “forces of domination or inequity remain unchallenged”

³⁴⁰ Lucy Lippard, *Get the Message? A Decade of Art for Social Change* (E.P. Dutton: New York, 1984), p. 25.

³⁴¹ Joel Latner, *The Gestalt Therapy Book* (Toronto, New York, London: Bantam Books, 1974), p. 4.

when relations to small groups and self-interest obscure larger social causes.³⁴² Similarly concerned about the interdependence between individuals and larger collectivities or environments, anthropologist Gregory Bateson apprehended the threat posed by the notion that we need to perfectly echo the attributes of the systems to which we belong or whose aspirations we are trying to embrace. He believed that the dualism of Cartesian thinking and determinism was destructive and maintained that even though relations between people may not always be complementary, “the relation between the individual and the larger system of which he is a part must necessarily be so”³⁴³ for one to develop a balanced assessment of his/her position in relation to various social environments. Taking into account the variability of systems, which exhibit dynamic transformations, Bateson preached for openness to changes and active evaluation of how one relates to the wider, yet equally variable, contexts, without being necessarily in tune with their characteristics or demands. Conversant with these new approaches to social relations, some artists of the 1970s conceived settings or situations in which viewers felt compelled to compare themselves with others or think of the way they responded to the cultural and economic conditions of their existence on a regular basis. Far from inspiring self-consolation or advancing introspection as a means of surpassing individual dissatisfaction with external conditions, their works often stimulated a critical assessment of how power and mutual supervision were enforced through the consolidation of stagnant relations of subordination and the projection of falsified desires and interests.

Just as in the 1960s, mirroring processes, which highlighted the relations of art viewers to the wider environment, were observable across a variety of mediums. In a more drastic manner, artists cautioned viewers about the way their self-images and the reflections of their socio-

³⁴² Sennett (1977, 339)

³⁴³ Bateson (1972, 337)

cultural or art institutional contexts influenced perception and representation. Daniel Buren provided a more literal exemplification of his institutional critique theory when he decided to alternate mirror bands with transparent glass bands in window frames in order to show that the context of his works truly informed the content of his striped objects displayed both in museums and in public spaces.³⁴⁴ Sharing similar concerns about the way institutional frameworks give value to the artwork and take advantage of their power to encourage the production of works that cater to the demands of the art market, Jean Dupuy decided to step out of the gallery system entirely in 1972. He installed mirrors at skewed angles in his own loft in order to bring within it images of the sky or of concealed areas of his apartment, such as the space between the beams and the floorboard. In his works, reflective surfaces acted both as antennae projecting information from the exterior to the interior of his studio and as lenses for zooming into the anatomy of the site. Eventually, he decided to open up the space of his loft to other artists (e.g. Gordon Matta Clark, Nam June Paik) who wanted to create and display works within this setting. Many of their works were site-specific interventions, which cast new light on the socio-cultural context of the building.

Mirroring acts also surfaced in video works from this period, as in the case of Peter Campus's *Shadow Projection* (1972) in which projections from live video cameras intermingled with shadows of viewers on the surface of screens or Peter Weibel's *Observation of the Observation: Uncertainty* (1977), which enabled viewers to take a look at their image as seen from profile or from the back, yet did not permit them to see themselves frontally. This genre of works revealed the control exerted by the camera angle over the image and underlined the surveillance potential inherent in video technology. Reflective processes acquired a more

³⁴⁴ See Daniel Buren's *Venetian Transparency with Reflections*, 1972-2009 and *Corridor Passage: From and Off the Windows*, 1974-5 (MoMA).

interpersonal character in installations and performances, which challenged viewers to become protagonists and react to each other's physical presence, verbal cues or behavior. For *Command Performance* (1974), Vito Acconci cajoled gallery visitors into taking a seat on a stool before a monitor only to inform them via video images that they had turned from empowered voyeurs into objects of the voyeuristic gaze. Having experimented with the self-referentiality of mirror and photographic images for a long time, conceptual artist William Anastasi staged a similar situation in the performance *You Are* (1978). He arranged for Les Levine, John Cage, and Carl Keilblock to describe the visitors as they stepped into the Clock Tower gallery. Hence, the performers acted as interpersonal mirrors reflecting back the ways in which they perceived the participants. Their descriptions were typed and posted on a board, which corresponded to an interpersonal representation of the audience. Other works transposed the reflections of the viewers into a more specific visual context, which challenged them to negotiate their identity in relation to socio-cultural constructions or to self-fashioned personas. Judith Baca's *Las Tres Marias* (1976) inscribed the mirror image of the viewer within a triptych installation construction. His/her picture would be projected against a reflective surface, situated between two images of Chicano women, one embodying the ideal of the activist woman of the 1940s and one corresponding to the youth subculture of the 1970s. The insertion of the viewer's reflection in this context underlined the way in which identities can be self-fashioned and how they respond to the demands of society or to the characteristics of groups, seeking to consolidate belonging through dress codes or behavioral norms.

I decided to focus primarily on an in-depth analysis of mirroring processes in the context of Dan Graham and Lynn Hershman because they synthesized in a very astute manner the concerns raised by all the above-mentioned artists about the control of perception and the

constraints placed upon the process of identity negotiation, as well as about the limitations of art objecthood and contemplative spectatorship. Moreover, I consider that the pairing of these two artists is beneficial for outlining the broader artistic and socio-cultural context of this decade because they both worked in various mediums and adopted a primarily conceptual approach to raise awareness about political and social issues. Nonetheless, their practices during the 1970s were sufficiently different to allow for an adequate illustration of multiple art tendencies and set out the pressures exerted upon art making processes, which fell outside already established categories. To a much greater extent than other artists of their generation, Graham and Hershman created environments and performances that gave rise to interpersonal relations and group networks as a result of the way they incorporated audience responses, challenged the opposition between the performer and the spectator, and stimulated awareness of collective and individual alliances. Some of them even exemplified the circulation of information in cultural networks where messages are disseminated from many individuals to many while their primary origin remains anonymous.³⁴⁵ Throughout this chapter, I will identify these types of communication and interaction in the context of key works by Graham and Hershman in order to expand upon the notion of interpersonal spectatorship and upon the role of affective ties in foreshadowing verbal or non-verbal expressions of emotional involvement.

As a co-founder and director of John Daniels Gallery in 1964, Dan Graham came into contact with some of the most prominent Minimalist artists, such as Dan Flavin and Donald Judd and entered into conversation with artists who soon became closely associated with Conceptual Art such as Robert Smithson and Sol LeWitt. Nonetheless, when Graham started to work as an

³⁴⁵ These categories of networks will be analyzed in conformity with Jurgen Ruesch and Gregory Bateson's classification. Dan Graham was probably familiar with this text since he was acquainted with the broader theories of both authors. See Jurgen Ruesch, Gregory Bateson, *Communication. The Social Matrix of Psychiatry* (New York: W.W. Norton and Company, 1968).

artist he did not choose to align himself with any particular art tendency, preferring instead to define his practice in contradistinction to them. Graham praised Flavin's blunt transformation of the presumably neutral white cube through the insertion of works based on fluorescent light,³⁴⁶ yet he was critical of Minimalists' persistent focus on objecthood. He cherished Pop artists' use of popular culture sources, but disapproved of the fact that they did not employ mass media means of distribution, sanctifying instead the singular and permanent artwork.³⁴⁷ Similarly, he did not fully embrace Conceptual Art since he feared its potential transformation into a rigid art category, which may be rapidly absorbed by art institutions. In a conversation with Nicolás Guagnini, Graham explained: "I didn't want to be a Conceptual artist. I usually go through things very fast. I like things that are early experiments or models..."³⁴⁸ After his gallery closed in 1965 due to financial difficulties, he started to explore other ways in which he could infiltrate the art world and potentially change its course. His *Homes for America* project of 1966 parodied the promises of suburban architectural space and was displayed both in an art institutional context at Finch College of Art and in *Arts Magazine*.³⁴⁹ Thus, Graham called into question the uniqueness of the artwork and replicated the processes through which the suburban house designs were serially reproduced even though advertisements for them advocated that they would cater to the individual tastes of the buyers. The standardized architectural configurations, which reflected the control exerted over social systems, also spoke to the compartmentalization of the art world based on stylistic features and art market demands.

³⁴⁶ Graham considered that Dan Flavin's neon-based works constituted a subversive critique of the institutional space. See the article first published by him in *Perth* magazine in 1965. "My Works for Magazine Pages: A History of Conceptual Art" in Gloria Moure ed., *Dan Graham: Works and Collected Writings* (Barcelona: Ediciones Polígrafa, 2009), pp. 217-221.

³⁴⁷ Graham affirmed that he wanted "to make a Pop art which was more literally disposable." See "My Works for Magazine Pages: A History of Conceptual Art" in Moure (2009, 220).

³⁴⁸ "A Conversation between Dan Graham and Nicolás Guagnini, New York, New York, 14 May 2006," *Dan Graham: Beyond*, exh. cat. (Cambridge, MA: MIT Press, 2009), p. 283.

³⁴⁹ "Homes for America," *Arts Magazine*, Vol. 41, no. 3, December 1966 – January 1967, pp. 20-21.

While Hershman's early artistic trajectory appears to be less sinuous than Graham's since she started creating collages and drawings in her teens and obtained an MFA degree for San Francisco State University, her stylistic preferences were by no means straightforward. Her works could not be easily inscribed within pre-existing art categories, especially since she frequently merged sculptural pieces with performative actions by making use of sound recordings or allowing viewers to bring changes to her works. Gregory Battcock positioned Hershman's art practice in relation to that of Peter Saari and Dennis Oppenheim since he found that their works did "not fit into critical movements" and set "subject matter" above aesthetic innovation.³⁵⁰ The artist herself has repeatedly maintained that her practice defied existing categories and advanced the feminist socio-political agenda.³⁵¹ For *Dante Hotel* (1973-4), one of her early installations, she booked a hotel room in North Beach, San Francisco for a nine-month period. The residents of this environment were two wax female figures, whose life stories could be decoded based on the everyday objects, the audio recordings, and the images, which composed the hotel mise-en-scène characteristic of this city area. Visitors would take the key of the room from the receptionist in order to explore the work. They guessed at the socio-economic condition of the two women based on their possessions and made interpersonal inferences about their past, present, and future depending on how similar or different these protagonists were by comparison with themselves. *Dante Hotel* stood both for a portrait of the wax figures and for a portrait of the environments in which they lived.

³⁵⁰ Gregory Battcock, *Why Art. Casual Notes on the Aesthetics of the Immediate Past* (New York: E.P. Dutton, 1977), p. 112.

³⁵¹ Asked about the reasons for which she did not receive recognition for her works at an earlier stage, Hershman described her works in the following way: "I feel, that it was radical, the timing of it was too early, and I was a woman who lived on the West Coast. No critical language existed to describe what I did. It wasn't only video, it wasn't only performance, and it wasn't only installation." See Moira Roth, Diane Tani, "Interview with Lynn Hershman," *Chimaera. Monographie* (Herimoncourt: Centre International de Création Vidéo Montbeliard Belfort, 1992), p. 118.

Two years prior to this installation, Hershman's exhibition at the University Art Museum in Berkeley had been closed because the artist had tried to display some of her installation works based on sound rather than show only pencil drawings. Both the medium and the subject matter were considered problematic at the time. While West Coast art institutions wanted to prove that they were open to showing works done by women they had preconceived ideas about the genre of works they created that were worthy of being displayed. Writing about the history of Californian performance art in the 1970s, Moira Roth pointed out that it was rooted in the events of the 1960s – “a decade when theater was part of life – political theater of the streets, the huge communal celebrations of the Be-Ins, Rock concerts, the Haight-Ashbury scene, dramatics of encounter group therapy, and also, the ritualized and communal life of many artists.”³⁵² Indeed, Hershman conceived her works in response to this lively context imbued with political ideals. She signaled the lingering social problems and the persistent constraints placed upon women's lives. In addition to the circumspect attitude of art institutions to works, which did not uphold aesthetic concerns, Hershman had to face great difficulties as she tried to enter the highly patriarchal art network.

Graham's practice critically responded to the major art currents of the 1960s and 1970s while signaling the role of the socio-economic infrastructure in shaping the art world and modeling social behavior. Hershman assumed the task of creating works in response to the living conditions of specific cultural environments, disregarding the pre-existing art currents and focusing instead on very particular social issues such as the marginalization of women or the low economic status of minorities who were denied credit. Even though she was attuned to the art currents of the 1970s she considered that her art practice was more closely linked to the historical

³⁵² Moira Roth, “Toward a History of California Performance: Part One,” *Arts Magazine*, Vol. 52, no. 6, February 1978, p. 94.

avant-gardes, more exactly to Surrealism, Dadaism, and Brechtian theater, due to its non-linear temporality, its interactive potential, and its political character. Graham openly expressed his negative views upon Duchamp's impact upon the art world. He was critical of his precursor because his readymades eventually enhanced the power of art institutions, which were in a better position after that to recognize and increase the value of art objects.³⁵³ Quite on the contrary, Hershman felt greatly indebted to Duchamp and praised the participatory implications of his works, considering him a significant precursor of interactive art.³⁵⁴ What both artists greatly appreciate about the earlier avant-gardes is their merger of art and life and their commitment to changing society. In a conversation with Mark Francis, Graham stated that he shared the idealism of the Russian Constructivists. He was skeptical about the evolution of Conceptual Art, which was increasingly turning into an academic art category devoid of political or social relevance.³⁵⁵

Neither Graham nor Hershman chose to become affiliated with a specific art current because they feared that this would limit their practice. Graham's prior ownership of a gallery had rendered him particularly cautious about how art value is produced and manipulated. Having realized the interdependence between the functioning of art institutions and art magazines, he created *Schema* (1966), a language-based work meant to appear in several different publications, which set on display the way epistemological structures come to influence information transmission. Graham asked editors to replicate the content of a magazine page of their own choice via a list of morphological components and formatting features. Giving up authorial control, the artist aimed to unveil how pre-established structures impose limitations upon the way

³⁵³ Graham stated "In his 'readymades,' Duchamp brought objects which were not considered as art when placed outside the gallery into the gallery to prove dialectically that is in fact the gallery which gives the objects its value and meaning." Graham, "My Works for Magazine Pages: A History of Conceptual Art" in Moure (2009, 218).

³⁵⁴ Lynn Hershman, "Romancing the Anti-Body: Lust and Longing in (Cyber)Space," Meredith Tromble ed., *The Art and Films of Lynn Hershman Leeson. Secret Agents, Private I* (Berkeley, Los Angeles, London: University of California Press and Seattle: Henry Art Gallery, University of Washington, 2005), p. 186.

³⁵⁵ Francis (2001, 14)

information that is conveyed. Simultaneously, as Alexander Alberro argued, Graham indicated that both art galleries and art magazines falsely claimed to provide a neutral context.³⁵⁶

Hershman was also acutely aware of the alliance between art institutions and publications, as well as of the way display contexts could influence the meaning of the works, often limiting their political effectiveness. She invented three male art critics, astutely called Gay Abandon, Prudence Juris, and Herbert Goode, who submitted reviews of her exhibitions to magazines so that art institutions would be more likely to display her works upon seeing that they had already been acknowledged. In a recent interview focusing on her experience as a woman artist in the 1960s and 1970s, Hershman explained that she took advantage of the fact that she was an outcast of the mainstream art network in order to devise ways of “dealing with the system, so that the system itself became the content for the art meaning.”³⁵⁷ She proved to be an apt art administrator, publicizing her temporary installations sited in hotels via TV commercials and eventually setting up her own curatorial project by establishing *The Floating Museum* (1974-8), an organization which commissioned artists to create site-specific projects for public spaces. In a statement reminiscent of Vladimir Mayakovsky’s revolutionary statements, the artist spoke of this initiative in terms of “a global canvas in which artists make broad brush paintings directly in the environmental landscape.”³⁵⁸ Briefly acquainted with Dan Graham via their common network of friends, Hershman invited him to exhibit within this framework in the 1970s, but plans for this project never came to fruition.³⁵⁹

³⁵⁶ For a detailed analysis of this work in terms of the transformation of context into content, see Alexander Alberro, “Structure as Content: Dan Graham’s *Schema* (March 1966) and the Emergence of Conceptual Art,” Moure ed. (2009, 61-68).

³⁵⁷ Lynn Hershman in “Women Art Revolution: Interview of Lynn Hershman with Kyle Stephen,” October 26, 2006. Available online at: https://lib.stanford.edu/files/WAR_Hershman_2006.pdf on April 26, 2011.

³⁵⁸ Lynn Hershman, “The Floating Museum,” *Data*, Vol. 27, July- September 1977, p. 1.

³⁵⁹ This information is based on e-mail correspondence with Lynn Hershman (May 5, 2011).

In spite of the fact that both artists refused to take the display context of their works for granted, their approaches to this issue differed. In the 1970s, Graham created works that could be moved from one site to another without changing in terms of format, yet shifting in content as they came to reflect a different settings or audience groups. Thus, variability was instilled within his installations and performances, which charted diverse social spaces with the goal of revealing similar ideological structures. Hershman was keener on devising works in response to very specific circumstances. They could not be moved to a different location without being completely re-designed and re-conceptualized. For example, even though the *Dante Hotel* project was similar to the environments enacted a couple of months later at Hotel Chelsea, the Plaza, and Central YWCA in New York, their configurations were different so that they could mirror contrasting cultural locations. Hershman emphasized the indigenous character of the objects, which composed these scenes. Given this contrast between these two artists' works, it is somewhat paradoxical that Graham's art practice was primarily influenced by anthropological discourse in the 1970s whereas Hershman's practice was more closely informed by sociological theories, such as Erving Goffman's ideas about the theatricality of daily life.³⁶⁰ Her investigations into the specific nature of urban contexts from the West Coast and the East Coast of U.S. seemed more in tune with anthropological research because they were envisioned as portraits of a cultural group, which was usually perceived from the perspective of an outsider.³⁶¹ Graham provided a vehement critique of sociology since he viewed it as a social science subservient to the interests of institutions constructing hegemonic structures. He fervently

³⁶⁰ In an email sent to the author, Hershman asserted that one of the texts that was instrumental in her conceptualization of *25 Windows: A Portrait of Bonwit Teller* was Erving Goffman's *The Presentation of Self in Everyday Life*.

³⁶¹ In an exhibition review, Hershman is quoted as saying: "I try to create portraits [...] by revealing layers of indigenous elements of a system." Hershman in David Bourdon, "Folie-Légères: Busting Out of Bonwit's," *The Village Voice*, November 8, 1976, p. 85.

embraced anthropologists Margaret Mead and Gregory Bateson's theories concerning the crucial need for reflecting on the rightfulness of the means used for reaching social or political goals.³⁶²

Out of his contemporaries, Graham felt more closely connected to Bruce Nauman and Michael Snow due to their phenomenological concerns, musicians Steve Reich and Terry Riley due to their interest in how sound delay can raise temporal consciousness, as well as to Paul Ryan and other members of the Raindance Corporation, who were experimenting with video to unveil the fluid process of self construction. Nonetheless, Graham rarely chose to identify with other artistic directions fully, taking them instead as cues for dialectically developing his practice, which frequently juxtaposed contrasting ideas or contradictory spatio-temporal reference points. By contrast with Nauman who focused on the experience of individual viewers in the 1970s, he took an interest in the social dimension of spectatorship. In Graham's performances such as *Past Future/Split Attention* (1972) or his video installations such as *Present Continuous Past(s)* (1974), audience members collectively witnessed how self-identity is projected, revised, and actively reconfigured in relation to information received from various sources. Throughout the 1970s, critics contrasted his works with Peter Campus's installations, which were more prone to inspire narcissistic drives. Referring to *Yesterday/Today* (1975), an installation which merged live video images of a private setting (e.g. an art gallery office) with an audio recording of the sounds made in the same location one day prior, Eric Cameron noted:

Whereas Peter Campus's installations may find the viewer musing on the miracle of his own existence, Dan Graham's are more likely to leave him wondering if his fly is zipped up – or just what it was he said to Susan Gibson in that other room where the tape-recorder is still switched on.³⁶³

³⁶² Graham mentioned coming under the influence of Margaret Mead's writings while he was still a teenager. See Francis (2001, 10). In interviews, he made repeated references to Gregory Bateson's theories on schizophrenia and memory. See Kim Gordon, "Interview with Dan Graham," *Dan Graham: Beyond* (2009, 170), as well as the already cited interview with Francis in *Dan Graham* (2001, 16; 30). For a detailed account of Bateson's views on Margaret Mead's argument regarding the formulation of judgments, means, and goals in relation to specific contexts, see his essay "Social Planning and the Concept of Deutero-Learning." Bateson (1972, 160).

³⁶³ Eric Cameron, "Dan Graham: Appearing in Public," *Artforum*, Vol. 15, no. 3, November 1976, p. 66.

The private and the public sphere were not perfectly sealed off from each other in Graham's projects, which subjected viewers to the same risks posed by surveillance mechanisms on a daily basis. Similarly, Hershman's works dissolved the boundaries between the space of performance and the space of social praxis, indicating that in each of these settings participants became engaged in role-playing. Her creation of Roberta Breitmore in 1974, a female figure who had an identity of her own and interacted with people without letting them know that they were turning into protagonists in her life adventures, spoke to her desire to showcase social relations as they arise rather than stage fictive situations and delimit the space between the performers and the audience. Christine Tamblyn rightly pointed out that Hershman's performative experiments contrasted with those of other women artists of the same generation, such as Eleanor Antin, whose "events were clearly separated from everyday reality by theatrical framing and costuming."³⁶⁴ The artist preferred rendering the fictional dimension of Roberta Breitmore as invisible as possible in order to underscore the reality of the social and political systems with which she confronted herself.

From the earliest stages of their respective art practices, actual and virtual mirroring acts have held a key role in the works of Graham and Hershman. These processes were not supposed to generate a series of perfectly equivalent relations between the viewers/performers and their body images, but to trigger disjunctions, encourage transformations, or put into perspective the invisible forces or systems within which individuals were entrapped. Hershman introduced reflective materials in her early mixed media works. She covered the faces and arms of the figures she sketched with Plexiglas surfaces during the mid-1960s. Hence, she rendered them

³⁶⁴ Christine Tamblyn, "Lynn Hershman's Narrative Anti-Narrative," *Afterimage*, Vol. 14, no. 1, Summer 1986, p. 8.

quasi-anonymous and hinted at the fact that their features were continuously on the brink of transformation, defying categorization.³⁶⁵ Such works, which also encompassed crumpled pieces of paper and other materials susceptible to change, were portraits perpetually in the making just like the identities of the people they depicted. Graham first used glass in the context of *Project for Slide Projector* (1966). For this work, he shot photos of the interior of a rectangular transparent box in which he gradually inserted smaller and smaller components made of the same material so that the degree of transparency would decrease while the degree of reflexivity would increase. The resulting images blurred the distinctions between foreground and background, as well as between two-dimensionality and three-dimensionality, thus interrogating the objectivity of perception. In Graham's opinion, mirrors were symbols of stagnation and centralized perspective. Only double mirrors or semi-transparent surfaces were ambiguous enough to suggest variability and multiple points of view. In "Essay on Video, Architecture and Television," Graham set mirrors in dialectical opposition to video, arguing that the former "conceal or cancel the passage of time" and correspond to the "Western concept of the self," whereas the latter emphasizes temporal variability and self-transformation as one can perceive oneself from more perspectives while watching pre-recorded or delayed images.³⁶⁶

Hershman's view on the function of mirrors and video contrasted with that of Graham. She saw mirrors as responsive surfaces that staged a more spontaneous dialogue than video. In discussing various means through which participation can be catalyzed, Hershman maintained: "While video was like a reflection that did not talk back, interactive works were like a trick, two

³⁶⁵ See *X-Ray Man*, 1965, acrylic on wood and Plexiglas.

³⁶⁶ Dan Graham, "Essay on Video, Architecture and Television," Benjamin D. Buchloh ed., *Video-Architecture-Television. Writings on Video and Video Works 1970-1978*. (Halifax: The Press of Nova Scotia College of Art and Design; New York: New York University Press, 1979), pp. 67-69.

way mirror that allowed you to have a dialogue with the other side.”³⁶⁷ She did not underestimate the participatory potential of one-way mirrors either, making recurrent use of them in *25 Windows* as will be discussed in this chapter. According to her, they do not suspend time, but underline its perpetual flow and the ineluctable transformation of the self. Hence, they function as disruptive interfaces, which showcase the lack of perfect coincidence between imagined and perceived images and act as stimuli for virtual identification with others. Yet, for Graham, one-way mirrors are a foil either for performative discourse, which cannot instantaneously present how bodily movements are registered as in *Performer/Audience/Mirror* (1977), which will be analyzed in the first section, or for delayed video images, which imperfectly duplicate the reference points of ongoing visual processes as in *Video Piece for Show Case Window in a Shopping Arcade* (1978), which will be examined in the second section. Otherwise, Graham has used reflective surfaces to facilitate metacommunication as in the *Body Press* (1970-1972) performance in the context of which a man and a woman rotated cameras around their naked bodies while standing in a reflective cylinder that provided visual cues for their movements and the images they were capturing. In his works, these components have also had the role of compartmentalizing space by introducing variations in perceptual conditions as in *Public Space/Two Audiences* (1976), which will be amply discussed in the third section of this chapter. Graham aptly synthesized one of the main principles informing his works when he stated “I always try to put together two things that shouldn’t go together.”³⁶⁸ Whether he combines mirrors and video, phenomenology and behaviorism, modernist functionalism and postmodernist vernacular, or public spaces and private spaces, he insures that the tension

³⁶⁷ Lynn Hershman, “Romancing the Anti-Body; Lust and Longing in (Cyber)space,” *Captured Bodies of Resistance* (Warsaw: Centrum Sztuki Współczesnej, 1996), p. 22.

³⁶⁸ “Interview with Dan Graham by Rodney Graham with Chrissie Iles and Fary Carrion-Murayari,” *Dan Graham: Beyond* (2008, 96).

between contradictory elements is vividly maintained. Thus, Graham abides by Bateson's dictum, which is the motto of this chapter and encourages individuals to develop asymmetrical relations to larger social systems.

In a similar fashion, Hershman created critical gaps within seemingly all-engulfing environments. Her invented persona Roberta Breitmore remained a social outcast throughout her adventures in the world because only in this way she could adequately bring to the surface the controlling mechanisms of society. By the same token, *25 Windows* staged a world, which was not fully congruent with that of the upper-class consumers of the department store. When she was asked by Alanna Heiss to provide a definition of her art practice, Hershman responded: "I think all of my work deals with reality discrepancies and portraits."³⁶⁹ Undoubtedly, her works have disrupted the smooth parallelism between the viewer and the viewed or between the object of perception and the object of representation. The asymmetrical or discrepant relations inspired by Graham and Hershman's projects have contributed to the formation of affective ties among participants, who found themselves in a condition of liminality as they tried to make sense of the behavior of real or virtual performers and negotiate the multiple roles they can assume in the given system. Familiar with R.D. Laing's theories of interpersonal perception succinctly discussed in the prior chapter, both artists have relied on multiple series of inexact correspondences between what one thinks about himself/herself and what others think about him/her, to set into motion reflective processes that highlight the dynamic transformation of social systems and the consolidation of self- and group consciousness through affective involvement.

³⁶⁹ Alanna Heiss, "Interview with Lynn Hershman," *Currant*, Vol. 2, no. 2, August-September-October, 1976, p. 44.

Nevertheless, Graham and Hershman's views on the characteristics of audiences are not perfectly congruent. Even though they are both intent on rendering spectators aware of their collective presence and the web of interpersonal inferences triggered by voyeuristic acts, they are not equally concerned about the demographic features of the group of participants. By comparison with Graham, Hershman has paid more attention to the class, gender, and ethnicity of audience members, purposefully trying to address individuals pertaining to different collectivities in specific ways. This particular approach qualifies many of her installations, including the one analyzed in this chapter, as new genre public art, a term designating works that take place in public space and engage diverse, yet specific, audience groups by encouraging them to ponder critical social or political issues.³⁷⁰ In the 1970s, Graham was fully conscious of the rich potential for variability of his performances and installations depending on the audience constituency, yet made no special efforts to increase its diversity. Most of his performances were held in spaces attended by artists or people who already had a keen interest in art (e.g. NYU Loeb Student Center, San Francisco Art Institute). Lucy Lippard adroitly remarked that most art events of this type simply "preached to the converted" by taking for granted the fact that the audience would be diverse when in fact it turned out to be quite homogeneous, being composed of individuals who were mostly part of art circles.³⁷¹ Most frequently, spectators of Graham's performances were addressed as a fairly coherent group. Differences between spectators outlined by the performer tended to be based more on his/her distance from them and on their location in relation to other attendees sitting in the same seat row than on their socio-cultural background. In a fairly restricted number of performances, Graham took into account the way gender influences

³⁷⁰ Hershman's *25 Windows* is included in the compendium of new genre public art presented in one of the most comprehensive studies of this art category, which developed starting with the mid-1970s. See Suzanne Lacy ed., *Mapping the Terrain. New Genre Public Art* (Seattle, WA: Bay Press, 1995).

³⁷¹ Lippard (1984, 322)

both the relations set up between performers and the way they are perceived by the audience. For example, in *Two Consciousness Projection* (1972), a man filmed a woman while she was watching live televised images of herself on a monitor and proceeded to describing herself, paralleling or disproving the impressions conveyed by the video images. Specific issues concerning gender construction and representation could also be observed in the context of *Identification Projection* (1977) in which a female performer described men or women from the audience to whom she felt sexually drawn. Graham's failure to take into consideration a diverse, yet sufficiently specific audience, may be due to the fact that he expected his works to attract heterogeneous groups by being located in public areas - this is the case of his outdoor pavilions designed starting with the late 1970s - or by being displayed in different locations, hence acquiring new relevance for spectators from different contexts. An enthusiastic supporter of the artist's sharp critique of the art system, Benjamin Buchloh explained that: "While the audience for Graham's work is therefore unspecific – and that is clearly problematic – it is at least shifting and diffuse, and the work is potentially open to non-art-world audiences...."³⁷² Some of Graham's installations from the 1970s targeted more specific audience groups, such as Citicorp employees in *Video View of Suburbia in an Urban Atrium* (1979-80) or individuals frequenting a specific group of galleries located in the same New York area in *Projections on a Gallery Window* (1979).

In contrast with Graham, Hershman has actively pursued the goal of speaking to specific audience groups, be they rich customers of department stores or passers-by of a lower social condition striving to mimic the appearance of upper-class individuals. *25 Windows* addressed the needs and desires of different social segments, often reflecting their compelling drive to switch

³⁷² Benjamin H.D. Buchloh, "From Gadget Video to Agit Video: Some Notes on Four Recent Video Works," *Art Journal*, (Autumn 1984), Vol. 45, no. 3, p. 221.

roles and turn reality upside down and inside out. Some of the mannequins that stood behind the windows of Bonwit Teller in Hershman's installation were clear outsiders of the world of luxury advertised by the department store. So were numerous onlookers who passed by them and could note the satirical overtones of some of the mise-en-scènes. *Noncredited Americans* (1981), Hershman's later installation for the windows of Wanamaker's Department Store in Philadelphia rendered even more explicit these disjunctions between the actual and the would-be customers of such fashionable shops.

While there are significant distinctions between Graham and Hershman's approaches to the specificity of audience groups and exhibition sites, there are quite a number of similarities between their views on the notion of time. Their works have regularly encompassed multiple temporal sequences unfolding concomitantly and interdependently. In their performances and installations of the 1970s, the trajectories of the past, the present and the future did not form a unitary and homogeneous course, but ran in parallel through a dense net of contingent events. In spite of their esteem for the historical avant-gardes, Graham and Hershman were acutely aware of the fact that a solely future-oriented art practice and social praxis could not represent a solution to the quagmire of the 1970s, when it became clear that many of the ideals of the prior decade still remained unfulfilled and the utopianism of communes seemed inadequate for turning the tables on hegemonic structures. In talking about how the notion of time needed to change, both artists suggested that it was crucial to keep the memory of previous goals, achievements, and failures alive in order to strengthen historical consciousness and undermine the modern faith in perpetual progress. Referring to the 1960s, Hershman asserted that "the fatal delusion of this

era was that the future required liberation from the past”³⁷³ and insisted that the agenda of prior social movements should inform the content of conceptual art from the 1970s. Her works testified to the persistent struggle for women’s rights, yet were not infused with confidence in fast changes. Roberta Breitmore, the performance persona created by Hershman, illustrated the way female passivity, restraint, and self-abasement were constructed in response to social pressure and could not be easily fought off unless the very context which engendered them underwent significant transformation.

Graham expressed similar views on the way the past needed to be repeatedly reminisced to thwart self-oblivion and examine its impact upon the present and the future. However, he focused his attention more on the recent past, emphasizing the way in which its reiteration affects intrapersonal and interpersonal perception. Critically commenting upon individual immersion in a perpetually renewable present, which leaves no traces upon human consciousness, Graham persuasively explained how temporal orientation needed to change: “In the 1960s we believed in instant moments, in ‘no time,’ getting rid of historical and metaphorical time. Moments after moments, with no memory. I got involved in the idea of the just past.”³⁷⁴ Both his performances and time delay installations from the 1970s invited viewers to consider how they had just behaved and how this affected the way they modeled their next response to a similar social or perceptual context. Graham was hoping that in this way he could enhance self-empowerment and unveil how individuals can become victims of invisible systems of control, which manipulate their reactions without allowing them to ponder their past choices and acts. Interestingly, Graham and Hershman reified the past both by actively constructing representations of it and by

³⁷³ Lynn Hershman in Moira Roth, “Leaping the Fence: An Introduction to the Work of Lynn Hershman,” *Chimaera* (1992, 11)

³⁷⁴ Graham in Francis (2001, 30)

composing a complex web of cross-references between their respective works, which often implied variations on similar performative situations or synthesized prior conceptual projects. As will be delineated in this chapter, *25 Windows* brought together re-enactments of previous installations such as the Chelsea Hotel environment of 1974, as well as personas from past and ongoing performances, such as Roberta Breitmore, whose portrait appeared in one window. Hershman argued that she actually envisioned the project as “a kind of retrospective.”³⁷⁵ This type of initiative held particular significance in the 1970s when it was becoming increasingly clear that women artists had been deprived of the history of their practice for centuries. Hence, Hershman’s installation represented a strategic means of taking charge of her past and insuring that her early works acquired historical significance even if they had only a temporary character. Even though as a woman artist she came up against more constraints than Graham she succeeded in making her work known without compromising its political agenda by administering several public art projects concomitantly and by envisioning works that had the potential for change across time thanks to viewers’ interaction.

Hershman and Graham critically responded to the state of numbness that society seemed to be reaching in the 1970s when social activism was becoming more subdued. Both of them hoped to unsettle the prevailing order of self-reproducing social systems by replicating their power mechanisms and conspicuously unveiling the way they subordinated individuals by restricting their autonomy while giving them the illusion of personal choice. In the first chapter section, I will consider the way mirroring processes in Graham’s *Performer/Audience/Mirror* and Hershman’s *25 Windows* encouraged viewers to question the conscription of their body images within one-way reflective surfaces or closed-circuit video systems and come up with

³⁷⁵ This information is based on e-mail correspondence with Lynn Hershman (May 5, 2011).

ways of strategically manipulating their reflections to bring about transformations in systems of visual and behavioral surveillance that constrained their self-perception and interpersonal responses.

3.1 DOCILE BODY IMAGES UNDER REFRACTION

In the 1970s, Graham and Hershman investigated how changes occur within social groups or environments when apparently equivalent relations are suspended or upset through the introduction of additional frames of reference such as mirrors, windows, and video. In what follows, I will analyze the modes in which reflected images underwent processes of refraction as they projected through the consciousness of the performer or of the audience members, inducing interpersonal shifts in perspective and signaling the need for repeated interrogations of representation. First, I will succinctly outline how Hershman's *25 Windows* (1976) and Graham's *Performer/Audience/Mirror* (1977) relate to other works by the two artists and to the socio-historical context in which they emerged. Secondly, I will look into the way they showcase the tactics through which docility and surveillance are imposed. Thirdly, I will underline how they give vent to affective impulses by highlighting disjunctions between self and others, reality and virtuality, motion and stasis. I will use the term "refraction" metaphorically to refer to slightly discrepant relations that emerge among members of social systems or components of visual systems when perceptual experience and representation do not fully coincide with their referents.

Hershman's first plans for *25 Windows* date back to 1974 when she came up with the idea for this installation after having seen the Bonwit Teller windows and realized they resembled

Joseph Cornell boxes.³⁷⁶ In addition to encompassing a broad variety of items that composed a Surrealist-like tableau, this particular store façade had an interesting history because Salvador Dali, Andy Warhol, and Robert Rauschenberg had been involved in the design of its display cases. Fully aware of this, Hershman was intent on inscribing her practice in this iconic context evocative of multiple art historical references from the 20th century. Yet, she also planned to break away from the tradition of artists turned designers in order to promote the commercial products of Bonwit Teller. Hershman repeatedly stressed the fact that she wanted “to sell ideas” rather than clothing.³⁷⁷ Her installation was meant to illustrate a portrait not only of the interior of the shop and its upper-scale customers, but also of the wider social landscape of New York as seen through the interface of the Bonwit Teller windows, the narratives of mannequins turned into interactive protagonists, and the reactions of the passers-by.

Hershman managed to secure the support of the store for the installation only in 1976. During this period, Bonwit Teller was facing significant financial problems, which may have led the company to adopt a less conventional approach to window display in order to increase sales.³⁷⁸ The competition between upper-scale department stores in New York was fierce during the 1970s. In this context, the design of large window displays with spectacular mise-en-scènes had become a significant promotional trend. Delineating these new directions in store advertising, Rosemary Kent compared the sensationalist scenes with “a kind of street theater,

³⁷⁶ Lynn Hershman mentions this analogy in a short video documenting the installation. The video was not shot by the artist. Subsequently, she worked on editing it and adding audio comments, which sometimes overlapped her responses to questions raised by the interviewer. The mismatches between these intertwining installation narratives highlighted even more its Surrealist character.

³⁷⁷ She made this statement in e-mail correspondence with the author, as well as in the description of this project on her website: <http://www.lynnhershman.com/>

³⁷⁸ Genesco Inc., the parent company of Bonwit Teller declared bankruptcy in 1979. Donald J. Trump purchased the East 57th Street store building. For a more detailed discussion of the efforts of the store to surpass this crisis see Robert A. M. Stern, Thomas Mellins, David Fishman eds., *New York 1960. Architecture and Urbanism between the Second World War and the Bicentennial* (New York: The Monacelli Press, 1995), p. 998.

making comments on the news of the day – garbage strike, the sleeping-pill syndrome, the latest fads and hang-ups – and sometimes even mocking the very customers the windows are designed to attract.”³⁷⁹ In most instances, the social commentary offered by these window designs was quite feeble and resulted mainly from the absurdity and promiscuousness of the situations in which rich protagonists were set. The leader of this trend was Robert Curie, the designer of Henri Bendel, who earned his fame for the shocking content of his window displays, which included dramatic scenes of death, seduction, and aggression. By contrast, Candy Pratts, the designer of Bloomingdale, staged mundane situations, which emphasized the strangeness inherent in everyday life. Nonetheless, her designs often had an equally shocking impact since they unveiled quotidian acts that were usually hidden from public view. Hershman’s Bonwit Teller installation built upon voyeuristic impulses and images subsistent in the collective unconscious, but it also openly called for heightened awareness of the present socio-cultural context by creating opportunities for communicative exchanges, as well as for thinking critically about identity construction, limited energy resources, and future world challenges.

Exhibited only for a 6-day period, *25 Windows* was designed with the support of the Institute for Social Research. It entailed the collaboration of technicians, scientists, video specialists, fashion models, and members of the window display team. Hershman faced no restrictions in terms of the content of the installation except for the fact that she was given a number of items of clothing that Bonwit Teller expected her to use. Critical responses to *25 Windows* were scanty and tended to emphasize the uniqueness conferred to the work by its location in the store windows. Hershman herself stated that the work “was not well received in the art world” and explained that *Art in America* and *Artforum* did not consider it worthy of the

³⁷⁹ Rosemary Kent, “Drama Department: Comedy, Sex and Violence in Store Windows,” *New York Magazine* (May 24, 1976), p. 82.

art status at the time of its conception.³⁸⁰ Its display context in an upper-scale store may have contributed to this fairly cold reception since art critics may have suspected that the artist compromised its critical function through this collaboration with Bonwit Teller. In his review, Gregory Battcock cited artist Victor Hugo who claimed that “It’s vulgar to put art in store windows.”³⁸¹ David Bourdon started his review by stating that “It was business as usual in the 57th Street galleries”³⁸² when Hershman’s exhibition opened given the number of people the work drew to the store. However, *25 Windows* was far from simply promoting the commercial goals of Bonwit Teller since it brought into the public eye serious economic and social issues. Jane Bell praised the fact that the installation appealed to a diverse public that surpassed the circle of art critics and artists.³⁸³ Similarly, Battcock remarked that it entailed “a meshing of the popular and the intellectual,” which could teach conservative art institutions a lesson.³⁸⁴

Composed of three parts aligned along different streets, *25 Windows* constituted a portrait of the city in motion by incorporating references to past events, mirroring quotidian happenings, and foreshadowing how it will change under the impact of new technologies. In this chapter section, I will limit my discussion of interpersonal spectatorship to one tableau of the *Past and Illusion* narrative trajectory of the installation, located on 57th Street. It reconstituted a bedroom scene of the Chelsea Hotel environment Hershman created two years earlier in Manhattan. For this prior work, she booked a cheap hotel room for a three-month period and paid a woman to live in it. In addition to this living character and her personal belongings, the room included wax figures and a series of everyday objects. The recreation of the environment in the Bonwit Teller

³⁸⁰ Lynn Hershman in Moira Roth, Diane Tani (1992, 112)

³⁸¹ Victor Hugo in Gregory Battcock, “Cocktails at Bonwit’s.” *The Soho Weekly News*, November 4, 1976, p. 22.

³⁸² David Bourdon, “Folie-Légères: Busting Out of Bonwit’s,” *The Village Voice*, November 8, 1976, p. 85.

³⁸³ Jane Bell, “Art in a Department Store’s Windows,” *St. Louis Dispatcher*, November 21, 1976, p. D5.

³⁸⁴ Battcock (1977, 131)

window had as its main protagonists a female mannequin who seemed to have just woken up to discover that she was set on display, a male mannequin with his face turned towards the bedroom wallpaper, and the passers-by whose live images were presented on a TV monitor. Thus, the re-enacted past of the Chelsea Hotel environment intermingled with the present. Passers-by were both witnesses to this scene and actors in the melodrama staged in the window store. Via the juxtaposition of a bedroom *mise-en-scène* to closed-circuit video images of the audience, Hershman suggested that both the notion of privacy and the sealing off of the past from the present are merely illusory. As this set of windows indicated, prior events can always be revisited and interpreted in a new manner. Next to the hotel scene, Hershman projected a series of speeded-up images of the transformations undergone by the display design during the course of the previous three months. The time-lapse images distorted even more the idea of linear temporal flow and highlighted the design process in order to disclose the forces of production and the construction of ideal images, which encouraged consumerism. The illusory character of representation was further underscored by the instantaneous doubling of these cinematic sequences, which were projected against a wall situated within the display case and got reflected back onto the store window. The third tableau belonging to the *Past and Illusion* narrative was more mysterious, being composed of filmstrips and lights, which allowed only a very limited view of a group of mannequins. Their ghostly presence served as another reminder of the haunting presence of the past within the present context. Hershman mentioned that André Breton's writings, in particular his novel *Nadja*, had a great impact upon her as she was making plans for *25 Windows*.³⁸⁵ The tableaux dedicated to *Past and Illusion* constituted Surrealist landscapes, which enticed viewers to peer beneath the surface of things, look at themselves from

³⁸⁵ This information is based on e-mail correspondence with Lynn Hershman (May 5, 2011).

the perspective of others, and delve deeper into the past to uncover significant correspondences with the present.

While Graham's performances and installations from the 1970s emphasized states of enhanced consciousness and only rarely revealed subconscious elements, they also pointed to the non-linearity of time sequences and called for cyclical processes in which acts of self-reflection alternated with acts of interpersonal reflection in order to cast light on the conversion of spontaneous observations about the present into subjective impressions about the recent past. *TV Camera/Monitor Performance* (1970) is one of the artist's first works that catalyzed an awareness of the discrepancy between individual points of view and showcased the subjugation of the gaze to the coordinates of visual systems that one cannot fully manipulate. Holding a camera at eye level, Graham rolled on a table in front of a group of spectators who hesitated between watching his performative actions and looking at the images of themselves transmitted live from the camera to a monitor located on the opposite side of the room. Even though they could virtually identify with the performer as they watched the monitor, audience members' perspective could never match his view entirely because their own images captured by the camera entered the visual field framed by the camera. This disjunction between different perspectives is reminiscent of Joan Jonas's mirror performances (1969-1970) discussed at length in the previous chapter. However, in the case of her works the performers retained less control over the images perceived by spectators since they could not watch the reflections projected in the oblong mirrors held in front of their bodies. In his subsequent performances, Graham gradually diminished the authority of the performer by showing that his perspective was shaped not only by his self-consciousness and the technological interface he used to make observations about the public, but also by the reactions of audience members, which undoubtedly affected his

self-perception and his future decisions about the performative actions. In the context of *Intention Intentionality Sequence* (1972), Graham discriminated between how he perceived things from a subjective point of view and how things or people appeared to him when observed from a more generic perspective. The performance was partly based on gestalt therapy techniques through which individuals improved their knowledge of their environment by describing its present characteristics as they visualized it. But Graham chose to forego the absolute immersion in an eternal present where the way things are takes complete precedence over the reasons for which they unfold in a particular way. After having outlined his intentions as a performer and his observations of the public, the artist decided to step back from the roles of a subjective leader and an impartial observer and explain the limitations of his perceptual acts and interpretations of audience members' behavior. At the end of the performance, he remarked his failure to fully identify with every spectator and his/her attitude:

I had wanted to come as close as possible to the time of the audience, but I felt their position to be entirely different. Their responses can't correspond, so the spectator's sequences, order of relation, cause-to-effect perceiving, always would be inverse...or, one step ahead or behind mine. They can see my motives before I can see the motives in them.³⁸⁶

Graham found that he was out of tune with the audience, whose gestures and expressions he could not perfectly mirror through verbal descriptions because they would abruptly change or appear in a different light before he could explicitly point to them. The present would quickly turn into the just past without allowing him to reflect upon it. His verbal representations refracted information rather than reflecting it, hence triggering affective impulses that dissuaded him from a purely epistemological task.

³⁸⁶ "Intention Intentionality Sequence." (transcript of the second performance: Protetch-Rivkin Gallery, Washington D.C., May 1972) in Dan Graham, *Theatre* (Gent: Anton Herbert, 1977), unpaginated.

Following up on the observations made during this performance, Graham planned *Performer/Audience/Sequence* (1975), which was no longer based on the idea of intentionality. The artist wanted to exert less control over the outcome of exchanges between himself and the audience. In the first stage of the performance, Graham described himself while watching the audience so that he could gain a sense of how he was viewed from the outside. Thus, he minimized the function of the intrapersonal network of communication, which resisted transformations in relation to external factors that could affect authorial intent, and maximized the function of group network communication by taking into account how his self-consciousness and performative acts were molded by the presence of the audience. In the second stage, Graham directed his attention to the public and described how they looked and acted, making inferences about how they felt and how they related to one another. While both the performer and the audience members had the possibility of receiving and sending messages, they did not hold equal power positions. Graham could verbalize his impressions whereas the public could only transmit them through their gestures, gazes, and facial expressions. As time passed by and these two performative stages were repeated, both the performer's awareness of himself as object of the perception and cognition of others and the audience members' awareness of themselves as a heterogeneous group increased. Graham realized that interpersonal communication was gradually established between audience members studying each other's reactions. He decided to cease the cyclical repetition of the two descriptive stages when he noticed that a consonant relationship had formed between him and the spectators. Upon the conclusion of the performance, he remarked: "The audience is smiling in a similar way to the way I must be smiling. Very slow kind of smile...I will stop the piece."³⁸⁷ This mirroring between Graham and

³⁸⁷ "Performer Audience Sequence" (transcript of the second performance: Artist's Space, New York, January 1976)

the audience was not a pre-planned consequence of the performative sequence. It was not meant to reflect group coherence and homogeneity. Instead, it was a temporary sign of mutual transformation emphasizing the potential for affective exchanges and the constant re-alignment of individual members' attitudes in conjunction with shifts in interpersonal responses.

Performer/Audience/Mirror (1977) added another layer to the sequence of perceptual and epistemological acts observable in the context of *Intention Intentionality Sequence* and *Performer/Audience Sequence*. By inserting a mirror wall opposite the audience, Graham introduced a reflective interface that had a function relatively similar to his performative act. His descriptions of himself and of the spectators could be checked against the mirror images, which could validate his perspective or underline its lack of perfect coincidence with what was happening in the room. The performance consisted of four repeatable stages. Not only did Graham describe himself and the audience while directly facing it as in *Performer/Audience Sequence*, but he also turned towards the mirror and delineated a portrait of himself and of the audience as seen from a third perspective. These four descriptions underlined the illusionary character of all totalizing representations of the social environment, which cannot convey the full spectrum of points of view or capture all the shifts in relations between individuals and groups. The mirror expanded the series of reference points available to the performer and the audience members. Consequently, it contributed to the multiplication of interpersonal inferences. Graham acknowledged its role in heightening viewer participation and underscoring the contradictions between his subjective point of view and the linear perspective offered by the reflective space: "Putting a mirror at the back implicated the audience more, because I could describe the audience, where they would be seeing themselves in a kind of instantaneous time, but my

in Dan Graham, *Theatre* (1977), unpaginated.

description would be phenomenological.”³⁸⁸ The mirror interface showcased immediate cause and effect relations whereas the performer provided slightly delayed verbal descriptions of what was happening. His descriptions about the reactions of the audience could be contradicted as he was verbalizing them. The mirror image in front of the spectators instantaneously highlighted the inconsistencies between his reading of the situation and what was just happening in the room. The performer’s role corresponded to the function of slightly delayed video sequences in his installations. He refracted the images he perceived as he faced the audience, as well as the reflections he observed when he turned towards the mirror. By filtering visual information through his selective perception and distorting consciousness, he disrupted deterministic relations and upset the contiguity between what takes place outside and within the reflective screen. Moreover, the role of the performer was analogous to that of video since he absorbed and retransmitted information, virtually rewinding it in order to make it accessible to others.

Graham’s insertion of the mirror wall in this performance was also motivated by his desire to enhance audience members’ group consciousness. The collective reflection of the spectators in the reflective surface emphasized the distinctions between themselves and the performer who occupied a central position and held control over the sequence of descriptions. However, it is arguable that the mirror gave the audience “power within the performance equivalent to that of the performer” as Graham claimed in his observations on the margins of the performance.³⁸⁹ The situation remained slanted in favor of the individual performer even though it enabled viewers to manipulate their images more freely by observing their reflections and manipulating them as if they were prosthetic devices. The performer still held control over the verbal representations. Through his descriptions, he had the option of singling out certain

³⁸⁸ Francis (2001, 19).

³⁸⁹ “Performer Audience Mirror” in Dan Graham, *Theatre* (1977), unpaginated.

individuals in the audience or making overall generalizations about the behavior of the whole group. However, the spectators could not bring their observations to the attention of all the others via verbal communication. They could only become involved in intersubjective visual exchanges with the larger group or share their observations with their nearby neighbors. The parallelism between the performer and the audience, the performer and the mirror images, or the audience and the mirror images was only partial. The relations between them were slightly out of joint because of the different positions they occupied, the temporal incongruities between verbal and visual representations, and their distinct functions during the performative sequence.

Both Hershman's *Past and Illusion* component of *25 Windows* and Graham's *Performance/Audience/Mirror* multiplied the frames of representation in order to disclose the way reality is produced through the manipulation of appearances. By inviting participants to reflect on how they were perceived in relation to various reference points, the artists displaced single-focused perspective and gave vent to processes of self-transformation through interpersonal conjectures. Hershman's inscription of a closed-circuit video system in the Chelsea Hotel environment betrayed viewers' voyeuristic intrusion in the private space of the sleeping couple. Placed at an angle in the right-hand corner of the display case, the TV monitor doubled the frame of representation of the window screen and subverted the linear perspective of the tableau. The mannequin figures seemed oblivious to its presence. By gazing in different directions, they increased the number of points of view from which the scene could be interpreted. The mirror screen in *Performance/Audience/Mirror* contributed to a similar disjunction between visual references even though it was placed parallel to the audience. It encompassed within its expansive field multiple spectatorial responses, thus exhibiting shifts in perceptual orientation depending on the position occupied by each of the spectators. Both artists'

preoccupation with revealing contrasting viewpoints stemmed from a desire to instill changes through interpersonal reflection and through the critical observation of both past and present. Hershman argued that “the video and mirror encapsulation of viewers was about time transitioned and modified,”³⁹⁰ thus hinting at the fact that the installation presupposed a re-evaluation of the temporal context. Although the images displayed on the TV monitor in *Past and Illusion* were not delayed as in the case of many of Graham’s video-based installations from the 1970s, they still had the effect of slowing down perception by presenting a fragmented view of the scene outside the store. The disjunctions between the mirror reflections of passers-by in the window and their televised images on the small monitor screen enhanced the potential for negotiating self-representation at an interpersonal level by taking into account various reference points. The transformation of the visual signifiers integrated in the window display emphasized the construction of identity in relation to changing social and cultural parameters. Explaining how video can alter one’s self-perception and incur changes in how one acts, Hershman stated that “video is not merely reflective but actively refractive, capable of eliciting multiple points of view.”³⁹¹ Since the camera in the window store was hidden from view, passers-by mentally envisioned a more distant voyeur watching the street scenes from an invisible location. Both their video images and their virtual body images were refracted as they witnessed their inscription in the installation narrative. The identity of observers concomitantly underwent fictionalization and actualization as they simultaneously occupied the position of insiders and outsiders of the tableau.

The reflected images in *Performance/Audience/Mirror* and the televised images in *Past and Illusion* helped viewers note the way they staged their reactions in response to their

³⁹⁰ Lynn Hershman in e-mail correspondence with the author (May 5, 2011).

³⁹¹ Lynn Hershman, “Private I: An Investigator’s Timeline” in Tromble ed. (2005, 69)

environment. Even in the case of Hershman's earlier *Chelsea Hotel* installation, which did not include a closed-circuit video system, participants had been inclined to step outside the role of uninvolved observers of a rigorously pre-conceived visual representation. After having visited the installation, Battcock remarked that once inside it

You wondered what all the other people crowding around were thinking. You wondered what the hotel management had to say and you wondered about the furniture, the room-service menu on the table [...] and how much the very idea of a hotel room resembled a microcosm of the habitat.³⁹²

While looking at the recreated Chelsea Hotel environment in the Bonwit Teller windows, one also wondered how he/she defined himself/herself in relation to other passers-by. Gender divisions rendered the process of identification with the mannequin protagonists more complicated. The display appeared to be a commercial for Bonwit Teller Men's Shop as the text on the window screen announced; yet, the main focus of attention was the female figure occupying the foreground of the tableau. From the object of male desire, she became the voyeur gazing outside the window frame at the potential customers. While gender played less of a role in Graham's *Performer/Audience/Mirror*, the alternation between the function of subject and object of perception was evident as the performer shifted his attention from focusing on the observation of his own body image and to observing spectators' reactions.

Yet, the two works were not limited to dyadic relations. They provided a framework for the triadic construction of identity. The passers-by stopping by the Bonwit Teller window defined themselves in relation to the mannequins and the closed-circuit system, which thwarted identification with a unique point of view because of their different orientation in space. The averted gaze of the female figure and the utterly disregarded monitor sitting in the corner offered oblique points of view on the social environment lying beyond the store window. The installation

³⁹² Battcock (1977, 115)

was to be experienced in a state of distraction from a frontal perspective. Consequently, it prevented full immersion in a commercial environment capitalizing upon individual desire and narcissistic self-projection. Similarly, Graham's *Performer/Audience/Mirror* did not simulate a theatrical or a cinematic space in which spectators were isolated from each other as they identified with the artist or with their image projected on the reflective screen. Faced with a fluctuating field of alternative perspectives, the viewers had to shift their gaze constantly and question both verbal descriptions and visual signifiers. As part of a group whose identity was strengthened by all-encompassing mirror images, they negotiated between the personal and the impersonal dimension of the perceptual and the social context. A harsh critic of the dyadic relations established between isolated viewers and electronic mediums, Sennett believed that the growing personalization of information led to alienation and social passivity. He maintained that those who approached "social situations as mirrors of the self"³⁹³ were oblivious to their impersonal characteristics and could easily fall prey to dominating ideologies without being able to note how they were constructed and imposed. By counterbalancing the description of the audience as filtered through his consciousness with the description of the audience as observed via the mirror interface, Graham metaphorically stood for a refractive surface, which re-directed information while transforming it and relativizing its content. Moreover, the triadic relations formed between the viewer, the performer, and the mirror image could branch out into more complex networks of interpersonal exchanges. Graham noted that viewers glanced at each other during the performance: "some people are making eye contact; a lot of people shifted...and there's a kind of laughter...uh, a laughing and looking away."³⁹⁴ Participants sought visual confirmation of his verbal descriptions or took their cue from others in order to adjust their

³⁹³ Sennett (1977, 327)

³⁹⁴ Ibid. (1977), unpaginated.

reactions to those of other audience members. Momentarily abandoning the reference points dictated by the performer and his selective reading of the mirror image, they forged relations with those sitting next to them. Through these communicative acts, viewers assumed more control over the interpersonal negotiation of their position in the audience group and expanded the triadic relation between the individual performer, the witnessing collective, and their visual representation. Similarly, passers-by looking at the *Past and Illusion* environment could forge temporary connections with others by watching the closed-circuit system or by striking up conversations with others. As they speculated on the identity of the two mannequins, participants indirectly revealed their own social status in relation to them.

Through their respective works, Graham and Hershman set the basis of a disciplinary apparatus, which was not fully functional since its mechanisms of control were partly disclosed. Despite the apparent docility of the mannequins in *Past and Illusion* and the restricted motion of audience members in *Performance/Audience/Mirror*, the system of control established by the artists purposefully transgressed the goals of increased efficiency and utility described by Foucault as the source of the disciplinary regimes enforced starting with the seventeenth century. The figures in Hershman's installation seemed to be suspended between slumber and wakefulness. Analogously, the spectators in Graham's performance did not constitute a coherent social group, but kept rehearsing similar, yet slightly disjunctive, roles in the ongoing cycle of interpersonal exchanges. The mannequins, who would normally stand for the epitome of docility, defied the commercial purpose of the window display because they appeared as characters in a cheap hotel scene re-enacting a prior installation. The display had the attributes of a diorama. The bedroom setting was more of an object of display than the actual characters. It directed the roles of the mannequins and restricted their privacy. Foucault maintained that discipline is

imposed through “the constitution of ‘*tableaux vivants*,’ which transform the confused, useless or dangerous multitudes into ordered multiplicities.”³⁹⁵ Yet, instead of providing a clear model for social order, the installation conveyed an ambiguous portrait because it inserted images of crowds of passers-by moving past the Bonwit windows into a re-enacted scene from a previous installation. In a similar manner, *Performer/Audience/ Mirror* did not offer a model of efficient behavior in spite of the fact that it was organized into 5-minute sequences of epistemological acts so that the performer would regularly alter his point of reference. Graham observed the movements of different parts of his body both as he perceived them from within and as he imagined others perceived them from the exterior. At times, his body appeared to acquire a will of its own, independent of that of the performer. Looking at his mirror image and trying to decode the meaning of his reactions, Graham remarked: “...and then the feet kind of kick each other, kick around in place...a kind of hop, skip, and jump: a semi-dance...it’s hard to know what that signifies.”³⁹⁶ The arbitrariness of his gestures contradicted the model of a disciplined body, whose responses are not only carefully monitored, but also efficiently manipulated so that they express meaningful behavioral codes and fulfill precise functions.

Under the guise of disciplinary apparatuses, *Past and Illusion* and *Performance/Audience/Mirror* scrutinized the reactions of spectators as individuals and members of collectivities. The TV monitor in the Bonwit Teller window singled out passers-by and inserted their images into a collage of objects and inanimate bodies, which lacked fixed symbolical meaning even after two years from its initial display. The random juxtaposition of glimpses of the instantaneous present to the past tableau underlined the potential for change even in contexts that were deeply ingrained with the dreams and hopes of a prior age. The inscription

³⁹⁵ Foucault (1977, 148)

³⁹⁶ Graham (1977), unpaginated.

of passers-by's body images within the frame of the TV monitor, which was in its turn framed by the window display case, served as a metaphor for the compartmentalization of society and the distribution of individuals into various groups. The migration of their images between different spaces illustrated the dynamic character of their roles, which shifted in relation to the behavioral context. The mobility of onlookers virtually stepping into the tableau corresponded to the awakening of the female figure about to embark on a process of self-transformation. The boundaries between spaces, as well as those between individuals and groups were permeable enough to allow for temporary transgression.

Performance/Audience/Mirror also permitted the virtual collapse of spatial segmentation as the reflections of Graham and the spectators were simultaneously encapsulated in the mirror interface. Nonetheless, this collective visual framework did not efface differences. A master of disciplinary tactics who knows both how to enforce them and how to challenge their authority by rendering their mechanisms conspicuous, Graham aptly shifted from describing individual reactions to emphasizing interdependent relations between participants. Just as at the beginning of the performance he conveyed a fragmentary view upon his body by describing the position and movement of different body parts, in the subsequent stages he made observations about different audience segments, highlighting the unique behavior of certain spectators or indicating the convergence of their behavioral responses. Foucault maintained that disciplinary training was targeted not at controlling the masses as a homogeneous whole, but at improving the conduct of individuals and regulating their dynamic relations to others. He asserted that in the interest of active supervision, "the crowd, a compact mass, a locus of multiple exchanges, individualities merging together, a collective effect, is abolished and replaced by a collection of separated

individualities.”³⁹⁷ Graham set distracted viewers on the spot by describing their absent-minded gazes or by hinting at the narcissistic interest they took in their appearance as they arranged their hair or body posture while facing the mirror. He also compartmentalized the audience into different groups depending on how far away they stood from him or from the reflective screen. Frequently, he remarked the spectators’ different degrees of attentiveness depending on where they were seated in the audience. These plain descriptions of behavioral responses often turned into implicit stage directions, engendering shifts in viewers’ attitudes or reactions. Far from a naïve observer of the audience, Graham was an astute conductor, who swiftly orchestrated spectators’ responses by delineating the way in which they confirmed or contradicted his observations. For instance, he astutely underscored his influence upon them by describing how they altered their facial expressions in relation to his remarks: “well a moment ago they were smiling now they’re very serious. Umm...and now there’s a half smile that comes up to a full smile in the case of a couple of people.”³⁹⁸ The synchronization between individual responses constituted a sign of the performer’s commanding impact upon the whole group of spectators. Concomitantly, it was also a strategic means of collectively seeking relief from the compartmentalization of the audience into separate groups, which could be subjected to tighter control. At times, smirking and snickering became contagious during the performance, rapidly disseminating across the entire room. Sensing the power of interpersonal influences, Graham examined how spectators took note of each other’s behavior even when he did not draw their attention to particular reactions. He remarked that certain viewers self-policed their conduct, smiling or looking in a certain direction only when others acted in a similar manner.

³⁹⁷ Foucault (1977, 201)

³⁹⁸ Graham (1977), unpaginated.

Foucault equated the disciplinary apparatus with “a perfect eye that nothing would escape and a center towards which all the gazes will be turned.”³⁹⁹ In the bedroom tableau from *Past and Illusion*, its function was attributed to the store window faced by the female mannequin and the passers-by. As an all too visible interface, which intertwined the re-construction of the Chelsea Hotel room and the New York street scenes, it condensed into a single picture private and public settings where individuals found no retreat from disciplinary tactics and surveillance mechanisms. The mannequins appeared to defy efficiency and time regulation as they lay in bed, but they also could be seen as docile props subjected to the disciplinary gaze of the public and possibly to the commercial interests of Bonwit Teller, which generally used them to perpetuate a world of fantasy supposedly found within easy reach. Passers-by found themselves in a similarly ambivalent situation given the fact that their body images were co-opted in the installation via the closed-circuit system. The hidden video camera doubled the disciplinary apparatus of the reflective window and virtually refracted the images by displaying them from an upper angle. Power was deindividualized because its source remained hidden. Moreover, it was unclear whether the position of the camera could change and shift the perspective of visual images of passers-by. The newspaper placed near the TV monitor was another sign of the pervasive presence of the disciplinary apparatus, which absorbed and disseminated information about events with dire consequences in order to instill self-discipline. Despite the mirroring between the interior and the exterior of this Bonwit Teller tableau, the installation did not easily engender identification or mutual recognition because of the disjunctions between the averted gazes of the two mannequins. Furthermore, the TV monitor was neither parallel to the bed nor to the window. Hence, it did not fully match the perspective of the passers-by or of the mannequins. Its

³⁹⁹ Foucault (1977, 173)

orientation did not coincide with the camera eye either since the video images were captured from a higher angle.

This mismatch between points of view and the virtual impossibility of projecting oneself into the body image of the female mannequin looking away from the passers-by's gaze was somewhat reminiscent of a scene from Breton's novel *Nadja*, which inspired Hershman's installation. In this book, the female protagonist recounts the voyeuristic pleasure she experienced while watching the workers traveling in a second-class Metro car. The male narrator promptly reminds Nadja that her gaze was not returned: "Besides, at such moments you see them and they don't see you."⁴⁰⁰ This novel scene is significant because the lack of visual exchanges denoted the absence of mutual recognition and indicated the fact that the lower classes needed to become more highly conscious of the fact that they needed to challenge their condition of social servitude and the rules imposed by the disciplinary apparatus. Yet, in *Past and Illusion* the situation was reversed. The female mannequin appeared to avert its gaze from the group of passers-by voyeuristically looking at the bedroom scene. Her act did not denote self-obliviousness as in the case of the commuters in Breton's novel, but vivid awareness of her role as docile body juxtaposed to Bonwit Teller commodities. In the installation context, it was only the disciplinary apparatus represented by the window and the camera eye that mirrored back the gaze of the viewers without however providing any sense of empathy due to its deindividuating function. The only alternative left to passers-by for seeking mutual recognition may have been turning towards each other or watching each other via the television interface. Thus, the installation made them better aware of their relation to the broader social environment and

⁴⁰⁰ Breton (1960, 68)

limited their tendency to adopt unchanging roles through their close identification with mannequins.

By contrast with the *Past and Illusion* hotel scene, disciplinary power was individuated in *Performer/Audience/Mirror*. Graham did not hesitate to convey his subjectivity by describing his bodily sensations and his thoughts on the attitudes of spectators, but he also portrayed himself as an object of a surveillance system that surpassed his authority. The mirror was a disciplinary apparatus without a face, which encompassed the entire environment and rendered all spectatorial and performative actions visible and objectifiable. Graham has manifested an interest in the power mechanisms of perception and representation. His ideas about the disciplining function of the gaze and the performative discourse were amply expressed in his essay “Theater, Cinema, Power” (1983) in which he contrasted the model of the single-focused perspective characteristic of Renaissance theater with the architectural models of Bauhaus theater that revealed the illusory character of the *mise-en-scène* through the use of transparent panels.⁴⁰¹ Graham argued that Renaissance actors were supposed to mirror the view of the ruler by constantly addressing his ideal and distant gaze without however overestimating their lower social status. The artist’s performance in *Performer/Audience/Mirror* exemplified this ambivalent position while simultaneously deconstructing the system of binary relations established between a visible authority figure and an inferior mass of spectators. Foucault noted that with the gradual downfall of monarchies and the weakening of cultures based on cyclical ceremonies, power became “more anonymous and more functional.”⁴⁰² The mirror interface introduced in the performance as a third element affecting the development of interpersonal relationships epitomized this invisible authority, paralleling the all-encompassing social,

⁴⁰¹ “Theatre, Cinema, Power,” Moure ed. (2009, 267)

⁴⁰² Foucault (1977, 193)

economic, and political system. Acting between the reflective screen and the audience, Graham revealed both the advantages and the limitations of his position. He showed how his observations incurred changes that he could control only to a limited extent because information did not circulate only between himself and the spectators or between the mirror and spectators. It also got disseminated laterally between audience members who entered into dialogue with one another. Graham held increased power when he was facing the mirror because the direction of his gaze was not fully verifiable by the members of the audience. However, he was also more likely to make mistakes in this case by treating the audience as a more compact collectivity. Thierry de Duve argued that *Performer/Audience/Mirror* disclosed the mistaken political view that collectivities can be treated as unchanging homogeneous groups: “the production of a group imaginary – whether class consciousness or hippie conviviality – cannot result in a coherent vision of the world stated from a common point of view.”⁴⁰³ Indeed, Graham ended his second performance by concluding that the audience members were gradually communicating among themselves more than reacting to his presence. He could not maintain constant supervision over the reactions of the spectators, which were dynamically fluctuating and did not depend only on his observations, especially as individuals started to adopt more performative roles.

The incongruent relation between spectatorial and performative responses, together with their potential future coincidence at a certain level, was a source of affective impulses in the context of Graham and Hershman’s works. This concatenation of ties between participants was not to be taken as a sign of collective subordination because the connections were subject to unforeseen variations over time. In the case of Graham’s performance they were to a certain extent directed due to the performer’s observations because he drew spectators’ attention to

⁴⁰³ Thierry de Duve, “Dan Graham and the Critique of Artistic Autonomy,” Alex Kitnick ed., *Dan Graham* (Cambridge, MA: MIT Press, 2011), p. 77.

various smaller groups in the audience. These ties were less constrained in Hershman's installation where they evolved in relation to the flow of the crowds passing by the Bonwit Teller windows. The fear that the interdependence between individuals facilitates manipulation is not entirely justifiable. Interconnectivity is not based solely on binary relations of subordination or domination and can be highly variable. In his study of affective attunement during infancy, Daniel Stern pointed out that "intersubjectivity is equally crucial for creating experiences of being with a mentally similar other and for furthering individuation and autonomy."⁴⁰⁴ Hence, the two works did not objectify the mass of participants, but offered them a chance to gain a third distance from the situation such that they could witness the multiplicity inherent in themselves given the various ways in which they could relate to others and the changing conditions of their perceptual and social context. Lynn Hershman's re-staged hotel scene set out the possibility for the repetition of the past with a difference, emphasizing the contingency of events and self-perception upon the characteristics of spatial and temporal coordinates. In addition to picturing the convoluted relations between oneself and one's surroundings, this tableau presented the web of interpersonal inferences conjoining or dividing individuals. There was no coincidence between the mannequins transposed from a different environment, the small-scale televised representations of the passers-by, and their actual bodily presence in front of the shop. Nonetheless, their potential for convergence through simultaneous transformation was conveyed by the palimpsestic window reflections, which collapsed the rigid boundaries between the experience of isolated individuals. Lateral communication was established directly or indirectly between passers-by who would be speculating about the roles embodied by the mannequins. The transitoriness of window reflections heightened the impression of fluctuating relations and split

⁴⁰⁴ Stern (1985, 127)

the attention of viewers between various reference points, which constituted significant nodes in the dynamic network of interpersonal relations. Reminiscing her experience of visiting *The Dante Hotel* (1973) environment, preceding the Chelsea Hotel installation that stood at the basis of the Bonwit Teller exhibition, Moira Roth stated:

Willy-nilly, I was part of the visceral as well as psychological narrative. As I was to discover later, this is characteristic of Hershman's work: an engulfing, often uncomfortably seductive intensity of atmosphere, the implication of the viewer/spectator as a participant, and the resulting experience of shared voyeurism.⁴⁰⁵

Roth's observation evoked the affective impact of Hershman's projects, which have often brought to the surface fairly incongruent roles, such as that of the undisguised voyeur conspicuously turned into an observation target together with his/her victims. The hotel scene from *Past and Illusion* enacted a similar kind of perceptual interplay by engulfing viewers into a chain of interdependent visual exchanges between themselves, the camera eye, the TV monitor, and the window interface. Roth defined the mutual engulfment of spectators in Hershman's voyeuristic environments in terms of a sensation of uneasy "intensity."⁴⁰⁶ Massumi employs the same term to define affect and emphasize its capacity to trigger transformation as one is faced with competing possibilities of action or expression. Hershman's hotel tableau for the Bonwit Teller windows inflicted a sensation of uncertainty as to the past of the prototypical mannequins and as to what additional protagonists and urban scenes were to be inscribed in its overlapping visual frames.

The transitory symmetries and asymmetries between the responses of viewers and the descriptions of the performer in *Performer/Audience/Mirror* were also conducive to intense uncertainty about the evolution of intrapersonal and interpersonal relations throughout the performance even though the cycle of descriptive stages orchestrated by Graham was pre-

⁴⁰⁵ Roth (1992, 6)

⁴⁰⁶ Massumi (2002, 27)

established. Signs of affective suspension were evident at the level of the artist's recurrent pauses as he struggled to define his inner experience or to describe the reactions of various audience members. He found his expectations contradicted and was at a loss about interpreting the full range of participatory responses. Having repeatedly noticed the heterogeneity of expressions and gestures observable in the audience, Graham underlined the fact that he could provide no overall assessment of spectators' emotions or thoughts. Even when he made generalizing remarks, he found that he had to rapidly dismiss them. While facing the audience he observed that everyone in the audience was smiling, yet found himself compelled to admit that "the smiles are not of a uniform type."⁴⁰⁷ The rich range of convergent responses reflected not only Graham's sensible perception of expressive nuances, but also the lateral dissemination of affective ties since audience members were engaged in observing each other's reactions as they watched their mirror images. Stern argued that intersubjective relations, which imply affective connections, entail swift variations in behavioral and expressive responses instead of presupposing strictly imitative acts.⁴⁰⁸ According to him, these slightly asymmetrical ties are considered signs of enhanced comprehension and contribute to the proliferation of communicative exchanges. Hence, the heterogeneity of responses to Graham's performance indicated the emergence of affective forms of interpersonal spectatorship, which consolidated both individual and group awareness.

Performer/Audience/Mirror and the hotel scene from *Past and Illusion* also inspired affective impulses because of the conjunction of actuality and virtuality, which further prompted interpersonal transformative processes through which participants could re-negotiate their roles in the proposed scenarios. Graham was prone to hesitating when describing his movements during the performance. He found it hard to draw distinctions between natural and

⁴⁰⁷ Graham (1977), unpaginated.

⁴⁰⁸ Stern (1985, 138-139)

staged gestures or expressions. At times, his misgivings about the choice of verbal signifiers that would accurately delineate his performative actions translated into doubts about subsequent corporeal reactions: “and I’m walking...walking in that direction ... to the side of the room off stage; it stops at the word stage, hesitates on the toe of the left [...]”⁴⁰⁹ The body seemed to acquire a mind of its own by judging the performer’s verbal allusion to the theatrical setting, which conflicted with his presumably unpremeditated use of gestural language. Graham’s difficulties in externalizing his corporeal experience also underscored his affective involvement. Eloquently asserting that “the skin is faster than the word,”⁴¹⁰ Massumi explained that when emotion or tension is verbally expressed it loses part of its intensity because it cannot adequately illustrate the ambiguity characteristic of affective intervals. Graham was highly conscious of the lack of synchronicity between bodily sensations, words, and images throughout the performance. Their coincidence was possible only at a virtual level, which preceded the actual projection of these sensations in the realm of perception. Participants could intuit the moments at which the performer was most affectively involved based on his pauses and hesitations. During these intervals, they themselves were trapped between the performer’s prior observations and their personal suppositions about his bodily sensations and movements. The virtual and the real intertwined, thus increasing the multiplicity of potential states of mind and feeling concomitantly experienced by the participants and contributing to a proliferation of affective engagement.

Hershman’s hotel room scene arose similar misgivings about the relation between actuality and virtuality. It cast doubt both on what had happened in its environment two years before that made it worthy of being restaged and on what was occurring within society at that very moment that represented a continuation of that scene. The individual identity of the

⁴⁰⁹ Graham (1977), unpaginated.

⁴¹⁰ Massumi (2002, 25)

mannequins lying in bed remained fictive. At first sight, their virtual existence collided with the live images of passers-by inscribed in the tableau. Yet, at a closer examination, it underlined the virtuality inherent in the lives of all individuals assuming often conflicting public and private roles in order to adjust to different circumstances. Hershman has been persistently interested in how actual social realities can be transformed through a process of re-contextualization that does not obliterate their underlying causes, but brings them to the foreground and stimulates profound changes. Synthesizing her thinking on the productive dialogue between the real and the virtual, she affirmed: “When real objects are artificially inserted into real environment, they simultaneously become simulated symbols as virtual reality.”⁴¹¹ The televised images of passers-by in *Past and Illusion* became emblematic signifiers of various social groups once they became part of the hotel scene. The notion of identity was also shaped by how much they resembled or differed from the mannequin figures. Their docile bodies served as props in the virtual reconstruction of one’s sense of selfhood in relation to the installation. The static posture of the mannequins contrasted with the ongoing movement observable in the background of the onlookers who watched their images on the TV monitor as other passers-by kept walking at a fast pace and cars dashed across 57th Street. Thus, spectators found themselves in an affective transition. On the one hand they could only get a good look at their self-image on the TV screen if they came to a full stop since their body image would quickly disappear or shift with their change in position. On the other hand they felt the need to escape its constraining surveillance frame and explore the larger context of the hotel environment, which engulfed their reflections. Participants felt affectively tied both to the mannequins, whose private space they virtually

⁴¹¹ Hershman, “Private I: An Investigator’s Timeline” in Tromble ed. (2005, 17)

invaded and whose static posture they shared as they intently watched their self-images, and to the passers-by appearing and disappearing on the monitor as they stood in front of the window.

The impression of momentarily suspended motion was also intensely conveyed by Graham's performance. It contributed to channeling spectators' attention to different parts of the performer's body as he minutely described his every motion, be it accidental or intentional. Since Graham decomposed every gesture and virtually reified it through verbal description, participants got a sense of how the movement was registered at a proprioceptive level by imagining how their own bodies would react to a similar series of changes in posture. Concomitantly, Graham's corporeal perception was influenced by how he sensed the spectators would expect him to move at the very next moment. At certain points during the performance, his intent bled into that of the audience, hence indicating the contingency of his responses upon his affective alliance with others: "It's funny how the feet are now splayed apart. They're always asymmetrical as if the audience, as if I deliberately want to unbalance myself; but I don't move; I'm stationary..."⁴¹² Graham's hesitation between implying that his gestures are dependent upon viewers' expectations and stating that they are self-willed acts betrayed the difficulty of distinguishing between the roles individuals voluntarily assume and the roles they are conditioned to embrace due to the social contexts in which they live. In addition to this, it spoke to the consolidation of his affective ties to the group of viewers whose reactions and attitudes he had previously described while he was mimicking the function of the mirror screen in order to create a critical distance between the viewers and their self-reflections.

Graham's reflections on how his bodily positions were constrained by various factors and the mannequins' rigid bodily posture in Hershman's Bonwit Teller installation served as

⁴¹² Graham (1977), unpaginated.

instruments for activating viewers' awareness of how docility is constructed through the perpetuation of models of visual perception and representation, which efface ambiguities and impede self-transformation. In *Performer/Audience/Mirror* and *Past and Illusion*, mirroring processes had the role of deflecting images and creating interpersonal awareness with the purpose of unveiling the risks of becoming individually or collectively absorbed in systems of surveillance and control, which hinder social change and thwart self-reflection in relation to heterogeneous groups and environments.

3.2 DISCREPANT REFLECTIONS: THE MISE EN ABYME OF CONSUMER SPECTACLE

In this second section, I will focus on how Hershman's *25 windows* (1976) and Graham's *Video piece for showcase window in a shopping arcade* (1976) critiqued the underlying structure of consumer culture and the society of the spectacle through the design of competing visual systems nested inside one another like Chinese boxes. By combining representations of conflicting temporalities, they called into question the notion of uniform time and enhanced historical consciousness. I will mainly concentrate on the middle part of the Bonwit Teller installation, entitled *Time, Identity and Transformation*, in order to outline how the work set under a critical lens the manipulation of desire, the conventional construction of femininity, and the propagation of ideals of eternal youth. By analyzing Graham and Hershman's installations in tandem, I will explore the modes in which they insidiously replicated and deconstructed the visual rhetoric of commercial display spaces, which isolated viewers from each other and the broader social environment, with the goal of channeling their attention to desirable consumer products.

Sketched in 1976, *Video piece for showcase window in a shopping arcade* proposed the insertion of two interconnected closed-circuit systems in two parallel shop windows containing large mirror panels against their back walls. The left window included a camera turned to the interior and a monitor facing the exterior, which displayed delayed images transmitted from a camera situated in the opposite window. The right window included a similar setup, composed of a camera turned to the exterior and a monitor facing the interior, which displayed live images from the camera located in the other display space. The images circulating across the closed-circuit systems were integrated into an additional visual system represented by the glass façade of the stores and the parallel mirror screens, which flanked their window cases. Since it was supposed to unveil the most general basis of the marketing system, the installation could be inscribed in any two facing shops, irrespective of the type of merchandise they sold.

By the 1970s, closed-circuit television had been already used in the design of shop windows. In 1968, the façade of the *On* store in New York featured nine monitors displaying pictures of commercial products along with live images of consumers shopping inside.⁴¹³ Yet, while this genre of closed-circuit display was aimed at enticing passers-by to follow the example of others and buy more products, Graham's *Video piece for showcase window in a shopping arcade* shifted viewers' attention from the idealized commodities to the broader social environment in which the shopping experience was staged. Thus, he hoped to undermine the proliferation of consumer desire through close identification with the image of consumer products. Alex Kitnick placed the installation in the category of works by Graham that were explicitly attacking the commercial strategies, which objectified the consumer by capitalizing on

⁴¹³ Stern et al. ed. (1995, 597)

his/her narcissistic impulses. He argued that there is “a move from criticality to affectivity”⁴¹⁴ in the artist’s practice only during the late 1970s when he started designing pavilions based on transparent materials, meant to be installed in public spaces open to a non-specific audience. However, Graham’s earlier works were by no means devoid of affective implications as it could be noted in the prior discussion of his performances. Affectivity does not undermine the critical strength of a work, but brings out its potential for consolidating alliances between specific groups that would not necessarily share a mutual agenda under different circumstances. In “Intensities of Feeling: Towards a Spatial Politics of Affect,” Nigel Thrift warned about the danger of equating affective impulses with libidinal drives, which can be easily manipulated, as well as about the fallacy of disregarding the specific setting in which they emerge.⁴¹⁵ The audience of *Video piece for showcase window in a shopping arcade* could not be reduced to a unique social category at which the critique of the commercial system was targeted. The installation functioned as an interface between various groups of spectators more or less likely to become potential customers of the arcade shops, yet commonly involved in interdependent economic and social networks. Their combined images in the reflective screens of the installation emphasized their belonging to heterogeneous collectivities.

The installation was displayed in a shopping arcade in Groningen (Netherlands) in 1978. Although it built upon the context in which it was embedded, it was transferable to commercial venues, which employed similar strategies in catalyzing consumer desire. Birgit Pelzer remarked that the modified storefronts distanced the passers-by from the commodities instead of bringing them closer to them in order to strengthen the impression that they fulfilled essential needs: “The

⁴¹⁴ Alex Kitnick, “What’s Your Type?” in Kitnick ed. (2011, 210)

⁴¹⁵ Nigel Thrift, “Intensities of Feeling: Towards a Spatial Politics of Affect,” *Geografiska Annaler. Series B, Human Geography*, Vol. 86, no. 1, 2004, p. 60.

constant interchange of different reflections from both inside and outside the vitrine introduced a yawning gap, an insecurity about the image.”⁴¹⁶ The images of consumer objects underwent a process of multiplication and relativization, which diminished their capacity to inspire fetishistic desire. The installation bore similarities with earlier works by Graham in terms of its visual components and its strategic parallelism of sites, which enforced behavioral codes. Designed in 1974 and displayed in Galerie Vega (Liège) in 1976, *Mirror window corner piece* (1974) challenged visitors to position themselves inside and outside a system of mirrors and delayed TV images in order to gain a view of themselves from a short spatial and temporal distance. The shopping arcade installation resembled even more closely *Video piece for two glass office buildings* (1974-6), which broadcast live and delayed video images in opposite office spaces fitted with large mirror walls, and *Picture Window Piece* (1976), which presented live and delayed views of the interior and exterior of a domestic space. Through embedding similar visual systems in spaces with diverse functions, Graham created a series of analogies between the workings of stores, galleries, offices, and family living spaces. Thus, he pointed out that they were all based on a set of enclosures and openings that guaranteed limited visual access to the operations through which social behavior was regulated.

Based on much less abstract frames of references, yet proposing a similar set of complementary relations between the passers-by and the installation components, Hershman’s *Time, Identity and Transformation* unveiled the dissemination of artificial consumerist ideals, which distorted self-perception and impeded personal transformation. Composed of several tableaux arranged in a non-linear fashion along Fifth Avenue, this part of *25 Windows* portrayed

⁴¹⁶ Birgit Pelzer, “Double Intersections; the Optics of Dan Graham,” Pelzer et al. ed. (2001, 57)

the construction of identity as a tortuous process of negotiation between notions of selfhood at different ages and iconic typologies propagated by mass media and commercial venues.

The first window in this series included a large photograph of Roberta Breitmore, the persona invented by Hershman two years earlier. The image provided instructions for a virtual makeover in 20 minutes. Placed on an architect's table, the chart evoked both a cosmetic change and an intervention in the social space inhabited by the female figure. The tableau was completed by a set of beauty products and a cinematic sequence of images showing the transformation of a woman as layers and layers of makeup were applied to her face. While the images seemed to parody the photographs in fashion magazines they also bespoke of the compelling need to develop alternative identities in order to fit into the patriarchal social environment of the 1970s.

The subsequent windows presented a narrative of self-transformation that spanned a twenty-year period and brought together a 20-year old woman called Blaze Simpson and a 40-year old woman called Ruth Stein, who looked alike and served as alter egos of a female self at different stages in their lives. Visual representations of these two live models, who were also present in the vicinity of the installation at various times throughout the exhibition, populated the world of the window display cases, which offered various glimpses into the way these protagonists reflected on their changing self-images and needs. In one window, a mannequin seemed engaged in contemplating her photographic image displayed behind a window frame. A caption showed the thoughts of her life-size two-dimensional figure, who self-assertively stated: "When I was young I had everything." The past tense of the statement appeared to contrast with the glamorous look of the woman in the photograph, smiling broadly as she put on a show for the Bonwit Teller customers. At the bottom of the display case, the artist arranged a series of plates with images of different body parts, which appeared to undergo a process of self-destruction.

They were somewhat reminiscent of her wax casts from the early 1960s and her ceramics for performative dinners she organized for artist friends and art critics during the 1970s. Ironically, these seemingly self-destructive plates were the only part of the installation Hershman sold as a commodity through the Bonwit Teller shop during the exhibition period. By selling consumer objects, which had a short life span and already appeared to be damaged, the artist showed how much the market system relied on consumers' need for new commodities, as well as on their perpetual dissatisfaction with their identity.

The subsequent tableaux in *Time, Identity and Transformation* displayed images of the two mannequins stripping off their clothes. Captions proclaimed the liberation of the individual from material needs as one aged and desired to change from within rather than acquire more clothes and improve his/her looks. The mannequins also appeared in two shower scenes, suggestive of different degrees of visibility in society as one shower stall was covered in water drops whereas the other one was suffused with steam. The ambivalent relation between the two models, as well as between the time periods represented by each of them, was further enhanced by the design of a stereoscopic visual apparatus. Passers-by could gaze upon two filmstrips showing Blaze Simpson and Ruth Stein by looking through two viewfinders corresponding to the left and right eye. In the video documenting the exhibition, Hershman implied that viewers could thus combine the images of the two women into a single picture, which stood for a virtual portrait of a thirty-year old woman faced with personal dilemmas as she was caught between different life stages.

The final tableau of *Time, Identity and Transformation* returned the viewer to the beginning of the cycle of cinematic sequences by portraying a mannequin looking at her life-size aged picture rhetorically stating: "When I was young I had nothing. I know now what I should

have known then. “Less is more, more or less?”. The final question mark indicated that despite the fact that the woman had come to terms with her changes in physique and had acquired an understanding of what she had gained in experience during the aging process, her series of self-transformations and reflections on the recent and distant past had not reached an end. Through the virtual mirroring processes between the two mannequins, Hershman called for intrapersonal and interpersonal examination as a means of maintaining some amount of control over the changes in identity elicited by variations in one’s personal trajectory and one’s social environment. Just like Graham, she created a gap between various images of oneself as object and subject of perception in a society dominated by consumerism. Preferring a more mysterious narrative with surrealist overtones similar to the stories portrayed in the other installation tableaux, Jane Bell criticized the “unevenness” of this part of *25 windows*, which confronted the viewer with too many different visual representations building upon the idea of aging.⁴¹⁷ Nonetheless, Hershman’s repetitive casting of the two models in similar roles was not superfluous since it underlined the variability of points of view and encouraged passers-by to question both the reality of two-dimensional and three-dimensional representations, and the identity of the two female protagonists.

By intervening in the space of storefronts, which usually function as utopian environments where everything is possible, Graham and Hershman effectively transformed them into heterotopias by underscoring their firm anchorage in actual socio-economic conditions and their illusory neutralization of contradictions between different groups of customers. In enunciating the principles of heterotopias, Foucault argued that they “are most often linked to

⁴¹⁷ Bell (1976, D5)

slices in time.”⁴¹⁸ Both *Video piece for showcase window in a shopping arcade* and *Time, Identity and Transformation* collaged conflicting temporal intervals. Graham delayed the broadcast of images from the corridor between the two stores by five seconds. The temporal gap jolted passers-by into recognizing the distinction between the way they behaved when they were unaware of the camera lens and the way they purposefully altered their conduct upon noticing the recording. This delayed sequence paradoxically coexisted with the live broadcast showcased by the monitor on the right. Similarly, Hershman’s installation mapped out asymmetrical temporal relations by conjoining visual representations of a woman at different ages. Two-dimensional and three-dimensional female figures standing for the same persona appeared engaged in a live conversation that disregarded temporal boundaries. The younger looking woman did not speak from the point of view of her own age. Instead, she enunciated the reflections of the elder one by talking in the past tense about the experience she was yet to accumulate. Some of the remarks were contradictory. In the first caption, the young woman claimed to have had everything when she was young whereas in the last caption, her aging self maintained the very opposite. Yet, the distinctions were by no means clear-cut since the voices of these two personas appeared to be projections of the female mannequin’s thoughts standing in front of several window frames through which she could gaze upon her two-dimensional representations at different moments in time. The situation was even more ambiguous since the facial features of the three-dimensional figure were not clearly visible. Hence, it was difficult to tell her age. One could only intuit whether she looked younger or older than the woman standing behind the window frame.

⁴¹⁸ Michel Foucault, “Of Other Spaces” (1967). Available online at: <http://foucault.info/documents/heteroTopia/foucault.heteroTopia.en.html> on 02/15/2011.

In Graham and Hershman's installations, reality was turned inside out. Just as it was hard to distinguish between the thoughts and ages of the women represented in *Time, Identity and Transformation* it was fairly difficult to discriminate between the index and the temporal framework of the video images when one first came across *Video piece for showcase window in a shopping arcade*. The conjunction of competing temporalities in the context of the two works shattered the impression of uniform time propitious to commercial activities, which are primarily anchored in the present and the immediate future. In *The Society of the Spectacle*, Debord maintained that "the time of production, time-as-commodity, is an infinite accumulation of equivalent intervals."⁴¹⁹ Graham and Hershman set out to counteract this temporal model in their respective installations. They juxtaposed temporal intervals which were at odds with each other in order to impede a seamless transition from the present to the past and vice versa. The delay of images in Graham's installation collided with the time of the commodities generally conceptualized as irreversible so that consumers could be constantly tempted to purchase newer and newer products. The blatant display of the aging process in *Time, Identity and Transformation* did away with the ideal of perpetual youth advanced by advertising so that passers-by could step out of the secluded utopia of the window display and confront themselves with the reality of their limited time span. The installation suggested that their existence must not be oriented to the satisfaction of consumer needs, but to the fulfillment of social goals through repeated acts of intrapersonal reflection and transformation in relation to one's environment.

Graham and Hershman turned viewers' attention from the cyclical change of consumer objects in the shop windows to the unpredictable living experience. In Debord's view, the "social absence of death" artificially constructed by the society of spectacle was equivalent to "the social

⁴¹⁹ Debord (1994, 150)

absence of life”⁴²⁰ because it prevented individuals from gaining awareness of the control exerted by economic forces over their existence. The mirror and video frames in *Video piece for showcase window in a shopping arcade* had a disorienting effect since images of the interior of one display case were projected within the space of the other one. The confusing exchange of information between cameras and monitors located in opposite storefronts stimulated viewers to take their present conduct as a point of reference for what was actually happening in the visual corridor between the two shops. In a similar attempt at emphasizing the lived experience of the participants in the installation in order to prevent them from seeking an illusory escape into the utopian realm of commodities, Hershman arranged for the two women who embodied the virtual protagonist of *Time, Identity and Transformation* to be present on the exhibition site. In a photograph documenting the installation, Ruth Stein, the 40-year old woman, is shown distributing images of herself to viewers, thus rendering the signs of the aging process even more evident and pointing out that the world portrayed in the shop windows did not come at a standstill. While Hershman incorporated references to the past and the future in the titles of the other parts of the installation, she purposefully avoided including the term “present” in the title of this middle component because she wanted to subvert the notion of a stagnating present, which can be turned into an object of representation. The artist explained that this choice was “conscious” since “the present could never be frozen.”⁴²¹ Even though Graham’s installation conveyed the impression that time can be virtually suspended for five seconds, it also underlined its ineluctable transition and made viewers aware of how their lived experience constantly changed as it was shaped by the experience of the recent past.

⁴²⁰ Debord (1995, 161)

⁴²¹ Lynn Hershman in e-mail correspondence with the author (May 5, 2011).

Not only did the two installations alert passers-by to the active role they needed to play in modeling their present existence by pondering over different temporalities, but they also warned them about the crossbreeding between the control mechanisms of the society of the spectacle and those of the society of surveillance, which were no longer in conflict with one another in the age of electronic media. Foucault posited that the modern period was the age of individual supervision when people were brought under control by being isolated from each other whereas the antiquity was “the civilization of spectacle,” in the context of which people could be collectively brought into submission as they participated in public events, which rendered them more docile.⁴²² By embedding video systems in public spaces, Graham rendered surveillance information accessible to the crowd of passers-by, thus hinting at the fact that the society of the spectacle increased the potential for mutual supervision among individuals. Noticing each other in the multiple reflective frames of *Video piece for showcase window in a shopping arcade*, participants realized that they were subjected to the conditions of all-encompassing systems of control both at an individual and at a collective level. The five-second delay created a critical distance between themselves and their visual representations. It primarily catalyzed individual agency since participants could become conscious of the temporal gap by observing how their own movements were fed back into the system. Nonetheless, the delay was also triggered by interpersonal cognizance since the participants were in close proximity to one another and could control the visual field of the installation through their performative actions only to a limited extent since those within their proximity could bring changes to the visual information circulating through the closed-circuit systems.

⁴²² Foucault (1977, 216)

In *Time, Identity and Transformation*, the connections between spectacle and surveillance were more implicit. The installation voyeuristically displayed how women scrutinized their bodies and facial features in relation to iconic representations. The visual transformation of an anonymous female figure into Roberta based on a series of cosmetic instructions evoked the way consumer spectacle influenced self-representation. Despite the mimetic change illustrated by the diagram and the cinematic series of images, the woman did not appear as a completely disempowered subject since she took charge of the transformative process. The subsequent tableaux focusing on images of mannequins of different ages underlined the agency of the heroine in a clearer manner. They called for self-examination at various points in life and presented the multiple ways in which individuals construct their image in response to self-perception and mental reflections.

Video piece for showcase window in a shopping arcade and *Time, Identity and Transformation* laid bare the strategies by means of which consumer desire was generated. Graham and Hershman's replication of an already tautological market system whose sole goal was its self-perpetuation through the proliferation of analogies between consumers and commodity objects served as an instrument for revealing its artificiality and the threat it posed to individual self-expression and social changes. Visual information was reiterated and disseminated through multiple channels in the two installations. Passers-by became engaged in a performative game of decoding the discrepancies between the system components. Instead of seeking assimilation into the realm of reflections represented by the shop windows, they aimed to define themselves in contradistinction to them. Spectators of Graham's installation repeatedly shifted their bodily posture to notice how they could influence the video broadcast in the two display cases. Individuals who passed by the Bonwit Teller installation felt compelled to move

along its windows to restore the narrative thread that linked the various portraits of the female figures. In his extensive study of arcades, Walter Benjamin noted that these urban areas limited mobility and subdued social tensions:

The arcade is a street of lascivious commerce only; it is wholly adapted to arousing desires. Because in this street, the juices slow to a standstill, the commodity proliferates along the margins and enters into fantastic combinations, like the tissue in tumors.⁴²³

Benjamin's definition of the arcades in terms of social stagnation, which facilitated the dissemination of desire for consumer products, matches the critical perspectives embraced by Graham and Hershman upon the functioning of commercial sites. Their works catalyzed incidental encounters between passers-by and disrupted the parallelism construed between the display in the shop window and the world outside.

Graham discussed the function of glass interfaces in the design of storefronts at great length in his essay concerning the relations between video, architecture, and television. He argued that the public display of goods in window cases was merely another mode of concealing the social forces that contributed to their production and alienating the individual from society by strengthening his/her desire for consumer objects isolated in glass cases.⁴²⁴ In his description of *Video piece for showcase window in a shopping arcade*, the artist suggested that spectators could be actually permitted to enter into the display case if the storefront design allowed it. Hence, the distance between the potential consumer and the commodities would be annihilated and the mobility of the participants would increase as they could interact more with the visual system of the installation under these potential circumstances. Even if they remained outside glass facades, their process of identification with the products would be undermined because of the

⁴²³ Benjamin (1999, 42)

⁴²⁴ Graham (1979, 72)

incongruities between the video and mirror images situated on opposite sides of the arcade corridor.

Hershman's installation created a similar dissociation between the realm of luxury commodities sealed off behind protective glass and the world outside, where Bonwit Teller customers commingled with members of lower social classes. *Time, Identity and Transformation* constituted a direct attack upon materialistic values. Cutout female figures were shown discarding their clothes, as they understood how much they had become entrapped in the ideals of a utopian environment built upon egotistic drives. The apparent contradiction between visual representations and verbal statements enhanced the tense relation between the function of the store and the message of the installation. One speech bubble placed near the silhouette of a naked woman appeared to further the goals of the store since it conveyed the message: "As I grew older I wanted more." However, the visual evidence pointed to the contrary since the woman had just thrown off her clothes. Hershman implicitly suggested that the model desired to accumulate more knowledge rather than acquire more material goods. The pop aesthetic of the display, which resembled a comic strip, increased the parodic mood of the installation.

Graham and Hershman used the store context as exhibition site with the aim of bringing to the surface a more extensive set of relations between individuals and social, cultural, and economic systems, which capitalized on a sense of lack either in information or material goods in order to trigger desire. Within the framework of installations that exposed the way in which behavior is regulated, the artists subdued the effect of such mechanisms by showing their pervasive presence and parodically replicating their influence on the human psyche. Both *Video piece for showcase window in a shopping arcade* and *Time, Identity and Transformation* set forward a strategic *mise en abyme* of consumerism. They were structured around a series of

interwoven visual frames, which placed the beholders in variable perceptual contexts meant to catalyze a re-assessment of oneself in relation to the socio-economic networks embedded in one's surroundings. While facing the two installations, participants appeared to be on the outskirts of the systems they portrayed only to discover that they were in fact deeply involved in them. The number of networks in which they were engaged in the real world largely surpassed that of visual frameworks displayed in the store windows. The installations created a distance between the viewers and their surroundings in order to enable them to discriminate between the multiple layers of circumscribed socio-economic systems, which closely overlapped and inconspicuously blended with the environment.

In front of the Bonwit Teller windows displaying the narrative sequence of *Time, Identity and Transformation*, passers-by found that a female mannequin mimicked their viewpoint as they gazed at the storefront. Just like them, she was looking towards a window through which she could see the image of a female model. However, the parallelism between the two representations of women, as well as between the viewer and the mannequin, was incomplete because the narrative protagonists belonged to different times. At first glance the window frame appeared to also function as a mirror frame since the life-size image of the woman matched the bodily posture of the three-dimensional model. Yet, the synchronicity between the two representations was illusory. The past tense of the statements made by the smiling woman inhabiting the space behind the window indicated her temporal distance. The ambivalent nature of this narrative frame echoed the dualistic function of the glass storefront, which both demarcated the space of commodities from the space of the street and facilitated the overlap of images of these two worlds at the level of its specular interface. The contradictory relation between the female models standing for different ages compromised the parallelism between the

viewers and the narrative protagonists, thus instituting a distance between the commodity sphere, which turned out to be unable to restore youth, and the consumer domain.

A similar unbalanced relation between multiple frames of reference situated within the same visual context was observable in Graham's installation. Passers-by occupying the space between the two storefronts encountered competing representations. The contrasting orientation of the cameras and monitors interfered with the perfect parallelism between the facing windows and mirrors. No matter to which side of the arcade corridor viewers turned, they could not gain direct access to the televised images being recorded in that spatial framework. The monitor on the left faced the audience, yet presented delayed images, and the monitor on the right showcased live images, yet was oriented towards the mirror so that participants could only observe the broadcast via the medium of the mirror. The temporal discrepancy between the televised images inscribed in the installation reflected Graham's ideas on how videos embedded in architectural settings could disclose the prevailing modes in which social order was imposed by functioning "semiotically speaking as window and as mirror simultaneously."⁴²⁵ In the context of the shopping arcade, they set on display the alienation of the individual immersed in an illusory infinite space and time.

The *mise en abyme* construction proposed by *Video piece for showcase window in a shopping arcade* entailed multiple self-referential and cross-referential layers. Graham insured that the specific characteristics of each medium were fully underlined. The mirrors, which stood for Renaissance perspective and instantaneity in the artist's opinion,⁴²⁶ incorporated only live images when seen frontally whereas the video representations, which had the potential to encompass multiple viewpoints and reflect temporal transitions, showed two contrasting views of

⁴²⁵ Ibid. (1979, 64)

⁴²⁶ Ibid., p. 67.

a similar scene, as seen through the camera lens and the mirror at different moments in time. The mirror walls encompassed images of the passers-by in the arcade corridor and commodity objects in the storefronts. In addition to this, they challenged the boundaries between foreground and background by incorporating reflections of each other. While the mirrors evoked infinite spatial recession, the video images were suggestive of infinite temporal regression. The TV set on the left encapsulated both images of what was taking place in the gallery five seconds before and of what had been presented on its screen ten seconds before. Despite the similarities between the two storefronts evocative of the overwhelming impact of the commercial system, there was no perfect overlap between their images. In this way, viewers felt compelled to challenge their representations and virtually step outside the enclosing boundaries of the realm of spectacle by gaining a sense of the way visual perception and consumer desire can be manipulated to catalyze processes of close identification between potential customers and commodities.

The presence of multiple female personas of different ages in Hershman's *Time, Identity and Transformation* and multiple video channels in Graham's installation for shopping arcades provided an opportunity both for a critique of the spatial and temporal enclosures engendered by consumerism and for an investigation into processes of identity construction based on interpersonal relations. Passers-by who stopped by the store windows where the works were exhibited found that they had to define themselves in terms of the way they were viewed from asynchronous viewpoints. While re-constituting the narrative of aging proposed by Hershman based on nonlinear visual sequences, they were encouraged to ponder the way their self-perception changed as they got older, as well as over how their views on appearance and consumer products would compare with those of the female protagonists of the story and the other persons in the audience. Similarly, passers-by who came across Graham's installation in

the arcades negotiated between the way they were inscribed in the video images at various times. They observed how their movements became a reference point for other viewers engaged in disentangling the threads of the complex visual system. The discrepant video representations prevented viewers from becoming immersed in an egotistic contemplation of their reflections, which would have only deepened their absorption in the idealized world of commodities. Paul Ryan, one of the artists whose cybernetic theories were widely known in the circles of American artists from the 1970s, explained that video was an instrument for exploring the process through which notions of selfhood are constituted and revised. In a discussion concerning the advantages and risks of video systems, he suggested that even in the context of these time-based visual representations it “*is easy to be zooming in on “self” to the exclusion of the environmental systems.*”⁴²⁷ In order to counteract this tendency, Ryan suggested involving others in the process of recording videos so that one would avoid developing a closed binary relation with the camera lens through relating to a wider web of interpersonal references. Graham adopted a similar perspective when he decided to embed his works in public spaces where the presence of multiple viewers would disrupt narrow spectatorial identification with the video channels.

In their respective installations, Graham and Hershman used a system of interrelated frameworks, which expanded not only the series of complementary visual representations, but also the network of relations to other participants or to virtual protagonists in more or less fictional narratives. Their *mise en abyme* of processes of self-perception resembled that proposed by psychoanalyst R.D. Laing who recommended the construction of long chains of inferences about how one is perceived by others in order to improve self-understanding through the exploration of multiple points of view: “Put all possible expressions in brackets/Put all possible

⁴²⁷ Paul Ryan, *Cybernetics of the Sacred* (Garden City, NY: Anchor Books, 1974), p. 33

forms in brackets/ and put the brackets in brackets.”⁴²⁸ Ultimately, Laing’s proposition was not limited to decoding the social ties between individuals, but was meant to reveal the larger abstract systems in which they participated. Graham and Hershman developed a bracketing technique that fulfilled the same purpose: rather than take their cues from the merchandise and the mannequins arranged in the showcase, shoppers interacting with *Video piece for showcase window in a shopping arcade* observed the behavior of others and the characteristics of the broader social environment in which the arcade was integrated; likewise, rather than envision the satisfaction they would derive from purchasing Bonwit Teller commodities, passers-by who stopped by the tableaux of *Time, Identity and Transformation* imagined how their living experience related to the stories of the fictive female figures in the window and the concerns of the two similar-looking models who epitomized the views of different generations.

In the case of Hershman’s installation, bracketing was achieved through the interposition of various forms of representation of similar personas within the same showcase, as well as through the invention of an entirely new identity, which could reflect the demands of the interconnected systems of spectacle, surveillance, and patriarchal conventions. Roberta, the woman whose past appeared to have been obliterated with the application of a cosmetic mask in the first tableau of *Time, Identity and Transformation*, was far from an autonomous figure, as the spectacular transformation appeared to imply. The very need for a total makeover and the precise instructions for the cosmetic improvements indicated that her new identity was already bracketed, being shaped by cultural and social expectations of the 1970s. In her discussion of the construction chart of Roberta, Amelia Jones suggested that Hershman “ironically pointed to both

⁴²⁸ R.D. Laing, *Knots* (New York: Pantheon Books, 1970), p. 87.

the apparent ease of such a transformation and the superficiality of such “cosmetic” change,”⁴²⁹ which ultimately could not guarantee a new identity. In addition to this, the image resembled an anatomical diagram. The makeup revealed the underlying tissue of the woman’s face. It was thus implied that she was about to undergo a plastic surgery instead of a mere cosmetic retouching procedure. The segmentation of her face into several numbered areas enforced this impression, as did the series of interviews with passers-by in the video documentation of the installation. Upon observing this tableau in the Bonwit Teller window, one woman ironically remarked that such a transformation took more than just twenty minutes and confessed to having had plastic surgery. Only the areas of Roberta’s portrait that had undergone transformation were vividly colored. The expression of her face resembled that of glamorous fashion models and her knowing glance betrayed her awareness of the implications of the transformative process she had embraced. Nonetheless, Roberta’s image in the chart was by no means the portrait of an empowered subject assuming complete control over her identity. The discolored areas of her face hinted at her depersonalization and at the commodification of her image.

The construction of Roberta displayed all the signs of a masquerade. Taking a distance from her image, the woman was shown enhancing her femininity through the application of makeup in a series of photographs, which presented all the steps of the cosmetic procedure. In her analysis of female masquerade in films, Mary Ann Doane remarked its subversive potential by defining it as “a type of representation which carries a threat, disarticulating male systems of viewing.”⁴³⁰ While Hershman was aware of the critical attitude implicit in the adoption of a mask, which hyperbolized feminine features to such a large extent that the construction of

⁴²⁹ Amelia Jones, “Roberta Breitmore Lives On” in Tromble ed. (2005, 110)

⁴³⁰ Mary Ann Doane, “Film and the Masquerade: Theorising the Female Spectator,” *Screen* 23, September-October 1982, p. 82.

appearance became evident, she was under no illusion that such an individual gesture would menace the patriarchal system. Roberta, the character she created and embodied for the first time in 1974, was far from a strongly individualized female figure. Instead, she stood for a collective persona illustrating the problems faced by multiple generations of women. In an essay discussing how this project paved her way to the design of interactive works, Hershman commented: “Like Roberta, many women found that one way to define themselves was through the cultural props around them. [...] There is something ambiguous, artificial, and self-defeating about women’s participation in that process.”⁴³¹ The artist carefully charted Roberta’s growing alienation and vulnerable position in society. She collected material evidence of her existence in the real world, such as records from her psychiatric sessions, newspaper announcements, and diary entries. By recording the narrative of this invented figure, Hershman was in fact writing a history of the problems faced by multiple generations of women.

Strongly denying that Roberta was simply a role performed by herself, Hershman persuaded three other women to transform into her by adopting her appearance, demeanor, and dress code. Through the public display of her identity construction in the Bonwit Teller windows, Hershman invited passers-by to take part in the multiplication of her persona. The eventual ubiquity of Roberta would have shown how the social and behavioral expectations of a patriarchal society were propagated and enforced. The artist explained that this invented identity served as a lens through which one could get a better view of the hegemonic systems controlling the lives of individuals. In some of the notes she wrote on this project together with Kristine

⁴³¹ Lynn Hershman, “Touch-Sensitivity and Other Forms of Subversion: Interactive Artwork,” *Leonardo*, Vol. 26, no. 5, Art and Social Consciousness: Special Issue (1993), p. 433.

Stiles,⁴³² Hershman asserted that as this figure “gains experience and time dimension, the people that are incorporated into her history become fictionalized archetypal characters.”⁴³³ Hence, she was suggesting that the enclosure of Roberta in the patriarchal system uncovered a series of additional social and economic enclaves in which large groups of people were entrapped. Retrospectively, Hershman argued that “Roberta was a kind of mirror for the society she reflected”⁴³⁴ and “an interactive vehicle with which to analyze culture.”⁴³⁵ Hershman repeatedly conceptualized her persona in terms of a reflective interface, which could encapsulate multiple perspectives upon society since it lacked very specific features.

The virtual identity created by Hershman was neither the equivalent of a mask nor that of an autonomous persona. Roberta’s characteristics changed depending on her encounters with others. Her experience in the living world affected her self-perception and influenced her subsequent behavior. Sociologist Erwin Goffman explained that “expressive coherence”⁴³⁶ is not an innate characteristic of the human self, but an outcome of processes of socialization, which gradually fix the performative roles embraced by individuals. Roberta underwent a process of becoming that could be anticipated to a certain extent based on the socio-cultural environment in which she was inscribed, but could not be fully predicted. By strictly defining the physiognomy of Roberta based on the construction chart, Hershman emphasized the constraints this persona would be facing in the social realm. She also ensured that the transformative process could be easily replicated so that the identity she created would become contagious and would expose the

⁴³² Kristine Stiles also embodied this persona during the 1970s. She wrote diary notes from the perspective of Roberta. These are included in the exhibition catalogue *LYNN HERSHMAN is not ROBERTA BREITMORE* (San Francisco: Fringe Press, 1978).

⁴³³ Lynn Hershman and Kristine Stiles (1978, 18)

⁴³⁴ Lynn Hershman in Laura Parnes, "Lynn Hershman Leeson, History=Future", *P.S.1 Newspaper Special Edition, WACK!* Available online on March 30, 2011.

⁴³⁵ Lynn Hershman in Tromble ed. (2005, 33)

⁴³⁶ Goffman (1959, 56)

difficulties collectively faced by women in the 1970s as they interrogated patriarchal definitions and representations of femininity.

Even though self-transformation was less explicit in the context of Graham's *Video piece for showcase window in a shopping arcade*, it was a constitutive part of the installation, which would become complete only when shoppers would interact with the contrasting visual systems by observing their shifts in attitude and bodily posture at different moments in time. Whereas stores would normally encourage potential customers to identify with the product and imagine themselves playing well-defined roles in order to spur consumer demand, this work catalyzed the production of variable performative gestures that would contrast with ordinary behavioral norms in shopping contexts. The differences between the visual components of the two storefronts became discernible only when passers-by chose to alter their passive contemplative pose. Their inability to immediately tell how the closed-circuit systems functioned triggered affective impulses, especially since the behavior of others also represented a point of reference for one's own conduct as previously explained in this section. Deleuze defined affect in terms of an incomplete transformation of humans into non-human beings. He identified its most intense manifestation with the moment that precedes "the natural differentiation"⁴³⁷ between the individuals who engage in the process of becoming and the entities they come to embody virtually. The mutual transformation undergone by the shoppers, as well as by their visual images integrated in the delayed information circuit, contributed to the emergence of affective ties between the participants and their visual representations. Affective sensations also issued from the imperfect contiguity between the images encapsulated in the facing mirror walls and the images incorporated into the opposite video channels. This lack of correspondence catalyzed

⁴³⁷ Deleuze and Guattari (1994, 173)

further transformations as participants tried to interact with the interconnected visual frameworks and/or with each other in order to identify the specific distinctions between them.

Both *Time, Identity and Transformation* and *Video piece for showcase window in a shopping arcade* constituted environments in which relations between individuals, commodities, and iconic representations were destabilized with the purpose of triggering self-reflection and transformation. The lack of coincidence between seemingly equivalent visual representations showcased in the storefronts underscored the variability of perception and identity. The mise en abyme of consumer spectacle subverted individual assimilation in the existing cultural, economic, and social systems and gave vent to intrapersonal and interpersonal relations that helped viewers negotiate their roles within the broader urban context.

3.3 INTERPERSONAL ALLIANCES ACROSS ACTUAL AND VIRTUAL PROJECTIONS

In this third section, I will outline how the works of Dan Graham and Lynn Hershman created a network of relations that surpassed those between viewers present within a narrowly defined exhibition space. Through an analysis of the mirroring processes engendered by *Public Space/Two Audiences* (1976) and *Reflections and the Future* (1976), the third component of *25 Windows*, I will discuss how they mediated between intrapersonal and interpersonal self-definition and how they constructed affective connections between individuals situated at a distance from one another. Both works triggered performative engagement and cultivated a sense of belonging. They brought into view the ties established between small-scale groups and larger collectives, which are exposed to similar conditions and have to find solutions to problems that

transcend social classes and national boundaries. The two installations showed that the actual and the virtual are in constant dialogue with each other at the level of human consciousness, enabling individuals to take into consideration multiple perspectives and reflect on the variability of perceptual and environmental factors.

Public Space/Two Audiences created an interpersonal context similar to the one formed in Graham's prior performances and video installations, which unpacked the chain of inferences people make when they compare slightly divergent visual representations or when they negotiate their identity in relation to others. The artist specifically designed this installation for "Ambiente Arte," an exhibition curated by Germano Celant on the occasion of the Venice Biennale of 1976. The show featured both environments by artists belonging to the historical avant-gardes, such as El Lissitzky and Kurt Schwitters, who first created works that took over the space of an entire room, and environments by contemporary artists, such as Michael Asher or Maria Nordman, who explored the institutional or perceptual conditions that influence visual experience. *Public Space/Two Audiences* was composed of two rectangular spaces separated by a sound insulating glass divider. Each of them could be entered through doors located on the long side of the room. While one spatial enclosure had a single reflective component represented by the dividing transparent wall, the other one had an additional reflective screen represented by a mirror wall, situated against the back wall. Visitors could observe their reflections from different angles by moving between the two rooms or by modifying the distance at which they stood from the two interfaces, which instantaneously encompassed their images irrespective of the space where they were located. The glass divider served both as a transparent frame and as a mirror since it incorporated the reflections of those who drew near its surface. Participants observed each other simultaneously performing the roles of undisguised voyeurs, narcissistic viewers, and voyeuristic

objects. At first glance, it seemed that the visitors located in the room with the mirror wall were more empowered because they had easier access to multiple sources of visual information. However, they also appeared more objectified since their body reflections and movements could be observed in parallel from the opposite room. In fact neither of the two groups of visitors located in the adjacent environments had a greater amount of control over the situation. Just as the fate of the voyeur situated in the panoptic tower is intimately correlated with that of the subjects of surveillance since he/she is located within the same spatial enclosure isolated from the exterior,⁴³⁸ the participants on either side of the glass divider were part of the same visual system, which symbolically stood for the structure of the whole society built upon mechanisms of control and self-regulation. In addition to this, the installation did not establish a hierarchy between the two spaces because everyone was equally exposed to the gaze of others. One could only imagine how their behavior could be observed from a point situated outside the confines of the interconnected settings. The artist's pavilions from the late 1970s would allow for this latter possibility in order to underscore the need for taking a critical distance from the conditions of one's existence.

Graham's installation for the Venice Biennale was not only motivated by the desire to show how the social environment shapes individual and group conduct. *Public Space/Two Audiences* constituted a direct attack on contemplative aesthetic experience within the presumably neutral space of the white cube, as well as upon the consumerist drives fueled by the biennial circuit. In the text explaining the composition and concept of the work, Graham maintained that the perceptual situation he proposed reversed "the usual loss of "self" when a

⁴³⁸ Foucault (1977, 204)

spectator looks at a conventional art work.”⁴³⁹ He pointed out that the art viewer is generally invited to closely identify with the art object and ignore the social and institutional context in which his/her experience takes place. According to him, this diminishes self-awareness and renders the viewers oblivious to the actual conditions of perception, undermining their agency and enhancing their illusory immersion in a virtual realm. Graham challenged the alienation of viewers in exhibition contexts by introducing them into visual systems where they were set on display as subjects and objects of contemplation. Both in *Video piece for showcase window in a shopping arcade* and in *Public Space/Two Audiences*, the image of participants was virtually commodified in an attempt at disclosing the manipulation of desire and the isolation of individuals. In a recent interview coordinated by Rodney Graham, the artist described the installation in terms of a parody of the commercial aspects of the Venice Biennale:

And you got tote bags, Gilbert & George tote bags [in the British pavilion], so I thought because I'd done early video time-delay pieces for two showcase windows, I thought the people themselves, the spectators, should be inside a showcase situation looking at themselves perceiving each other.⁴⁴⁰

Viewers were entrapped in a visual environment that could be observed only from the inside. Hence, Graham subversively unveiled the lack of autonomy of the individual and the art object, jointly subordinated to the market system.

Public Space/Two Audiences had site-specific characteristics not only from the point of view of its references to the biennial circuit, but also from the point of view of its cultural location. In the same interview, the artist explained that the work was inspired by Italians' frequent use of body language during communicative exchanges.⁴⁴¹ Given the fact that the two spaces were acoustically isolated from one another, the installation encouraged participants to

⁴³⁹ Graham (1978, 24)

⁴⁴⁰ Graham in “Interview with Dan Graham by Rodney Graham with Chrissie Iles and Fary Carrion-Murayari” (2008, 95)

⁴⁴¹ Ibid. (2008, 96)

experiment with non-verbal codes of conduct in order to interact with one another. While some behavioral signs were easily decodable others were more ambivalent, especially since the biennial attracted a multi-cultural audience. In the absence of an object of representation, participants created experimental communicative scenarios. They engaged in intrapersonal processes of cognition by exploring a whole range of bodily postures and facial expressions in front of the reflective surfaces, as well as in interpersonal processes by observing how others reacted to their conduct. Alliances were formed both between visitors located in opposite rooms and between visitors sharing the same space, who had the option of verbally interacting with one another or using the reflective interface to communicate with their companions. The further the participants were from the mirror wall, the more likely they were to observe their reflections as if they were virtual projections of alternative identities with which they formed imaginary ties. These various types of alliances led to a complex negotiation between slightly divergent viewpoints duplicated within the frames of the reflective screens.

Like *Public Space/Two Audiences*, Hershman's Bonwit Teller installation provided an interface between multiple participants. Their alliances were based both on communicative exchanges mediated by mirrors and window screens and on more or less imaginary projections of narrative trajectories, which entailed an entire cast of mannequins, models, pollsters, specially appointed experts in various fields, and random passers-by. *Reflections and the Future* completed the temporal axis of the installation. In spite of the tripartite structure of *25 Windows*, there was no linear progression between its parts. The multiple stories it included were open-ended so that they could better trigger audience involvement. *Reflections and the Future* was the installation component that provided the most numerous venues for communicative exchanges and raised the most direct questions about pressing ecological, economic, and social concerns. Its

tableaus presented loosely interconnected narrative sequences, whose plots started in the Bonwit Teller windows, yet were unfolding in the streets. As in the case of the other two parts of the installation, the display hybridized temporalities, pointing to the intricate correlations between past events, present conditions, and future expectations. The first tableau that passers-by encountered when turning the corner onto 56th Street reflected the quotidian immersion in the realm of news and superfluous commercials that often distracted individuals' attention from urgent matters of greater significance. A female mannequin stood in the window reading the New York Times next to what appeared to be an enlarged version of one of its pages, which collaged advertisements and news from the prior editions of the newspaper. The tableau underlined the repetition of the past and suggested that transformations can be illusory in the society of the spectacle where a false notion of newness is constantly perpetuated. In *The Arcades Project*, Benjamin observed that this misconception furthered the effacement of use value. He eloquently explained that the “semblance of the new is reflected, like one mirror in another, in the semblance of the ever recurrent.”⁴⁴² Hershman's New York Times tableau adequately highlighted the illusory newness promoted by mass media and commodity culture. It was reminiscent of Graham's *Schema* (1966) since it replicated the newspaper format without providing any new content.

The next window continued to subvert the impression of progression by presenting a re-enactment of a crime committed by a balloon seller. The story was culled from a prior newspaper issue, but it seemed to be projected into the future given the title of the installation. One could have also suspected that the tableau was depicting the news that the mannequin in the preceding window was reading. It showed a woman wiping her tears in a melodramatic pose. Next to her,

⁴⁴² Benjamin (1999, 11)

stood her husband who seemed to have just shot another man, fallen to the ground amid balloons. The scene carried the title *Crimes of Passion* and seemed to suggest that the murder had been committed because of jealousy. However, an enlarged text from the newspaper story indicated that there were economic reasons for this incident since both men were competing balloon sellers. The faces of the male mannequins were covered up by mirrors, which rendered them more anonymous and reflected the images of passers-by transposed in a compromising situation.

The following two window displays were also closely related and triggered mirroring processes between the viewers and the mannequin figures. In one of them, a mannequin appeared to seek liberation from her state of confinement in the storefront as her hand broke through the glass surface. A mirror panel was affixed to the cracked area of the window to better highlight the woman's attempted escape and capture the reflections of passers-by. The presence of this interface suggested that no complete liberation was possible from social enclosures. Hershman implied that the mannequin would have found herself in yet another mirror-lined box outside the store vitrine. Even in the midst of the New York crowds, she would have been subjected to the curious gaze of passers-by making judgments about her identity. The parallelism between the display of commercial products in storefront and the display of the social self in public spaces in *Reflections and the Future* echoed the analogy drawn by Graham between art objects and art viewers in the context of *Public Space: Two Audiences*. In both installations, there was no ultimate escape from the enclosing visual system. Yet, the message of the two works was far from being one of passive contentment and resignation. Hershman explained that the mannequin's gesture was "a metaphor for someone who was not going to be caught in the entrapment of only being looked at without being able to really participate in life."⁴⁴³ Similarly,

⁴⁴³ Hershman (1992, 111)

Public Space: Two Audiences encouraged biennial visitors to move between the reflective screens in order to undermine their subordination to the gaze of others or to the immobile reflective screens.

Despite its more fictional aspects, Hershman's installation also called for actual participatory engagement and subverted visual illusion. In order to emphasize the fact that the mannequin's escape was not merely an illusionary act that could never be fulfilled, Hershman glued glass shards to the sidewalk in front of the store. They disrupted the ordinary street traffic since passers-by playfully jumped over them. Next to the mannequin, Hershman placed a rectangular panel formed out of large mirror fragments. The silhouette of a woman had been cut out from the center of this surface to indicate that another mannequin had broken away from the window case and suggest that her successful escape had provoked a chain reaction, inspiring others to take action.

The display in the adjacent window reinforced this impression. Passers-by were informed that Bonnie, the mannequin who previously inhabited that space, had broken free and could be seen in various locations in New York according to a pre-established schedule. An enlarged city map illustrated the coordinates of the places where she could be encountered. A live model, who closely resembled Bonnie, accompanied her during her adventures in Central Park and Soho, as well as during her visit at the Metropolitan Museum and her stop at a subway station. Nonetheless, the mannequin spoke on her own since her voice could be heard via an audiocassette recording implanted in her chest. The recording presented a frank account of her life in the Bronx and her social aspirations. Given the strictly established schedule of Bonnie's public appearances, it was quite evident that she was more of a service provider than a free subject who could decide how to spend her leisure time on her own. Present in various lively

environments, she had the function of a social mirror. By sharing her personal story with others, she invited them to reflect on the way they constructed their public personas. In the video documentary, Hershman pointed out that her expectations from this installation component were met because “people did go and talk to Bonnie, they would talk to her about their life and she would answer and talk about her image and how it changed since she started to wear Bonwit Teller clothes.”⁴⁴⁴ By means of this remark, the artist subtly underlined the contrast between living experience and visual appearance. She would have liked exhibition participants to identify parallelisms and contrasts between themselves and Bonnie who embodied the image of the shopper who buys into the dream world of upper scale stores in the hope that it can offer him/her a better social position.

The subsequent windows triggered a greater sense of collective awareness because they underscored planetary concerns rather than anxieties about self-identity. They created a sense of solidarity between passers-by of various social backgrounds who were communally exposed to climate change and transformations brought about by technological advancements. These installation components had a stronger future orientation, but also called for present reflection and action in order to prevent catastrophes. With the help of physicist Nick Herbert from the Physics-Consciousness Research Group in San Francisco, Hershman created a tableau in which she juxtaposed a confident-looking mannequin to a polarized panel, which became illuminated and displayed the word “times” when sunlight of a certain vibration was directed to its surface after passing through a screen. The word was repeated across the entire area of the luminescent plate. Depending on the light oscillation, the letters would appear sharper or blurrier, evoking the inevitable passage of time and the variability of planetary conditions. Multiple temporalities

⁴⁴⁴ Hershman (1976)

converged at the level of this panel. On the one hand, the light beams were indexical of the cosmic past because they reached the surface of the earth after having traveled through the universe. On the other hand, they were indexical of the present because their presence and effect became fully observable only as viewers looked at the polarization of the panel. Last but not least, the panel pointed to the future, suggesting the dependence of the whole world upon solar light and energy. Entitled *Quantum Logic*, the tableau pointed to the complex interconnections between things situated at a distance due to the relativity of spatio-temporal coordinates. Hence, it was suggested that members from various social strata and cultural contexts could synchronize their efforts in order to insure a balanced world environment.

The next window display built upon this idea and illustrated the impending need for change in a more explicit manner. Hershman presented charts showing statistical estimates for the various levels of energy consumption in the New York area between 1960 and 1990. She hired pollsters to ask passers-by to fill in questionnaires about their views on energy use in order to raise social consciousness about diminishing resources. The artist intended to distribute the results of this investigation to government representatives and oil corporations in order to familiarize them with the opinions of New Yorkers about these pressing problems. She incorporated in the installation the personal views of young people interviewed about energy resources. In one window, she displayed recycled news footage of individuals discussing alternative fuels or explaining what energy means for them. One woman suggested that energy represented the work that women did instead of assuming more traditional family roles and having children, another one suggested that Americans needed to put a stop to oil imports and use other combustible materials, such as garbage, to produce more power. Generally, the interviewees equated energy both with social forces and natural resources. The artist selected

closed-up shots of them and displayed them against a large projection screen in the store window in order to underline the significance of the cause they were supporting.

Above all, Hershman wanted to stir a group conversation upon the critical consequences of irresponsible energy use, as well as upon the future of humanity. The Committee of the Future tableau expanded the platform of discussion and provided the ground for an engaging exchange of ideas between passers-by and a team of people made up of Hershman's friends and acquaintances who seemed to hold the key to what the future had in store for everyone. Admittedly, the hierarchical organization of this dialogue between a group of presumed experts sitting in the store window and a group of audience members raising questions from its exterior had its own problems. Yet, Hershman did not intend to initiate a didactic series of communicative acts, but to leave the ground open for approaching diverse topics and brainstorming on potential transformations of current situations and experiences in the more or less distant future. Hershman stated that "future planning is a nostalgic dream."⁴⁴⁵ Through this affirmation, she implied that utopias were a thing of the past. Her initiative to create a Committee of the Future was not to be taken lightly, but it was not a programmatic endeavor aimed at dictating new directions. Instead, it was a strategic instrument for encouraging participants to question contemporary conditions and envision alternatives to established trends that had acquired normative value. The impact of the discussions surpassed the circle of passers-by gathered in front of the Bonwit Teller windows since the exchange of information between the Committee of the Future and the audience was broadcast live over the radio in other locations.

⁴⁴⁵ Hershman in Arturo Schwartz, "Who Is Roberta Breitmore?, Some Preliminary Remarks on the Origin and Development of an Alchemical Opus" (1978) in LFiles on the CDROM accompanying the monograph *The Art and Films of Lynn Hershman Leeson. Secret Agents, Private I.*

Both Hershman and Graham were dedicated to expanding two-way communication through the use of media and to creating opportunities for intimate encounters between strangers. They believed that by stimulating mutual exchanges of information they could consolidate the formation of alternative networks of communication that would undermine the authority of unidirectional information channels. In 1976, Graham created a piece entitled *Production/Reception* for two cable channels out of which one would display live images of the production set during the filming of a show, whereas the other would display live images of a local family setting in which the TV set broadcast images of a third channel presenting the actual live show. The system set up by Graham allowed for the reception of the TV program to be fed back into the information chain. Similarly, *Public Space/Two Audiences* made it possible for the visual information to be transmitted from one room to another via parallel reflective screens. The physical presence of the Committee of the Future in the vicinity of the public in the Bonwit Teller installation also facilitated the co-existence of information production and information reception. The reflections of the passers-by gathered near the storefront became interconnected with the images of the group of ad-hoc futurologists set on exhibit inside the store window just as the images of participants situated in the two rooms separated by the glass divider in *Public Space/Two Audiences*. Both Graham and Hershman have been described as artists who try to consolidate ties between individuals. Chrissie Iles explained that by contrast with other artists, such as Vitto Acconci, who created works that exposed participants to certain risks in order to reveal the control one can exert over others, Graham's "interest in discovering the borders of the self was driven by a deep desire for a connection to others."⁴⁴⁶ In a similar fashion, Hershman's works have been praised for their ability to foster interpersonal connectivity in addition to

⁴⁴⁶ Chrissie Iles, "You Are the Information: Dan Graham and Performance," *Dan Graham: Beyond* (2008, 69)

cultivating self-knowledge and self-questioning. Howard Fox remarked that her practice is concerned not only with an investigation of “the profound insularity of each individual,” but also with “the longing for deliverance from that insularity.”⁴⁴⁷ Through their attempts at introducing individuals into public situations that solicited a response or at least a visual interaction with a variable environment, the two artists endeavored to challenge the boundaries between a seemingly autonomous private self and a socialized self.

There were several different communicative networks that Graham and Hershman set up in the context of their installations. *Public Space/Two Audiences* staged interpersonal networks both between participants situated on either side of the glass divider and between participants and their reflections in the mirror. Graham delineated various modes of interaction with the environment, including those through which the participants would virtually relate to one another by commonly watching their mirror images and altering them as if they were prosthetic devices via which they could communicate. The artist noted that the behavior of individuals located in the room without a mirror would be a bit more predictable since they would “look collectively in only one direction, as both the image of the other audience and the image of themselves”⁴⁴⁸ were encapsulated in the reflective surface situated at the far back of the adjacent room. Participants felt simultaneously part of several collectives, some of which shared the same physical space whereas others shared only the virtual projections of their bodies, yet analogously experienced a sense of proximity.

In his review of the Venice Biennale, Simon Wilson provided an account of the interactive dimension of *Public Space/Two Audiences*. Upon observing the difficulty of separating the virtual from the real within the space of the installation, the art historian outlined

⁴⁴⁷ Howard Fox, “Breaking the Code,” Tromble ed. (2005, 1)

⁴⁴⁸ Graham (1981, 24)

the complementarity between the tendency of participants to visually interact with their mirror reflections and “the tendency of groups in each half of the room to confront and interact with each other through glass.”⁴⁴⁹ Far from adopting a merely voyeuristic attitude by concentrating solely on the way their images combined in the reflective screen, the participants communicated via rhetorical gestures, which challenged spatial divisions. They formed an interpersonal network, which, according to Jurgen Ruesch and Gregory Bateson, “consists of potentially equivalent parts,”⁴⁵⁰ which are equally visible and may alternatively act as a source or a destination of information. This did not mean that the participants’ experience was identical, but that each of them had a chance to input additional data into the system through his/her interaction with the environment. Their perceptions of the two rooms and of each other were always slightly divergent because of the different positions they occupied within the installation space, their prior socializing experience, and their suppositions about the way others perceived them. They related in complementary ways both to the members of the group they incidentally became part of upon entering the room and to the individuals who formed the other audience. The participants witnessed the emergence of public space in the presumably private sphere of the white cube.

In the context of *Reflections and the Future*, most interpersonal relations had a virtual character, being based on participants’ imaginary ties to mannequin figures. Yet, these loose affinities always seemed to be on the verge of transforming into real connections to embodied individuals since the characters in the display windows either represented actual people, who had become notorious because of the roles they had played in past events – as in the case of the balloon sellers in the *Crimes of Passion* scene – or were about to come to life and enter the social world – as in the case of the model breaking away from the window. Moreover, passers-by could

⁴⁴⁹ Simon Wilson, “The Venice Biennale,” *The Burlington Magazine*, Vol. 118, no. 883, October 1976, p. 724.

⁴⁵⁰ Ruesch and Bateson ed. (1968, 279)

engage in a make-believe conversation with Bonnie, who seemed intent on sharing her life story with everyone via the acoustic recording. The installation also offered virtual face-to-face encounters with individuals expressing their views upon energy resources in the quasi-cinematic projections in the storefronts. These imaginary interpersonal relations prompted passers-by to question the way they perceived themselves, hence consolidating intrapersonal communicative processes. The mannequin breaking out of the Bonwit Teller display case appeared to reach out towards the passers-by as her hand jutted out of the reflective screen. When pedestrians virtually responded to her call for help by approaching the storefront, their image was absorbed into the mirror shards pasted to the exterior of the window and was kaleidoscopically fragmented. Like Graham in *Video Piece for Show Case Window in a Shopping Arcade*, Hershman disrupted the process of identification between the consumer and the idealized image of commodities because the surface of the quasi-invisible screen between the Bonwit Teller products and the shoppers was cracked. In this way, the artist instilled doubt in the satisfaction offered by consumerism, as well as in individuals' self-perception. She invited participants to subject the process of identity construction to repeated interrogation. Similarly, Graham underlined the relative character of self-perception by creating a distance between gallery visitors and their mirror reflections through the division of the exhibition space into two environments with complementary features.

In addition to the virtual interpersonal relations fostered between pedestrians and mannequins, *Reflections and the Future* elicited the formation of broader communicative networks in conjunction with the workings of the Committee of the Future. While both the audience members and the experts had the possibility to transmit information via the two-way microphone system, the relationship established between these two ad-hoc collectivities resembled more the group network than the interpersonal network because of the specific roles

assigned to each of them. The passers-by asked questions about the future whereas the committee members answered them as if they were oracles or time travelers who could inform people about upcoming tendencies. Ruesch and Bateson maintained that by contrast with the interpersonal network, the group network was characterized by the “restriction or specialization of function.”⁴⁵¹ Even though communicative acts in the context of the Committee of the Future were to some extent similar to those of this latter network category, they did not fully coincide with its patterns of information exchanges since the members of both groups were within visible reach and had an equal chance to transmit information. This is certainly not the case in large organizations, the most salient example of group networks provided by Ruesch and Bateson, where the flow of data is more strictly controlled and the individuals are not in direct contact with each other. Moreover, the members of the Committee of the Future did not limit themselves to offering predictions, but reflected on the present and the social implications of future changes. Answering a question about the transformation of the shopping experience, one futurologist announced that shops might disappear entirely once people would start ordering commodities via computer systems and explained that the socializing function of shopping would be lost as a result of this. By constituting the Committee of the Future, Hershman personalized the transmission of cultural information from many persons to many. The emergence of new trends was not to be taken for granted as it depended on individual human agency. The committee members discussed the potential for large-scale transformations in relation to specific conditions and asked the audience to ponder their consequences rather than merely celebrate the newness brought about by trend shifts.

⁴⁵¹ Ibid. (1968, 280)

Graham's *Public Space/Two Audiences* also referenced cultural networks and the uncritical acceptance of control structures, which become embedded in our environment on a massive scale before we gain awareness of how they shape our social interactions. The two rooms were not designed only with the aim of triggering interpersonal relations. As Graham explained in his essay about the installation, they were based on the structure and materials of hospital wards or customs areas, which separate individuals from one another, transforming them into docile subjects of surveillance. He argued that "materials also function as social signs"⁴⁵² because they model relationships. Yet, his production of two environments, which imitated the visual rhetoric of spaces of containment, was a replication with a twist. The close juxtaposition of the rooms blatantly disclosed their mechanisms of control. Moreover, participants could move from one environment to another and experience the perceptual conditions characteristic of each of them. They did not belong to a secluded homogeneous collectivity. Instead, they were part of a dynamic network in which relations between individuals could flexibly change as they formed alliances with groups of biennial visitors moving between the two spaces.

Public Space/Two Audiences and *Reflections and the Future* provided settings for large social gatherings, as well as for the formation of smaller networks. Within their framework, participants established connections with different types of collectivities and acquired a better understanding of the interdependence between large-scale social systems and small-scale groups. In her description of Hershman's installation, Moira Roth mentioned that "huge crowds thronged around looking at the multi-media environments occupied by real people and mannequins."⁴⁵³ The seriality of this work, composed of so many different narrative sequences, made it possible for smaller collectivities to be formed around different store windows. These groups of passers-

⁴⁵² Graham (1981, 23)

⁴⁵³ Roth (1978, 102)

by would migrate from one window to another in their search for common threads linking all the real and fictional protagonists. The Committee of the Future brought together a larger mass of people. Passers-by would spontaneously join and leave its audience, which could be described as a diffuse collectivity, whose behavior and responses would not easily converge as in the case of compact collectivities.⁴⁵⁴ In addition to eliciting the public gatherings in the vicinity of the store, the exhibition engendered the formation of groups of participants in different parts of the city as people went to meet Bonnie in a Soho café or had a conversation with her on a bench in Central Park as the photographs documenting the work show. The public of Graham's installation also had diffuse characteristics as groups of participants would coalesce or disperse in unpredictable ways when they shifted their position. Observing the variability of perception and behavior inside the environment, Simon Wilson commented that "the room only functions when there are people in it, up to a point the more the better."⁴⁵⁵ The various ways in which the environment affected the viewers only became visible when multiple people interacted with it. Their experience was shaped by the spatial structure and by the physical presence and reactions of other spectators who became a constitutive part of the work.

Given the way the two installations underscored the way individuals switch between different roles and form fluctuating relations to larger or small groups, it could be argued that they announced the emergence of "neotribalism," a new type of social organization, described by Michel Maffesoli in terms of complex ties and affective connections to multiple collectivities, which enable the individual to gain deeper insight into his/her own plurality. The sociologist maintains that this tendency reflects the growing realization that the manifestations of large

⁴⁵⁴ For a description of the characteristics of diffuse collectivities in contrast with compact collectivities, which exhibit signs of crowd behavior, see Turner (1964, 413)

⁴⁵⁵ Wilson (1976, 724)

masses of people and small collectivities are highly unstable since individuals can easily shift between them by adopting an entire panoply of roles throughout their existence. Maffesoli associated neotribalism with more recent social trends characteristic of the 1990s. He claimed that:

[...]in contrast with the 1970s – with its strengths such as the Californian counterculture and the European student communes – it is less a question of belonging to a gang, a family or a community than of switching from one group to another. This can give the impression of atomization or wrongly give rise to talk of narcissism. In fact, in contrast to the stability induced by classical tribalism, neo-tribalism is characterized by fluidity, occasional gatherings and dispersal.⁴⁵⁶

Nonetheless, the signs of these changes underlined by Maffesoli were already visible in the context of *Public Space/Two Audiences* and *25 Windows* in the 1970s. The two works encouraged participants to establish shifting alliances with others rather than form tightly defined communities or stable audience groups which would engage in predictable types of interaction and develop a quasi-homogeneous identity defined in strict opposition to that of other collectivities. *Passers-by* explored Hershman's installations by moving from one window to another, joining various groups of onlookers, and examining their ambivalent relations to the interior and exterior of the display cases. By setting forward a large array of more or less fictional figures that played complementary or disjunctive roles in the narrative sequences, the artist strategically impeded close identification with a unique protagonist. Thus, she maximized the potential for self-transformation through imperfect acts of mirroring various personas.

The tendency towards neotribalism was even more visible in the context of *Public Space/Two Audiences* because participants oscillated between incompatible alternatives when they had to decide on the point of references they took in order to negotiate their perceptual boundaries and establish their relations to audience groups situated in each room. Thierry de

⁴⁵⁶ Michel Maffesoli, *The Time of the Tribes. The Decline of Individualism in Mass Society* (Sage: London, 1996), p. 76.

Duve remarked that Graham's focus on heightening awareness of how one defines himself or herself in relation to collectivities had

much less to do with the Marxist horizon of a "classless consciousness" than with the American dream, the commune as incarnation of Walt Whitman's "transcendental I," pop music as the basis of great ritual gatherings, the "tribalism of the media as an answer to the crisis of familialism."⁴⁵⁷

Public Space/Two Audiences represents a relevant example of this because it cultivated relations to multiple groups. Even though the distinctions between them were blurred to a certain extent at the level of the two reflective screens, which displayed at times a murky field of overlapping mirror images of collectivities, participants were confronted with concurrent alternatives of belonging to smaller circles of participants situated in close proximity to one another. De Duve compared the groups formed in the context of Graham's works not only to social gatherings based on fluid ties, but also to close-knit communities such as the communes. I would argue that this latter conjecture is less well-founded in the case of *Public Space/Two Audiences* because its spatial and social boundaries are less restrictive. The installation enabled participants to move from one space to another and envision their alliances with groups situated on either side of the insulating glass wall. The affinities of individuals with various social movements having interconnected goals in the second half of the 1960s probably consolidated the development of this new direction towards developing ties with multiple groups.

The collective dimension of the two installations favored the emergence of affective connections. In Maffesoli's opinion, neotribalism implied a strengthening of these forms of alliances as organizational structures became more permeable.⁴⁵⁹ Accounts of the interactions with *Public Space/Two Audiences* testify to the affective impulses the installation generated.

⁴⁵⁷ De Duve (2011, 66)

⁴⁵⁸ Ibid.

⁴⁵⁹ Maffesoli (1996, 127)

Mark Francis described participants' inclination towards imitating each other's gestures and creatively combining them: "The general reaction of visitors is initially to look at each other through the glass and then to start mimicking actions as in a dance."⁴⁶⁰ His comparison of social interactions with choreographed movements and his subsequent notes on the distinctions between the perceptual observations of spectators in the two rooms emphasized the tension between similarities in conduct and disjunctions in experience. The variability inherent in this interpersonal system based on somewhat similar behavioral acts was a sign of affective attunement. From the point of view of psychoanalyst Daniel Stern, it is only the incomplete match between the gestures or expressions of two persons, which renders the observed sensation shareable and makes it capable of eliciting affect.⁴⁶¹

Even though Graham did not use the term affect in his description of *Public Space/Two Audiences*, some of his remarks revealed the intensity of the relations set up between participants who experienced a strong feeling of belonging despite the fact that they were separated by the dividing transparent wall: "while the glass-partition on one hand places a distance between opposing spectators, on the other hand, the co-presence on the mirror of the two groups' bodies and the visual image of their process of looking make for an extreme visual inter-subjective intimacy."⁴⁶² Through observing their self-reflections in the mirror wall, participants felt that their experiences were quite similar even though they were not identical. The physical separation of the two rooms strengthened the affective relations because it emphasized the distinctions between their positions in spite of the evident correlations between their shared condition of entrapment into larger systems, which rendered them vulnerable to the gaze of others. The vivid

⁴⁶⁰ Mark Francis, "A Public Space: Context and History," *Dan Graham: Beyond* (2009, 185)

⁴⁶¹ Stern (1985, 152)

⁴⁶² Graham (1981, 23)

awareness that there is a gap between what each participant sensed at an individual level and what was experienced at a collective level stimulated them to engage in non-verbal communicative acts to externalize differences while simultaneously expressing the desire to strengthen connections with others. Participants shared an interest in discovering how their experience compared to that of the people located in the opposite room, as well as with the experience of those situated in the same room with them.

Reflections and the Future also prompted viewers to virtually project themselves into another space via mirror interfaces and sense what it might be like to be in the situation of someone else. In front of the window-screen re-enacting the crime scene, passers-by observed how they momentarily transformed into the balloon sellers as their reflections were inscribed in the mirror masks placed over the faces of the mannequins. The parallelism between participants and the characters was not complete because of the process of double identification proposed in the context of the same scene. As the voice in the background of the video documentation of the installation announced, the viewer could alternatively become “either the murdered or the victim.” This tense duality matched that established between the participants in *Public Space/Two Audiences*, who vacillated between seeing themselves as objects or subjects of perception. The affective impulses stirred by the process of becoming multiple through assuming more than one role in the same scene were heightened by the orientation of the mirrors. These were slightly inclined towards the lower part of the vitrine so that they could better capture the images of participants’ faces. However, their orientation also underscored the disjunction between the point of view of the viewers and that of the characters. Mirrors, as well as cinematic screens, are supposed to be perceived frontally in order to stimulate immersive processes of identification. In this context, the slight incongruence between the reflective surfaces and the

faces of the viewers subverted this complete absorption in the image. Christian Metz observed in his book on the relation between imagination and cinema that whenever movie scenes are shot from a skewed angle the constructed character of representation is revealed and the spectator is jolted out of his immersive state: “The ordinary framings are finally felt to be non-framings: I espouse the film-maker’s look (without which no cinema would be possible), but my consciousness is not too aware of it. The uncommon angle reawakens me”⁴⁶³ Likewise, Hershman’s choice to set the mirrors in a slightly oblique position was probably motivated by her desire to underline the fact that the relation between the world within the Bonwit Teller vitrine and that outside its frame was not seamless. It also suggested that viewers’ transformation into the balloon sellers was not meant to be an imaginary escapist projection, especially since this was not a crime of passion, but a crime motivated by economic conditions. The scene did not enhance the feeling of belonging to the world of Bonwit Teller customers. Focused on the fate of the outcasts of the world of glamour, it created discomfort instead of providing satisfaction and boosting consumerism. Nonetheless, it also inspired solidarity because it invited viewers to picture themselves in less felicitous social circumstances. This solidarity surpassed class allegiance. The high-end Bonwit Teller shoppers witnessed a scene with which they would not normally identify and the passers-by who could only afford the luxury of window-shopping would find themselves torn between the desire to adopt the latest look and the reality of the dire economic conditions, which led to personal and social tragedies. Significantly, this disquieting encounter with the multiple facets of existence within the social system was staged in a public setting where one could contemplate the possibility of being in the position of other onlookers.

⁴⁶³ Christian Metz, *The Imaginary Signifier. Psychoanalysis and the Cinema* (Bloomington: Indiana University Press, 1977), p. 55

In his salient study on psychic and collective individuation, Gilbert Simondon argued that the presence of a collective reinforces emotional sensations by eliciting further affective transformations and preventing the formation of abstract representations of emotions.⁴⁶⁴ Spectators did not experience Graham and Hershman's installations in settings isolated from social life where they would form binary relations to the objects on display. The demographic composition of the heterogeneous audiences would intermittently change, contributing to the actualization of emotion since viewers would need to re-assess their virtual or actual projections in the spaces of the two works based on the presence and conduct of multiple others whose reflections would enter into the reflective screens. While in the case of *Reflections and the Future*, this multiplicity of unstable audience groups corresponded to the plurality of characters in the shop windows in the case of *Public Space/Two Audiences*, it corresponded to the constant transformation of information depending on the contexts in which it was introduced. Hershman described the score of characters she created throughout her artistic career as "a community of friends"⁴⁶⁵ residing in her brain. Her analogy underlined the plurality of selfhood and the need for constantly broadening one's interpersonal circle and re-adjusting the point of view from which one looks at society. Graham's perspective upon self-definition in terms of social relations is more abstract. His works from the 1970s emphasized recurrent patterns in interpersonal cognition. They were utterly devoid of a fictional dimension, yet proposed an array of virtual situations, which could easily be identified in concrete social contexts once the visual systems that stood at their basis were disclosed. This was the reason for which in some cases⁴⁶⁶ it was not

⁴⁶⁴ Simondon (1989, 116)

⁴⁶⁵ Hershman in Linda M. Montano, *Performance Artists Talking in the Eighties* (Berkeley: University of California Press, 2000), p. 65

⁴⁶⁶ An example of this would be *Alteration to a Suburban House* (1978-1992), which was an architectural model for a building with a mirror back wall and large glass façade, which was never constructed.

important for him whether his propositions were enacted or merely envisioned at a conceptual level, based on the diagrams and texts he drew up to describe their schemas.

Hershman's *Reflections and the Future* series of tableaux had a more visceral impact upon the viewers than *Public Space/Two Audiences*, which introduced participants in sealed-off abstract spaces. One of the most striking and sensorially intense scenes of her installation was that of the female mannequin breaking through the window. Her hand apparently emerged intact from the broken mirror attached to the glass storefront. The tactility of the tableau was utterly at odds with the exacerbated visuality of the culture of spectacle, which primarily encourages distant observation in order to heighten the reality of the supposedly ideal products and models that spur consumer desire. The mannequin seemed about to come alive and challenge the world of appearances through her embodied presence. The gesture expressed both violence and vulnerability since the female figure seemed to be asking for help, not having fully emerged from the vitrine. Tory Dent brilliantly outlined the way the scene upset the ordinary relations to visual culture by remarking that "Hershman fleshes out what is inhuman, pierces the invulnerability of our television screens to touch us, instill contact, and recuperate our voices as we recognize in her voice what once our own and can be again."⁴⁶⁷ The act of reaching out your hand towards others is one of the gestures most closely associated with the notion of humanity. The mannequin's escape from the store window challenged the objectification of the female body and the limited set of roles she could assume in society. In addition to this, it stood for a process of becoming human through seeking affiliation with the crowds of passers-by. The artist simulated a mute, yet highly affective dialogue, between the mannequin and the viewers through the interposition of the mirror interface. Within its framework, fluctuating reflections of the exterior

⁴⁶⁷ Tory Dent, "First Person Plural," *Arts Magazine*, Vol. 65, no. 3, November 1990, p. 87.

were juxtaposed to the reverse image of the model's hand jutting out from the window. This compelling coalescence of the inhuman and the human, the alienated individual and the social environment, the visual and the tactile increased the proximity between participants and the mannequin.

In Graham and Hershman's installations, reflections constituted prosthetic instruments, which had a socializing function. Just as in *Public Space/Two Audiences* spectators developed a sense of belonging to a collectivity by observing their reflections in the mirror wall, in the Bonwit Teller installation they formed alliances by noticing the analogies that existed between their fragmented images in the broken mirror and the quasi-dismembered body of the mannequin entrapped between the exterior and the interior of the vitrine. Massumi explained that part-whole relationships are not only at the foundation of the way we experience our surroundings, but also at the foundation of the way we form connections with others by extending the boundaries of selfhood: "just as the body has already extended beyond the skin into a mutual prosthesis with matter, from its first perception, so, too, is the individual body always – already plugged into a collectivity."⁴⁶⁸ The mannequin's extended hand became a symbol of the subject's drive towards entering a symbiotic relation to a dynamic social environment where relations between individuals and collectivities are repeatedly negotiated. The broken mirror was the foil of the smooth glass façade of the store; its kaleidoscopic visual realm conveyed the intricacy of interpersonal relations and sharply contrasted with the spatial and temporal unity evoked by shop displays, which project consumer objects in an ideal realm situated beyond human reach.

Besides the diffuse collective of passers-by gathering around the store windows, *Reflections and the Future* included a collective body of mannequins about to break free from

⁴⁶⁸ Massumi (2002, 121)

the windows or already infiltrated in the social fabric of the city. They were engaged in processes of human becoming as they formed alliances with people and embodied the roles that they had previously mimicked while they were posed in the glass boxes. If prior to getting away from their enclosed universe, each of the mannequins had been associated with a particular social type their identity gradually proved to be more complex because it was shaped by virtual interactions with the audience. In his theory of affect, Deleuze contended that becoming nonhuman implies a transgression of boundaries between different states of being and a drive towards forming connections with “a pack, a band, a population, a peopling, in short a multiplicity.”⁴⁶⁹ The mannequins in *Reflections and the Future* were involved in an analogous process. They did not become identical to humans, yet they were drawn to mirroring them as a pluralistic group with which they aspired to merge. Bonnie, the mannequin who had scheduled appearances in public, revealed her multiplicity as she confessed in an audio recording that she was a girl from the Bronx who could not come to terms with her social status and fashioned her appearance in various ways in order to challenge her condition. Ironically, through this process, she seemed to have turned into a Bonwit Teller mannequin who was seeking to reverse this transformation through socializing with people from various backgrounds in different locations in New York. Neither Bonnie’s metamorphosis into a human being nor her metamorphosis into a mannequin appeared to be complete. She was caught between two worlds, which equally entailed elements of the real and the virtual. Bonnie’s becoming human was contagious. It set a trend for a whole group of mannequins experiencing the same desire to free themselves from the window. The female figure extending her hand through the mirror towards passers-by and the one who already escaped from the store leaving an index of her body in a broken mirror panel were Bonnie’s

⁴⁶⁹ Deleuze and Guattari (1987, 239)

virtual companions in the quest for a pluralistic, perpetually malleable, identity. Hershman expected that the becoming of these mannequins would spread like a virus and inspire people to contemplate their potential metamorphoses into others in order to destabilize existing hierarchies and gradually trigger larger social transformations.

Graham shared Hershman's desideratum and subverted one-to-one correspondences between individuals and systems by upsetting the parallelism between people and their mirror reflections through the interposition of additional interfaces, be they represented by insulating glass walls as in *Public Space/Two Audiences* or by performers embodying the function of a mirror and describing the spectators as in *Performer/Audience/Mirror*. His afterthoughts on *Schema*, the work he conceived for magazines in order to disclose the formats they used to canonize information, indicated his investment in processes of becoming, which upset established categories and impeded the creation of new ones that would further limit the free dissemination of ideas and the constant negotiation of selfhood. In a retrospective essay on this work, Graham argued that "systems of in-formation seem to exist somewhere half-way between material and concept, without being either of these."⁴⁷⁰ While the becoming of spectators in *Public Space/Two Audiences* was less explicit than that of mannequins serving as alter egos of participants in Hershman's *Reflections and the Future*, it could be similarly defined in terms of affect, understood as an incomplete transition from the virtual to the real or vice versa. The shifting cybernetic network observable in the mirror wall defied confinement within a single stable system of relations. When new participants entered the room or when there were visible changes in the expression or movement of the participants who were already inside the environment, the whole series of interpersonal alliances underwent transformation and catalyzed

⁴⁷⁰ Graham, "Schema (afterthought)" in Moure ed. (2009, 69)

further changes as in a kaleidoscopic framework where every tiny vibration can trigger the re-arrangement of all the glass particles in the optical apparatus. Moreover, this would not involve a mere process of adjustment or a simple change in the bodily position of individual spectators. The entire configuration of the social environment would transform, as well as the dynamic correlations between its components, which amounted to more than just pieces in a pre-determined puzzle. Closely acquainted with Bateson's theory concerning the cybernetics of the self and of society, Graham upheld his beliefs in the immanent links between the environment and its elements, which evolve in tandem without being strictly separated from one another. The anthropologist thought that we wrongly assume that a system changes based on cause and effect relations between its separate components and the larger whole because "the self" as ordinarily understood is only a small part of a much larger trial-and-error system which does the thinking, acting, and deciding. [...] The "self" is a false reification of an improperly delimited part of this much larger field of interlocking processes."⁴⁷¹ Both Bateson and Graham suggested that the boundaries of the self and of social systems are expandable and permeable.

Hershman also embraced this ecological way of thinking. Her emphasis on recycling energy resources, as well as social environments, which were on the verge of becoming too passive under the impact of consumer culture, signaled her preoccupation with preserving the right balance between the components of the planetary system and insuring that transformations do not come at a standstill. Hershman's concerns about the complacency of individuals with fixed roles and the inability of society to react to critical circumstances transpired at the level of *Reflections and the Future*. The mannequins' desperate attempts at connecting with the social world and the close-up video shots of people talking about dwindling resources underscored the

⁴⁷¹ Bateson (1972, 332)

need for launching a dialogue about the urgent problems, which awaited solution in the immediate future.

To a greater extent than Graham, Hershman emphasized the compelling urgency of ecological and social problems of the 1970s. In her interview with Alanna Heiss preceding the exhibition in the Bonwit Teller window, she persuasively outlined the need for a constant re-assessment of our relations to our environment: “We are all in a terminal state of time and space. It is up to each of us to determine the qualities of each day, to feel the subtleties of air change from morning to afternoon.”⁴⁷² The polarized panel displaying the word “times” under different degrees of light intensity was another sign of the sensitivity Hershman hoped people would develop to the transformations of their surroundings. She wanted to heighten participants’ planetary consciousness and enhance their responsibility not only towards their local settings, but also towards the broader social and ecological systems, which had a pervasive influence upon their existence and their relations to others. Graham’s decision to open up the space of *Public Space/Two Audiences* by doing away with the overlap between the gallery walls and the spatial framework of his environments in his subsequent works (e.g. architectural models and pavilions) amounted to a similar interest in extending the scope of his social critique and showing the broader implications of constraining systems of supervision and control, which had become embedded in a myriad of contexts all around the world.

Hershman’s *Reflections and the Future* and Graham’s *Public Space/Two Audiences* provided a clear impetus for self-transformation in relation to constantly changing environments to which one would react in a responsible manner by taking into account the variability of their components and the web of dynamic relations woven between self and others. As suggested in

⁴⁷² Hershman in Heiss (1976, 50)

this section, the affective alliances between participants in these installations contributed to the formation of diffuse groups whose members would experience an intense connection to those sharing similar perceptual and social conditions. However, these relations did not stand at the basis of cohesive communities that would privilege local ties over planetary ties, but would favor the development of fluid correlations between individuals who had more or less in common, yet faced comparable constraints because they were part of interconnected economic, ecological, or social systems.

Mirroring acts in Graham and Hershman's works from the 1970s had the function of strengthening interpersonal relations and undermining the stability of stagnant hierarchical systems with the purpose of uncovering the mechanisms through which consumer desire and social docility were consolidated. Reflective interfaces encouraged spectators to observe the constraining effects social enclosures had upon their behavior and actively engage in altering their mirror images in order to shift their point of view upon their surroundings and discover their intrinsic multiplicity. In the 1960s most works that triggered interpersonal mirroring acts had a less explicit critical potential, tended to emphasize the relativity of perception rather than the variability of the environment, and usually remained confined within gallery settings. Numerous installations from the 1970s based on similar processes highlighted the social and economic factors, which increased the absorption of individuals into controlling systems and critically intervened within the space of art institutions, as well as within the broader public sphere. Graham and Hershman drew attention to the fact that people needed to avoid becoming mere pawns on the grid of the society of surveillance and undermine the power of the control apparatus by constantly reassessing their points of view in relation to the kaleidoscopic web of interconnections between themselves and their environment.

4.0 MIRROR INTERVALS: PROLONGED ENCOUNTERS WITH OTHERS

“I am not a prisoner of history. I should not seek there for the meaning of my destiny. I should constantly remind myself that the real leap consists in introducing invention into existence. In the world through which I travel, I am endlessly creating myself.”

Frantz Fanon⁴⁷³

The use of mirrors in installation art offers access to intersubjective spaces by revealing the proximity between viewers communally involved in aesthetic experiences. It also underscores the temporal simultaneity between perceptual acts anchored in different consciousnesses and based on various reference points. Artworks with large reflective surfaces placed in public settings such as Anish Kapoor’s *Cloud Gate* (Chicago, 2004) seemingly contract space by incorporating their display context and publics into quasi-invisible mirror shells. Concomitantly, they expand the notion of time by revealing its relativity and capturing the changes in the live pictures they mirror. They are anything but autonomous art objects and show that we, as individuals, are anything but autonomous from each other or from the worlds we inhabit. As the size of installations increased during the 1990s, museum spaces became more and more public to adjust to this transformation. Meanwhile, the use of materials with mirror-like qualities so prominent in the 1960s made a comeback. In such contexts, the versatility of reflective surfaces served less as a tool for challenging the separation between art and life or the notion of

⁴⁷³ Frantz Fanon, *Black Skin, White Masks* (New York: Grove Press, 2008), p. 204. This particular excerpt is quoted by Ken Lum in “Something’s Missing,” *Canadian Art*, Volume 23, no. 3, Winter 2006, pp. 54-60. It is illustrative of the message conveyed by the works analyzed in this chapter since it evokes the potential for movement and change of selfhood, as well as of the world.

objecthood and more as a strategic device for creating spatio-temporal interstices in which art participants can reconsider their sense of selfhood and re-connect to their surroundings and to each other in unexpected ways. This tendency has found the support of art institutions more than ever before because it has strengthened the rationale for their existence by emphasizing the need for alternative social spaces in which one regains a sense of physical and mental presence in societies increasingly based on virtual interactions.

In this third chapter, I will focus on three installation artworks with mirroring qualities, each of which prolongs into the present the turn of the 1960s towards artworks as responsive systems, the critique of control and ideological constructions of the 1970s, and the persistent increase in size and publicness of art from the 1990s. Anish Kapoor's *Cloud Gate* (2004), Ken Lum's *Pi* (2006), and Olafur Eliasson's *Take your time* (2008) relate in different ways to the spectacle of everyday life by providing destabilizing perceptual frameworks, which invite viewers to ponder their shifting role in the world, their connections to others, and the potential for suspending the usual order of things.

As it will be discussed in the first section of this chapter, these three artists belong to distinct artistic lineages, yet their practices converge at the level of their underlying conception of the perpetual becoming of individuals and the world, the modes of spectatorship they entail and the use of reflective materials with the aim of triggering perceptual, affective and mental reflection. Kapoor's practice has been most commonly associated with Minimalist and post-Minimalist sculpture, Lum's photographic series and installations have been analyzed in terms of their conceptual character since they highlight the ambiguous correlations between words and images, and Eliasson's works have been repeatedly placed in the lineage of Light and Space artists. However, these are only the most immediate art historical connections of these three

exponents of contemporary art. The relations of their practices to different temporalities of art are further complicated by the fact that they do not belong to a unique geographical location. They all have mixed heritage and feel that they belong to hybrid cultural spaces. Kapoor is an artist of Indian-Jewish descent who currently lives in London. Lum is a Canadian artist, born in a family of Chinese immigrants who lives in Vancouver, but has also traveled for significant periods of time to different parts of the world in order to peer into multiple alternatives to mainstream Western art history. Eliasson is a Danish-Icelandic artist who has set up a large studio in Berlin, but repeatedly returns to Iceland to observe the dramatic transformations of the landscape over short and long time intervals. Given their different artistic trajectories and cultural affiliations, their works have not been discussed before in tandem even though their artistic practice is related to the phenomenological idea that perception and identity are continuously in a process of becoming and depend both on subjectivity and on the variable parameters of our surroundings.

This chapter follows a tripartite structure and is organized around a comparison between *Cloud Gate*, *Pi*, and *Take your time*. It aims to reveal the intersubjective implications of these reflective installations and the way they simultaneously support and critique what Terry Smith has termed the contemporary “iconomy”⁴⁷⁴ – a culture and economy of spectacle based on iconic images, which draw upon both private and public capital. In the first section, I examine the ways in which the above-mentioned works of Kapoor, Lum, and Eliasson constitute passageways between public and private spaces, as well as between a personal sense of time and a sense of shared history, be it represented by micro-events or by broader historical conditions. I also dwell on how works of this genre change the locations in which they are inscribed by concomitantly

⁴⁷⁴ Terry Smith, *The Architecture of Aftermath* (Chicago: University of Chicago Press, 2006)

enhancing their specificity and replicating the aesthetics and functions of other spaces, which mediate cursory encounters between strangers in real and virtual spaces.

The second section of this chapter discusses the affective impact of these works upon spectators. Starting from Daniel Stern's theory of affective attunement based on intersensoriality,⁴⁷⁵ Deleuze's interpretation of affect as a process of becoming other,⁴⁷⁶ and Massumi's definition of affect in terms of the potential transformation of the virtual into the actual,⁴⁷⁷ I will analyze the intersubjective spectatorial modes triggered by these installations. In the case of *Cloud Gate*, the evaluation of participatory responses is based on the outcomes of a survey conducted by Corrin Conard⁴⁷⁸ in order to assess the degree of public involvement in the Millennium Park (Chicago) where Kapoor's sculpture is located, as well as on web comments and reviews concerning the perceptual engagement and the performative responses the artwork elicits. In the case of *Pi* and *Take your time*, the analysis is informed by my personal observations of passers-by's encounters with Lum's series of mirror walls displaying statistical data in Karlsplatz Westpassage in Vienna and museum viewers' reactions to Eliasson's rotating mirror disk affixed to the ceiling of a P.S.1 gallery during his survey exhibition of 2008.

While it is debatable whether these three works can be brought together under the umbrella term of "installation art" given the fact that two of them are located in outdoor public spaces rather than museums and have been commissioned by local administrative bodies, hence being more worthy of the name "public art," I choose to forego the more specific distinctions between these two categories of art practices due to the similar type of engagement they foster.

⁴⁷⁵ Stern (1985)

⁴⁷⁶ Deleuze and Guattari (1994, 163-199)

⁴⁷⁷ Massumi (2002)

⁴⁷⁸ Corrin Conard, *Where Is the Public in Public Art? A Case Study of Millennium Park* (MA thesis), Ohio State University, 2008.

Although I am not discounting the specificity of their respective locations, I argue that irrespective of their outdoor or indoor display contexts, they all challenge viewers to watch themselves and others react to mirror interfaces that encapsulate their self-reflections and the live images of their surroundings. Visitors of *Take your time* behaved in ways that are more characteristic of encounters with public art in outdoor parks than of conventional art museum experiences. People lay on the gallery floor and joined hands while watching the mirror circle slowly rotate. *The weather project* (2003-2004), Eliasson's most famous installation to date, caused a stir in the art world precisely because of the informal responses it inspired. Upon stepping into a foggy environment and walking along a ramp that led to a gigantic sun-like construction, visitors realized that its impressive scale was given not only by the large size of the Turbine Hall in Tate Modern, but also by the virtual doubling of its space in the mirror foil placed on the ceiling. Viewers became enraptured by the other people's interactions with their reflections. Carol Diehl observed that visitors behaved "as if they were in Central Park's Sheep Meadow on a sunny day."⁴⁷⁹ There are striking resemblances between the spectatorial modes of public art and large-scale installations. Museums are trying to capitalize on this tendency in order to strengthen their roles as democratic spaces, accessible to a wide public.

In the third section of this chapter, I take a closer look at the way these works picture changing views upon ideas of individuality and collectivity. I argue that *Cloud Gate*, *Pi*, and *Take your time* evoke the increased skepticism both towards modes of behavior and representation, which have become the object of commodification in consumer-oriented societies that thrive on the illusion of individual fulfillment and satisfaction, and towards collective identities and agency, which have become tainted by the persistent threat of ideological

⁴⁷⁹ Carol Diehl, "Northern Lights," *Art in America*, October 2004, Vol. 92, no. 9, p. 110.

manipulation and control. In an indirect way, these works mirror the failed ideals of both capitalism and socialism and favor modes of engagement that maintain the tension between singularity and plurality, keeping spectators on the cusp between narcissistic and voyeuristic tendencies.

Unlike their avant-garde precursors at the beginning of the twentieth century, Eliasson, Lum, and Kapoor do not consider themselves exponents of major changes within society.⁴⁸⁰ Instead, they portray themselves as agents of small-scale transformations that involve viewers at an individual level while simultaneously enhancing their awareness of a larger picture denoted by the mirror image of the cityscape in *Cloud Gate*, the presence of other participants in a shared spectatorial experience in *Take your time*, or the statistical information on the fluctuating reality of the world in *Pi*. Kapoor, Lum and Eliasson instill doubt in perception and representation. The evanescent reflections continuously captured by their works in real time portray the endless variability of the individual and the world. These installations provide alternatives to online social media by offering opportunities for building group alliances and creating surprising encounters between individuals. The physical proximity ensured by their reflective framework compensates for the distance in virtual space between social network users, while intensifying the affective dimension of intersubjective perceptual or gestural exchanges between participants, which, under certain circumstances, may serve as a stronger proof of connectivity than verbal communication.

⁴⁸⁰ Eliasson and Lum express this belief more openly than Kapoor. Lum maintains that “there can be no progress (real, that is moral) except in the individual and by the individual himself.” See Ken Lum, “Something’s Missing,” *Canadian Art*, Vol. 23, no. 3, Winter 2006. Available online at: <http://www.canadianart.ca/art/features/2006/12/01/somethings-missing/> In discussing his art practice, Eliasson explains that he does not want “to set up utopias for anybody else” and that each person creates his/her own utopias. See Olafur Eliasson, *Your engagement has consequences: on the relativity of your reality* (Baden: Lars Müller Publishers, 2006), p. 67.

4.1 SPATIO-TEMPORAL PASSAGEWAYS

Reflective surfaces stand for liminal spaces and temporalities. They are situated between the three-dimensionality of the world that unfolds in front of them and the two-dimensionality of the images they capture; they are evocative of a state of absolute presentness, but they also illustrate the mutability of time swiftly stretching between a perpetually expanding past and a seemingly inexhaustible future. *Cloud Gate*, *Take your time*, and *Pi* situate viewers at spatial and temporal crossroads without actually giving them a choice between two alternative pathways. They simply ask them to embrace the precariousness of the shimmering reflections and the indeterminacy of the interval between one state of being and another, hence offering them a glimpse into the plasticity of the world and selfhood, which are intimately interrelated.

Kapoor, Lum and Eliasson have followed different artistic trajectories. Nonetheless, they share more than an interest in the use of materials with reflective qualities. A student of the Hornsey College of Art and the Chelsea School of Art during the 1970s, Kapoor took an interest in the ritualistic aspects of art, the co-existence of opposite principles, and the transformation of the materiality of objects. Rejecting the formalist tradition, he questioned the specificity of artistic mediums and reflected on the ambiguous nature of matter and concepts. When asked to name the major influences upon his early art practice, Kapoor talks about Duchamp's fascination with the contest between the feminine and the masculine, Paul Thek's environments richly suffused with traces of rites of passage, and Paul Neagu's belief that art has the function of merging the physical with the metaphysical.⁴⁸¹ In reminiscing his formation as an artist, he emphasizes his desire to go past objecthood and to conceive artworks that confound the

⁴⁸¹ See "Anish Kapoor Interviewed by Douglas Maxwell," *Art Monthly*, no. 136, May 1990, pp. 6-12.

boundaries between materiality and spirituality: “I do not want to make sculpture about form – it doesn’t really interest me. I wish to make sculpture about belief, or about passion, about experience that is outside material concern.”⁴⁸² Kapoor’s most widely acclaimed early work *1000 Names*, which he conceived after revisiting India in 1979, testifies to his orientation towards art perception as an alchemical process. Forms shaped out of pigment or sprayed with fine pigment grains appear vulnerable both to human touch and sight as viewers feel that their spatial configuration and color intensity are bound to change as they approach them. This tension between the seeming permanence of universal geometric shapes such as hemispheres or pyramids and the ephemeral material they are made of is a recurrent trope in the artist’s practice. Given the transience and variability of the shapes Kapoor creates, Germano Celant compares his works to that of Arte Povera artists and Land artists.⁴⁸³ Yet, his approach is not so far removed from Minimalism either. Kapoor does not refrain from using industrial materials such as stainless steel and often designs open-ended series of objects. These seem to have derived from a singular concept that takes multiple forms. Malin Hedlin Hayden considers that his sculptures provide “artistic re-interpretations of Minimalism”⁴⁸⁴ by undermining the literalness of the abstract shapes and instilling doubt both in the perceived object and in the perceptual experience of the viewer. Various classified as a late modernist⁴⁸⁵ or as a contemporary artist who deftly appropriates “the new visual language of our digital era”⁴⁸⁶ since his works appear to change shape and color in response to various external stimuli, Kapoor’s practice embodies the

⁴⁸² Quoted in Germano Celant, *Anish Kapoor* (Milan: Edizioni Charta, 1996), p. xx.

⁴⁸³ Ibid. p. xxi.1

⁴⁸⁴ Malin Hedlin Hayden, *Out of Minimalism: The Referential Cube. Contextualizing Sculptures by Antony Gormley, Anish Kapoor and Rachel Whiteread* (Uppsala: Uppsala Universitet, 2003), p. 3.

⁴⁸⁵ Partha Mitter, “History, Memory and Anish Kapoor” in Nicholas Baume ed., *Anish Kapoor. Past, Present, Future* (Cambridge, Mass., London: MIT Press, 2008), p. 107.

⁴⁸⁶ Nicholas Baume, “Floating in the Most Peculiar Way” in Baume ed., (2008, 26)

contingence of multiple temporalities so characteristic of the contemporaneous condition.⁴⁸⁷ Not only do his sculptures impede clear cut historical periodization, but they also bring forth a perplexing realization of the conflicting times of lived experience. They situate viewers on the boundary between transitoriness and immanence by confronting them with relative visual and material referents. The object of perception and the viewing subject appear to undergo transformations simultaneously, yet their spatial and temporal parameters remain distinct, thwarting complete identification.

Kapoor's interest in a perpetually deferred representation that cannot be fully grasped underlies his quest into the dialectics of presence and absence. Both his sculptures based on the motif of the void from the latter half of the 1980s and the ones based on reflective materials from the mid-1990s propose similar phenomenological experiences since they challenge the distinctions between blunt flatness and absorptive depth, impending proximity and unsurpassable distance. They also open up the space of the object to intersubjective relations. *I* (1987), one of Kapoor's first sculptures dealing with the void, presents the viewer with a boulder whose upper part has been pierced to reveal its abysmal inner core, which can be sensed rather than seen. Its conceptual twin *Void Field* (1989) destabilizes the binary relation between the beholder and the object by multiplying the number of perceptual referents. Composed of several stone blocks staring back at the viewers through their dark oculi, the work renders the notion of an infinite emptiness perplexing since it abolishes the singularity of the void, unveiling its presence at the core of all things. Moreover, it does away with the uniqueness of the individual viewer's perspective. The plurality of the similar looking objects parallels the plurality of perceiving subjects absorbed in contemplating their finitude in relation to the field of boulders. Even before

⁴⁸⁷ See Terry Smith, *What Is Contemporary Art?* (Chicago: Chicago University Press, 2009)

starting to use reflective surfaces, Kapoor envisioned the aesthetic experience prompted by his works in terms of a mirroring process:

When I started working with the void, hollowness, emptiness became my main focus. [...] The relationship with the spectator became more intimate. I was looking for a condition of emptiness, which if it was empty enough might return your gaze like some blind mirror.⁴⁸⁸

The lack of coincidence between the realm of reflections and the embodied world destabilizes the subjectivity of the viewer. The feeling of intimacy conferred by the encounter with the void or by the mirror images encompassed by Kapoor's sculptures is not seclusive. It brings out previously experienced psychological states and highlights their universal dimension. Kapoor describes his first use of mirror-like materials in terms of an experimentation with spatial depth meant to further undermine the certitude implicit in objecthood.⁴⁸⁹ By employing a concave polished surface embedded in a wall, he created a work that not only gave the illusion of visual depth, but actually extended the world in front of the mirror into a swirling space with its own internal logic. *Turning the World Inside Out* (1995) metaphorically dissolved the Cartesian space of the gallery even to a greater extent by transferring the image of its abstract white space onto the aluminum surface of a globe-like shape, which dissolved its materiality and encapsulated the images of visitors. Whether used to disrupt the flatness of the pictorial plane or to display the oneness of our surroundings instantaneously condensed into an image, these reflective interfaces make viewers question their relations to the space and temporality of their bodies, as well as to the coordinates of the world they live in. Displayed in outdoor spaces, Kapoor's reflective sculptures such as *Sky Mirror* (2001) or *Cloud Gate* (2004) frame vivid metropolitan scenes. They offer passers-by a glimpse into the eventfulness of everyday life and reveal their intimate

⁴⁸⁸ Kapoor in Homi Bhabha and Anish Kapoor, "A Conversation. June 1, 1993," in *Anish Kapoor* (Tel Aviv: Tel Aviv Museum of Art, 1993), p. 60.

⁴⁸⁹ Kapoor, "Mythologies in the Making: Anish Kapoor in Conversation with Nicholas Baume," Baume ed. (2008, 50)

ties to the space they inhabit together with multiple others. For the design of large-scale works, Kapoor collaborates with engineers and architects in order to create shapes that appear to defy gravitational laws and enhance the viewers' sense of wonder by offering no clue to how they stand up. More recently, he has also designed a series of mirror sculptures entitled *Non-objects* (2008), which replicate architectural components seemingly rendered dysfunctional by their isolation from a specific building structure. As optical referents rather than structures of support, enclosures or doorways, they resensitize viewers to the symbolical dimension of spatial coordinates and the contingency of perceptual processes upon bodily motion.

Kapoor's reflective sculptures have consolidated his critique of the autonomy of the art object and have crystallized his notion of art as a transformative experience. Moreover, they fulfill his desire to create sculptures that conceal all traces of the manufacturing processes as if they had been brought into being by kinetic forces, which cannot be contained and whose source remains invisible.⁴⁹⁰ *Past, Present, Future* (2006) and *Svayambh* (2007) are literal extrapolations of Kapoor's idea of an autopoietic artwork. Their shapes and outlines are gradually carved out of wax through the repeated movement of apparently unstoppable mechanisms hidden from view. Stainless steel objects mirror the same concept since the images they absorb into their translucent surfaces perpetually alter with the ebb and flow of people moving past them. From this point of view they can be envisioned as interfaces for mediating the broadcast of live images, which unpredictably change the appearance of the sculptural screen from one moment to another.

Olafur Eliasson's practice resembles that of Kapoor from the point of view of the phenomenological premise, but it is also strikingly different from it because the artist

⁴⁹⁰ Kapoor states that "materials are there to make something else possible [...]. The things that are available, or the non-physical things, the intellectual things, the possibilities that are available through the material." Kapoor in Sherry Gaché, "Interview: Anish Kapoor," *Sculpture*, Vol. 15, no. 2, February 1996, p. 26.

conspicuously displays how the artworks or situations he sets up have been construed in order to underline the false opposition between nature and culture. Nonetheless, both approaches deconstruct Western modern myths that derive from the Renaissance idea that humans stand for the primary engine of the world, having been given the supreme task to oversee and, if necessary, bring into submission all the other divine creations, which are presumably uncultured. Kapoor's bent on self-generated forms and images points to the mysticism subsistent in any act of creation irrespective of the human or non-human nature of its catalyst whereas Eliasson's preference for showing how phenomena occur reflects the belief that there is ultimately a rationale for all processes, whether their origin is immediately visible or not. Their works have been prominently displayed by major art institutions such as Tate Modern, yet have been rarely discussed comparatively in critical discourse. James Meyer has noted that Kapoor and Eliasson respond to the demands of the culture of spectacle by designing installations of massive size, which dwarf the viewers and implicitly control them.⁴⁹¹ But the architectural scale so poignantly underlined by Meyer also frees the viewer from the shell of private absorption by drawing attention to the intersubjective character of our surroundings and by providing an opportunity to experience intimate connections in the public sphere. Yet, Kapoor and Eliasson's practices are not united merely by the size of their works and by the fact that they have been commissioned to create works both by some of the largest contemporary art museums and by public art boards. More significantly, their works expose the unpredictability of lived experience, the contingency of subjects and objects of perception and the potential for individual transformation subsistent in spatio-temporal intervals that disrupt the quotidian flow of information.

⁴⁹¹ Meyer (2004, 222-223)

Eliasson's art practice is so vast and eclectic that it poses even more problems than Kapoor's sculpture when art historians try to determine its artistic lineage. Throughout his prolific career, he has created color and light environments (e.g. *Remagine*, 2002; *Your color memory*, 2004) and has enacted natural phenomena indoors and outdoors (e.g. *Beauty*, 1993; *The New York City Waterfalls*, 2008); he has also staged unannounced interventions in public space (e.g. *Erosion*, 1997; *Green river*, 1998) and has conceived collaborative participatory projects that involve people from different communities (e.g. *The collectivity project*, 2005). As well, he has designed architectural configurations (e.g. *The blind pavilion*, 2003), has composed conceptual photographic series (e.g. *The fault series*, 2001), and has devised interactive environments using old and new media (e.g. *Notion motion*, 2005). His practice has also involved numerous collaborations with scientists, architects, and theorists. Despite the celebrity status he has achieved after the enormous success of *The weather project* (2003-2004) at Tate Modern, Eliasson has managed to maintain the experimental nature of his approach by working with a large team of designers and engineers in his laboratory-like studio in Berlin and by constantly testing out his ideas within the framework of interdisciplinary workshops such as *The Colors of the Brain* organized in conjunction with his survey exhibition at MoMA in 2008. He has also set up collective afterimage experiments through which audience members can discover the potential of their eyes and mind to create colors and shapes that lack a corresponding index in physical space. In the context of such public projects,⁴⁹² Eliasson adopts the role of a conductor instructing participants how and for how long they need to focus their attention on a certain object or image for a an unexpected optical phenomenon to occur. These experiments imply an

⁴⁹² An example of this is *The Afterimage Experiment* at Zeiss Grossplanetarium, Berlin in 2006. He also organizes this type of experiments during some of his talks in order to explain the way viewers turn into co-producers of his works through their perceptual engagement.

intersubjective mirroring process between participants since each of them feels that he/she is the producer of a unique experience, which can be affectively shared with numerous others, who are simultaneously involved in generating their own afterimages by following similar guidelines.

The collaborative production of his works in his studio has probably led Eliasson to envision the process of art reception as an intersubjective experience. Eliasson elucidates the social implications of perceptual and creative acts when he asserts: “to me, the potential of an object is difficult to decipher if I’m alone, because it lies very much in the object as a social construct.”⁴⁹³ This is one of the reasons for which he has expanded his studio and has constantly collaborated with people outside art circles so as to develop new perspectives on the objects and environments he devises. Group creativity theorists suggest that collaborations between group members with different backgrounds can yield more productive ideas.⁴⁹⁴ By all accounts, Eliasson is conscious of the fact that dissimilar views and approaches can breed original perspectives and contest artificial binaries enforced by modern ideologies.

The rich idiom of Eliasson’s works has generated a long list of art historical analogies. Philip Ursprung has compared his environments with those of Allan Kaprow from the late 1950s due to their participatory qualities,⁴⁹⁵ Madeleine Grynsztejn has associated his installations with the tradition of institutional critique from the 1960s and 1970s because of the way they set on view the museum confines and the construction of spectatorial conditions,⁴⁹⁶ and Pamela Lee has

⁴⁹³ Eliasson in “S-studio,” Anna Engberg-Pedersen ed., *Studio Olafur Eliasson. An Encyclopedia* (Taschen: Cologne, London, Los Angeles, Madrid, Paris, Tokyo, 2009), p. 381.

⁴⁹⁴ Monique Ziebro and Gregory Northcraft maintain that “The exchange of information with dissimilar others would greatly increase a group member’s range of information, and thereby facilitate that group member’s potential to generate highly unique and radical ideas.” See Ziebro and Northcraft, “Connecting the Dots: Network Development, Information Flow and the Creativity in Groups,” in Elizabeth A. Manniz, Margaret A. Neale, Jack A. Goncalo eds. (2009, 146)

⁴⁹⁵ Philip Ursprung, “From Observer to Participant,” Anna Engberg-Pedersen ed. (2009, 11)

⁴⁹⁶ Madeleine Grynsztejn, “(Y)our Entanglements: Olafur Eliasson, the Museum, and Consumer Culture,” Madeleine Grynsztejn ed., *Take Your Time* (Lodon: Thames and Hudson, 2007), p. 23.

pointed out the way Eliasson's practice reflects that of Light and Space artists such as James Turrell and Robert Irwin due to its phenomenological and experimental nature.⁴⁹⁷ In a survey essay for the Phaidon catalogue on the Danish-Icelandic artist, Grynsztejn has also paired him with Minimalist artists given his interest in challenging the boundaries between the art object and the beholder, Conceptual artists given his taxonomic juxtaposition of photographic images seemingly taken from the same distance, and Land artists given his site-specific interventions.⁴⁹⁸ While Eliasson's practice is strongly tied in with the multiple breaks in aesthetic traditions of the second half of the 20th century, they are also reminiscent of Constructivist works⁴⁹⁹ and American Abstract Expressionist painting due to their emphasis on the perceptual impact of light modulations and geometric fields of color. His affinities with prior art traditions or aesthetic tendencies are complex, yet he does not frequently approach this topic in his writings or interviews.

In talking about what has influenced his practice, Eliasson usually refers to Jonathan Crary's publication *Techniques of the Observer*,⁵⁰⁰ which he affectionately calls "the little yellow book."⁵⁰¹ Many of the numerous catalogues published in conjunction with his exhibitions have been designed under the careful coordination of his studio staff, which includes art historians such as Anna Engberg-Pedersen. Eliasson explains that he wishes to be involved in the production of these publications in order to insure that the meaning of his works is not

⁴⁹⁷ Pamela M. Lee, "Your Light and Space," Grynsztejn ed. (2007, 33-47).

⁴⁹⁸ Madeleine Grynsztejn, "Attention Universe: The Work of Olafur Eliasson," *Olafur Eliasson* (London, New York: Phaidon, 2002), pp. 35-97.

⁴⁹⁹ Klaus Bisenbach and Roxana Marcoci, "Toward the Sun: Olafur Eliasson's Protocinematic Vision" in Grynsztejn ed. (2007, 183-195).

⁵⁰⁰ Jonathan Crary, *Techniques of the Observer: on Vision and Modernity in the Nineteenth Century* (Cambridge, Mass.: MIT Press, 1990)

⁵⁰¹ Quoted from the artist's talk during *The Colors of the Brain* symposium at MoMA, April 18-19, 2008.

restricted.⁵⁰² Even though he rarely mentions artistic influences on his practice, it is striking to observe how much his projects resemble the aesthetics of works from the 1960s. *Room for one color* (1997) brings to mind Les Levine's *White Sight* (1969),⁵⁰³ an environment based on the use of monochromatic lamps. In both cases, visitors who enter these spaces plunge into a yellow field of light in which all other colors are reduced to grayish hues. The works of Venezuelan artist Carlos Cruz-Diez from the late 1960s also represent significant precedents of Eliasson's installations. His chromosaturated environments in which different modular spaces are suffused with changing colors anticipate *360° room for all colors* (2002) and *Your color memory* (2004). Half a century ago, this genre of installations tended to be less warmly received by critics since it was considered that it exerted an unprecedented amount of control over viewer's behavior and perception. Art critic Robert Pincus-Witten harshly criticized Bruce Nauman for devising fluorescent light environments in the 1960s. He maintained that the artist had betrayed the Duchampian tradition and had "exchanged elitism for populism" by offering viewers "sensitivity boxes" which test behavioral responses just as Pavlovian experiments did.⁵⁰⁴ At present, it has become evident that perception and reasoning are closely entangled and that it is impossible to completely escape perceptual control and attain autonomy as a viewer. Yet, individual perception implies a degree of relativity that helps one negotiate his/her sensorial field.

⁵⁰² Eliasson asserts: "I guess the fear of being misconceived that I mentioned at some point turned into a wish to support a certain way of verbalizing my work, surrounding it with texts, not just to protect it from art history, but to keep it open, also to myself and to avoid conclusive catalogues. To achieve this I've worked with a few great writers." See "A Conversation between Olafur Eliasson and Luca Cerizza," Olafur Eliasson, Luca Cerizza eds., *TYT [Take Your Time]*, Vol. 2 (Cologne: Verlag der Buchhandlung Walther König, 2009), p. 51. Even curators have remarked Eliasson's desire to maintain his authority over the production of catalogues documenting his practice. Acknowledging Eliasson's productive collaboration with the San Francisco Museum of Modern Art, Madeleine Grynsztejn states: "Olafur has up to now controlled much of the treatment of his own work in exhibition and in publications, which is why I thank him all the more for his generosity in working with SFMOMA on this more traditional survey." See Madeleine Grynsztejn, "Acknowledgements," Grynsztejn ed. (2002, 9).

⁵⁰³ This environment could also be labeled an intervention. Les Levine created it for a charity ball held at MoMA. The disruptive effects of this environment, as well as the dismay it caused among event participants, are described in Bourdon, (1969, 62-67)

⁵⁰⁴ Pincus-Witten (1972, 31)

Eliasson's *Green river* interventions also vividly recall prior practices. Staged on various locations starting with 1998, they unintentionally replicate the provocative gesture of Argentine artist Nicolas Uriburu, who turned the water in the Venice canals green by dispersing fluorescent sodium at the time of the art biennial of 1968. However, Eliasson keeps his actions more anonymous than his precursor in order to shock witnesses of this spontaneous color change and thus challenge them to think of potential hazardous factors that contributed to this transformation.⁵⁰⁵ Another surprising resemblance is that between Eliasson's installation *Convex/concave* (1995-2000) and Robert Whitman's *Vibrating Mirror Room* (1968) composed of reflective Mylar disks inflating and deflating under the influence of air pumps and sound oscillation. The significant difference is the fact that Eliasson's installation blatantly unveils the mechanism through which the mirror reflections are distorted to the rhythm of the air vibrations. However, his works are rarely compared to art and technology projects of the 1960s, which are considered the main predecessors of new media art.

The list of analogies with works from the 1960s and 1970s is much more extensive than this. One can identify almost perfect matches between Eliasson's projects and those of artists Daniel Buren, Robert Irwin, and Maria Nordman. This repetition is not intentional or subversive, but it should not be merely overlooked as a coincidence that lacks importance. It is in fact revelatory of the extension of the temporalities of the past into the present as a result of the continued need for contesting prevailing modes of disciplined perception, as well as for acquiring a greater awareness of how we participate in shaping the conditions of our existence and experience. Interestingly, these amazing coincidences have come up in Eliasson's conversations with his precursors more than in art criticism. Daniel Buren expressed his

⁵⁰⁵ Both interventions have ecological implications, but they are documented differently. Uriburu had his actions filmed whereas Eliasson conceals his agency and only takes photographs of the river as the substance dissipates in it.

bewilderment at several perfect correspondences between artworks separated by a couple of decades. In an interview, he asked the younger artist why he thinks critics and art historians avoid making “these connections, as though they wanted to block out certain precedents or ignore them.”⁵⁰⁶ Eliasson did not actually provide an answer; instead, he claimed that despite the formal affinities of his works with those of his precursors, the content is different. At the end of the conversation with Buren, he returns to these perplexing correlations and mentioned that the message of an artwork is conveyed not only by the artist, but also by the site of display and by the variable experience of the viewers. By resorting to this generalization, Eliasson eschews providing a response to the question concerning the reasons why these periods in contemporary art are so intimately related even though they are not contiguous. Major art museums are more actively engaged in promoting this genre of art practices than they used to be in the 1960s because they are committed to developing new ways of thinking about their critical role in society at a time when the convergence between mass-media culture and high culture has become a reality. These ideas will be developed further in my dissertation conclusion.

Mirrors have been prevalent in Eliasson’s practice from the beginning of his career. He recognized early that they constitute a medium that predisposes viewers towards phenomenological explorations. He has used mirrors to attain different effects ranging from paralleling the position of the viewer and that of the artist in order to show that they are equal participants in the experience of perception and the production of meaning to engaging groups of museum visitors in playful visual exchanges that reveal the intersubjective character of self-

⁵⁰⁶ Daniel Buren raises this question in the context of a discussion concerning the commonalities between his installation *Corridor-Passage: From and Off the Windows*, 1974-1975 and Eliasson’s installation *Seeing Yourself Sensing* (2001), both made up of strips of mirror and glass and installed in the windows of Museum of Modern Art, New York. Buren also mentions the conspicuous similarity between *Green River* and Nicolas Uriburu’s interventions. See “In Conversation: Daniel Buren & Olafur Eliasson,” *Artforum*, Vol. 43, no. 9, May 2005, pp. 208-214.

reflection. For *Mental* (1993), one of his earliest works incorporating reflective materials, Eliasson placed a mirror over the full length of a gallery wall and played a recording of his heartbeat in the background. The installation simulates a virtual encounter between the viewer and the artist who are united by ethereal traces of their bodily presence within the exhibition setting. The mirror reflections and the sound of the pulse seem to be affectively responding to one another. *Your Compound Eye* (1996) provides a more multilayered space for intersubjective reflections. It is a kaleidoscope composed of inclined mirror panels through which viewers can examine their surroundings from different angles. The installation also serves as an interface between participants since this optical apparatus is open at both ends so that visitors can watch each other interact with it. Eliasson has underlined the role played by viewers in the mediation of perception in various different contexts: “When you have people around you, they become a way of measuring visibility, depth, time and distance.”⁵⁰⁷ However, he does not privilege interpersonal experience over personal experience or vice versa, maintaining instead that each of these modes of engagement has its own value. While *Your Compound Eye* (1996) gives viewers the chance to use the work as an optical instrument detached from their bodies, *La situazione antispettiva* (2003) and *Multiple Grotto* (2004) ask gallery visitors to step inside kaleidoscopic devices. Upon entering the stainless steel carcasses of these large-scale sculptural environments, participants can watch their reflections in the fractured space of slanted mirror panels or gaze through small oculi upon the Cartesian gallery space lying beyond this mesmerizing visual maze. Another labyrinthine perceptual situation is offered by *Frost Activity* (2004), where visitors experience a sensation of disorientation not only because of the mirror ceiling, but also because the floor is covered by zigzagging tiles that enhance the illusionary effects of the work. The

⁵⁰⁷ Olafur Eliasson, “Landscape,” Engberg-Pedersen ed. (2009, 253).

installation became a space for informal congregations during the opening of Eliasson's exhibition at the Reykjavik Art Museum in 2004. Carol Diehl suggested that even though the work did not stimulate viewers to focus their attention on a sculptural object that would mediate their encounter with the mirror as in the case of *The weather project*, people were still "moved to gather in the otherwise empty space, sit on the floor and talk or gaze up at themselves."⁵⁰⁸ In this sense, the work closely resembles *Take your time* (2008), which includes even fewer elements of visual representation, but, as will be discussed in this chapter, successfully prompts interpersonal engagement.

Eliasson has openly explored the interactive character of mirrors in his *Mirror door* series from 2008. By using mirror panels affixed to gallery walls and spotlights mounted on tripods, he framed three different modes of viewing. In the case of *Mirror door (visitor)*, a strong beam of light is directed straight to the base of a vertical tripod. The beholder remains outside its glowing disk, which blatantly points to the way the installation is assembled. *Mirror door (spectator)* moves past the self-referentiality of the work, providing a more theatrical context. The spotlight beam is oriented towards the basis of a rectangular mirror where it forms a bright hemisphere doubled by its reflection. It forms a space for self-projection in a virtual space that resembles a theatre stage or a cinematic screen. *Mirror door (user)* shifts the focus of attention once more. The light beam is turned neither to the tripod nor to the mirror, but is directed to an entirely different floor area in order to grant the viewer a chance to step into the limelight and assume an active role in the manipulation of his/her reflection through bodily movements. Despite these invitations, it is noticeable that these works do not seem to trigger as much interaction as other installations that include mirrors. The conspicuous transformation of the beholder into a user of

⁵⁰⁸ Diehl (2004, 110)

the interface provided by the artwork turns out to be intimidating. I visited this work on several occasions while it was on display at MoMA during Eliasson's survey exhibition in 2008, but I rarely saw any adult viewers interacting with it. Even so, the *Mirror door* series provides a powerful metaphor for transformations in art spectatorship throughout the course of the past century and encourages conceptual engagement. Its metatextual references to changes in the condition of art objecthood and spectatorship are also at play in Eliasson's earlier installation *Wall eclipse* (2004). A rectangular mirror rotates in the middle of a room in front of a strong spotlight, simultaneously casting shadows and projecting light on its walls. The shape and size of the reflective screen is reminiscent of a painting canvas. Yet, viewers concentrate less on the image of the reflective screen and more on the process through which its shadow and the light it refracts modify the gallery setting. By inviting a careful scrutiny of the conditions of display and perception, the work interrogates the role of art as a window upon the world or a mimetic representation of reality.

There are also numerous works by Eliasson that inspire interpersonal reflective processes even though they do not include large mirror surfaces. An example of this would be *I only see things when they move* (2004) in which the shadows of participants are projected on gallery walls as light is projected through rotating colored lenses set on a tripod at the center of the room. This form of spectatorial involvement is generally associated with interaction with new media art since it implies feedback between a viewer turned into active user and a responsive environment that reflects the outcomes of his/her actions. The variability of color projections and bodily movements emphasizes the mutability of spatial and temporal reference points and calls one's attention to the relativity and selectivity of perception. Users of *I only see things when they move* form geometric or organic shapes out of their bodies by making their shadows converge or

diverge on the gallery walls. They imitate each other's gestures or spontaneously come up with new means of complicating this loose and imperfect process of mirroring. Self-observation and voyeuristic acts combine to give vent to affective exchanges between participants. *Take your time* offers a similar perceptual situation since visual reference points constantly shift as the mirror rotates and museum visitors adopt contemplative or performative modes of behavior. Yet, it does not inspire the same high degree of playfulness as *I only see things as I move* because it encapsulates the actual images of participants, thus crudely unveiling its voyeuristic implications. By staging ambivalent perceptual situations, Eliasson cultivates an ethical awareness of the fact that we share our surroundings with multiple others and a sense of individual responsibility towards the space we inhabit and the time we have been given. He explains the repetitive use of personal pronouns in his titles in the following manner: "When I say "Your" this or that, it's simply to suggest that you're responsible for the performativity that the work itself offers as a potential."⁵⁰⁹ Mirrors fulfill the same function since they highlight our personal involvement in the world.

Ken Lum shares Eliasson's preoccupation with eliciting individual responsibility and intersubjective awareness. Conscious of the fact that art cannot bring about large-scale revolutionary social changes,⁵¹⁰ he places his faith in individual acts of critical interpretation, which can lay bare ideological constructions. Out of the three artists discussed in this chapter, he

⁵⁰⁹ Eliasson, "You," Engberg-Pedersen ed. (2009, 477).

⁵¹⁰ Contradicting the interviewer's statement that he calls for art practices that generate cultural changes, Lum asserts: "I don't know if I would have worded it that way. I'm for a kind of socially critical, engaging art. I'm not sure I would have said that, that it would have to change culture. It has to have some effect, but I'm not for a sort of art which is essentially agit-prop." See Lum in Evan McArthur and Ken Lum, *Transcript: a Journal of Visual Culture*, Vol. 2, no. 1, 1996, p. 30. Eliasson also departs from avant-garde faith in the potential of art to engender large-scale changes. In an essay concerning the artist's views on utopias, Molly Nesbitt mentions that Eliasson has explained in one of his talks that "for him and for his generation the hope of actually changing the world did not exist." See Molly Nesbitt, "I Am the Tiger," *Olafur Eliasson. Minding the World* (Ostfilder-Ruit: Hatje Cantz Verlag, 2004), p. 141.

is the one most closely identified with a specific art historical tradition. A descendent of the conceptual generation of artists of the 1970s who have radically attacked the closed systems of information and the mechanisms of social control, Lum has unpacked the subversive ways in which corporations manipulate images and language to create the illusion of a happy conformist society. Through his performances, photographic series and installations, he has underlined the need for self-involvement and interpersonal exchanges in order to counteract the subordination of individuals to corporatist culture. Growing up in a family of Chinese immigrants on the east side of Vancouver, Lum is acutely conscious of the invisible boundaries that separate different social or cultural groups and aims to create works that provoke encounters between people or familiarize them with the carefully masked divisions between themselves and others. In talking about how his identity has shaped his practice, the artist mentions that he has developed an acute sense of observation while living in a Chinese neighborhood located in a remote metropolitan area: “my movements were very, very circumscribed. I was always watching. Watching and observing situations.”⁵¹¹ Many of his works are suggestive of this voyeuristic experience of feeling intimately connected to the lives of others. Just as Kapoor’s sculptures situate viewers on the edge of void or reflective fields that absorb them perceptually while simultaneously denying them complete access to their virtual world, Lum’s practice maintains the tension between the exclusion and the inclusion of beholders in different social and cultural spaces. Yet, his artistic trajectory is different from that of Kapoor who has been primarily interested in experimenting with various materials and shapes in order to challenge objecthood.

Lum’s preoccupation with exposing the suppression of individuality has been manifest since the early years of his formation as an artist. As a student at Simon Fraser University in the

⁵¹¹ Ken Lum in Marnie Fleming, “The Resolute Moment: a conversation with Ken Lum about his most recent work,” *Ken Lum. Recent Work* (Oakville, Ontario: Oakville Galleries, 1994), p.7.

second half of the 1970s, he studied art under the guidance of Jeff Wall and had an opportunity to become acquainted with the conceptual approach of Michael Asher and Dan Graham who visited Vancouver at the time.⁵¹² Coming out of an art background critical of formalism and the presumed neutrality of art display spaces, Lum became invested in devising strategies for uncovering the separation of artworks from social systems. His sculptural works from the early 1980s bear strong connections with Minimalism. Composed of furniture pieces, they are connotative of the warmth of family life, but they are deprived of functionality since they are arranged in closed circular or rectangular configurations that deny viewer's access to their space. While they reconstitute the unitary forms of Minimalist objects, they reverse their aesthetics and challenge the ideal autonomy of the museum visitors' experience. During the same period, Lum also built upon the tradition of Pop art and Conceptual art. Subversively appropriating the visual vocabulary of corporate advertising, he created photographic series that bluntly show the processes through which brand power is consolidated through the use of individual or family identity markers.⁵¹³ In Lum's view, all the above-mentioned art tendencies have contributed to unmasking the limitations of private aesthetic contemplation in the supposedly autonomous space of art institutions:

I've always thought that the hermeticism, the purging of reflection in gallery spaces, was problematic. That's something conceptual art has dealt with, minimal art, even pop art to some degree. I realize more and more that excising all the social references in the gallery space is not only to enhance the contemplative relationship that people have with a work of art, but also to enhance the privacy of the viewer.⁵¹⁴

⁵¹² In an essay on his former student's early career, Wall mentions these influences upon Lum's thinking about art and explains that "From Dan Graham, Lum learned that each apparently abstract gesture concealed a literature, a host of implications and allusions to social experience." See Jeff Wall, "Four Essays on Ken Lum," *Ken Lum* (Winnipeg: Winnipeg Art Gallery, 1990), p. 39.

⁵¹³ The *Portrait Logos* series from 1984 is a relevant example. It juxtaposes images of accomplished workers presumably satisfied with their achievements to invented logos, carrying their family names.

⁵¹⁴ Ken Lum in Lisa Gabrielle Mark, "Reflections on the Mirror: an interview with Ken Lum," Lisa Gabrielle Mark ed., *Ken Lum, Photo-Mirrors* (Toronto: Walter Philips Gallery and the Banff Center for the Arts, 1998), p. 16.

Lum questions the notion that art galleries constitute a true public space because they hold out the promise of a private experience unaffected by the presence of others or by the ties of the artwork with larger socio-economic systems that surpass the boundaries of the art world. Many of his works solicit the viewer to relate empathetically to the functions fulfilled by individuals within global networks of production and consumption or to the roles adopted by individuals in diverse social situations that require them to negotiate their identity at an interpersonal level.

Lum's diverse projects trigger both literal and metaphorical processes of mirroring. A number of them render viewers or participants aware of how their mundane activities are perceived from the perspective of a distant onlooker, others encourage them to put themselves in someone else's shoes in order to virtually experience emotional moments or socio-cultural marginalization. More recent works, including *Pi*, which will be amply analyzed in this chapter, include large-scale mirrors and written statements that engender processes of perceptual and conceptual reflection. *Entertainment for Surrey* (1978), one of Lum's first performances, disrupted the ordinary experience of commuters. The artist stood immobile between 6 and 8 o'clock in the morning near the curve of a road. He repeated this task on four business days, observing the changing reactions of commuters upon noticing him. After encountering him repeatedly, some of them joyfully greeted him. Lum's static posture contrasted with their hectic rush to work. His performance metaphorically constituted a mirror image of their habitual performances in society. Lum gradually realized that his presence would stop having the disruptive impact he envisioned as commuters would become accustomed to seeing him on that spot. He concluded that he was turning into "a sign"⁵¹⁵ with fixed meaning and replaced his bodily presence with a cardboard silhouette on the fifth day of the performance. Lum's *Diptych*

⁵¹⁵ Lum quoted in "Living Statue Tries Experiment," *The Surrey Leader*, July 5, 1978, p. 12.

series (1993), which juxtaposes carefully staged photographic representations with texts that convey the thoughts of protagonists shown in the pictures also play upon a process of identification with familiar strangers. Viewers become witnesses to the psychological turmoil of anonymous figures and adopt a voyeuristic role in trying to discover what may have prompted these individuals' traumatic experience. The ambivalent correlations between images and texts foster critical reflection. Given the ambiguous nature of the individual stories portrayed in the *Dptych series*, the beholders feel compelled to ponder what aspects of their own identity might have made them imagine a particular narrative sequence while interpreting the work.

Lum's first use of mirrors dates back to 1997. During his residency in a Tuscan village, he developed a community-oriented project by placing a long mirror panel on a wall and asking people to affix to its surface photos that they wanted to exhibit. As the artist explains, the work had a site-specific character, being inspired by local Catholic rituals based on offerings.⁵¹⁶ Moreover, it stood for a symbolical gift exchange between the artist and the community. While Lum staged the context for this creative endeavor, the work could only be completed through the participation of local people. The mirror acted as a bridge between the past and the present of the village by incorporating both real-time reflections of its inhabitants and photographic signifiers of their memories. Building upon the idea for this project, Lum produced his *Photo-Mirror* series (1998). In this case, the particular is translated into the general since the artist makes his own selection of images out of randomly found photographs. The work no longer reproduces a community, but the loose ties between the memories of individuals pertaining to unrelated groups. The pictures are inserted in the frames of multiple mirror panels that take the place of canvases on gallery walls. The space of art production is conflated with that of art reception as

⁵¹⁶ Lum in Mark (1998, 18)

the reflections of viewers migrate from one specular space to another, hence replicating the disparate correlations established between the individuals represented in the photographs. *Photo-Mirrors* gives vent to mirroring acts across space and time. Visitors reflect themselves in the mirrors, as well as in the pictures, which bring forth memories of past experiences analogous to those experienced by the people in the photographs. Similarly to the *Diptych* series, this work produces rich intertextual analogies and prompts intersubjective reflection.

The mirror trope is reiterated in Lum's *Mirror Maze with 12 Signs of Depression* (2002), the installation he exhibited at Documenta 11. The artist introduced visitors in a disorienting environment fractured into zigzagging corridors by vertical reflective panels. Short statements associated with the diagnosis of depression such as "I feel alone in the world" or "I cry for no reason" were etched on the transparent partition walls. The installation has been mainly analyzed in terms of processes of identification with the enunciated symptoms. Scott Watson remarks that the maze is "meant to provoke self-absorption to the point of self-pitying depression"⁵¹⁷ and Christine Ross argues that the work denotes "an aesthetic depreciation of connectedness."⁵¹⁸ Neither of them considers that the mirror maze offers a potential for interpersonal encounters that can undermine the feeling of isolation. As visitors struggle to find their way around the labyrinth of reflections, the bodily presence of others becomes a reference point for their position in space and interferes with the state of self-absorption conducive to the deepening of depression. The identification with other participants interacting with the work serves as a foil for the identification with the etched signs and emphasizes the mutability of psychological states under the influence of intersubjective visual and communicative exchanges.

⁵¹⁷ Scott Watson in *Documenta 11_Platform 5: Exhibition. Short Guide*. (Ostfildern-Ruit: Hatje Cantz, 2002), p. 148.

⁵¹⁸ Christine Ross, *The Aesthetic of Disengagement. Contemporary Art and Depression* (Minneapolis and London: Minnesota University Press, 2006), p. xxii.

Kapoor, Eliasson and Lum fully explore the versatility of mirroring processes, which simultaneously point to the inner world of individuals and their relations to the external world. *Cloud Gate*, *Take your time*, and *Pi* highlight the fluidity of spatial and temporal coordinates, which vary with the movement of visitors or passers-by, whose image is seemingly temporarily suspended in their reflective screens. In the remaining part of this section, I will delineate the ways in which the installations function as passageways, provide a sense of presentness by confronting viewers with the eventfulness of everyday existence and draw connections between global imaginings and local identifications. Last, but not least, I will explain how they unveil the interdependence between public and private spaces and cultivate an awareness of the tensions subsistent between different groups.

Located on AT&T Plaza in Millenium Park, Kapoor's *Cloud Gate* confers specificity to its context of display, turning it into a key symbolical marker of Chicago. It fulfils multiple roles since it can be defined as a transitory space through which local people pass repeatedly on their way to work, as a temporary dwelling or ritualistic site to which inhabitants return repeatedly during their spare time, or as a site of spectacle - a must-see icon for every tourist visiting the Midwest metropolis. Originally, *Cloud Gate* was supposed to be positioned in the Lurie Garden, a much quieter location that was preferred by Kapoor to the present one. However, it was felt that the sculpture would overshadow the specificity of the garden design: "The move of Kapoor's piece was necessary because it became the focal point of a garden that donors had wanted to be an entity unto itself."⁵¹⁹ A major landmark of Millenium Park, *Cloud Gate* was

⁵¹⁹ Alan G. Artner, "Revealing 'The Bean.' A Look behind the scenes at one of the most important additions of public art in decades," *Chicago Tribune*, April 25, 2004. Available online at: http://articles.chicagotribune.com/2004-04-25/news/0404250487_1_sculpture-art-institute-plates on October 20, 2010.

expected to stand out as an artwork in a gallery space rather than blend in with its surroundings.⁵²⁰

Cloud Gate is suggestive of both transitoriness and immanence. The smooth transformation of its silver surface contrasts with the stability evoked by its massive shape, anchored to the ground by means of two pillars that penetrate the interior of its ovoid shape, yet remain invisible to onlookers. The rest of its structural components are also concealed. The sculpture is made up of 168 steel plates, sealed together over its skeleton. The seams between them have been carefully polished over a long period of time so that *Cloud Gate* appears as an autopoietic body, characterized by mystical oneness and capable of perpetually regenerating with every new reflection it instantaneously incorporates into its skin. Thus, the sculpture mirrors the concept of “svayambh,”⁵²¹ which also informs Kapoor’s more recent works as shown in the first part of this section.

The corridor formed underneath the curved shell of *Cloud Gate* was specifically designed to allow visitors to gain entrance into its inner core also known as the omphalos of the sculpture. Despite the intimate quality of this location conveyed by its low height and the mesmerizing reflections projecting against its canopy the space is not enclosed and serves as a passageway between different corners of the plaza. From the point of view of its functional purpose, the omphalos appears to be a “non-place,” that is a mere site of repeated transitions according to Marc Augé’s theory of spatial relations.⁵²² Yet, from the point of view of the feeling of

⁵²⁰ Diane Millis remarks that “The park was created as a series of rooms, each providing an opportunity for art and architecture to be located.” See Diane Millis, “Millenium Park, Chicago, USA,” *Green Places*, Issue 13, March 2005, p. 35.

⁵²¹ “Svayambh” means self-generation in Sanskrit. It is also the name of a work produced by Kapoor in 2007. It consisted of a block of red wax that moved imperceptibly along rails between galleries. *Svayambh* seemed to transform itself throughout this process by taking the shape of the arched doorways.

⁵²² Augé defines “non-places” as spaces in which “people coexist or cohabit without living together.” See Marc Augé, *Anthropology for Contemporaneous Worlds* (Stanford: University Press, 1999), p. 110.

temporary belongingness to an eclectic urban group it inspires, the work constitutes a place of intersubjective encounters, whose history becomes denser and denser as it becomes part of the affective memory of numerous visitors. Moreover, *Cloud Gate* is as representative of the modern aesthetic of reflective screens since it is symbolical of archaic spaces built around an axis mundi, which mediates the connection between heaven and earth. Since Kapoor resents the ornamental character of most public sculptures, he aimed to create an artwork that mirrors its surroundings and gives them new meaning by disrupting ordinary perceptual coordinates and recalling the archetypal character of ancient arches. Explaining the reasons for which the commissioning committee selected *Cloud Gate* out of the numerous proposals for Millennium Park, project director Ed Uhler stated: “The feeling was that Anish’s sculpture really reflected the spirit of the next millennium. It was classical in some respects and very contemporary in others. It reflects the individual as well as the skyline and the clouds.”⁵²³ Hence, the work is described as a passageway not only across space, but also across time. Reflecting the agenda of this large-scale redevelopment project of the Chicago downtown area, it marks the entry into the new millennium through its combination of a primeval shape with a futuristic aesthetic conveyed by the interactive potential of its silver surface, which constantly mutates with every change in its immediate surroundings.

Similarly to *Cloud Gate*, Eliasson’s *Take your time* frames an interval in space and time. Since the installation gives the title of the artist’s largest survey exhibition to date, it stands in a synecdochic relation to it. While the work embodies Eliasson’s phenomenological philosophy and serves as a dictum for living in the present and not allowing oneself to become a mere pawn on the chessboard of history set up by others, it also maps a very specific perceptual situation in

⁵²³ Ed Uhler quoted in Shanthi Shankarkumar, “A Silver Bean for Chicago,” *Rediff on the Net*, November 26, 1999. Available online at: <http://www.rediff.com/news/1999/nov/26us2.htm> on September 20, 2010.

which viewers experience a temporary delay of the current moment and a momentary deferral of stable spatial coordinates. *Take your time* introduces museum visitors into a gallery space dominated by a circular mirror, placed at an oblique angle against the ceiling. The reflective disk has a disorienting effect: it enhances the depth of the room by turning the image of its floor upside down and it constitutes a mobile point of reference for the viewers as it slowly revolves above their bodies. Standing both for a metaphorical instantiation of the artist's entire artistic practice and for a particular example of how perception is conditioned by individual consciousness and visual physiology, as well as by the phenomenological context, the installation calls for a revitalization of one's relations to the world and an enhanced awareness of being *in* and *with* time.

Take your time was strategically displayed in a square gallery located in the middle of the third floor of P.S. 1. Its central location and the rounded shape of the mirror demarcating the space of interaction with the installation emphasized its function as a public forum. The installation was envisioned as a space of encounter with the otherness inherent in oneself and in the world we inhabit, which is constantly altering just like the mirror disk, incessantly rotating on the ceiling. The public dimension of the installation was underscored by the fact that the gallery could be entered from two opposite sides, thus representing a literal passageway between different sides of the exhibition. Like *Cloud Gate*, *Take your time* is concomitantly a site of transition and dwelling. On the one hand it invited viewers to inhabit its space and momentarily forget about their sequential trajectory through the museum, on the other hand it mediated their transition by situating them in between different exhibition areas, each vying for their attention. Whether they chose to exit through the same door they had entered or follow a new path, their experience was momentarily disrupted since the institutional framework became clearly visible.

On both sides of the central gallery where *Take you time* was displayed, visitors could observe numerous prototypes of geodesic spheres, rhombic dodecahedrons, and various other complex geometrical objects arranged along longer or smaller shelves. Aptly entitled *The Model Room*, this environment was reminiscent of the space of the Wunderkammer, as well as of a laboratory-like setting or an artist's studio. It encompassed a large area of the museum floor and it foreshadowed the space of perceptual interaction of *Take your time*, where visitors simultaneously became agents and subjects of sensory experimentation. For Eliasson, the installation represented a model just as the smaller-scale geometrical objects displayed as collectible items or prototypes outside the central gallery. In his view, models do not only anticipate what is to become real at a future time, but are actual “producers of reality.”⁵²⁴ His philosophy points to the collapse of master narratives and the value of small gestures and subjective involvement. Within the space framed by *Take your time*, museum visitors become insiders of the studio, testing out the effect and affect of the installation and transforming it through their various modes of interaction with its reflective interface.

Not only was the experience of this installation mediated by its inscription in the middle of a studio-like environment, a seemingly smaller-scale version of Studio Olafur in Berlin where Eliasson collaborates with others on the design of experimental models, but it was also influenced by the carefully staged transition of museum visitors between the two venues of the survey exhibition in New York: MoMA and P.S.1. The exhibition brochure provided subway directions for traveling between the two museums. The concept of *Take your time* concept insidiously infiltrated the space of the city. As visitors took the escalators to the subway platform, they saw along the walls square pictures with images of the studio and the exhibition

⁵²⁴ Eliasson (2009, 349)

title. These small-scale square photographs departed from the format and typographic conventions of advertising panels and were arranged in a diagonal line all the way along the axis of the staircase, colonizing its transitory space and rendering passers-by highly aware of their movement through the city. The visiting experience acquired performative qualities and was no longer limited to the institutional framework. It became part of what Michel de Certeau calls “the practice of everyday life.”⁵²⁵ In a conversation with Robert Irwin, Eliasson observed that: “Taking one’s time means to engage actively in a spatial and temporal situation, either within the museum or in the outside world.”⁵²⁶ The journey from MoMA to P.S.1 built up anticipation and underlined the fact that one needs to take his/her time on a daily basis to avoid a state of perceptual and social inertia. De Certeau defines space in terms of mobility and intersubjectivity: “To practice space is thus to repeat the joyful and silent experience of childhood; it is, in a place, *to be other and to move toward the other.*”⁵²⁷ This re-appropriation of a time of wonder, which helps one question the presumably fixed coordinates of space and identity, is what Eliasson considers to be an essential element of a conscious everyday life practice. The “Take your time” exhibition asks viewers both to engage with their surroundings by moving from one space to another and to dwell in a very specific, yet temporally relative location, under the revolving mirror disk, which temporarily arrests their transition between PS1 galleries.

Sharing Eliasson’s belief that art can inspire reflection on personal agency and self-transformation, Ken Lum has also created works that span the space between museums and quotidian urban itineraries. *Pi* (2006) was specifically designed for the passage linking Karlsplatz Square to the Secession building in Vienna. The project was initiated in 2004 by Art

⁵²⁵ Michel de Certeau, *The Practice of Everyday Life* (Minneapolis: University of Minnesota Press, 1984)

⁵²⁶ Olafur Eliasson and Robert Irwin, Grynstejn ed., “Take your time: a conversation,” (2007, 51-52)

⁵²⁷ De Certeau (1984, 110)

in Public Space Vienna, an organization that commissions art projects with the help of funding from the City Council. The design brief invited artists to submit proposals for projects that would creatively transform the space of advertising glass cases normally arranged along the walls of urban passages.⁵²⁸ Playing upon the identification of passers-by with images of satisfied consumers of commercial products, Ken Lum created an installation composed of fourteen mirror panels which confronted passers-by with their own reflections, hence underscoring their role as active agents, responsible for their choices and beliefs. Each of them was etched with inscriptions and included LED panels offering statistical information about local or global issues such as wars, hunger, diseases or ecological disasters.⁵²⁹ Opposite these vertically oriented panels reminiscent of advertising cases, he placed a series of adjacent mirror screens which wrapped around the passage walls and offered a quasi-representation of π , the number used in the calculation of mathematical estimates. The numerical value of π was etched onto the reflective surface. The last ten digits of it were indicated by means of a digital animation shifting between various numbers since there is no way in which they can be accurately determined. Hence, π defies the fixity of representation and symbolically points to the perpetual variation of the world. The installation instills doubt in the statistical data it presents since all predictions are based on the use of this unstable number. Lum aptly indicates that both our knowledge and our

⁵²⁸ The documentation for *Pi*, compiled by Art in Public Space Vienna states: “According to the brief, the City Light show cases that are normally used for advertising purposes and are big enough for large-format posters are to serve as the main visual elements of a coherent and over-arching artistic design.” Art in Public Space Vienna, “A Sign for Karlsplatz – A Square for Art.” Available online at: http://www.publicartvienna.at/presse/Ken_LUM_Pi_e_2.pdf on September 10, 2010.

⁵²⁹ The installations includes 14 statistical estimates, also called factoids concerning the following issues: malnourished children in the world; people in love in Vienna today, people killed in war since January 1, paid hours worked by Austrians since January 1, HIV infections worldwide since January 1, amount of garbage produced in Vienna since January 1, people dissatisfied with their job in Austria, world population, growth in the Sahara Desert (in hectares), books borrowed in Vienna since January 1, people killed or maimed in landmines, schnitzels eaten in Vienna since January 1, days until Chernobyl is considered safe, amount of money spent on military armament since January 1 (in Euro).

perceptions are in fact approximations of actual phenomena or life events, which constantly alter just as reflections in the mirror change in real time. Yet, *Pi* entails additional implications. Besides the installation components directly related to this number, Lum displays a cylindrical glass case with publications concerning world demographics and migration. This documentation shows that there is more at stake in this public art project than a mere popularization of statistical figures as one would find in quotidian press. *Pi* astutely suggests that human movement and diasporic networks cannot be fully mapped since they are in a state of continuous flux.

Lum's Westpassage project resists iconicity. π , its abstract visual signifier, is successively repeated and challenges the notion of commensurability and singularity due to the variability of its last ten digits. Given its multiple components, which are systematically arranged throughout the entire passageway, no photographic reproduction of the installation can convey its entire structure. *Pi* needs to be experienced in motion. It interrupts one's advancement through the corridor, but it also entices one to keep moving and discover other numerical and visual indices. While trying to connect all the components of the installation, passers-by become the authors and protagonists of a visual narrative that is simultaneously personal and impersonal since it results from the intertwining of their reflections with statistical data. Unlike *Cloud Gate*, *Pi* cannot be contemplated from a distance. It challenges proximity and it rejects a unitary configuration that can be instantaneously revealed. By exposing the limitations of all statistical calculations based on π , Lum underscores the fact that the installation is a construction and not a transparent representation of the state of the world at the current moment. Yet, *Pi* also resembles *Cloud Gate* because it similarly points to the fact that our surroundings are changing more rapidly than we can realize it. The images reflected in the curved screen of Kapoor's sculpture

are anything but static or accurate depictions of the world that is unfolding around it. Due to its bulging organic-looking shape, the sculpture distorts the sense of distance and proportion.

In a similar fashion, *Pi* enhances the specificity of the location in which it is inscribed. Westpassage is transformed into a mirror space, where one's bodily presence is visibly incorporated into a system of information that reflects instantaneous changes in the urban landscape, as well as world transformations that may impact passers-by sooner or later. The jury board, which selected Lum's installation, argued that thanks to "its international, global references, this work does justice to Karlsplatz, a transfer space for people of most variable origins."⁵³⁰ It also commended its correlations with the local context since *Pi* includes statistical data relevant for Vienna. Alert to the way public art is put into the service of tourism, precisely as a result of the fact that it confers site-specificity to non-places, Lum subtly parodies this tendency by inserting in the installation statistical information about the number of "schnitzels eaten in Vienna since January 1." Tourists eager to experience Viennese cuisine discover that they may actually contribute to the oscillation of this statistical figure even if they are merely visiting the city for a couple of days. As a target audience group for public art projects, they indirectly affect the shaping of the public space which is purposefully designed to respond to their desire for encountering locally specific features and for developing a momentary feeling of belonging to a foreign cultural space.

In addition to situating viewers in liminal spaces, *Cloud Gate*, *Take your time* and *Pi* disrupt the fluidity of the time flow, virtually suspending its advancement or altering its rhythm. They propose a paradoxical co-existence of presentness and real-time experience. Their reflective surfaces delimit an immediate field of perception and interaction, apparently detached

⁵³⁰ "Jury Argumentation." Available online at: http://www.publicartvienna.at/presse/Ken_LUM_PI_e_2.pdf on September 10, 2010.

from the ordinary unfolding of time. However, they also encapsulate changes that occur in different spaces, thus emphasizing the lack of control over mirror images and the instantaneity of transformations in our surroundings. *Cloud Gate* encourages passers-by to loiter in its vicinity and become absorbed in the observation of its mutability. Visitors remark that it calls for an extended perceptual experience. Several respondents to a blog including Flickr images of Kapoor's sculpture made comments concerning the temporal awareness generated by the sculpture. One of them asserts that the sculpture "entertained" him/her "for quite some time," another one mentions that "it is so creative" that it makes him/her "look at it again and again."⁵³¹ Creativity is subsistent not only in the completed artwork, but also in the act of looking and performing in real time in its proximity. For Chicago inhabitants, the temporal dimension of *Cloud Gate* holds additional implications. The process of polishing the surface of the sculpture took about two years. During this period, people could observe different parts of it being unveiled temporarily. The delay enhanced people's attachment to the site of the sculpture, which held out a perceptual promise for an extended duration.

A similar promise was offered by the title of Eliasson's survey exhibition. It announced museum visitors that what they were going to experience depended as much on the artist as on their own capacity to wait for their senses to adjust to different perceptual stimuli and for their thoughts to crystallize. As a large number of time-based art projects (e.g. video artworks that have the length of feature films), his installations ask visitors to slow down for an indefinite period of time. They are ultimately the ones to decide how to time their experience. Yet, their feeling of belonging to the temporality and space of Eliasson's installations will also be influenced by the presence of others. Upon entering the P.S.1 gallery where *Take your time* was

⁵³¹ See comments on SOOTHBRUSH blog. Available online at: <http://www.soothbrush.com/cloud-gate-chicago-sculpture/> on October 30, 2010.

displayed, viewers felt torn between looking at the rotating mirror from the doorway and stepping into the area situated immediately beneath it.⁵³² The disorientation engendered by the recurrent slipping away of the images reflected in the mirror disk compelled numerous viewers to lie down on the floor. The wall label did not indicate any prescribed form of interaction with the work, but most visitors assumed a horizontal position either in order to regain their bodily balance or in order to adapt to the behavior of others who had already discovered the preferred vantage point. While the impression of spatial displacement gradually diminished, the impression of temporal displacement became increasingly profound. With every rotation of the mirror disk, one sensed that the coincidence of one's bodily image with the mirror reflection was constantly delayed. The experience was highly ambivalent. Even though the mirror symbolically performed the role of a clock hand measuring real time, one registered a sensation of temporal suspension that was catalyzed by the horizontal bodily posture voluntarily assumed by almost everyone.

The disk was diagonally inclined and was made up of adjoining reflective strips whose edges could be fairly easily observed. As the object revolved, one's reflective image seemed to momentarily disappear between the boundaries of the mirror bands and reappear in another segment of the work's circular perimeter. Unlike the perfectly neat screen of *Cloud Gate*, *Take your time* openly exposed its man-made nature. Upon realizing how the installation was set up, the perceptual experience became highly perplexing. The oneness of self-creation denoted by the constant speed of the disk contrasted with the discontinuities observable in the mirror surface. Immersion in a state of presentness was deferred as a result of these tense relations between parts and whole. The eternal cyclic time of the mirror was in conflict with the relativity of lived time.

⁵³² This description of the perceptual experience within the space of *Take your time* is based on the observations I made during my visit to the exhibition on April 18, 2008.

Its engine-driven motion, which could come at a stop at any moment, rendered the temporal coordinates even more ambiguous. As viewers followed the displacement of their reflected image split between the edges of mirror strips, they felt entrapped between a past extending into the present and an anticipated future. This paradoxical embodiment of multiple temporalities situated them into what Hannah Arendt calls a “non-time-space in the very heart of time,”⁵³³ where thinking is liberated from the pressure of history and from commitments to a programmatic future. Thinking of oneself in a metaphorical temporal interval that thrives on the unpredictability of mental and perceptual processes constitutes an exercise in assuming agency. Eliasson believes that original ideas arise in these moments of suspension of strictly organized activities. The interdisciplinary workshops he coordinates at his studio in Berlin often have a very loose framework, more time being allocated to discussions during long breaks rather than to pre-arranged presentations. Eliasson maintains that awareness of the mutability of the present can enhance our active involvement in the world we inhabit: “Time is a tool with which to navigate the world; it makes us grasp that the subject is causally intertwined with its surroundings. This causal relations brings to the fore the notion of responsibility.”⁵³⁴ His precursor Les Levine also embraces this concept of personal commitment to present thought and action. As described in the fourth section of the first chapter, his closed-circuit installations were meant to inspire individual responsibility and cultivate an enhanced sense of real time so that one becomes more fully conscious of the effect he/she has upon his/her surroundings.

Acquiring responsibility by contemplating one’s role as a simultaneous subject and object of present time is also a guiding principle for Lum, who argues that “the purpose of art should be

⁵³³ Hannah Arendt, *Between Past and Future. Eight Exercises in Political Thought* (New York; London: Penguin Books, 1993), p. 13.

⁵³⁴ Eliasson in Eliasson and Cerizza eds. (2009, 88)

to offer a space for pause and reflection.”⁵³⁵ *Pi* frames an environment marked by multiple temporal interstices that can briefly suspend passers-by’s traffic through the Westpassage. Statistical studies aim to capture the reality of a specific time period and are used to predict future changes based on present conditions. They give the illusion that they can suspend time and provide a clear picture of the current state of things. Lum’s use of a digital program, which updates the statistical data embedded in the reflective panels, gives passers-by the impression that they are witnesses to history in the making and suggests that they themselves may be responsible for altering the numerical figures. They experience the desire to see the statistical data change in real time just as the mirror images fluctuate as people pass by them.

Pi incorporates different representations of time. On the one hand, it symbolizes a linear temporal axis illustrated by the extensive series of digits composing the universal number π , on the other hand it presents simultaneous time intervals illustrated by the 14 panels with time-dependent statistical information, which is regularly updated. Both models emphasize the unpredictability of the future. The last ten digits of π keep changing under one’s eyes and the data in the panels transforms in various ways over longer or shorter time spans. Interestingly, the statistical predictions do not have the same temporal parameter. Some of them illustrate the recent past and present by providing data estimates for the year when the installation is being viewed. For example, one of the panels shows the number of books that have been borrowed in Vienna since January 1st. By contrast, other estimates do not offer any information about the temporal framework. For example, passers-by will infer that the panel concerning world population provides demographic information in real time. Moreover, one panel provides information about a more distant future that surpasses the lifespan of contemporary viewers of

⁵³⁵ Ken Lum, “Something’s Missing” in *Canadian Art*, Vol. 23, no. 3, Winter 2006, p. 60.

the installation. It displays the number of days left until the Chernobyl area will become inhabitable once again. Moving across the Westpassage, one feels that his/her existence is closely intertwined with this network of numbers. Time is experienced as an intricate stream whose unfolding cannot be accurately envisioned in spite of the overflow of statistical data. The mirror images reflect its fleeting qualities in a more accurate manner than the approximate figures. The instantaneity of reflections sharply contrasts with the considerably slower transformation of estimates entreating passers-by to consider the way their existence not only belongs to time, but also shapes time. Ultimately, the survival of individuals living in areas affected by war or malnourishment, whose numbers are charted by the installation, may depend on an enhanced awareness of the roles we assume at the present moment.

Cloud Gate, Take your time and *Pi* expand participants' sense of time. In interesting ways, Kapoor, Eliasson and Lum build upon the trend towards slowing down time in art practices of the 1960s.⁵³⁶ They respond to a similar need for challenging the compliance of individuals with the increasingly accelerated rhythm of everyday life, which impedes a careful consideration of the implications of one's actions and of the relations one has to his/her surroundings. However, their installations do not simply perpetuate chronophobic impulses. They slow viewers down, but they also encourage them to move and observe the perpetual transformations of the spaces in which they are embedded. *Cloud Gate, Take your time* and *Pi* draw viewers' attention to a wide range of perceptual stimuli that are constantly morphing. In this sense, they illustrate a fascination with chronophobia as well as with chronomania. As our perception has increasingly adjusted to zooming in or out of extensive visual fields and engaging

⁵³⁶ See Lee (2004).

with rapidly shifting spatial coordinates, we have grown to expect and even cherish images that solicit intense interaction and test perceptual limits.

Cloud Gate becomes an epitome of movement and transformation on sunny days when passers-by gather around it in large numbers. Its omphalos seems to offer a shelter from the accelerated rhythm of its surroundings, yet it projects highly intricate images, which are as transient as the ones reflected by its outer silver skin. At first sight, *Take your time* provides an escape from daily rhythm. Nonetheless, it does not isolate viewers from it. As will be shown in more detail in the next section concerning affective ties, visitors sitting on the gallery floor looking at the rotating mirror often start moving their bodies in order to explore various ways in which they can shift the reference points of their perception. Just like *Cloud Gate*, *Pi* can mirror large groups of people crossing the Westpassage at different speeds at peak hours of the morning. Some of them will not alter the rhythm of their daily walk whereas others will slow down or furtively look at the changes in figures reflected by the mirror panels. The three installations encourage repeated viewing under different circumstances and underscore our conspicuous fascination with altering the tempo of life experience in order to actualize perceptual experience in a society flooded with information.

The focus on re-connecting to the present by becoming alert to the relativity of perception and the transformation of one's surroundings brings to mind Walter Benjamin's notion of the "aura," previously associated with the presentness of the object. What seemed to have been lost in the age of mass reproduction and mass distribution is actually retrieved at the level of participatory art experience, which singles out the uniqueness of the encounter with the artwork rather than the uniqueness of the artwork. Many installations require the presence of viewers to become complete as a result of perceptual engagement or performative gestures. Reproductions

cannot fully illustrate what it feels like to be present within their space. Nonetheless, images of installations taken by different visitors are frequently posted on blogs and image hosting websites. They serve as a testimony of the participatory experience even though they cannot truly reify it. *Cloud Gate* is one of the most photographed public artworks.⁵³⁷ Although it does not have a powerful iconic status, *Pi* also invites picture taking. Photography becomes a process through which viewers express their virtual inclusion in the statistical pool by inserting their reflections in the mirror panels. In the case of the display of *Take your time* at P.S.1, photography was forbidden and vigilant guards stood by the two entrances in the installation space to prevent museum visitors from stealthily using their mobile phones to take pictures.

In the last two decades, the concept of the aura has undergone reinterpretation in the context of transformations in art practices, which have become increasingly time-oriented and have drawn more attention to the site of display. It is currently associated with the singularity of aesthetic experience, which can be purely perceptual or can imply interactions with the artwork or with other visitors. Art theorist and curator Nicolas Bourriaud points out that “the aura of the artworks has shifted towards the public”⁵³⁸ and new media theorist Mark B. N. Hansen maintains that the aura originates not only in the unique art object, but also in the “singular actualization of data in embodied experience.”⁵³⁹ The same argument is taken up by Boris Groys in his discussion of the mass-cultural aspects of installation art. He highlights the fact that “what the installation offers to the fluid, circulating multitudes is an aura of the here and now.”⁵⁴⁰ Significantly, he does not associate this notion with an individual private experience, but with a public one analogous with the feeling of presentness sensed by the *flâneurs* in the midst of 19th

⁵³⁷ Currently, there are 64.922 photographs with the tag *Cloud Gate* on Flickr.

⁵³⁸ Bourriaud (2002, 58)

⁵³⁹ Hansen (2004, 3)

⁵⁴⁰ Groys (2009)

century crowds. The second section of this chapter will delve into the way *Cloud Gate*, *Take your time* and *Pi* foster viewers' awareness of the fact that they share the space and time of the installations with multiple others. The aura of such works turns out to be more intense when the plurality of participatory responses becomes visible. The more complex the dynamics of social interaction and perceptual transformations is the less repeatable the aesthetic experience becomes.

Just as these three installations bring viewers in touch with the immediate present and proximate localities, they also render them conscious of a broader order of things. Each of them projects an image of a world, which is simultaneously familiar and alien to onlookers. *Cloud Gate* resembles a newly discovered planet whose landscape can be scrutinized as a whole only from a distance. The names of Kapoor's reflective sculptures frequently refer to the transformation of the world and have globular shapes. These works transfer images of the display context onto concave or convex surfaces that shift the scale of the mirrored objects. Anthony Vidler underlines the topological character of the spaces mapped by Kapoor and remarks that he "has long toyed with the making of worlds."⁵⁴¹ *Cloud Gate* carries cosmological connotations through its condensation of images of the sky and the earth. The whirlpool of reflections condensed in its omphalos call to mind perpetual variations in atmospheric conditions, hence depicting the entropy inherent in all systems. At first glance, *Take your time* appears to convey a less chaotic representation of reality, but it also upsets the perfect parallelism between the world outside and inside the mirror. As already discussed, the margins of the reflective strips composing the disk surface dismember the images of participants. The revolving movement of the installation inevitably points to the rotation of the Earth. While we cannot

⁵⁴¹ Anthony Vidler, "Reflections on Whiteout: Anish Kapoor at Barbara Gladstone," *Anish Kapoor. Whiteout* (Milan: Charta, 2004), p. 8.

physically sense the motion of the planet under our feet, our entire lives are organized around the duration of its circumvolution around the sun. The installation renders viewers aware of their participation in a larger cosmological system, whose movements are independent of their presence or actions. It upsets their physical balance and augments their sensation of the gravity pull. Lying on the floor in a virtual state of suspension, visitors have the impression that the very floor of the gallery is moving to the rhythm of the mirror disk. Hence, the flow of time becomes a perceptible bodily movement. Through its configuration and scale, Eliasson's installation resembles Kapoor's earlier work *At the Edge of the World II* (1998), which is composed of a dome-like shape affixed to the gallery ceiling. Made of maroon fiberglass, this latter installation triggers a similar experience of inhabiting a liminal space hovering between the earth and the sky. However, it plays more on the aesthetics of the void than on the notion of temporal contingency due to its virtually incommensurable depth. By contrast, *Take your time* prioritizes movement and displacement over immersive engagement. Ken Lum's *Pi* also conveys a world picture in motion. The statistical data it provides offers an approximate representation of the approximate state of various localities and the transformation of the whole planet under the impact of changing demographics or natural phenomena that escape human control. In Lum's words, *Pi* is "an allegory of the world, the circle to which pi refers standing symbolically for the world and its infinitely varying patterns."⁵⁴² The installation points to a circular system of interrelated elements. Some correlations between the data presented in different mirror panels are clearly visible. For example, the number of people killed in wars over the course of one year is intimately linked with the amount of money spent on weapons during the same period. Others are less immediately evident. The amount of garbage produced in Vienna may appear to

⁵⁴² Lum (2006, 55)

illustrate only a local reality. However, in the long run, it can affect climate change and contribute to the growth of desertification, which is also estimated in the context of *Pi*.

The three installations under consideration in this chapter call for ethical responsibility towards others and the spaces we commonly inhabit. *Cloud Gate* displays the hybridity of groups congregating around its reflective screen, *Pi* reveals the interdependence of larger and smaller social or environmental systems and *Take your time* hints at viewers' contemporaneity with one another, showing that their lives are similarly in tune with the rotation of the planet even though each of them may experience time differently. In the following section, I will analyze how these installations foster affective impulses by encouraging participants to ponder the way the presence of others shapes their experience and catalyzes intersubjective processes of self-definition.

4.2 BECOMING MULTIPLE: AFFECTIVE SHARING ACROSS THE MIRROR INTERVAL

In this section, I will examine the affective implications of the three installations by analyzing the way they generate intersensorial experiences, instill motion and stimulate processes of becoming multiple through contemplating the plurality inherent in oneself and others. The three types of mirroring acts outlined in the introduction to this thesis can be observed in each of these works. *Cloud Gate*, *Take your time*, and *Pi* call participants' attention to the presence of others, who serve as perceptual anchor points in the context of elusive reflective environments. In addition to reflective visual exchanges, they trigger spontaneous behavioral imitation and adaptation by openly displaying the participatory reactions of other viewers, mutually engaged in

exploring the variability of the environment. Finally, these installations enhance the impression that one shares with others similar states of mind and emotions.

Cloud Gate, *Take your time* and *Pi* function as quasi-visible, quasi-invisible mediums for connecting oneself to others. Despite their materiality, they symbolize permeable membranes, which highlight the contingency of interpersonal relations developed through actual social interactions or through imaginary reflections between one's self-experience and that of others subjected to similar perceptual conditions. It is quite evident that spectators admire the installations because of their aesthetic qualities, and the way they create public awareness by showcasing the variability of human participatory responses. Visitors to the online forum launched by SFMoMA in conjunction with the "Take your time" exhibition acutely noted the way Eliasson's installations made them aware of other participants' corporeal presence. User JDalldorf enthusiastically expressed her/his wish to see the works once again with a group of friends: "We went home making plans to bring all the friends we could gather back with us next week." Risd, another exhibition visitor, commented on the intersubjective dimension of *360° room for all colors*, a panoramic environment suffused in swiftly changing tones of color: "far more interesting than the actual room, was eavesdropping on moma-goers going on and on about it."⁵⁴³ Even though *Take your time* was not part of the works on display at SFMoMA, being only shown at MoMA, New York (where the survey exhibition traveled afterwards), it is safe to assume that it challenged similar responses given the way it exposed viewers' bodily presence and reactions to the large mirror eye of the rotating disk. Similarly, *Cloud Gate* draws audiences not only thanks to its gate-like shape reminiscent of rites of passage, but also due to its interpersonal dimension and the way it frames a liminal zone between personal experiences of

⁵⁴³ Online comments on the exhibition were available on the SFMoMA website for the exhibition: <http://www.sfmoma.org/exhibitions/232> They are no longer accessible via web at the moment.

the sublime and collective enchantment with everyday life. In her study of participation in the Millennium Park, Corrin Conard remarks that numerous questionnaire respondents assert that “it is the people surrounding the works of art that draw them to the Park rather than the works of art themselves.”⁵⁴⁴ These comments recall the ones made by art critics in response to art and technology exhibitions of the 1960s, which showcased participants’ behavior more than the materiality of the installation components. The participatory dimension of Ken Lum’s *Pi* has not been analyzed by independent observers, yet the installation is bound to direct one’s gaze towards other passers-by simultaneously engaged in watching their reflections shift across the mirror space of the Westpassage as they stop by the panels to read the statistical data.

All three installations signal an erosion of the differences between public spaces and private spaces by conveying both a feeling of intimacy and uncanniness since they confront viewers with the strangeness of the world they inhabit. The notion of utter freedom from social constraints is compromised. These works have the merit of unveiling these limitations without impeding connectivity towards others. By underlining the vulnerability of all viewers to the controlling spatial and temporal structures, they showcase the potential for transformation without however offering any guarantee of perfect equilibrium. In her analysis of *Cloud Gate*, Mary Jane Jacobs explains that Anish Kapoor’s work would frame a highly public form of encounter with art even if it were placed inside a museum space: “It is more than its urban park site that makes this work public; it is truly so because it engages us in an intimate and giving way, offering not one but multiple ways of experiencing it.”⁵⁴⁵ Eliasson’s work similarly downplays the feeling of individual immersion by proposing an expanded perceptual field in

⁵⁴⁴ Conard provides several examples of comments concerning the intersubjective awareness catalyzed by *Cloud Gate*: “One respondent said, “It is the community that helps make the art.” (2008, 108)

⁵⁴⁵ Mary Jane Jacobs, “Being with Cloud Gate,” Baume ed. (2008, 123)

which the bodily presence of others and their potentially different perspectives upon an environment become highly conspicuous. He conceives museums as “spaces where one steps even deeper into society.”⁵⁴⁶ The apparently seclusive display context of art institutions turns out to offer more possibilities for public forms of active spectatorship. Lum shares a similar conviction since he maintains that museums can provide more of an open space for expression and exchanges than outdoor locations, which have become increasingly privatized: “I think private spaces, compromised as they are, within the museum and so on, can actually be more public than the so-called public spaces outside, which have become more and more compromised and appropriated by private interests anyway.”⁵⁴⁷ *Cloud Gate*, *Take your time*, and *Pi* undermine the distinctions between indoor and outdoor display contexts, soliciting viewers’ undivided attention to the reflective interface of the works, the reactions of other participants and the processes of self-questioning experienced by the individual.

Perceptual disorientation and negotiations between different sensorial responses are markers of affective experiences. These installations destabilize confidence in visual stimuli. The mirror images they encapsulate do not perfectly coincide with their physical index: the arched shape of *Cloud Gate* modifies the proportions of the bodies moving in front of it in the manner of an entertainment park distorted mirror; the inclined axis of the disk in *Take your time* subverts the parallelism between the world outside and the world within the mirror frame; and the sharp contrast between the rapidly shifting reflections and the slow changing numerical values on the display screens in *Pi* casts doubt on the accuracy of visual representations. Hence, the works challenge multisensorial engagement by revealing that only glimmers of actuality can be sensed

⁵⁴⁶ Olafur Eliasson, *Your engagement has consequences* (2006, 72).

⁵⁴⁷ Ken Lum in Cathy Busby, “‘I Say, Come On! Open Your Eyes!’ An Interview with Ken Lum,” *National Gallery of Canada Review*, Vol. II, 2001, p. 104.

as the world is continuously undergoing changes. Visitors of *Cloud Gate* feel compelled to reach out to the silver surface of the sculpture and touch it to become better aware of its depth and meandering outline. Out of a similar need to gain sensorial balance, viewers of *Take your time* rest on the gallery floor and are confounded by the striking contrast between the magnetic attraction of the mirror disk and its impenetrable distance. In the case of *Pi*, passers-by experience sensorial ambiguity because of the way the installation disrupts the rhythm of motion through the passageway and unveils the friction between bodily presence, mirror reflections, and abstract statistical values, which presumably capture the impact of humanity upon economic, social, and ecological systems. Participants' awareness of the relativity of vision has a disquieting effect and prompts intersensory perception.

Building upon Spinoza's reflections on the translation of information from one sensorial register to another, Brian Massumi explains that "affect is synesthetic, implying a participation of the senses in each other: the measure of a living thing's potential interactions is its ability to transform the effects of one sensory mode into those of another."⁵⁴⁸ Acknowledging the disjunctions and correspondences between sense experiences is a way of discovering the multiplicity inherent in oneself. It is also a means of becoming aware of the correlations between the private world of oneself and that of others who are sharing the same perceptual field and are concomitantly trying to make sense of its elusive visual coordinates. The visual signs of participants' reactions to the three installations may be different, yet their inner experiences can converge since affective impulses permeate various sensorial registers. Whether they choose to remain still or move, reach out to the mirror surfaces, or observe how others manipulate their reflections, visitors share an intense awareness of synesthetic responses. The proprioceptive

⁵⁴⁸ Massumi (2002, 35)

impulses triggered by these works reveal the commingling of the senses. Visual representations are purposefully subverted to provoke bewilderment and make participants question the stability of subjects and objects of perception.

Cloud Gate, *Take your time*, and *Pi* correspond to the current of “precarious visualities” identified by Christine Ross in recent contemporary art practices.⁵⁴⁹ She observes that numerous artists are staging visually puzzling situations to catalyze greater bodily awareness and restore agency to the viewers by challenging them to negotiate between concurrent sensorial stimuli. Hence, they aim to develop a critical attitude towards ocularcentrism and passive immersion in spectacular environments. The perpetuation of this trend in the context of art and visual culture has contributed to the emergence of new modes of spectatorship that call for multisensorial engagement, interaction, and interpersonal awareness. In examining changes in viewers’ expectations as a result of the *gesamtkunstwerk* qualities of contemporary installation art, Alison Oddey and Christine White maintain that “the spectator is no longer content simply to view the work. More is required. The spectator wants to engage in a more active way, to play a significant part or role in the reception of the work.”⁵⁵⁰ Even when artworks solicit participants to explore their transient qualities at different sensorial registers and shift their point of view in order to discover how they can virtually model the object of their perception, they are not considered sufficiently interactive. One of the respondents to Conard’s survey concerning the publicness of Millenium Park expressed his dissatisfaction with the selection of Kapoor’s *Cloud Gate* for this site: “I would have something different than ‘The Bean’; I don’t understand why we spent all

⁵⁴⁹ Christine Ross, “Introduction: The Precarious Visualities of Contemporary Art and Visual Culture,” Olivier Asselin, Johanne Lamoureux, Christine Ross eds., *Precarious Visualities. New Perspectives on Indetification in Contemporary Art and Visual Culture* (Montreal & Kingston: McGill-Queen’s University Press, 2008), pp. 3-16.

⁵⁵⁰ Alison Oddey and Christine White, “Introduction: Visions Now: Life Is a Screen,” *Modes of Spectating* (Bristol and Chicago: Intellect Books, 2009), p. 8-9.

that money on just a bean. It just sits there.”⁵⁵¹ In spite of the instantaneous transformations of the sculpture’s surface, some visitors perceive it as a static, immutable object because its metamorphosis is not easily predictable, depending on more than just one individual’s interaction with it.

Cloud Gate places viewers in the role of explorers seeking to chart a territory that first appears to be instantaneously visible and accessible, yet gradually turns out to be disquietingly complex and uncontrollable. In discussing the sensorial impulses challenged by his works, Kapoor acknowledges that he is purposefully highlighting the complementarity between eyesight and tactility because “there is a degree of uncertainty confronting the eye which can only be resolved by extending the hand.”⁵⁵² In the process of discovering the qualities of *Cloud Gate*, viewers question their perceptual acuity and investigate the crossovers between sensorial registers. Thus, they try to fathom the phenomenal transformation of the subject and object of perception.

By the same token, *Take your time* proposes a seemingly simple heuristic exercise by means of which visitors become conscious of the way their body image and axis influences the perception of spatial and temporal intervals. The installation proposes an experience similar to that of numerous new media works, which invite participants to move or act in an exploratory manner in environments where visual referents fail to provide stable coordinates. In his analysis of digitally processed images, which generate anamorphic representations of objects, theorist Mark Hansen points out that when “visual faculties are rendered useless [...] we experience a

⁵⁵¹ Survey respondent in Conard (2008, 158)

⁵⁵² Quoted in Clare Farrow, “Anish Kapoor. Theatre of Lightness, Space and Intimacy,” *Art and Design*, no. 33, 1993, p. 53.

shift to an alternate mode of perception rooted in our bodily function of proprioception.”⁵⁵³ Similarly, *Take your time* fosters affective responses by destabilizing the individual gaze and asking visitors to reflect on the virtuality of their bodies, which gradually adjust to challenging visual stimuli through multisensorial processes and movement.

The participatory implications of *Pi* are less immediately evident at the level of the complex body sensorium. The installation presents statistical data and places the viewer in the role of a reader of quotidian information. His/her bodily presence in front of the mirror panels constitutes a disjunctive factor in the process of constructing a stable picture of the world or of the local context based on the abstract numerical figures. The shifting reflections of passers-by moving past Lum’s installation expose the degree to which the statistical data are dependent upon temporal parameters. The numerical estimates are ultimately a construct based on approximations and on the visibility of the data and subjects of statistical inquiry. By having their reflections encompassed in the work, viewers wonder who and what is ultimately included and excluded from these numerical estimates of how many people are in love in Vienna today or how much money has been allocated to military armament since the beginning of the year. *Pi* dwells more on the ambiguity between numerical representations and embodied subjects of surveys and less on multisensorial engagement. The precarious reflections of passers-by transiting the Westpassage as others stop by the mirror panels call forth the dialectics of presence and absence of social and cultural categories, official and unofficial data, avowed and concealed beliefs or habits. Instead of creating friction between the senses, *Pi* stirs up tension between the actuality and virtuality of statistical data, thus encouraging participants to interrogate their

⁵⁵³ Hansen (2004, 203)

validity and reflect on their position in the socio-economic systems numerically represented in the installation.

Besides its multisensorial implications, affect has been theorized in terms of an interval between relative equilibrium and impending motion. Whether it is conducive to actual kinetic participation or it is merely suggestive of it, this emotional intensity, which precedes expression or representation, fosters an actual or virtual process of self-transformation in relation to others. *Cloud Gate*, *Take your time*, and *Pi* encourage active observation and movement. They entail objects or interfaces with variable features that echo the transience of the world pictures or local contexts they mirror. *Cloud Gate* is experienced in motion as visitors approach it or circle it to make sense of its floating shape and check out its wide range of reflective effects. The sculpture is not a flat screen, but has bodily characteristics because it transforms and reacts to its immediate environments. Consequently, it triggers spontaneous behavior. Deleuze situates affect between perception and impending action. He considers that it anticipates motion, equating it with extreme uncertainty and unknown duration. According to him, affect is “this combination of a reflecting, immobile unity and of intensive expressive movements.”⁵⁵⁴ The affective impulse generated by *Cloud Gate* originates in the interval between an initial encounter with the sculpture and a conscious decision to use it as a device for framing one’s surroundings and movements. It is at the point where one experiences a virtual projection of motion and a fascination with the potential externalization of this sensation that affect emerges. Viewers find themselves in the position of the artist before a blank canvas that can come alive when they externalize their mental pictures. However, there is not a perfect match between what they imagine and what they are creating because the two processes are not fully synchronous or identical. In the context of

⁵⁵⁴ Deleuze (1986, 88)

Cloud Gate, no individual participant has control over the pool of reflections. Viewers are part of a collective audience with which they partially merge as they discover the plurality of experiences and mirror images. Kapoor eloquently describes the act of art making as a transformative process that must remain open-ended, offering a potential for further creative involvement: “True making often finds itself [...] in bringing to expression, and keeping open, the in-between temporality, that *something* – the strange sublimity of technique – that locates the object in between the static and the dynamic, in a transitional state.”⁵⁵⁵ *Cloud Gate* maintains this openness by mirroring images that are in motion and engaging participants in a process of perceptual montage of reflective sequences. One survey respondent in Conard’s case study asserts that he/she enjoys the sculpture because it is “not static” and it invites interaction.⁵⁵⁶ The mobility of the mirror images catalyzes expressive motions, which bring to the surface the otherwise hidden signs of affective engagement.

Take your time portrays the tension between virtual motion and actual motion to an even greater degree. During my visit of Eliasson’s exhibition at PS1 MoMA, I could observe different affective registers challenged by the installation. From the moment one stepped into the gallery where *Take your time* was displayed, one found himself/herself on the brink of an ineluctable immersion in an inverted space and an expanded time interval. Within its context, things seemed to change, yet also stay the same due to the cyclical movements of the mirror disk. The installation combined protocinematic and cinematic effects. It projected images of movement as exhibition visitors moved into its frame and sometimes gave in to performative impulses as if they were in front of a video camera. Simultaneously, it displayed what Deleuze calls

⁵⁵⁵ Kapoor in Homi Bhabha, “Anish Kapoor: Making Emptiness,” Jean de Loisy and Adrian Locke ed., *Anish Kapoor* (London: Royal Academy of Arts, 2009), p. 174.

⁵⁵⁶ Survey respondent in Conard (2008, 160)

“movement-images,”⁵⁵⁷ that is cinematic sequences that are created through the movement of the camera eye or through montage. Visitors’ reflections were continuously displaced and deferred since they rotated along the axis of the revolving mirror disk. This disjunction between the function of the mirror as a prosthetic device for self-reflection and its role as a quasi-cinematic apparatus enhanced the affective potential of the work. Groups of visitors lined up next to each other and created more or less regular geometric shapes out of their bodies. Some of them joined hands or executed choreographic-like movements to the slow tempo of the mirror rotation. Two lovers tilted their heads towards each other while watching their reflections. Their hair mingled and for a moment the line of separation between their two bodies became blurred. Participants’ reactions frequently denoted “affective attunement,” which in psychologist Daniel Stern’s terms stands for an approximate match between the emotional experiences of two individuals who imperfectly mirror each other’s behavior.⁵⁵⁸ Based on his studies of mother-child interaction, he argues that an affective impulse is transmitted only if one does not mechanically imitate someone else’s conduct, but introduces some sort of variation in his/her response in order to show that he/she has comprehended the emotional engagement of the other in the expressive act. The lovers who interacted with their reflections in Eliasson’s installation adopted a similar behavioral code. Yet, their reactions were not simply imitative. The two gradually introduced variations in their responses. By bending her head towards her lover to the point that her hair blended with his, the woman playfully emphasized the attunement between their affective experiences. Other participants were also prone to improvisation as they interacted with their friends. By coordinating their bodily movements and introducing changes in posture, they gave free rein to creative expression and non-verbal communication. The imperfect correspondences between

⁵⁵⁷ Deleuze (1986, 24)

⁵⁵⁸ Stern (1985, 141-2)

their gestures highlighted even better the way Eliasson subverts the parallelism between the body and the mirror image by setting the reflective disk at a skewed angle and by inducing its slow circular motion. Thus, he conveyed an impression of spatial and temporal asynchronicity that encouraged viewers to prolong their stay in the gallery in order to negotiate their sensorial boundaries and gain sense of the relativity of perceptual phenomena.

Individual visitors tended to adopt more contemplative attitudes. However, some of them also tested the way they could introduce changes into the reflective projections, especially since the images of their bodies appeared to undergo fragmentation and re-composition along the junction lines between the mirror strips constituting the disk. During my visit, I could notice how visitors rotated their arms or moved their legs as if they were clock hands shifting more or less to the rhythm of the gyring mirror. Their gestures also resembled those of children making snow angels. The mirror instantaneously captured the elusive traces of their body movements. This form of interaction exemplifies an attunement between a subject and a responsive object and similarly entails affective engagement. In his study of the way we concomitantly undergo and produce emotions, Jack Katz explains that after gazing at themselves in distorting mirrors individuals gain an interest in reproducing their visual effects, moving their bodies in such a way that they reflect back their oblique angle or twisted perspective. Studying the behavior of visitors of fun house mirrors, he concludes that “the sociological magic of mirrors is that, while inanimate and passive, they generate interactional power that keeps the crowd moving.”⁵⁵⁹ In the case of *Take your time*, the mirror has more of an embodied presence thanks to its mobility. It thus enhances the potential for participation, stimulating kinetic responses that echo the affective reverberations experienced at an inner level. Depending on the personality of the visitors and the

⁵⁵⁹ Jack Katz, *How Emotions Work* (Chicago and London: University of Chicago Press, 1999)

exhibition setting, the impulse towards performativity fostered by the installation may gain visible form or remain concealed. This is also the case when one takes into account the wide range of responses to *Cloud Gate*. The refusal to interact with the reflective surface of these installations in a performative manner may not however be interpreted as a sign of antagonism towards the works and their display context since affect can be sensed without being registered as a visible emotion.

Lum's *Pi* sets up an interactive situation that entails more social tension than the experiential settings proposed by the other two works under discussion. Given its location in a more strictly delimited space with a more clearly prescribed urban function, the installation does not insure the production of a site that offers respite from the hectic pace of life. I personally came across *Pi* at evening time when the Karlsplatz Westpassage was almost deserted and I had the opportunity to take my time and observe the way it challenges perceptual engagement and raises concerns about the impact of one's behavior, neglect or active involvement upon local and global contexts. Hence, I am less aware of the way passers-by interact with its space at the rush hour, but I believe that its more or less frequent visitors would have a different participatory relation to it when they encounter it on their way to work or to some other pre-established destination. The presence of numerous other people may have a disorienting effect in such a context since the confined space of the passage does not easily facilitate interpersonal observation, which can enable one to attain perceptual balance in relation to the world of reflections. Lum was certainly aware of the fact that the installation would be frequently experienced while one is in motion. *Pi* blends in with the passage, enveloping its walls and even one of its columnar elements of support, which is encased in the glass pavilion where books on statistics are displayed. Thanks to its quasi-mimetic integration in the urban landscapes, it creates

a smooth space that draws attention to its reflective aesthetics and numerical parameters without being disruptive. While one passage wall is covered by detached mirror panels with electronic boards the other is lined up with conjoined mirror elements etched with a long series of figures composing π . The installation can both instill motion and intermittently interrupt it as the statistical coefficients sequentially draw passers-by attention.

While the mirror surfaces of *Cloud Gate* and *Take your time* function as seemingly animated objects, which distort or shift the reflections of the viewers, the mirror panels of *Pi* do not create supplementary visual effects. They reflect the body movements of those crossing the passage without morphing their image in any particular way. This does not however reduce the participatory implications since the installation proposes a series of multi-layered mirroring processes between the passers-by, the statistical figures, and the mirror images. Due to its position in a passageway, *Pi* strikingly unveils the limitations of reflective acts. As visitors of the installation move past its mirror panels while crossing the corridor, they may realize that they cannot watch themselves moving without partially arresting their advancement. In his analysis of the way one loses sight of his performance in the process of acting in front of a mirror, Massumi points out that “Mirror vision is by definition partial. [...] You can never see yourself “moving normally” as another sees you.”⁵⁶⁰ It can be argued that *Pi* draws a parallel between the imperfect perception of self-motion and the imperfect representation of world transformations via numerical values. This series of imperfect matches between visual, numerical and embodied representations catalyzes affective responses by prompting an increased awareness of the way reality is perverted once it is set in a static frame that does not capture its inevitable transience. In the information brief documenting the installation, it is explained that its performative potential

⁵⁶⁰ Massumi (2002, 48)

resides in the encounter of the viewers with the statistical figures: “While they read the current numeric values on the digital counter, they – the readers – merge with the number in a performative sense.”⁵⁶¹ The mirror panels intensify the affective potential of the imaginary merger between the passers-by and the subjects of statistics. They remind participants of the embodied presence of the individuals whose existence is reflected and influenced by the data displayed on the LED boards. Whether they are part or not of the potentially surveyed groups of people, passers-by feel that they are somehow in touch with their experience, especially since their reflections remain as anonymous as the figures behind the statistical numbers. Viewers’ mirror images may appear to reflect a more real time situation than the numerical estimates, yet their perception implies a somewhat similar suspension of motion since only by coming to a complete stop in front of the panels can passers-by - turned participants - perceive themselves as others see them. Any representation from an imaginary third distance implies a relativization of the image and a possible distortion of the actual experience through the artificial freeze of the phenomenal.

Pi engenders the voyeuristic identification of the viewers with the people represented by the statistical information and the passers-by whose reflection is encompassed by the mirrors. This imaginary sharing of emotional states, socio-political conditions and even guilt because of prior social or environmental irresponsibility has a highly affective impact. Massumi locates affect on the boundary of the real and the imaginary, equating it with “the simultaneous participation of the virtual in the actual and the actual in the virtual, as one arises from and returns to the other.”⁵⁶² *Pi* motivates viewers to relate to situations that have an influence upon their state of mind whether they imply mundane experiences or catastrophic events happening

⁵⁶¹ “Language and its Reference to the World in Ken Lum’s Work,” Art in Public Space documentation. p. 5.

⁵⁶² Massumi (2002, 35)

thousands of miles away from their home city. Affect implies an acute awareness of presence within a certain location, as well as an imaginary projection of oneself within a different space which is imprinted with traces of the past and foreshadows future transformations. This sensation of entrapment between actuality and virtuality is intensely conveyed by *Pi*, which displays numerical estimates based on past surveys and future predictions.

The installation elicits both processes of self-questioning and identification with others. As a tourist in Vienna, I could not help but wonder whether I might be counted among the people estimated to be in love in this city on the day of my visit to the Westpassage. The unreliability of the data is also indirectly conveyed by the information brief, which states that the term “love” actually designates various different emotions and hence entails multiple meanings. It thus hints at the relativity of the data, which cannot quantify the degree of uncertainty subsistent in our lives. Being in transit through the city, I wondered what it feels like to be an illegal immigrant working in Austria and read the number of paid hours worked by Austrians since the beginning of the year or to contemplate the figure designating the number of Austrian employees who are dissatisfied with their jobs. What is potentially left out of these estimates has as much of an affective influence upon the viewers as what is included in the numerical index. By mentally picturing the mirror reflection of an illegal worker in these panels, one becomes aware of the physical and virtual borders subsistent in the globalized world in spite of the illusionary image of a completely networked environment free of obstacles to traveling, work and communication. The potential presence within the installation framework of those who are excluded from these estimates enhances its effect and affect. Lum considers that art acquires a critical function if it brings forth an empathetic experience. He argues that “something generally only moves you if

you can imagine yourself in that situation.”⁵⁶³ Imaginary projections are not to be discounted as self-absorptive processes of questionable ethical value. They can in fact enable empathetic comprehension of other individuals’ roles in society. Since *Pi* provides both local and global estimates it takes viewers outside the safe confines of their everyday world, encouraging them to look at themselves from multiple points of view. While moving across the Westpassage, I also identified with the majority of passers-by, the Viennese who probably experienced mixed feelings about the way they were represented by the statistics. I imagined that they found the number of schnitzels eaten in Vienna a stereotypical portrayal of their food preferences and that they were astounded and perhaps even disturbed by the blatant display of the tons of garbage produced in their city. They must have also experienced an affective connection to the environmental problems and the military conflicts denoted by the statistics, which seriously affected other people’s lives and could potentially have an impact upon their own existence in the future. *Pi* launches an invitation to mirroring the condition of others voyeuristically. Concomitantly, it unveils the friction subsistent in different societies across the world and the contingency between their realities.

Cloud Gate and *Take your time* engender similar processes of empathetic identification. The openness of these works to incorporating large-scale images of their surroundings triggers a high degree of interpersonal awareness. The reflection of spectators in their mirror surfaces showcases the similarities and differences between their perceptual and behavioral experiences. It also indirectly suggests a possible congruence between the affective relations established between viewers voyeuristically gazing at each other’s mirror image. Mary Jane Jacobs suggests that Kapoor’s sculpture proposes an interpersonal dialogue because it “is not so much a mirror of

⁵⁶³ Evan McArthur and Ken Lum (1996, 32)

the self or of the city as a mirror into the self in which we can see ourselves in union with others.”⁵⁶⁴ Nonetheless, this co-existence in the same perceptual sphere also presupposes some amount of friction originating in the singularity of each viewer’s bodily location and experience. Within the warping space of *Cloud Gate*, differences appear to become less relevant, but they do not disappear as participants feel the need to call each other’s attention to reflective effects that they observe from different perceptual angles. Numerous photographs that capture images of participants pointing towards different areas of the sculpture reflect this enchantment with disparate perspectives.

Eliasson’s *Take your time* also sets up an encounter with the plurality of viewpoints. In its framework, the reflections of oneself and others are recurrently shifted by the revolving mirror, which repeatedly defers viewers’ identification with their self-reflections and with the images of others. As visitors enter the omphalos area of *Cloud Gate* or sit under the off-centered mirror disk of *Take your time* they open up towards other participants exposed to similar perceptual conditions. In a paradoxical way, the distanced reflections of their bodies bring them closer to one another and engender a process of self-exploration based on imaginary projections of oneself in the world of others. This longing for experiencing the works through the eyes and minds of multiple participants corresponds to a virtual self-transformation through intersubjective negotiation. However, the mirroring of others is bound to remain incomplete since it is the subject of voyeuristic projection and it brings to the surface a web of uncertain relations and irresolute contradictions. Identification with others is indefinitely postponed in order to maintain the potential for multiplicity. Deleuze and Guattari associate affect with a “nonhuman

⁵⁶⁴ Jacobs in Baume ed. (2008, 132)

becoming”⁵⁶⁵ or a virtual alliance with a group with whom one cannot fully identify in a real or voyeuristic way in spite of sensing a powerful degree of contingency. Despite the risk of generalizing their theory to some degree by extrapolating it from their philosophical context, one can argue that the connections developed between the viewers of *Cloud Gate* and *Take your time* are suggestive of a similar affective experience as a result of the intense bond developed between groups of anonymous strangers whose reactions are partially visible and similar, yet who remain apart from one another in spite of sharing an equally ambivalent temporal and spatial interval. Participants feel connected to others as they are sharing with them elusive mirror reflections that capture a morphing or revolving world, which cannot be accurately mimicked because it never comes at a standstill and it is characterized by plurality.

Cloud Gate and *Take your time* serve as reminders of latent possibilities for social relations in contemporary societies despite the preponderant alienation of individuals submerged in fast or slow moving crowds populating subway stations, public parks, malls or museums. Visitors of these works develop a feeling of familiarity with each other. This sensation resembles the loose attachments developed between commuters who frequent the same sites over long periods of time. In his sociological study of social relations between waiting passengers at the same train station, Milgram contends that individuals who regularly see each other in the same context feel they are acquainted with each other. He explains that they prefer not to engage in verbal communication in order to avoid unnecessary commitments in an environment that already demands engaged attention due to competing sensorial stimuli. According to Milgram, “to become a familiar stranger a person (1) has to be observed, (2) repeatedly for a certain time

⁵⁶⁵ Deleuze and Guattari (1994, 173)

period, and (3) without any interaction.”⁵⁶⁶ By interaction, he means verbal exchanges, yet he does not discount mutual observation and interpersonal reflection. Although the visitors of *Cloud Gate* and *Take your time* will not repeatedly meet within the same settings, they tend to experience an intense feeling of familiarity because of the convergence of their reflections within the same visual sphere. They share an affective alliance because they are equally vulnerable to each other’s gaze – concomitant subjects and objects of perceptual examination. Even if they develop such ties with co-participants, most viewers will refrain from starting conversations, hence respecting the unwritten pact between “familiar strangers” analyzed by Milgram.

Similar relations are evoked by *Pi*, which prompts passers-by to enter into an imaginary dialogue with the mute numbers, which metaphorically stand for the voices of those dissatisfied with their jobs or affected by global and local problems such as malnourishment or environmental catastrophes. In 1992, Lum published a book⁵⁶⁷ with photographs of passers-by and simple questions launching the reader in a speculative game concerning the identity of the pictured people. He explicitly talked about the way we stifle our desire to speak with strangers on a bus: “there’s a kind of incommunicado communication going on which still rests within my mind, there is this will there but then there is also this decorum.”⁵⁶⁸ *Pi* evokes the same kind of voyeuristic relatedness to others by encouraging viewers to wonder who the subjects of the statistics are.

Affective relations, which are mentally envisioned without taking a verbal or visual form, compensate for the alienating circumstances of everyday life. By watching their images unfold as if they were part of another world with a different topology and time cycle, visitors of *Cloud*

⁵⁶⁶ Milgram (1977)

⁵⁶⁷ Ken Lum, *Speculations* (Ghent: Imschoot, 1992)

⁵⁶⁸ Lum (1996, 29)

Gate take part in a ludic experience that consolidates their social ties. Even though there may be no concrete signs of interaction such as verbal exchanges between participants who encounter one another for the first time in such settings, they develop a feeling of attachment and solidarity with one another. Respondents to Conard's survey concerning public involvement in Millennium Park remarked the conviviality triggered by this environment. One person conveyed his/her enchantment with the voyeuristic dimension of the park "I like watching other people with the pieces. I come to people watch more than anything else."⁵⁶⁹ Another one emphasized his/her empathetic belongingness to the group of visitors engaged in the same experience: "It is a magnet for people in a good mood so it creates a really nice sense of community."⁵⁷⁰ The relations formed between spectators of Kapoor's sculpture may be temporary, but they do not lack intensity. *Cloud Gate* reveals viewers' co-existence with multiple others within societies that are subjected to more or less blatant surveillance. Its reflective interface has a liberating potential because it reveals that participants share this condition with crowds of anonymous strangers exposed to similar circumstances. Their experiences may differ, yet their provisional alliance to temporary urban gatherings responds to their desire for interpersonal recognition. Explaining people's ontological need for acknowledging each other's differences in public, Jean-Luc-Nancy maintains that:

The city is not primarily "community," any more than it is primarily "public space." The city is at least as much the bringing to light of being-in-coming *as the dis-position* (dispersal and disparity) of the community represented as founded in interiority or transcendence. It is "community without common origin."⁵⁷¹

⁵⁶⁹ Survey respondent in Conard (2008, 160)

⁵⁷⁰ Survey respondent in Conard (2008, 162)

⁵⁷¹ Jean-Luc Nancy, *Being Singular Plural* (Stanford, CA: Stanford University Press, 2000), p. 23.

Cloud Gate provides a context for gaining awareness of this belongingness to temporary collectivities engaged in quotidian rituals, which highlight plurality and divergence rather than promote homogeneity and conformity on the basis of unique interests and group characteristics.

As we choose to become part of Web 2.0 social networks even though we know that we are thus releasing control over our personal information, we express our need for confirmation of the singularity of our personal views, as well as for alliance with heterogeneous groups whose members may be distant acquaintances or complete strangers. The visual interfaces set up by Kapoor, Eliasson and Lum provide similar opportunities for affective mirroring between participants. By contrast with online networks, they do not invite participants to reveal their identity or construct an avatar in order to join in their interactive environments. Hence, they favor becoming over fixed constructs. Viewers remain largely anonymous while nonetheless feeling in touch with others thanks to the interplay of reflections and the virtually uninterrupted chain of visual information to which all are concomitantly contributing. The interpersonal exchanges between visitors of *Cloud Gate*, *Take your time*, and *Pi* may not lead to the formation of actual relationships or acquire visible form. Nevertheless, they elicit mutual awareness of belonging to complex systems, whose behavior depends on the attunements or divergences between their components, as well as upon the dynamic characteristics of the environment in which they are located. Upon gazing at their body images in the omphalos of *Cloud Gate*, visitors sense the interconnectedness between seemingly remote worlds. Participants who take their time within the framework of Eliasson's installation at P.S.1 have a similar experience. The images reflected in the rotating mirror disk appear disjoined from the space and time of lived experience, yet communicate the pervasive entanglement of the personal and the social, the virtual and the actual. In the case of *Pi*, the convergence of local and global realities unveils

passers-by's plural alliances. It inflicts feelings of contentment, despondency or shame depending on how well the statistical figures mirror someone's emotions, actions or passive contribution to the present state of things illustrated by the LED counters.

All three works trigger and map interpersonal relations, whether they are forged between people who occupy the same space or between inhabitants of different geographical spaces virtually connected by the shared consequences of planetary irresponsibility. In his essays on the visible and the invisible, Maurice Merleau-Ponty evokes the deeply troubling moment when one realizes that his/her private experience coincides with that of someone else, who communicates similar sensorial impressions or thoughts about a shared object of perception. The philosopher concludes that we connect to others through the external world and that it is only in this way that we can become conscious of our own otherness. By asserting that “the other's gaze on the things is a second openness,”⁵⁷² Merleau-Ponty emphasizes the significance of understanding that our mental pictures of the world are neither entirely sealed-off private projections nor transparent representations. *Cloud Gate*, *Take your time* and *Pi* enhance viewers' intuition of shared impulses and reflections by integrating their mirror images in large reflective screens open to the gaze of engaged participants and furtive onlookers. The visual palimpsests that they frame convey the plurality of experiences and world pictures, as well as the interdependence between the private and the public, the personal and the social. Even if they do not perform the same actions or do not reflect in the same way on the perceptual and conceptual situations proposed by the installations, the viewers that congregate in vicinity of these works develop empathetic relations and feel they voyeuristically belong to multiple collectivities – be they actual or real.

⁵⁷² Merleau-Ponty in Lefort ed., (1968, 59)

While *Cloud Gate* and *Take your time* create virtual ties between co-present viewers, *Pi* mainly proposes alliances with social or cultural groups represented by statistical numbers. The sensation of bodily proximity towards others is in this latter installation context supplemented by the flow of passers-by crossing the Westpassage. Even if they do not stop by the mirror panels, they symbolically stand for the crowds of anonymous subjects referenced by the statistical estimates. Ultimately, as new media theorist Mark Hansen suggests, “the experience of illusion and of perception are *affectively* identical”⁵⁷³ and viewers of *Pi* develop connections to multiple others even in the absence of companions simultaneously engaged in interpersonal mirroring acts with the numerical estimates.

The phenomenological qualities of these three works together with their affective potential foster self-questioning and interpersonal negotiation over notions of selfhood, belonging, and shared socio-political conditions. They create possibilities for participating in alternative spaces and times where viewers feel drawn to a plurality of viewpoints and develop real or imaginary connections with individuals that belong to different groups. In Kapoor’s opinion, art making provides “a space for becoming”⁵⁷⁴ since it starts from a virtual void that has to be filled in by means of creativity and imagination. For Eliasson, it is a process through which one envisions a situation or a model that triggers personal reflection and critical engagement. In his turn, Lum considers art to be a communicative process with a speculative message. Hence, he is convinced that “the ideal audience” is “a questioning one.”⁵⁷⁵ In all three instances, art creation opens up a series of perceptual and conceptual hypotheses, which cannot be easily reconciled and draw viewers’ attention to the responses of others. The reflective interfaces of

⁵⁷³ Hansen (2004, 190)

⁵⁷⁴ Quoted in Farrow (1993, 58)

⁵⁷⁵ Lum in Marnie Fleming, “The Resolute Moment: a conversation with Ken Lum about his most recent work,” (1994, 7).

Cloud Gate, *Take your time*, and *Pi* prompt affective belonging to more or less spontaneously formed groups. As Gilbert Simondon suggests, the origins of collectivities are to be found “at the level of affective-emotional aspects combined with representation and action.”⁵⁷⁶ Empathetic ties coalesce as participants parallel each other’s behavior, voyeuristically identify with multiple others and survey the perpetual transformations of the mirror field, which captures their moving images. The dynamic character of the morphing reflections echoes the unpredictability of the process of becoming experienced by the participants.

The following section looks into the cultural, social and technological factors that contribute to the production of spaces that challenge interpersonal processes of observation and self-definition such as the ones illustrated by *Cloud Gate*, *Take your time*, and *Pi*. It highlights the loose processes of identification characteristic of the contemporary period and examines the collapse of homogeneous notions of singularity and collectivity.

4.3 REFLECTIVE SPECTATORSHIP: PRODUCTIVE DIFFERENCES AND INTERDEPENDENT RELATIONS BETWEEN VIEWERS

Disillusionment with the cult of individuality promoted by capitalism in most Western countries, as well as with the unfulfilled promises of collectivism in numerous countries from the former Eastern block, has contributed to a skeptical outlook on the primacy of self-interest or collective interest. In the context of the collapse of grand narratives, this mistrust of large ideological systems has cast doubt on fixed notions of individual and group identity.

⁵⁷⁶ Simondon (1989, 100)

Far from privileging the reinstatement of a firmly positioned subject or the assimilation of individuals within cohesive groups, *Cloud Gate*, *Take your time*, and *Pi* underline the provisional aspects of perception, identity, and group belonging. The potential of these works for transformation thanks to their reflective qualities heightens awareness of the instability of the art object and the variable conditions of spectatorship. Although they seem to conspire with the logic of capital markets because they encourage processes of identification with images reflected in their sleek surfaces. However, as explained in the previous section, these mirroring acts undermine a one-to-one correspondence between the world projected within their visual frame and the world outside their polished screens. These disjunctions produce ambivalent perceptual situations and elicit reflection on how one views himself/herself and how one is perceived in relation to others.

As will be shown in this section, Anish Kapoor and Olafur Eliasson have been accused of breeding passivity through the construction of spectacular environments despite their claims to the contrary. The primary concern of critics is that their works build upon the capitalist market illusion that products are specifically created for the needs of individual consumers or that they can be customized to match their individual tastes or interests. Given the fact that they promise unique subjective engagement based on the background and personal experiences of each viewer, they seem to fuel the narcissistic desires of individuals who derive satisfaction from identifying with the presumed uniqueness of the objects of consumption. The more prominent conceptual nature of Ken Lum's projects, which directly reference social problems and use visual reflection as a reminder of viewers' position within society makes them less liable to this genre of critique. In his book on *Participatory Media*, Daniel Palmer argues that new technologies based on real-time communication strengthen capitalistic forces by encouraging

individual performativity. He believes that by persistently favoring subjectivity and instantaneous connectivity they suppress awareness of plurality and temporal disjunctions:

while the real-time imaginary serves the needs – and is in some ways mimetic – of the ‘objective’ real of contemporary globally networked capital flows, contemporary visual culture tends to dissolve otherness, reducing it to a personal anxiety in a realm of universal intimacy.⁵⁷⁷

The three works discussed in this chapter are not primarily based on new media. However, they challenge real-time experience and performativity. Despite their emphasis on co-presence, they take the viewer outside the comfort zone of an intimate encounter with his/her self-image by exposing his/her reactions to the gaze of others and displaying the plurality of responses to their large-scale reflective interfaces. Hence, they deprive viewers of privacy and confront them with the otherness inherent in themselves as they long for experiential communion with numerous other participants who engage with the work in contrasting ways. They ask them to envision what their surroundings would look like from a different perspective. In this sense, they are productive of spatial and temporal differences even if only at a virtual level.

If the idea of individuality appears corrupted because of the way it has been used to isolate individuals and trick them into buying the dream of a personalized world of consumer products, the idea of collectivity has also been tainted because it appears that large groups of people can be easily manipulated and subordinated to ideological systems. However, this latter notion still seems to offer more possibilities for critical engagement at a time when “multitudes” seem to be the only forces capable of withstanding global economic forces by creating alternative networks of social exchanges.⁵⁷⁸ Recent political changes such as the fall of Egyptian president Hosni Mubarak are applauded as victories facilitated by Web 2.0 technology.

⁵⁷⁷ Daniel Palmer, *Participatory Media: Visual Culture in Real Time* (Saarbrücken: VDM Verlag, 2008), p. 189.

⁵⁷⁸ Michael Hardt, Antonio Negri, *Empire* (Cambridge, Mass.; London: Harvard University Press, 2000), p. 393-413.

However, these collectivities formed in the online space are not viewed as cohesive groups, but as social gatherings held together both by close ties and disparate connections, dynamically evolving at different speeds across various temporalities and geographical locations. By the same token, the groups of viewers amassing around *Cloud Gate*, *Take your time*, and *Pi* involve individuals from various localities and social backgrounds who are more or less likely to develop real and imaginary connections. As long as these collectivities are open to change and do not become constrictive, they allow for interpersonal transformation without imposing boundaries or generating abstract group entities, which overshadow individual or social differences. It is essential that this form of alliances with multiple groups are not perceived in terms of an ideal of consensual coexistence, but in terms of constructive tension, which builds the potential for the emergence of new ideas.

Anish Kapoor, Olafur Eliasson and Ken Lum conceive their works as stimuli for perceiving differences and thinking about them while remaining aware of multiple others simultaneously engaged in negotiating their own personal perspectives in relation to the broader social context. Kapoor is interested in activating the imagination of the viewer. The virtual plasticity of the materials he uses in his sculptures, which appear to change shape and density under the eyes of viewers, is meant to mirror the plasticity of perception and thoughts:

If the mirror sucks in, it also spits out – it reflects and refluxes. Such a reasoning illustrates the motility embodied in the reflective surface of the mirror and exemplifies those ‘non-physical things, the intellectual things, the possibilities that are available *through* the material.⁵⁷⁹

Defying the logic of cause and effect, Kapoor’s works also throw into upheaval the inner world of the subject of perception, who loses control over the transformation of the object that seems to embody multiple states. In the case of *Cloud Gate*, this uncertainty is intensified both by the

⁵⁷⁹ Kapoor in Homi Bhabha (2009, 174)

large scale and curved shape of the silver archway, which undermines a centralized perspectival viewpoint, and by the presence of multiple co-present viewers who catch sight of different reflective effects. In an interview with Brian Massumi concerning preemptive tendencies during the contemporary period of high surveillance, images of Kapoor's sculpture were used as illustrations of "the space of collective individuation,"⁵⁸⁰ characterized by indetermination and interpersonal awareness. Massumi explains that this genre of environments is affective since it displays the potential for different reactions to a shared spatio-temporal context. Moreover, it privileges neither the subject nor the collective, exposing instead their contingency.

Olafur Eliasson's installations also build upon the coincidence of multiple viewpoints, each characterized by its own specificity, yet intimately connected to a changing social environment. Relying on a phenomenological approach consonant with his practice, the artist has extensively discussed the urgency of rendering viewers conscious of the fact that they are active producers of images rather than passive witnesses of representations or consumers of images. Eliasson has repeatedly underlined his belief that subjective involvement can become a tool for withstanding ideological control. The need for counteracting manipulation or deterministic behavioral responses has led him to give primacy to singularity. In 2003, he collaborated with Israël Rosenfeld to design a poster for the Utopia Station of the 50th Venice Biennial. It depicted a school of fish with similar, yet clearly distinct features, which conveyed the accompanying dictum: "The only way we'll make this thing work is if I lie to you and you lie to me!" It reflected Eliasson and Rosenfeld's skeptical attitude towards all collective utopias that supposedly reflect the ideas and desires of a unified social group. The poster unveiled the illusion of unanimous consensus. In subsequent years, the notion that we are united by our singularities

⁵⁸⁰ Charles Rice, "The Space-Time of Pre-Emption. An Interview with Brian Massumi," *Architectural Design. "Post-Traumatic Urbanism."* Vol. 80, no. 5, September - October 2010, p. 33.

has come to define Eliasson's entire artistic practice.⁵⁸¹ Nonetheless, it has also become increasingly noticeable that his works call for more than self-focused awareness since they foreground the potential for comparing different perceptual impressions and the experience of becoming affectively connected to others thanks to an actual or imaginary exchange of impressions between viewers.

Jonathan Crary was one of the first art historians to identify the social dimension of Eliasson's art practice. Commenting on *Your color memory* (2004), a gradually changing environment infused with different colors, he maintained that "the public nature of the work makes inescapable the realization that a world in common, the possibility of community, must be the exploratory coming together of singularities in many small-scale acts of sharing and exchange."⁵⁸² This interpersonal communion engendered by the awareness of differences and by the simultaneous encounter with a similar perceptual context is even more clearly observable in the case of his mirror-based installations such as *The weather project* and *Take your time*, which reflect groups of museum visitors engaged in observing their real-time images in the same setting.

In spite of the significant function of multitudes in shaping the experience of Eliasson's works, the notion of individual singularity continues to remain the anchor point of his practice. "Vibrations,"⁵⁸³ his most comprehensive theoretical essay to date, focuses on the responsibility of the individual viewer to be the determining agent in constituting perception in relation to

⁵⁸¹ Gitte Orsoku stated that "The only thing we have in common is that we are different" is one of "Eliasson's most distinctive *statements* in his confrontation with subjectivity's enforced regimentation." Similarly, Carol Diehl pointed out that Eliasson hopes that his works will bring to the surface the singularity of each viewer's perception. Along these lines, she compared him with Robert Irwin, arguing that "both seem to hope that each person which encounters the work will come away with a different experience based on the background he or she brings to it." See Gitte Orsoku, "Inside the Spectacle," *Olafur Eliasson. Minding the World* (2004, 23); and Diehl (2004, 113)

⁵⁸² Jonathan Crary, "Your Color Memory: Illuminations of the Unforeseen," *Olafur Eliasson. Minding the World*. (2004, 225)

⁵⁸³ Olafur Eliasson, "Vibrations," *Your engagement has consequences* (2006, 59-74)

his/her surroundings. Eliasson proposes that the viewing subject needs to keep in mind not only the spatial dimension of perceptual acts, but also their temporal dimension, which is dependent upon one's personal sense of time. Furthermore, he suggests taking into account a supplementary dimension called "your engagement sequence," which has the role of a critical lens in the perceptual process and restores agency to the individual who otherwise risks becoming immersed in the culture of spectacle.

Eliasson is committed to advancing subjectivity as the most instrumental strategy in challenging established perspectives. However, he does not see it as a stable construct, but as an individual entity that undergoes transformations, just as the spatial and temporal context of perception. Hence, Eliasson contends that self-reflection or "the first-person perspective" needs to be supplemented by "a third-person perspective."⁵⁸⁴ *Take your time* epitomizes this philosophy by offering museum visitors a view of themselves as individual subjects free to explore changes in their self-perception by observing how their mirror images transform in relation to their body movements and as objects of the rotating mirror eye, which represents a symbolical foil for the viewpoints of multiple other viewers present within the installation space.

In recent years, Eliasson's interest in the intricate ties between individuality and collectivity, has become more manifest. In *Studio Olafur Eliasson. An Encyclopedia* published in 2009, the artist acknowledges the influence of Jean-Luc Nancy's concept of "being singular-plural"⁵⁸⁵ and explains that neither of the two terms takes precedence over the other: "In society, we've cultivated the extreme wish to be individual, but it's almost paradoxical to talk about individual experiences if this isn't done against a collective background."⁵⁸⁶ The concomitant

⁵⁸⁴ Ibid. (2006, 72)

⁵⁸⁵ Olafur Eliasson in Anna Engberg-Pedersen ed. (2009, 451-2)

⁵⁸⁶ Ibid (2009, 465)

perception of oneself as an individual with personal agency and as a constitutive part of a broader or narrower social environment is an exercise in envisioning one's intrinsic singularity and multiplicity. Eliasson proposes perceptual situations in which the viewers are encouraged to consider the relativity of their autonomy and the mutability of their self-reflection.

However, the felicitous marriage between singularity and plurality is not free from tensions or controversy. Eliasson has been accused of addressing a generic public by trying to involve all viewers in different ways. In an article that brings to the surface the conundrum of promising both unique experiences that call forth the desiderata of capitalist societies and collective belonging to an equally shared social background, Anja Bock maintains that Eliasson's "subject is general rather than gendered or discursive: he missed the revolution, so to speak."⁵⁸⁷ Peter Scott voices similar concerns in his review of Eliasson's survey exhibition "Take your time." He finds that the artist's invitation to personalizing time is in fact a virtual imitation of contemporary branding strategies that "create the illusion of meaningful participation in a larger group while offering the uniqueness of the (constructed) individual's identification"⁵⁸⁸ with the consumer object. In order to counteract modes of spectatorship that cultivate personal enchantment with the uniqueness of the perceptual experience, Steven Psyllos, another reviewer of the same exhibition, suggests that visitors ought to observe the responses of others and revisit the installations in order to become aware of how changing social contexts affect experience. He admits that at first sight the works fulfill "the base desire of the attendees' need for instant stimulation/gratification," as well as the goal of the art market to identify "the

⁵⁸⁷ Anja Bock, "Olafur Eliasson: Blurring Spectacle and Critique," *Art Papers*, Vol. 32, no. 6, November - December, 2008, p. 26.

⁵⁸⁸ Peter Scott, "Bread and Circuses: The Mayor, the Waterfalls and the Art of Neo-Liberalism," *Art Monthly*, Issue 322, December 2008-January 2009, p. 8.

next rock star.”⁵⁸⁹ However, Psyllos ultimately defends Eliasson’s approach by singling out the intermingling of mental reflection and visual pleasure subsistent in the act of watching other people’s responses to the installations. The variability in personal perception is matched by the variability in reception, which destabilizes the process of complete identification with the reflection or the art object. The same type of mirroring processes was at play in the case of art and technology projects from the 1960s and is evident in the context of new media environments, which similarly highlight the complexity of systems formed between art viewers and artworks.

Kapoor, Eliasson, and Lum have the merit of creating experiential contexts that enable viewers to step out of a self-oblivious state of mind and re-consider their alliance with others. There may be no explicit call for individual or collective agency in their works, but this does not mean that they lack critical potential. The high aesthetic qualities of Kapoor and Eliasson’s works makes them more liable to criticism on the grounds that they deflect attention from the social circumstances of the experience, hence serving the culture of spectacle.⁵⁹⁰ This is less the case in the context of Lum’s art practice, which is more closely associated with conceptualism and explicitly impedes socially detached observations by making textual references to local and global conditions. Yet, his artistic philosophy matches that of Kapoor and Eliasson at the level of his belief that differences need to be highlighted rather than leveled down or set in strictly

⁵⁸⁹ Steven Psyllos, “Repeat viewing recommended. On Olafur Eliasson’s Take Your Time,” *New York Arts Magazine*. Available online at:

http://www.nyartsmagazine.com/index.php?option=com_content&view=article&catid=164%3Anew-york&id=200487%3Aolafur-eliasson&Itemid=723 on August 20, 2009.

⁵⁹⁰ Jeff Huebner maintains that Kapoor’s *Cloud Gate* stands for the epitome of narcissistic infatuation in the context of the Millennium Park project: “The Bean could be seen as being about perception, ephemerality r spirituality – as something sublime. Yet I see it and thik that perhaps only a city like Chicago, rightfully big-shouldered yet historically insecure about its own artistic accomplishments, could have produced such a monument to sublimely self-reflexive boosterism. [...] Kapoor offes us “psycho-physical validation.” See Jeff Huebner, “Millenium Pork and the Bean,” *Public Art Review*, Vol. 18, no. 1, Issue 35, Fall-Winter 2006, p. 70. Eliasson’s “Take your time” exhibition at MoMA was prefaced in *The New Yorker* by the statement: “If leadership in installation art for the masses were an elected position, the Icelandic-Danish dab hand would be a shoo-in.” See “Going On About Town,” *The New Yorker*, May 19, 2008, p. 14.

delineated ethnic, class, or gender categories. He explains that linguistic misunderstandings or imaginary conversations with familiar strangers can in fact be meaningful and activate the potential for self-exploration by enhancing social awareness. Reminiscing his experience of growing up in East Vancouver, Lum underscores the productive outcome of interpersonal dialogues between immigrants with different cultural backgrounds who reach mutual understanding by deriving new English words: “what happens in such interactions is that they are intensified in their qualities because of their respective differences. I think that when there is a common ground, it is usually by way of some mangled English.”⁵⁹¹ This encounter between individuals who derive new linguistic codes to communicate with each other suggests that differences do not always provoke unsurpassable clashes, but can generate alternative forms and meanings.

Irrespective of the cultural origin of its viewers, *Pi* sets the scene for an equivocal relation to the statistical information it displays. It elicits an inquiry into the role one plays in producing the reality conveyed by the numbers. Since the etched texts are written in German, Lum indicates that the installation does not offer a presumably neutral or universal representation of the state of the world. The data is provided by SORA, an Austrian social research institute, which updates the information based on mathematical estimates. For German-speaking people, the installation conveys a sense of comfort at the thought of belonging to a regional context where local and global realities are regularly assessed. For foreigners, be they migrants, resident aliens, or tourists, it is a reminder of the processes of deterritorialization and the need to constantly translate and interpret the verbal and visual signs that surround them. Nonetheless, neither group is released from the pressing need to interrogate the point of view from which the statistical

⁵⁹¹ Lum in Busby (2001, 93)

questions are formulated and the way the data is compiled. Lum undermines a hegemonic perspective by alternating information primarily relevant for Austrian people with information concerning transnational problems. Thus, it erodes the stability of knowledge and the fixity of identity, triggering a consistent questioning of representation and subjectivity. The relativity of π further points to the mutability of matter, information and personal views.

All three artists privilege variability over stasis and difference over sameness. In his dialogue with Homi Bhabha, Kapoor is hesitant about designating the void as a symbol of the third space between dominant cultural identities because he believes that the cultural spaces to which this notion becomes an alternative are also far from homogeneous or static:

In-betweenness is a statement of cultural certainty and not one of cultural ambiguity. If we are to speak of void as in-between then it is not in-between two predefined realities, but in-between in the sense that it is potential, that it is becoming, that it is emerging, that it is probable and possible.⁵⁹²

Despite its symbolical mediation between two spaces, *Cloud Gate* is not supposed to stand for a boundary, but for a space of transgression of binary differences. Its extensive silver skin incorporates reflections of individuals situated closer or farther away from it. The mirror images are subjected to different degrees of distortion and are hence suggestive of multiple points of view embodied by the viewers. The visual metamorphoses are indicative of the potential for interpersonal transformation, which does not depend solely on the interaction between two individuals or two collectivities, but on an entire network of more or less familiar strangers. For Kapoor, differences are not immutable. He refuses to believe in a compartmentalized model of the world, preferring instead the smooth spaces of the void and the mirror where distances are relativized and differences are always in flux.

⁵⁹² Kapoor in Homi Bhabha and Anish Kapoor (1993, 55)

Eliasson's keen interest in the temporal dimension of perceptual experience stems from a similar belief in the need for conceiving reality as a perpetually changing field that shifts with our motion and that can be simultaneously molded by the actions of multiple others, who are subjects and objects of their surroundings. In the encyclopedia of his studio, the artist includes such terms as "experiment," "friction," "journey," "movement," "orientation," "quasi-," "vibration," which denote a world view dependent on numerous physical and social variables.⁵⁹³ Even if he considers that the critical perspective of individuals needs to prevail over the predisposition of collectives he does not discount the influence of actual or virtual alliances with others based on communal perceptual and cognitive engagement.

In spite of Eliasson's investment in theorizing singular-plural modes of spectatorship, art critics and historians have remarked a disjunction between his avowed aim of creating works, which jolt viewers out of a state of passive acceptance of reality, and the apparent comforting and even pacifying effect of his installations upon large groups of viewers. James Meyer talks about this in terms of "an instrumentalization of the phenomenological tendency"⁵⁹⁴ that is favored by museums, which seek to boost their image as democratic settings where multiple experiences are simultaneously catalyzed in order to mask their ultimate subordination to the culture of spectacle. Peter Scott argues that the "Take your time" exhibition does not disrupt the state of individual or social slumber and is the equivalent of "a kind of Soma or Prozac to take for reassurance in troubled time."⁵⁹⁵ Affective responses do not gain visible form easily. The image of viewers lying on the gallery floor under the mirror disk of *Take your time* evokes stasis and peaceful co-existence, but the actual experience of being in that space is far from quieting or

⁵⁹³ Engberg-Pedersen ed. (2009)

⁵⁹⁴ Meyer (2004, 226)

⁵⁹⁵ Scott (2008-2009, 8)

free of friction because it brings out differences and undermines the physical balance in space and time. It does not carry any explicit political reference, but its abstract and reflective character calls for self-involvement and interpersonal awareness. The installation destabilizes both one's relation to his/her mirror image delayed by the rotation of the reflective disk and one's relation to others concomitantly caught in the swirl of reflections.

Like Kapoor and Eliasson, Lum is committed to heightening individual consciousness of the mutability of subjectivity and the potential for changes in political, cultural, and social circumstances. *Pi* parallels the approximation of data indexical of social and natural phenomena to the approximation of self-identity, which depends on a person's past experiences, as well as on how he/she envisages his present and future ties with the local and planetary context. The transitoriness of mirror images and the shifts in value of the last ten figures of π stand for the entropic forces subsistent in the world and highlight viewers' unavoidable entanglement in the transformations of society, no matter how insignificant their influence may seem when compared with ideologies or phenomena that escape human control. Lum avows his fascination with the way individuals adopt certain attitudes or adjust their beliefs, as they think about the shifting balance of forces in their more or less proximate environments. Through self-reflective acts that are never entirely independent of their interactions with their surroundings, they act as compasses of shifting realities and regularly shift their orientation parameters in conjunction with personal transformations, social tendencies or world events. In discussing about what motivated him to create mirror-based works, Lum asserts:

I am interested in what constitutes the subject. Not only the subject in the work, but the subject standing in front of the mirror. And that constitution has been a recurrent theme in all my work. I insist that the subject is something in between...a hybrid, always in the process of transformation.⁵⁹⁶

⁵⁹⁶ Lum in Kitty Scott, "Ken Lum Works with Photography," Kitty Scott, Martha Hanna eds. (Ottawa: Canadian Museum of Contemporary Photography, 2002), p. 15.

Just like Kapoor, Lum rejects the notion of a hybrid space or identity that combines otherwise invariable characteristics. He thinks that it is utopian and unethical to conceive social transformations in the absence of personal acts of self-reflection.

Ultimately, what underlies the thinking and practice of all three artists is the idea that the more conscious individuals are of their lack of autonomy the more power and freedom they have to become engaged in critical thought and action. By coming to terms with their entanglement in a mutable network of relations that affects not only the larger structures of society, but also their personal lives, they can conceive ways of upsetting the normative order of things.

Recent findings in neuroscience confirm the fact that our interdependence with others is not solely the consequence of ideological constructs. In fact, our sensori-motor reactions are influenced by the behavior of others, whether we are well acquainted with them or we merely observe them. As we watch the gestures of someone else and process the visual information in order to make sense of it, the same neurons fire in our brain as if we were performing the actions ourselves.⁵⁹⁷ This neuroscientific discovery partly explains the affective ties formed between self and others in the context of works such as *Cloud Gate*, *Take your time*, and *Pi*. Viewers' relations to the three perceptual and conceptual situations proposed by the artists are interdependent because they imply active personal and interpersonal involvement in response to the mirror images. As it turns out, the contemplation of others is not conducive to self-obliteration. It catalyzes personal reflection through virtual projection of oneself in someone else's position. The cells activated in this communicative process are called mirror neurons. This discovery raises anxieties concerning social manipulation, yet it does not suppress the role of

⁵⁹⁷ The first publication that presents the outcomes of research on this type of neurons is: Di Pellegrino, G., Fadiga, L., Fogassi, L., Gallese, V., & Rizzolatti, G., "Understanding motor events: a neurophysiological study," *Experimental Brain Research*, Vol. 91, no. 1, October, 1992, pp. 176-180.

individuality. Experiments have shown that while the same brain cells fire when we perform a gesture or see others perform it, the intensity with which the neurons respond to the received information is greater in the case when the individual is the agent of that specific action. In a study that eloquently presents research findings on mirror neurons and discusses the social implications of these neural processes, Marco Iacobini explains that:

Mirror neurons are brain cells that seem specialized in understanding our existential condition and our involvement with others. They show that we are not alone, but are biologically wired and evolutionarily designed to be deeply interconnected with one another.⁵⁹⁸

The insertion of mirror-based installations in public settings heightens the potential for sensing how our acts may be intimately linked with those of others even if we are not part of close-knit communities who share the same interests. Kapoor, Eliasson, and Lum confront viewers with the synchronicities and asynchronicities of experience in social settings where everyone is exposed to the gaze of multiple others. Nonetheless, the visual information conveyed by the reflections does not include the entire range of correlations that can be woven at an affective level.

Sociologists are astutely reflecting on how social relations have become more variable in recent decades. While in the 1970s Richard Sennett argued that Western societies had taken an introspective turn that diminished the potential for collective action,⁵⁹⁹ today there is less of a sense that the majority of individuals find privacy and contemplative attitudes more comforting than interpersonal relations and interaction. Despite the fact that online social networks seem to enhance the distance between people and create a fake sense of community, they continue to be hailed as effective media that can stimulate collective agency. Nonetheless, this does not mean that privacy is less valued. As Richard Stengel stated in an article explaining the rationale for choosing as Time's 2010 person of the year Mark Zuckerberg, the inventor of Facebook, the

⁵⁹⁸ Iacoboni (2008, 267)

⁵⁹⁹ Sennett, (1977, 5)

notion of what is public and private has significantly changed: “Our sense of identity is more variable, while our sense of privacy is expanding. What was once considered intimate is now shared among millions with a keystroke.”⁶⁰⁰ Posting images and messages on personalized online accounts presumably viewable only by one’s friends frequently provides a feeling of virtual proximity to others. In many instances, it is only an inadequate substitute, yet it enables one to stage his/her own encounters with a wide range of acquaintances and to fashion for himself/herself the image of a familiar stranger with constantly adjustable interests and looks.

Installations, which foster mirroring processes and incorporate the images of multiple spectators, respond to the same impulse towards belonging to volatile groups and adopting different poses and gestures in order to avoid a fixed image associated with one’s identity, which can be more easily subordinated to the gaze of others. In a sociological study, which precedes the emergence of Web 2.0 technology, Michel Maffesoli identifies a departure from modern group formations based on political and economic ties, which mainly foster static notions of identity and give vent to individualism.⁶⁰¹ He suggests that we are developing more dynamic and complex social connections by creating a wider range of personas, emphasizing differences rather than sameness, and interacting with more diverse groups. Like Sennett, Maffesoli identifies similar trends towards recognizing ourselves in the growing number of iconic figures of celebrity culture, yet suggests that these personalizing tendencies do not enhance individual privacy, but make us feel part of elusive collectivities. He argues that we feel increasingly united by our differences and by processes of incomplete and unstable identification with various groups, which lack rigid boundaries. Under these circumstances, Maffesoli believes that affective

⁶⁰⁰ Richard Stengel, “Only Connect,” *Time*, December 15, 2010. Available online at: http://www.time.com/time/specials/packages/article/0,28804,2036683_2037181_2037179,00.html on December 27, 2010.

⁶⁰¹ Maffesoli (1996)

connections proliferate and individuals develop more diffuse relationships to collectivities. He contrasts this tendency to the commitment to groups with a strong sense of identity prevalent in the 1970s:

This 'affectual' nebula leads us to understand the precise form which sociality takes today: the wandering mass-tribes. Indeed, in contrast to the 1970s – with its strengths such as the Californian counterculture and the European student communes – it is less a question of belonging to a gang, a family or a community than of switching from one group to another. This can give the impression of atomization or wrongly give rise to talk of narcissism. In fact, in contrast to the stability induced by classical tribalism, neo-tribalism is characterized by fluidity, occasional gatherings and dispersal.⁶⁰²

According to Maffesoli, these nebulous ties emphasize our intrinsic multiplicity. In this context, one of the major concerns that emerges is the fact that as individuals shift their alliances at a faster pace, both individual and collective agency may be weakening. Unless interpersonal mirroring processes generate an enhanced awareness of what is at stake in complex systems where all nodes in a network are affected by lack of responsibility towards others and our shared environment, we risk entering a period characterized by a return to small, disparate enclaves. Ken Lum's *Pi* explicitly underscores the need for affective connections to others, irrespective of their location or citizenship status. The irrational character of the mathematical symbol whose final decimals refuse to be fixed evokes the unpredictability inherent in world systems and our mutating differences that can bring us in closer proximity to multiple groups.

Kapoor's *Cloud Gate* and Eliasson's *Take your time* do not include specific references to social issues. Nevertheless, they augment the visibility of interpersonal connectedness while undermining a privileged perspectival view that would favor individualism and allow for the institution of an unethical principle of absolute otherness that suppresses multiplicity and enforces subordination. These works invite to prolonged engagement with spatio-temporal intervals in which one abandons the certitude characteristic of normative associations with others

⁶⁰² Ibid (1996, 76)

and comes to terms with the inevitable lack of complete autonomy and control in contemporaneous societies. What brings solace is the fact that these reflective interfaces do not mirror a static environment, but one where participants' social relations and personal experiences are mutable and not entirely predictable and the balance of interconnections is bound to shift repeatedly.

Kapoor, Eliasson, and Lum share an affinity towards mapping environments which stimulate both visual and mental reflections. Both acts are necessary in order to foster mirroring processes that enhance awareness of plurality rather than reducing images of oneself and others to static entities bound to remain in separate realms. Merleau-Ponty contends that when we suppress references to the visible world we distance ourselves from others since it is the shareability of potentially congruent experiences that unites us: "as soon as one reaches the true, that is, the invisible, it seems rather that each man inhabits his own islet, without there being transition from one to the other, and we should be astonished that sometimes men come to agreement about anything whatever."⁶⁰³ Jean Luc-Nancy evokes a similar idea when he argues that despite the negative implications of spectacle, it is a necessary aspect of our societies because "We present the "I" to ourselves, to one another, just as "I," each time, present the "we" to us, to one another. In this sense, there is no society without spectacle; or more precisely, there is no society without the spectacle of society."⁶⁰⁴ The philosopher implies that we construct ourselves as subjects by taking a distance from a solely self-focused perspective and thinking about how we appear in the eyes of others, how we connect with them, and what impact our surroundings have on us. This stage of reflection is not necessarily separate from that of action since the realization that one is as much an object as a subject in the social world does not bring

⁶⁰³ Merleau-Ponty (1968, 14)

⁶⁰⁴ Luc-Nancy (2000, 67)

about a state of passivity, but engenders a more lucid understanding of the potential roles one might embody in order to generate small changes, which can snowball into larger transformations depending on the number and intensity of connections one has with others. This negotiation between the singularity and the plurality of oneself casts light on the complex networks one is purposefully or incidentally part of.

Cloud Gate, *Take your time* and *Pi* create interstices in which affective ties between participants can be intuited. The mirror surface suggests a unitary frame characterized by synchronicity, yet the movements of the people, the processes of behavioral and emotional attunement, or the disjunctions between spectatorial responses underscore the asynchronous relations and the unpredictability subsistent in social networks and in the world at large. The popular appeal of Kapoor and Eliasson's works has triggered the assumption that they are spectacular icons, which undermine personal engagement by luring the masses through their sublime aesthetics. Both artists have taken a stance against this critique by pointing out that they invite viewers to question themselves and the representations of the world instead of providing an escape from critical reflection. In his monograph on Millenium Park, Timothy J. Gilfoyle asserts that Kapoor responds to the critique of *Cloud Gate* as a site of spectacle with the question: "How many Disneyland or theme park visitors contemplate their 'nothingness'...?"⁶⁰⁵ In the artist's view, the reflections encompassed by the sculpture are supposed to elicit awareness of the small position occupied by the individual in the large social picture. Yet, this does not mean that one is released from individual responsibility since he/she is part of multiple systems in which every cluster of nodes and even every disparate connection can induce changes. Eliasson rejects the view that his works fuel the need of art institutions for installations that

⁶⁰⁵ Kapoor in Timothy J. Gilfoyle, *Millenium Park: Creating a Chicago Landmark* (Chicago: University of Chicago Press, 2006), p. 347.

provoke overwhelming experiences in order to compete with cultural industries. Although he finds it hard at times to support this argument because many of his works have achieved massive popular success, hence boosting the image of museums as democratic sites that manage to address diverse and large audiences, he contends that he actually manages to offset the commodification of aesthetic experience by creating works that call for personal reflection:

[...] when I talk about a conflict of trajectories in my work it refers to the fact that in the experience industries it is generally seen as counter productive to the commercial potential of a situation if it makes you evaluate the nature of the experience in which you are engaging *while* you are engaging in it.⁶⁰⁶

To the immersive and subjugating spectacle of commercials claiming to echo viewers' desires and needs, Eliasson counterposes visual experiences that enhance self-awareness and critical involvement. Despite the fact that Lum's works are usually indexical of specific social conditions that surpass the immediate display context, he is highly conscious of the significant function of sense experience in critically confronting individual viewers with larger social structures. Even when his works take the form of banners or occupy the site of commercial display cases as *Pi* in the Karlsplatz Westpassage, they stand for "a call for self-reflection, which is not really the logic of advertisement."⁶⁰⁷ Like Eliasson, Lum believes that art can compensate for the obliteration of self-awareness in the context of the growing mass culture.

The art practices of Kapoor, Eliasson, and Lum remind us of belonging to interconnected spaces and temporalities. Without diminishing the importance of personal reflection, these artists conceive perceptual and conceptual contexts, which encourage viewers to ponder the interpersonal construction of identity and the potential for change of seemingly immutable social and political structures. Far from perpetuating utopian views of complete individual autonomy

⁶⁰⁶ "Bright Shadows. A Conversation between Olafur Eliasson and Ina Blom," Olafur Eliasson ed. (2006, 173)

⁶⁰⁷ Lum in Robert Statinski and Frans-Josef Petersson, "Interview with Ken Lum," (September 2004). Available online at: www.whywedoit.wordpress.com/interviews on 11/15/2010.

and broad revolutionary transformations, these installations support the view so forcefully expressed by Frantz Fanon that we are at least partly responsible for “creating ourselves” and envisaging modes of infiltrating and shifting the parameters of surveillance societies.

The mirror frame both unites and divides: within its reflective realm, one feels part of affective groups joined by their differences; outside it, one becomes critically cognizant of the condition of entrapment implied in any representation isolated from the wider social environment. Since the reflective intervals proposed by *Cloud Gate*, *Take your time*, and *Pi* remain open to real-time changes, they underscore the uncertainty subsistent in any act of self-perception and self-construction as a subject, as well as in all the social networks that rely as heavily on proximate connections as on disparate ties between familiar strangers.

5.0 MIRROR PORTALS: UNPREDICTABLE REFLECTIONS ACROSS THE INTERFACE OF NEW MEDIA ENVIRONMENTS

The relation of humans to computer technology and virtual representations is a heavily disputed topic that has upset the widespread perceptions about the balance between living beings and machines believed to have been achieved during the modern era. The computer age has conjured fears of disembodiment and surrendering consciousness to machines, hence leading to an intense questioning of the salient features of humanity. Under the impact of increasingly mediated interactions with other people and severe ecological threats, humans no longer seem to occupy a stable uppermost position on the world rostrum. The binary oppositions between technology and humanity, as well as the ones between humanity and animality seem to no longer hold. One consequence is that dialectical modes of self-definition are destabilized. Katherine N. Hayles has advanced the notion that we have reached a “posthuman condition” as we have become more intimately acquainted with the primary prosthetic function of our bodies and with information processes in which we are corporeally and mentally entrenched. She persuasively argues that “in the posthuman, there are no essential differences or absolute demarcations between bodily existence and computer simulation, cybernetic mechanism and biological organism, robot teleology and human goals.”⁶⁰⁸ Even though the boundaries between these terms become

⁶⁰⁸ Katherine N. Hayles, *How We Became Posthuman: Virtual Bodies in Cybernetics, Literature and Informatics* (Chicago: Chicago University Press, 1999), p. 3.

increasingly eroded, analogies and contrasting relations between them continue to drive the discourse around human-technology interaction.

Contemporary artists have set up situations in which computers and gallery visitors are subjected to similar performative tests or become engaged in information exchanges. They have also challenged viewers to become part of immaterial networks that react in unexpected ways to human presence: they stir long forgotten instincts and feelings and they upset subject-object relations. Personal identity is increasingly established through intricate negotiations with multiple others. Mirroring processes are prevalent in new media environments to the point of ubiquity. The human-computer interface is essentially analogous to a reflective surface that distributes users' and computers' input and output. It conjoins two communicative and cognitive systems that parallel one another just as mirror images reflect the three-dimensional physical space in which they are located. It is taken for granted that there is a perfect correspondence between the stimulus and the response in human-computer interaction just as it is expected that two-dimensional reflective surfaces will provide an accurate image of objects placed in front of them. However, these relations are not perfectly seamless since they depend on a number of variables, such as the characteristics of the processing system and the interface in the case of computers, or, in the case of mirrors, the reflective qualities of the panels, which may distort the projected image. In spite of this, reflective surfaces are generally upheld as transparent mediums, and there has been a parallel tendency towards perceiving computer interfaces as virtually neutral information portals.

Artist and theorist David Rokeby has provided the most lucid analysis of new media environments in terms of reflective processes. He has drawn analogies between human-computer interaction and mirroring acts because of the feedback they imply and their potential to trigger

mental reflection on intrapersonal and interpersonal relations. Rokeby talks about the way technology can confirm or question the notion of subjectivity:

To the degree that the technology reflects ourselves back recognizably, it provides us with a self-image, a sense of self. To the degree that the technology transforms our image in the act of reflection, it provides us with a sense of relation between this self and the experienced world.⁶⁰⁹

According to Rokeby, interactive technology can fulfill both the role of expanding our self-consciousness and extending our relations to the external environment. While he admits that its similarities with mirrors are compelling, he favors the creation of feedback systems that conspicuously show that information is not only fluidly transmitted via their interface, but is also transformed through processes that resemble refraction. Rokeby stresses the incongruities that arise in interactive systems because he believes that they help users ponder the implications of their acts, the lack of neutrality of interfaces (be they visible or invisible), and the indeterminate elements that subsist even in systems based on binary codes.

The responsive environments Rokeby has been creating since the early 1980s tend to follow a refractive model of interaction, which he names “the transforming mirror”⁶¹⁰ or “the distorting mirror.”⁶¹¹ He identifies Marcel Duchamp as a foremost precursor of new media due to the use of glass as interface between viewers in *The Large Glass*. He also acknowledges the influence of John Cage upon art practices that activate viewer response.⁶¹² Many of Rokeby’s works mirror back the external stimuli produced by participants by translating them into sounds, images, or words that appear to follow a prescribed code, yet frequently fail to abide by the expected interactive pattern, thus giving vent to variations in sensorial responses or meaningful

⁶⁰⁹ David Rokeby, “Transforming Mirrors: Subjectivity and Control in Interactive Media,” Simon Penny ed., *Critical Issues in Electronic Media* (New York: State University of New York, 1995), p. 133.

⁶¹⁰ Rokeby (1995, 138)

⁶¹¹ David Rokeby, “The Construction of Experience: Interface as Content,” Clark Dodsworth Jr. ed., *Digital Illusion. Entertaining the Future with High Technology* (Reading, MA: acm Press, 1998), p. 37.

⁶¹² Rokeby (1995, 135)

associations. This mismatch between participants' input and the cybernetic system's output elicits affective experiences since it gives rise to uncertainty and prompts a shift in the flow of the interaction. In this fourth chapter, I set out to analyze how these moments of ambiguity contribute to a suspension of belief in one's habitual bodily and mental processes, as well as in the capacity of new media environments to react. It is in such instances of imperfect mirroring between action and reaction that participants start observing others or asking questions about the system's ability to comprehend their input or about its role within the broader social spectrum. I will argue that the distinctions between animality, humanity, and technology are eroded at the level of this disquieting realization that uncertainty resides in ourselves, the technological devices we interact with, and the wider cybernetic and physical networks in which they are both situated.

As discussed in the previous chapters, the incongruities that appear at the level of reflections between viewers and mirror-based works, viewers and closed-circuit video systems, or viewers and sensor-based environments, call for a re-examination of the functions we fulfill in different social structures and the potential we have to inflict change or to respond to it. They also enhance the sense of affective connectedness to others and to our shared environments. A disciple of robotic art pioneer Norman White, David Rokeby is a leading figure of this direction in art in the context of new media works. Many others, such as Myron Krueger, Luc Courchesne, Monika Fleischmann, and Wolfgang Strauss, have followed a similar trajectory by envisioning responsive environments that undermine the linearity of interactive patterns. They have revised the legacy of art and technology projects from the 1960s, which were criticized for transforming the viewer into a sort of mechanical agent who has no other role in interactive systems except for that of activating pre-programmed sounds or images.

In this chapter, I will focus on an examination of the affective impact of Christian Moeller's and Rafael-Lozano Hemmer's rhizomatic environments, which combine pre-recorded acoustic or visual signals with sounds and images from public spaces. In order to anchor my analysis of their work in the context of models of interaction with new media works, I will dedicate the first section of the chapter to an overview of David Rokeby's development of *Very Nervous System* (1986 – 1990), an invisible interface, which permits users to produce sounds almost instantaneously through the movements of their bodies. This work has been thoroughly discussed in the context of human-machine interaction and mirroring, but its participatory implications have not been linked with affective impulses and have only rarely been analyzed in terms of interpersonal spectatorship. The second section will dwell on an analysis of the unpredictable character of the relations established between participants in the context of Christian Moeller's *Audio Park* (1995) and Rafael Lozano-Hemmer's *Under Scan, Relational Architecture No. 11* (2005). These outdoor installations inscribed in public spaces responded to the corporeal presence of passers-by and stimulated them to discover the multiple concatenations between their sense experience and the space they inhabited. In the third section, I will explore how their works trigger animal and machine-like behavior in humans. I argue that Moeller and Lozano-Hemmer debunk the idea that interaction with technology and virtual projections ultimately leads to disembodiment and alienation. By using media-based architecture as a catalyst for spontaneous encounters between people, they challenge us to reflect on the posthuman condition and make us more conscious of our bodily presence in the urban fabric where spontaneous social exchanges can lead to the rewiring of the city grids.

The environments created by Rokeby, Moeller, and Lozano-Hemmer trigger both immersive and non-immersive self-reflexive processes and render casual onlookers, as well as

engaged participants, conscious of the social dimension of their sense experience. They reject the immediacy of spectacular effects through the design of media-based environments that ensure an intimate atmosphere and invite viewers to form temporary alliances with others or with acoustic or visual projections activated by bodily movements. Drawing on Deleuze and Guattari's theory of 'becoming animal,' I seek to underline the alliance formed between multiple participants in responsive installations as a result of interactions with images and sensors. The conventional narrative of new media works based on action/reaction patterns of participation is being revised as a result of a deeper understanding of hybrid posthuman identity and of the function of affective connections in undermining the perfect correspondence between the sender's actions and the receiver's computational patterns. In this context, affect could be equated with noise in the communicative paradigm, which distorts the message, without necessarily impeding its delivery. This transformation in art practices is concurrent with a return to the aesthetics and the sociability of proto-cinematic experiential spaces.

As Edward Shanken has proposed, the narrative of new media needs to be re-connected to that of mainstream art.⁶¹³ Rokeby, Moeller, and Lozano-Hemmer share their affinity for reflective environments with artists such as Dan Graham, Anish Kapoor, and Ken Lum, who are equally interested in exploring how art can act as an interface between people and can unveil aspects of our surroundings that we may take for granted. They also seek to expose the technological apparatus they utilize in order to avoid any additional mystification that could consolidate the society of the spectacle. Just as Olafur Eliasson has openly displayed the electronic or mechanical components of his installations, Rokeby, Moeller, and Lozano-Hemmer have conceived works that conspicuously expose the presence of video or sensor interfaces,

⁶¹³ Edward Shanken has convened a panel on "Contemporary Art and New Media: Towards a Hybrid Discourse," at the College Art Association conference, New York, 2011.

which are normally hidden from view. The deliberate presentation of the devices based on which responsive environments operate does not diminish participants' experience. In fact, it enhances the perplexing effect of the works and it intensifies affective connections, as participants are surprised to discover the unpredictability that subsists even in what appear to be perfectly logical technology-based systems of information.

5.1 COMPUTER INTERFACES AS UNFAITHFUL MIRRORS

Very Nervous System (1982-1991) is a responsive environment based on a computerized system that senses motion and responds to it through acoustic stimuli that follow both rhythmic patterns that are easily discernible and melodic sequences that are less predictable. It includes video cameras and image processors that detect and interpret movements in space, as well as synthesizers and a complex sound system. The acoustic stimuli are contingent upon bodily movements, but their flow cannot be anticipated easily since one can hardly become instantaneously aware of the precise connections between one's bodily movements and the sounds generated by the system. As its title implies, the responsive environment is so alert to shifts in input that one cannot catch up with its processing speed. The different speeds of information processing in the human brain and the computer, combined with the inevitable variations that appear as more data enters the system, trigger acoustic combinations that take participants by surprise.

This environment is a salient example the "transforming mirrors" model of interactivity theorized by Rokeby since it is characterized by loose rather than close correspondences between stimuli and responses. The artist maintains that while all interactive systems are based on a

reflective principle, not all of them are complex enough to account for the multiple variables that mediate the transmission of information.⁶¹⁴ Therefore, only some responsive environments will encourage participants to observe how their actions have been analyzed and potentially distorted within the cybernetic network instead of being merely transcribed from one sensorial register to another at the level of the production of different stimuli. The system compares subsequent raster images of the environment in order to establish variations in movement. It also examines the abruptness or fluidity of kinetic actions and compares them against information held about less recent interactions with the interface. The response of the environment appears to be concomitant with one's movement. As Nancy Campbell noted, *Very Nervous System* proposes "an inversion of the traditional relationship between dance and music"⁶¹⁵ because performers move to bring the sounds into being. One cannot precisely decide which qualities of one's performance engendered the pitch or rhythm of the sounds. Hence, the behavior of the technological system remains somewhat uncanny even though participants may initially think they have a good intuition of the way the feedback process works.

Rokeby persistently worked on this environment for almost a decade, laboriously investigating various interactive possibilities and experimenting with different types of acoustic stimuli and temporal sequences. The hardware and software components of *Very Nervous System* came to resemble more a mutating biological organism than a technological apparatus used as an interface for eliciting participation. It was embedded in both indoor and outdoor spaces and it gave vent to various behavioral responses. Rokeby gradually shaped its interactive behavior by modulating the variable factors that the environment took into account. He also investigated how

⁶¹⁴ Rokeby (1995, 148)

⁶¹⁵ Nancy Campbell, "The Giver of Names," *The Giver of Names*, exh. cat. (Guelph, Ontario: Macdonald Stewart Art Center, 1998), p. 10.

his own performance within its space would change as a result of an increasingly acute understanding of its workings and a growing desire to release control over his bodily impact on it.

When he publicly displayed the system at Digicon - the first International Conference on Digital Arts which took place in Vancouver in 1983 - Rokeby discovered to his dismay that the system completely failed to notice the body movements of many participants. He realized that throughout the process of experimenting with the interface, he had come to intuit the type of gestures that *Very Nervous System* would read more easily. He had been more inclined to perform this genre of movements in order to solicit a response. Consequently, the environment could not mirror other people's performances very well. Rokeby explained that the system's lack of comprehension was the outcome not only of its inherent properties, but also of the way it had been modeled by human behavior: "In my isolation, rather than developing an interface that understood movement, I had evolved *with* the interface, developing a way of moving that the interface understood."⁶¹⁶ Rokeby's limited range of movements undermined the transformative potential of the interface. As it turned out, the mirroring between the performers and the responses of the system needed to be looser so that the interactive possibilities could remain open ended. The technological system was contingent upon the diversity of stimuli engendered by the participants. One-to-one correspondences between kinetic actions and sounds undermined the complexity of the system and diminished its ability to interpret the information. By attuning their movements to the different qualities of sounds they had previously produced and creating variations upon them instead of trying to replicate the same effects, participants would enter into a more intense symbiotic relation to the responsive system. Thus, they would increase the

⁶¹⁶ Rokeby (1998, 31)

plasticity of the environment and would better intuit its responses. This genre of interaction recalls the interpersonal cognitive processes through which mothers loosely emulate their infants' gestures by introducing slight variations in the communicative exchanges in order to emphasize comprehension.⁶¹⁷

Rokeby has designed different versions of the environment, aiming to expand its complexity. He first displayed the responsive environment under the title *Very Nervous System* in the context of the exhibition “Arte, Tecnologia e Informatica” at the Venice Biennale in 1986. Installed in various locations around the exhibition, it had a highly public dimension, drawing attention to the performative actions of multiple participants. During the same year, the environment offered a framework for creative exchanges of acoustic information between Paris and Binghamton, New York, as part of a “Strategic Arts Initiative” exhibition dedicated to telematic art. Participants in each location could produce a distinct range of sounds through their movements, yet the melodic outputs would combine since they could be simultaneously heard in both places. This dialogue via simple signals, which cut across spatial distance, emphasized the contingency between events and the human need for connectivity. It was reminiscent of Allan Kaprow's *Hello* (1969) happening in which participants acknowledged each other's presence in distinct contexts via live video feedback. While the exchange of information was still somewhat sequential and controllable in the case of Kaprow's event since it implied the coordination of relations between various video channels, the telematic operations of *Very Nervous System* were more fluid and entailed a higher degree of randomness since multiple ad-hoc performers were

⁶¹⁷ As discussed in prior chapters, Daniel Stern argued that mothers do not simply imitate their infants' movements and gestures, but introduce variations in their patterns in order show comprehension and improve the infants' cognitive skills. See Stern (1985).

involved in orchestrating different sounds simultaneously and the output of their actions became immediately perceptible irrespective of the distance between participants' locations.

Reviewers of Rokeby's exhibitions have identified the interpersonal quality of interactions with the acoustic interface both in terms of the analogous relations established between the behavior of humans and the responses of the technological apparatus and in terms of the perceptual relations established between multiple participants. In her analysis of the work in the context of the 1988 SIGGRAPH Exhibition of Computer Art, Jane Veeder observed that "the exhibitionism" required by the interaction with the environment encouraged some visitors to perform, yet prevented others from taking a more active role.⁶¹⁸ *Very Nervous System* created an enhanced awareness of the social dimension of behavior instead of emphasizing a dialogic type of interaction restricted to the feedback established between individual participants and the environment. In her account of an exhibition of this work in a public park setting in Manazuru (Japan) in 1990, curator Su Ditta praised the potential of the environment to disrupt usual behavioral patterns. She commented that the carp pond area in this otherwise quiet and contemplative location turned into "a site for complex social engagement" because the responsive environment challenged visitors to "study each other's reactions" and to contribute to orchestrating diverse acoustic effects.⁶¹⁹ The complexity of sound variations enhanced in public settings where interpersonal awareness was higher and participants started to respond not only to the system, but also to the movements of other people, whose acoustic output they tried to simulate or transform.

⁶¹⁸ Jane Veeder, "Viewer into Player: Notes on the Interactive Computer Art Installations at the 1988 SIGGRAPH Exhibition of Computer Art," *Leonardo*, Vol. 23, no. 1 (1990), p. 137.

⁶¹⁹ Su Ditta, "Between Chaos and Order: The Garden and the Computer in the Work of David Rokeby," *David Rokeby*, exh. cat., (Oakville, Ontario: Oakville Galleries, 2004), p. 11

As in the case of other installations that trigger interpersonal awareness discussed in prior chapters, mirroring processes can be observed at three different levels within the framework of *Very Nervous System*. The environment prompts participants to observe how their movements are reflected by the sound system. Participants also engage in examining the behavior of others in order to see how they could mirror or replicate their movements so that they can obtain similar or different acoustic effects. Rokeby contends that the environment exposes more than just personal reactions to the system since “it is not the individual interactor who is reflected in these works so much as human behavior itself.”⁶²⁰ In addition to making observations about what they can actually perceive in the space of the installation, participants create mental pictures of the potential sounds they can generate and the correlations they can form between them. Rokeby has underscored the virtual mirroring that occurs between what is sensed acoustically and what is imagined visually. In his comments on the interactions with *Very Nervous System*, he explains that participants “find themselves imagining the feel of it [the system] against their bodies, imagining the space filled with sound particles.”⁶²¹ By visualizing a tactile encounter between themselves and the interface at a mental level, they become engaged in a quasi-synesthetic perceptual mode that expands the potential for sensing subtle differences between similar signals or movements.

The three levels of sensorial, behavioral, and imaginary mirroring outlined above are thoroughly interlinked and may be simultaneously experienced. The lack of a perfect coincidence between them, as well as the mismatches that appear between what is mentally envisioned and what actually occurs within the responsive environment, catalyzes affective

⁶²⁰ Rokeby (1995, 151)

⁶²¹ David Rokeby, “The Harmonics of Interaction,” *Musicworks 46: Sound and Movement*, Spring 1990. Available online at: <http://homepage.mac.com/davidrokeby/harm.html> on August 3, 2011.

impulses and encourages participants to connect with one another and with the interface in a more intuitive manner. On the one hand, the encounter with the work is highly specific since the individual participant sets his/her imprint on the acoustic vibrations, which heavily depend on his/her bodily coordinates; on the other hand, it is an experience that is sufficiently elusive to suggest that there are inevitable correlations between the acoustic images shaped by different people.

Rokeby has identified two main patterns of interaction with *Very Nervous System*. He points out that upon stepping into the acoustic environment, most participants are tempted to examine to what degree they can attain control over its responses to their movements. He calls this pattern the “First Test of Interactivity”⁶²² and observes that tentative gestures gradually transform into commanding actions as performers discover connections between certain movements and certain types of sounds. Yet, Rokeby explains that the moment participants conclude that they can control the cybernetic system, they are bound to feel betrayed by the acoustic interface, as it no longer seems to mirror them in the same manner it did just a couple of seconds ago:

After the third repetition, interactors decided that the system was indeed interactive, at which point they changed the way they held their body and made a gesture to the space, a sort of command: “Make that sound.” The command gesture was significantly different from the early “questioning” gestures particularly in terms of dynamics [...]. I observed a couple of people going through this cycle several times before leaving in confusion. Their body had betrayed their motivation.⁶²³

It follows that both the relation of participants to the system and their relation to their bodies stands under the sign of ambiguity. The perplexing disjunctions between cause and effect, as well as between intent and bodily expression cast doubt over the responsiveness of *Very Nervous System* and the power of subjectivity. As the mind strives to attain control, the body turns out to

⁶²² Rokeby (1998, 34)

⁶²³ Ibid. p. 35.

be unruly and to express the intent of the subject in a more forceful and sincere manner. The presumed failure of the environment to respond consistently to similar movements is not solely the result of the individual participant's distortion of gestures. The acoustic stimuli in *Very Nervous System* also depend on how the technological apparatus analyzes the data in relation to a more extensive array of movements registered within its memory. Hence, it can select an acoustic response based on the correlations between present and past movements within the environment.

Participants intensely relate to the moment when inconsistencies emerge during their interaction with the interface. This experience instills a sensation of heightened presence and corresponds to a surge in affective impulses, which disrupts the positivistic search for a causal relation between stimulus and response. Massumi associates affect with "microshocks,"⁶²⁴ which momentarily shift the balance of things and foreshadow the potential for transformation. Upon suddenly sensing that either the system has failed them or their bodies have not abided by their command, participants find themselves on the brink of transformation without being able to foresee a concrete or unique outcome. According to Massumi, these moments of uncertainty are important because they can trigger a process of questioning of assumptions and open the way to changes in self-perception, as well as changes in the perception of social, political and economic structure: "In that moment of interruptive commotion, there's a productive indecision. There's a constructive suspense. Potentials resonate and interfere, and this modulates what actually eventuates."⁶²⁵ Before consciously assessing their condition within *Very Nervous System*, participants intuit that their role in the environment is by no means strictly defined. The notion

⁶²⁴ Brian Massumi in Joel McKim, "Of Microperception and Micropolitics. An Interview with Brian Massumi," *INFLExions*, Issue 3, October 2009, p. 4. Available online at: http://www.senselab.ca/inflexions/volume_3/node_i3/massumi_en_inflexions_vol03.html on September 1, 2011.

⁶²⁵ Massumi (2009, 5)

that the system is not fully controllable gradually permeates their consciousness and thoroughly disrupts their presuppositions.

The second interactive pattern noted by Rokeby stands in dialectical opposition to the one motivated by the desire to attain control over the system by closely orchestrating one's movements to engender specific acoustic responses. The artist suggests that those who choose to spend a more extensive amount of time interacting with the environment gradually relinquish their role as conductors of an invisible orchestra and improvise more by dancing to the sounds they are producing. As they cease thinking about the effect of each and every movement, they enter into a more fluid dialogue with the system.

Rokeby points out that the relation between mind and body is put to the test in different ways in these two interactive instances. While in the first case participants give priority to intent by focusing primarily on rationalizing the interaction with the system, in the second case they allow their body to respond to it in a more flexible manner. The artist explains that this genre of interaction is characterized by spontaneity: "This approach involves opening oneself to suggestion, allowing the music of the system to speak back through one's body directly, involving a minimum mental reflection, and thus tightening the feedback loop as much as possible."⁶²⁶ Rokeby remarks that this performative mode is not free from misconceptions since the participants tend to act as if they are no longer responsible for the transformations of the sound environment. Instead, he suggests that participants should try to alternate between the above-mentioned interactive approaches.

As the relations between participants and the environment fluctuate, Rokeby challenges them to observe both the indeterminacy of their behavior and that of the system. Through his

⁶²⁶ Rokeby (1990)

practice, as well as through his theoretical writings, he has attempted to disclose mistaken beliefs about the notion of interactivity. He suggests that “interaction is about encounter rather than control”⁶²⁷ because for a new media environment to be truly interactive both the computerized system and the participants need to undergo transformations. In order to emphasize even to a larger extent this idea of mutual influence, Rokeby calls the visitors who adopt performative roles in the context of *Very Nervous System* “interactors” rather than “users,” as they are usually called in analyses of new media reception.⁶²⁸ Thus, he undermines the idea that humans are active agents whereas computerized systems can only provide predetermined responses based on a cause and effect relation.

Ideally, participants would be able to switch back and forth between the two interactive patterns outlined above, negotiating the limitations of each of them and discovering the different levels at which they can simultaneously have an impact upon the system and be affected by it. *Very Nervous System* implies more than a dualistic relationship because it regularly diverts one’s perception and conceptualization of the system towards a new range of possibilities that cannot be fully predicted or brought under control. Rokeby designed the system in such a way that it continues to offer new surprises. However, its responses depend on more than just a predetermined scheme because the network morphs as new nodes are formed between prior and current responses. Heinrich Falk maintains that the aesthetic dimension of an invisible system like Rokeby’s environment, which lacks fixed formal features and depends on human interaction, derives from its mutability: “The perception of beauty in interactive situations can therefore be

⁶²⁷ Rokeby (1998, 148)

⁶²⁸ Rokeby distinguishes between these two terms in an endnote to the essay “Transforming Mirrors” (1998, 157). I share Rokeby’s concern about the misinterpretation of this concept. In this chapter, I have strategically chosen to use the terms “participants” and “ad-hoc performers” to refer to “interactors” with responsive environments in order to blur the distinctions drawn between installation art and new media at the level of the dichotomy established between “participation” and “interaction.”

described as the experience of potentiality.”⁶²⁹ Falk discusses the possibilities intrinsic in the system and in the individual. I believe there is an additional source of aesthetic enchantment, which derives from the realization that what one experiences as he/she interacts with the system is simply a tiny facet out of the kaleidoscope of responses that the system can offer. The movements of other participants can create a different series of acoustic vibrations, which can be mentally envisioned if not directly observed on site.

The dissonances and affinities between the ways the system responds to different performers constitute another source of affective impulses. The intuition that the potential for change cannot be fully encompassed at an individual level enhances participants’ uncertainty, as well as their sense of connectivity since they are equally confounded by the complexity of the system. Art historian Söke Dinkla finds the social dimension of Rokeby’s work problematic because it can disrupt the individual participant’s reflection on his/her relation to the interface. Upon noting that it is often unclear whether the user or the interface exerts more control over the stimuli produced in responsive environments, she contends that “the suggestive power of interactive correlation is only disturbed by the fact that Rokeby [...] creates environments which allow the presence of more than one visitor.”⁶³⁰ Dinkla favors a dualistic relation between the participant and the technological apparatus because she believes that this gives exhibition visitors the chance to raise more questions about the effect of interfaces upon their perception and behavior. Yet, it is equally important that participants consider a broader range of variable factors that have an impact upon the way they affect and are affected by cybernetic systems that

⁶²⁹ Heinrich Falk, “The Aesthetics of Interactive Artifacts – Thoughts on Performative Beauty,” *DIMEA '07. Proceedings of the 2nd International Conference on Digital Interactive Media in Entertainment and Arts*, p. 63. Available online at: <http://dl.acm.org/citation.cfm?id=1306832> on August 15, 2011.

⁶³⁰ Söke Dinkla, “The History of the Interface in Interactive Art” (1994). Available online at: http://kenfeingold.com/dinkla_history.html on April 2, 2011.

are not restricted to technological components. Dualistic relations are more likely to trigger positivistic associations between human agents and machines whereas relations established between multiple participants and multiple signals emitted by computer-based interfaces tend to unveil the unpredictability of both social and technological systems, which mutually influence the behavior of information networks.

Upon noticing the imperfect correspondences between movements and sounds, ad-hoc performers realize that both themselves and the technological system act as “transforming mirrors.” *Very Nervous System* is not an autonomous device, which provides a sound interface, but is a posthuman cybernetic network. It is the outcome of the virtual synapses formed between the human nervous system and the central processing unit of the computerized system. This symbiotic relation undermines a deterministic model of interaction based on perfect correspondences between a human stimulus and a computer response. It brings to the surface the plasticity of participants’ behavior and the mutability of the acoustic system.

In his account of the development of the project, Rokeby specified that he tried to go against deeply ingrained notions about computers. He highlighted the fact that we attribute to them a set of salient characteristics that stand in sharp contrast with the main features of humanity. In a lecture for the Kwangju Biennale of 1996, Rokeby outlined the system of binary oppositions between humanity and computerized systems that he was subverting through the design of a responsive environment that thoroughly contradicted widespread assumptions concerning computers:

Because the computer is purely logical, the language of interaction should strive to be intuitive. Because the computer removes you from your body, the body should be strongly engaged. Because the computer’s activity takes place on the microscopic scale of silicon wafers, the encounter with the computer should take

place in human-scaled physical space. And because the computer is objective and disinterested, the experience should be intimate.⁶³¹

Rokeby upset conventional assumptions about binary oppositions between humanity and computers by highlighting the fact that technological devices can stage unpredictable encounters that are similar to those that happen in physical environments and actual social contexts. In *Very Nervous System*, the computerized platform of interaction often responds in a surprising manner. The feedback it provides resembles less a literal transcription of participants' movements and more a new message that constitutes an empathetic response to the kinetic signals. Moreover, the sounds produced by the electronic devices become almost tangible in one's mental pictures since they resemble the cords or keys of an instrument.

While Rokeby designed a system that emulates human behavior participants' interaction with it frequently turned out to stand for a foil of intuitive conduct. The "First Test of Interactivity" responsive pattern singled out by the artist unveiled visitors' presuppositions about computers, as well as their deterministic tendency towards interpreting events in terms of simple causal sequences between a single factor and a single effect. Interestingly, the more the environment mirrored the complex behavior of participants the less they were driven to mirror back this genre of responses during the initial stage of interaction with the system. Instead they adopted quasi-mechanical means of triggering sounds, thus acting as a foil to it by offering a counter-response to the computerized platform. Rokeby does not undermine dialectical relations between humans and computers. *Very Nervous System* shows how these components of the cybernetic system act as distorting mirrors for one another. The potential for mutual transformations expands much more when participants no longer focus on defining themselves

⁶³¹ David Rokeby, Lecture for "Info Art," Kwangju Biennale (1996). Available online at: <http://homepage.mac.com/davidrokeby/install.html> on July 3, 2011.

and the environment in terms of binary opposites and embrace the unpredictability of the soundscape they create together with computers.

Massumi associates affect with an experience that precedes the emergence of subjectivity and even individual awareness of interpersonal modes of self-definition in relation to others: “Before the subject, there’s an in-mixing, a field of budding relation too crowded and heterogeneous to call intersubjective. It’s not at a level where things have settled into categories like subject and object.”⁶³² *Very Nervous System* creates such a field of potentiality in which participants merge with the interface as if it were a prosthetic device functioning in tandem with their bodies. In this context, the opposition between humans and computers no longer represents a guiding principle for participants’ behavior. Instead of being driven to inflict changes upon the computerized system, they transform with it and conceive their relation to it not in terms of distinct parts, but in terms of a seamless connection. The cybernetic system dissolves the specificity of subjective traces. Visitors’ input is introduced into a data bank where clear-cut distinctions between the stimuli produced by different individuals blur. Acoustic responses in *Very Nervous System* are the result of loose associations between prior inputs and outputs of the network irrespective of the specific performers who catalyzed them. Via the cybernetic web of information, individual participants become intimately, yet vaguely related to invisible bodies that have populated the environment at a different time.

Affect, conceived by Massumi as an incomplete, yet intensely felt transition of the body,⁶³³ and posthumanism, defined by Hayles as a condition triggered by the “mutually constitutive interactions between the components of a system,”⁶³⁴ be they human or

⁶³² Massumi (2009, 4)

⁶³³ Massumi (2002, 86)

⁶³⁴ Hayles (2009, 11)

technological, equally highlight a merger between materiality and virtuality, self and others, individuals and cybernetic systems. Rokeby proposes a temporary suspension of these binary categories as participants abandon self-focused interactive modes directed at attaining control over *Very Nervous System*. Nonetheless, he does not support an utter dissolution of differences because he senses that they are necessary in order to prevent a state of complete bodily immersion that may result in loss of responsibility and awareness. The environment favors the emergence of ambiguous relations so that the affective suspense is prolonged and neither participants nor the computerized system can fully direct the flow of acoustic signals. In commenting upon the balance of power within Rokeby's works, new media theorist Erkki Huhtamo astutely notes that "The interactor is not an absolute master, while *Very Nervous System* cannot be said to have real '(will)power.'"⁶³⁵ He wonders whether this genre of rapprochement between the interface and the participants may "eventually lead to the tightening of the cybernetic feed-back loop – a merger, cyborg logic."⁶³⁶ Huhtamo aptly leaves this question open-ended. He realizes that Rokeby is not an advocate of leveling down of all distinctions between humans and computers. The artist does not call for a close identification between the participants and the computerized devices. They need to reflect each other imperfectly so that the cybernetic system forged between them continues to transform, unveiling new facets of their respective roles in the communicative exchanges. In talking about technology as a distorting mirror, Rokeby maintains that there is "something about the alien perspective, the profoundly alien perspective, not invested with humanity, that is interesting."⁶³⁷ For one to

⁶³⁵ Erkki Huhtamo, "Silicon Remembers Ideology, or David Rokeby's Meta-Interactive Art," *The Giver of Names* (1998, 23)

⁶³⁶ Ibid.

⁶³⁷ David Rokeby, "Interactive Installations: David Rokeby (case study)," Andrew Dwedney and Peter Ride ed., *The New Media Handbook* (London and New York: Routledge, 2006), p. 220.

become capable of reflecting upon the implications of his/her actions, there needs to remain some minimum distance between the individual and the networks to which he/she connects or is intrinsically connected.

The unpredictability of the encounter with *Very Nervous System* initiates an affective surge that shakes one's sense of self and control and creates the potential for a subsequent re-consideration of selfhood from a less ego-driven perspective. According to Rokeby, technology can fulfill the role of a "philosophical prosthesis,"⁶³⁸ which enables humans to gain a better awareness of themselves and their surroundings, be they social, physical, or virtual. Ultimately, he expects the participants to engage in mental reflection and ponder the reasons for which they are driven to respond to the interface in a certain manner or over the reasons for which the computer does not faithfully reflect their action.

During the last two decades, Rokeby has continued to create works that challenge viewers to consider how technology imperfectly mirrors their performative actions or cognitive abilities. *Giver of Names* is another project that he has developed over an extensive period of time. Started in 1990 and continuously revised up to the present day, it represents a significant counterpart of *Very Nervous System* since it highlights how humans and technological devices form and decode meaning via more or less logical associations. Participants choose one or several items from a series of objects placed on the floor and virtually invite the computer to recognize them and give them names. They are generally surprised by the correlations established within the cybernetic system between various qualities of the things set on display. The disjunctions between the concepts participants associate with the objects and the concepts the computer assigns to them bring to light the plasticity of meaning and the potentially non-

⁶³⁸ David Rokeby, "The Computer as a Prosthetic Organ of Philosophy," *dichtung digital*, 2003, Issue 3. Available online at: <http://www.brown.edu/Research/dichtung-digital/2003/issue/3/Rokeby.htm> on July 21, 2011.

linear character of associations between visual and verbal signifiers within information networks. While in *Very Nervous System*, the technological interface usually remained invisible in order to allow for more spontaneous interaction, in the context of *Giver of Names* Rokeby starts to fully display the computerized system conducting the information processing operations. By disclosing its materiality, he emphasizes its lack of neutrality, which is also observable at the level of the names assigned to the objects.

Building upon similar ambiguous relations between stimuli and responses, *Silicon Remembers Carbon* (1993-2000) and *n-Chant* (2001) reveal the inconsistencies that emerge in all cybernetic systems as a result of the noise that interferes with one-to-one correspondences. In these works, Rokeby has underscored the social dimension of interactions to a greater extent. The unpredictability of responsive environments enhances, as the sphere of potential exchanges is no longer limited to the feedback-loop between an individual participant and a computer device. In *Silicon Remembers Carbon*, the artist projected pre-recorded and live images onto a bed of sand. Gallery visitors' shadows and silhouettes intermix with video images in a fluid manner. This beckons them to question their reality. Participants find it difficult to distinguish between their own bodily traces and those of others who are simultaneously present within the same environment or who have previously visited it.

Similarly, *n-Chant* plunges gallery visitors in a confounding cybernetic system where the original source and meaning of messages is rapidly obliterated. A colony of seven computers exchange information in a quasi-ritualistic manner repeating words in unison until visitors interfere with their chant. Upon pronouncing words into microphones placed in front of monitor screens, participants disrupt the information flow. The computers rapidly pick up the uttered words and transform them through new verbal associations almost as in a Chinese whispers

game. The more visitors interact with the system at the same time, the more chaotic the computers' acoustic responses become. Rokeby's installation showcases the proliferation of dissent within a cybernetic environment. Transformation appears to be contingent upon imperfect mirroring acts, which completely change the flow and content of messages, as well as the dynamics of social relations.

As will be shown in the following sections of this chapter, other new media artists have embraced a similar interest in designing interactive systems that subvert participants' expectations and draw analogies between the unpredictability of social systems and the non-linearity of computer systems. Pondering over human desire to retain control over technology, Rokeby has asserted that "sometimes control is not what you want, sometimes you want something that is like control but has a bit of a curve to it – something that reflects some of the complex, unexpected, surprising responses of things in the real world."⁶³⁹ His new media environments unveil the increased propensity for transformation, interpersonal exchanges, and reflection in unpredictable contexts, where one is taken outside of his/her familiar territory and frantically teeters between self-assertion and loose identification with others.

5.2 THE POETICS OF INTERACTION WITH OPEN-ENDED SYSTEMS IN PUBLIC SPACE

Like David Rokeby, new media artists Christian Moeller and Rafael Lozano-Hemmer create rhizomatic environments in which spectators acquire a better sense of the spatial and temporal

⁶³⁹ David Rokeby in Catherine Richards, Nell Tenhaaf, *Virtual Seminar on the Bioapparatus* (Banff, Alta: The Banff Center for the Arts, 1991), p. 89.

coordinates of their bodies through interactions with digital projections and sensors, as well as through affective connections with co-participants in the experiential field. Viewers have to intuitively learn the rules of half-real, half-virtual perceptual games and come to terms with the fact that they have no overall control over the operations or effects of open-ended systems. Facing an unpredictable situation in public space, they become more aware of the spontaneity of lived experience and actively negotiate between multiple sensorial stimuli and bodily responses. Both Moeller and Lozano-Hemmer encourage participants to question passive attitudes and long-standing habits. From this point of view, the two artists' projects resemble the practices of Situationists. They create disruptive situations that upset the ordinary balance of things in a particular setting and push passers-by out of their habitual comfort zone. Their environments also manage to convey a feeling of togetherness since multiple participants confront themselves with similar disorienting experiences.

In the remaining two sections of this chapter, I will focus on an analysis of Moeller's *Audio Park* (1995) and Lozano-Hemmer's *Under Scan, Relational Architecture No. 11* (2005), two outdoor installations that respond to the corporeal presence of passers-by and stimulate them to discover the multiple correlations between their sense experience and the spaces they inhabit. In this section, I will analyze the lack of perfect correspondences between the input of the participants and the output of visual or acoustic systems. I will argue that in spite of the quite overt surveillance implications of both works and the public character of the venues in which they are displayed they create an intimate atmosphere in which people experience a strange familiarity with each other and the sensorial stimuli emitted by the responsive environments. In the second section, I will compare the engaged modes of spectatorship catalyzed by *Audio Park*

and *Under Scan* with protocinematic experiences and with participatory responses to early avant-garde films.

While Moeller is an architect turned artist since he abandoned working on the design of large-scale architectural structures in order to create smaller-scale media environments that stimulate greater social interaction, it could be said that Lozano-Hemmer is an artist turned architect since he employs robotic equipment and powerful projectors to create spaces that elicit communication and playful engagement. Like Rokeby, both artists have chosen to insert their works within outdoor public spaces where passers-by have no reason to abide by the norms of museum visiting experience. In 1994, Lozano-Hemmer started a series of works under the title *Relational Architecture*, a term which designates environments that disrupt and enliven the relatively fixed boundaries of buildings or public squares by triggering human interaction with their structures. Similarly to Lozano-Hemmer, Moeller believes that electronic media can destabilize the rigid coordinates of architecture and can play a significant role in the staging of events that challenge habitual social practices. He generally discusses his works within the framework of media architecture and emphasizes the way in which technology helps us better realize our sensorial abilities.

Both Moeller and Lozano-Hemmer work in partnership with programmers, mechanical engineers, and light designers to produce their media-based environments. As it was noted in the first chapter in the context of art and technology projects from the 1960s, the more collaborative the process of art production is, the more likely art producers are to envision complex and interactive forms of reception. The two artists share an interest in developing intimate environments that stimulate performative modes of participation. Conscious of the intimidating effect that imposing architectural structures may have, they design works that are well adapted to

human scale. Moeller and Lozano-Hemmer take into account multiple factors that might impede convivial interactions in public settings. Participants in their projects need to feel completely at ease in order to forget about social inhibitions and perform spontaneous roles. Moeller and Lozano-Hemmer share with Rokeby an interest in the element of surprise. Most of their works are installed only for a limited period of time so that they can engender spontaneous responses. They avoid prescribing rules of interaction because they want viewers to intuitively discover the way the installations function, as well as possibly become better aware of their complexity by observing the diverse acoustic responses triggered by other participants.

Moeller and Lozano-Hemmer frame spaces of encounter between people. They do not colonize public areas, but subtly insert their works within a pre-established context. Neither of them seeks to construct overwhelming structures or produce spectacular effects. Relying on technology, they enact an ambience in which people can spontaneously react to visual or acoustic stimuli and interact with other passers-by. Most interpersonal relations triggered by their installations may indeed be merely temporary, but they speak to the contemporary condition in which many of us rely more and more on palliative bonds with avatars or strangers in the virtual domain than on next of kin relationships. In their works, public squares and parks become sensitive membranes that respond to people's movements and connect them to each other in unexpected ways, contributing to the erosion of boundaries between imagined and lived spaces. The temporary display of these responsive environments in public spaces enhances their affective power. They propose a blatantly fleeting experience, which can only be retrieved from memory at a later point in time. Unlike public sculptures such as Anish Kapoor's *Cloud Gate*, which are expected to make a long-lasting mark upon an urban area, they are presented and perceived more like temporary events. Participants' encounter with them enhances their

familiarity with the site where the work is exhibited. It also inspires an increased connectivity between people who move through these areas on a regular basis.

Audio Park was commissioned by V2, Institute for Unstable Media, for the Museum Park in Rotterdam, a quite deserted site in spite of its proximity to art institutions. Moeller's project was meant to revitalize this area by turning it into a convivial place of interaction. The artist designed a wooden platform of 262 x 262 feet in which he embedded light sensors. Tall towers located around the stage-like setting cast light beams and projected sound waves, thus producing a quasi-mystical atmosphere. The light sensors were located asymmetrically, yet their presence was clearly signaled out by green planks and arrows. When objects or bodies interfered with the flux of light projecting across the sensors the ambient sound got distorted. The acoustic environment had an otherworldly character. Sometimes it sounded like the interior of a void hall echoing the acoustic effect of the slightest footsteps, other times it sounded like a pulse or like a screeching noise produced by machines. Whether organic or mechanical, syncopated or prolonged, the sounds maintained an alien character due to the recurrent alternations and the overall dissonance. The operation of sensors depended on multiple factors such as the pressure applied by participants to the floor area or the speed of their movements. While all sounds appeared to be different, they intertwined with a less variable acoustic wave that altered their rhythm and was part of an electronic acoustic environment composed by German musician Pete Namlook (whose real name is Peter Kuhlmann). They also intermixed with randomly selected radio broadcasts. Hence, the sound effects did not depend solely on how people interacted with the light sensors. No individual or collective group could hold complete control over the acoustic signals.

Rokeby's *Very Nervous System* and Moeller's *Audio Park* are based on very similar interactive patterns in the sense that they both entail similar operational principles and act as refractive mirrors for the participants' input. Nonetheless, there are also significant differences between them. While Rokeby maintains the invisibility of the responsive interface in his early environments, Moeller signals its presence in a conspicuous manner by marking the location of the sensors. From this point of view, interaction with *Audio Park* is less intuitive than that with *Very Nervous System*. Moreover, the feedback loop between the input and the output of the system is less immediate in the case of Moeller's environment. Hence, participants have a sharper sense of control over the system even though the relation between the viewers' movements and the activated sounds is not purely deterministic. Both *Very Nervous System* and *Audio Park* function as open-ended systems. However, Moeller's environment is more analogous to a database given the fact that audio signals are incorporated from pre-recorded acoustic sounds and live radio broadcasts whereas Rokeby's environment is the equivalent of a cognitive system whose responses depend on the data previously incorporated within its memory as a result of participants' kinetic interaction. Nonetheless, both systems cultivate unpredictability and undermine the expectations of participants by enabling them to activate highly variable sounds.

Likewise, Lozano-Hemmer's *Under Scan* eschews manipulation and encourages lively participation. Its mechanisms of response are not immediately revealed. Lozano-Hemmer has often reflected on the need for subverting the feeling of control over technology since he senses that our more intuitive connection to it enhances our self-awareness. In an interview for *The New Media Handbook*, he affirms:

I'm interested in setting up a platform that can still get out of control. It is very important that in a public space no one will tell you how to act, and with media art including my own you are often given instructions. [...] This is something I have tried to avoid.⁶⁴⁰

In *Under Scan*, video portraits of hundreds of local people were projected onto the pavement of a public square. Like Moeller, Lozano-Hemmer used light variations to activate the environment. A series of robotic projectors and servers mounted on scaffolding were arranged around the installation site. Powerful light beams were cast against the square pavement to conceal the video projections. As people walked through the square, their movements were tracked by a computer system that anticipated the direction they intended to take. Subsequently, light beams followed the person and triggered the projection of his/her shadow on the ground. At this stage, the portrait of a performer came alive in the shaded pavement area. The ghostly figure animated by the shadows appeared to try to communicate with the passers-by. The individuals in these portraits kept on moving and gesticulating as long as people maintained their shadow over the video projection. Some of them blew kisses, winked, or enthusiastically opened their arms, whereas others adopted more threatening poses, seemingly seeking liberation from their spaces of confinement. Every seven minutes, the lights switched off and a flickering electronic grid appeared on the pavement. Its geometrical patterns constantly shifted in relation to the position of spectators. This interval brought to a halt the performance of the people in the portraits. The grid-like structure blatantly disclosed the infrastructure of the installation and its surveillance implications.

Under Scan was commissioned by the East Midlands Development Agency, which was interested in Lozano-Hemmer's idea of using technological means in order to form connections between people in the region. The project traveled to five cities: Derby, Leicester, Lincoln,

⁶⁴⁰ Rafael Lozano-Hemmer in Dwedney and Ride eds. (2006, 201)

Northampton, and Nottingham.⁶⁴¹ The installation was displayed in public squares, usually located near cultural districts. In each place, the environment was set up for a period of only ten days in each location. The projected portraits did not migrate from one city to another as the hardware components of the installation did. Lozano-Hemmer asked local filmmakers to shoot videos of people from every location where the installation traveled so that the environment encompassed portraits of individuals who belonged to the urban fabric in which their pictures were to be inserted.

In their projects, Moeller and Lozano have repeatedly explored individual and collective relations to shadows. Multiple new media artists, including David Rokeby, have used these virtual prosthetic devices indelibly connected to our bodies to highlight the way our corporeal presence is intimately connected to our surroundings and has the potential to shape them. Artists who design responsive environments, which function based on shadow projections, encourage both playful interactions and poetic reflections on the notion of the human body as interface. Shadows are similar to masks because they both reveal and conceal individuality. The illusory, yet comforting sensation they convey that individuals can maintain a certain degree of anonymity represents one of the main reasons for which artists employ shadows as catalysts for interactions. Moeller worked with this concept in 1997 when he designed *Camera Music/Kinetic Shadows* at the Spiral Gallery/Wacol Art Center in Tokyo. The real-time movements of visitors were captured by a camera and then projected as a series of interconnected spikes onto a screen. The spikes stood for kinetic markers of the human body. Not only did the abstracted forms act

⁶⁴¹ In addition to this series of exhibitions in urban spaces, *Under Scan* was exhibited in the Mexican Pavilion at the 52nd Venice Biennale in 2007. It was also re-created for Trafalgar Square, London in 2008. A set of 200 portraits were filmed at Tate Modern for this purpose.

similarly to shadows, but they also resembled musical notes since they activated sound patterns depending on people's position in relation to the projection screen.

Lozano-Hemmer has persistently studied the effect of shadow projections upon viewers' behavior in his *Relational Architecture* series. In 1997, he designed *Re: Positioning Fear, Relational Architecture No. 3* (1997), an installation meant to stir discussions about the devastating effects of terror upon the human psyche. The text of on-line conversations between artists on the topic of fear was projected onto the surface of a former military arsenal building in Graz. Bleached out by intense light, the messages could only be read when participants' magnified shadows were projected against the walls. Acknowledging the influence of Murnau's silent movies, Lozano-Hemmer claimed that this environment was meant not only to trigger reflections upon the consequences of terror, but also to inspire a bodily and psychological sensation of fear. He was surprised to discover that the installation didn't have the effect he foresaw. Instead of creating a repressive atmosphere, it provoked dynamic interactions because participants adopted performative roles to uncover the text. In an interview with Jose Luis Barrios, Lozano-Hemmer recalls, with pleasure, that: "The installation was converted into an ad hoc carnival and nobody thought for one minute about fears, plagues or invasions. This was one of the most entertaining errors of my career."⁶⁴² This so-called "error" inspired the creation of subsequent installations based on the interplay between video and shadow projections, such as *Body Movies, Relational Architecture No. 6* (2001) and *Frequency and Volume, Relational Architecture No. 9* (2003). Although the desire to contemplate one's shadow, together with the desire to relate to one's mirror image, is taken to be one of the most human-like inclinations, it

⁶⁴² Rafael Lozano Hemmer in conversation with José Luis Barrios, "Reflections around Loose Ends," *Some Things Happen More Often Than All of the Time* (Madrid: Turner, 2007) p. 145.

also stirs animal-like behavior by stimulating more instinctual reactions under the seemingly protective guise of virtual anonymity.

For *Audio Park*, Moeller created a stage-like setting in order to demarcate a location that provides a sense of security. Being seen may be an intimidating experience, but it can also be a reassuring experience in places where one feels unsafe. In his description of the project in *A Time and Place*, Moeller explains that the Museum Park in Rotterdam was generally avoided by passers-by due to drug-related crimes.⁶⁴³ The utopia of harmonious public spaces has often been shattered by the realization that it is not enough to configure an environment so that that it fulfills a prescribed set of social functions. Ultimately, an environment is never simply the result of architectural design, but depends on the way people relate to it or on the way they interact with each other within its framework. At the time when the installation was conceived, the Museum Park in Rotterdam was not so much a destination for tourists or a space of retreat for a specific local community. Instead it was a space of transition just as the underground passageway where Ken Lum's *Pi* installation is located in Vienna. Moeller's *Audio Park* encouraged people to congregate in this area even during evenings by setting the scene for an event in which passers-by became the main actors.

The tower-like scaffolding surrounded by green net panels produced sounds even when people were not around. Once people stepped on the sensors embedded in the floor, they triggered diverse acoustic responses, transforming the environment into an instrument with changing tonalities. Moeller eschewed a primarily visual spectacle. Sound elements took the place of iconic spatial coordinates, yet they did not constitute a fixed acoustic topography since they combined with audio snippets from changing live radio broadcasts. Moeller's installation

⁶⁴³ Christian Moeller, *A Time and Place. Media Architecture* (1991-2003). (Baden: Lars Müller Publishers, 2004) p. 89.

showed that space is not an abstract entity with fixed boundaries, but a social product. It calls to mind Henri Lefebvre's notion that space is not the result of an alignment of perfectly contiguous puzzle pieces, but the outcome of both convergent and divergent social relations. In *The Production of Space*, the sociologist remarks that there is no perfect parallelism between mental spaces, real spaces, and social spaces.⁶⁴⁴ Moeller's audioscape perfectly reflected these incongruities. The sounds produced by people's movements through interactions with it were never fully harmonious. From this perspective, Moeller's *Audio Park* corresponds to the interactive model of "transforming mirrors"⁶⁴⁵ theorized by Rokeby. Even when groups of participants sought to create a certain rhythm within this setting, dissonances did not disappear from the system because they did not have complete control over the type of sounds emitted. As Lefebvre argues, "social space implies actual or potential assembly at a single point, or around that point,"⁶⁴⁶ but it does not necessarily entail a consensus or a firmly prescribed set of rules. Moeller's *Audio Park* is an acoustic space that undergoes unexpected sound modulations and is shaped by more or less choreographed interactions. The artist does not orchestrate a spectacular event, but simply provides the tools for passers-by to enact self-directed happenings.

Although Lozano-Hemmer's *Under Scan* was directly linked to urban redevelopment projects since it was funded by a British regional agency, it did not entail strictly defined social goals. While it highlighted regional connectivity it did not transform local participation into a mere subsidiary to cultural policy objectives. Just like a virtual chat room, *Under Scan* facilitated chance encounters with people one might have never met. It was also instrumental in creating connections between familiar strangers who may have frequently crossed paths in the same

⁶⁴⁴ Lefebvre (1991, 6)

⁶⁴⁵ Rokeby (1995, 138)

⁶⁴⁶ Lefebvre (1991, 101)

public areas without interacting with each other. The installation attracted similar responses in the five urban areas in which it was integrated. In some cases, the installation framed a space that did not have a coherent geometrical shape; in others it followed the spatial configuration of a public square. For example, in Lincoln, the projectors were arranged in a circle around the stone pavement of the square. Judging by the videos recordings of people interacting with the installations in various venues,⁶⁴⁷ one can conclude that the installation of *Under Scan* in Lincoln triggered the most convivial forms of participation. The round shape of the light projection may have heightened participants' sense of dwelling. Circular spaces possibly inspire more dynamic engagement because they are reminiscent of the primeval space of the hearth around which people used to gather. They allow people to observe each other better, hence making them feel more protected. Nonetheless, they also subject participants to an increased state of active supervision and a higher degree of behavioral control.

Both Moeller and Lozano-Hemmer's projects encouraged reflections upon surveillance in public spaces. In *Audio Park*, the towers projecting light and sound gave participants the impression that the space was closely guarded. The correlations between responsive environments and a state of increased surveillance were even more obvious Lozano-Hemmer's *Under Scan* because the movements of people were actually tracked by a live camera and could be watched on a small monitor located in the vicinity of the installation area. In these images, participants were viewed from above; they appeared as minuscule beings moving in a video game environment. Lozano-Hemmer openly unveiled the surveillance implications of the technology used for the installation. By showing how it operates, he risked forfeiting a more intuitive relation to the system. His choice was probably motivated by his desire to alleviate fears

⁶⁴⁷ Video recordings are available online at: http://www.lozano-hemmer.com/under_scan.php

of hidden authoritative control and supervision. Some of the interviewed participants found it disappointing that their own image was not recorded and projected in the square.⁶⁴⁸ Such expectations parallel those of respondents to a survey concerning Millennium Park in Chicago, who expressed their disappointment with Anish Kapoor's *Cloud Gate* because it did not entail more interactive features.⁶⁴⁹ Lozano-Hemmer may have purposefully avoided to include live projections of on-site participants in *Under Scan* because he was intent on subverting the power of surveillance by transforming it from a mechanism that imposes limitations upon people's behavior in public to a playful tool for portraying people's desire to enter into dialogue with others. In an essay focused on the concept of *Under Scan*, the artist wondered: "What would happen if every single camera in public space became a projector? What if instead of taking images of us, and assume we are suspicious, the tracking system offered us images?"⁶⁵⁰ The effect of *Under Scan* can be convivial only as long as the portrayed figures that suddenly intrude into the shadow space of passers-by pertain to a quasi-fictional domain. Implications of social control were partly subdued because the projections were ultimately performative self-portraits of people who volunteered to stage a performance in front of a static camera for this piece.

In spite of the fact that most people are deeply aware of the vigilant eyes of cameras surveying contemporary public spaces, they continue to experience a sensation of exhilaration at the thought that they can somehow get lost in the crowd. This idea is comforting as long as one imagines that all individuals are actually undergoing an equally alienating, yet immersive, experience as they move in pack-like groups from one destination to another. Moeller and Lozano-Hemmer's environments convey a compelling impression that one shares with other

⁶⁴⁸ See Nadja Mounajjed, "Interviews with the Public," Rafael Lozano-Hemmer and David Hill eds., *Under Scan* (Montreal: Antimodular Research, 2007) p. 97.

⁶⁴⁹ Conard (2008, 158)

⁶⁵⁰ Rafael Lozano-Hemmer, "*Under Scan* Concept," Lozano-Hemmer and Hill eds., (2007, 11)

passers-by more than just the same public space. In *Audio Park*, participants became part of a virtual community of ad-hoc actors that activated the sensors in response to the sounds produced by others without necessarily communicating with them verbally or being located in their immediate proximity. Some sensors were positioned close together and enabled group interaction whereas others were more isolated, being placed at a distance from other sensor clusters. By the same token, video projections in *Under Scan* were spaced out. Hence, passers-by tended to approach someone else's shadow in order to observe a performative portrait.

In this way, *Audio Park* and *Under Scan* replicated the looseness and the unpredictability of relations between perfect strangers in public spaces. Since Moeller and Lozano-Hemmer avoid using excessive visual and audio stimuli they successfully manage to enact new media environments characterized by an intimate atmosphere, which enables people to approach others and freely interact with responsive components of the installations. Such works stimulate a feeling of what Mark Seltzer calls "stranger-intimacy" that is "bound up not merely with the conditions of urban proximity in anonymity but also with its counterpart: the emergence of intimacy in public."⁶⁵¹ Some of the people in the portraits took off their clothes or adopted sensuous poses, knowingly staging intimate encounters with the imagined passers-by that would stop by them. As shadows needed to overlap video projections in order to activate them, a virtually palpable connection was established between the bodily representations of the performers and those of the viewers. In a report on participants' responses to *Under Scan*, Nadja Mounajjed noted: "many users confirmed that the installation has changed their perception of the site; for those people, the space became 'friendlier,' 'livelier,' more intimate and inviting."⁶⁵²

⁶⁵¹ Mark Seltzer, "The Serial Killer as a Type of Person," Ken Gelder ed., *The Horror Reader* (London: Routledge, 2000), p. 100.

⁶⁵² Mounajjed in Lozano-Hemmer and Hill eds. (2007, 92)

Audio Park also invited participants to cross the boundary between the public and the private sphere and leave behind deeply rooted social restraints. Many people lay down or sat near the light sensors, touching them with their hands or feet. In both installations, technological interfaces acquired tactile qualities. They responded to external stimuli and mediated the encounters between people. Moeller was surprised by the intimate mood aroused by the sound and light environment. Trying to explain what drew people near the stage, he states: “I believe that the wooden deck, lit by the bright lights created a color temperature similar to familiar ambience of our family living rooms in the evening.”⁶⁵³ Interestingly, Moeller attributes the affective impact of the installation not only to participants’ interaction with the sensors, but also to the subtle visual and haptic effects the environment stimulated.

Audio Park and *Under Scan* constituted familiar spaces that held the promise of face-to-face encounters with others. This notion of places where social boundaries and normative behavioral codes are suspended subsists in the consciousness and the unconscious of many people, especially at a time when we have grown increasingly distant from each other. In *The Poetics of Space*, Bachelard maintains that adults grow increasingly accustomed to mundane living situations and that this habituation prevents them from gaining access to the affective dimension of reality.⁶⁵⁴ *Audio Park* and *Under Scan* probably reminded people of long forgotten convivial places and childhood games. Their ambience was somewhat reminiscent of Bachelard’s nostalgic description of images of intimate shelters recurrent in poetry: “By means of the light in that far-off house, the house sees, keeps vigil, vigilantly waits. When I let myself drift into the intoxication of inverting dreams and reality, that faraway house with its light

⁶⁵³ Moeller (2004, 89)

⁶⁵⁴ Bachelard (1994, 16)

becomes for me, before me, a house that is looking out.”⁶⁵⁵ Just as the stage in *Audio Park* became a refuge where one could regain a lost sense of intimacy, the public spaces in which *Under Scan* was installed beckoned viewers to find a path that led beyond the brightly lit pavement and guided them to an encounter with themselves, their shadow, and an imaginary mirror image of their subconscious impulses.

Moeller and Lozano-Hemmer’s projects enabled participants to reflect upon the alienation that is frequently experienced in urban contexts. Both artists aim to disrupt the usual trajectories of passers-by in search for shortcuts to their destination. Their installations call attention to the fact that we frequently miss out on significant details in our environment. We contribute to our own isolation since we tend to behave more and more as machines that minimize the effort and time required for reaching a certain place. Technology has been frequently vilified as the ultimate cause for the decline in social interaction, but it can in fact contribute to a re-discovery of connectivity to both place and people. Moeller and Lozano-Hemmer’s projects reveal our blindness to our bodily movements and our surroundings. By showing that motion has direct effects upon the way we perceive things and interact with people, the artists point out that we can truly inhabit a place when we linger in it for a sufficient amount of time or when it becomes a site for intimate encounters with others. In an interview with Alex Adriaansens and Joke Brouwer, Lozano-Hemmer contends: “ ‘Placelessness’ and ‘multiplace’ are terms concerning the conditions of the artwork, but also of ourselves, and of architecture. (...) Locality, like identity, is a performance.”⁶⁵⁶ Some passers-by turned into performers in the stage-like space framed by *Under Scan* since most of them dynamically reacted to the behavior of the

⁶⁵⁵ Ibid. (1994, 34)

⁶⁵⁶ Alex Adriaansens and Joke Brouwer in conversation with Lozano-Hemmer, “Alien Relationships from Public Space,” *Trans-Urbanism* (Rotterdam: V2_Publishing/NAI Publishers, 2002), p. 157

people in the portraits. Similarly, participants in *Audio Park* inadvertently turned into musical composers by improvising different acoustic effects through their movements. In order to enact convivial environments, Moeller and Lozano-Hemmer seemingly effaced the material contours of public spaces while heightening participants' awareness of physical presence. Lozano-Hemmer turned the flat surface of the public square pavement into a see-through portal that provided access to another realm populated by isolated individual performers. Moeller expanded park visitors' consciousness of their surroundings by enabling them to introduce variations in a complex acoustic environment. The non-Euclidian geometry of these multi-dimensional installations spurred inventive modes of interaction that testified to the congruous relations between real and virtual spaces. Moreover, they indicated that a sense of location and bodily connectivity is not restricted only to tangible environments. As Lozano-Hemmer observed in an interview with new media theorist Geert Lovink: "relational architecture tends to dematerialize the 'environment,'"⁶⁵⁷ not the body.

Despite the fact that they rely on recent technology, both environments catalyzed primeval experiences that closely resembled protocinematic experiments or intuitive modes of charting the boundaries of one's environment in order to discover new creative possibilities. The presence of technological components was visible, yet unobtrusive; the affective impact the works elicited was intense, yet not necessarily immediately observable since emotional states are not necessarily externalized. *Audio Park* and *Under Scan* showcased the complexity of the perceptual field. They played havoc with the smooth correlations between bodily movements and perceptual acts in order to underline their deep interconnections, as well as their disjunctions.

⁶⁵⁷ Lozano-Hemmer in Geert Lovink, "Real and Virtual Light of Relational Architecture – an interview with Rafael-Lozano Hemmer," *Uncanny Networks – Dialogues with the Virtual Intelligentsia* (Cambridge, Mass.: MIT Press, 2002), p. 307

Consequently, passers-by no longer took for granted the unity of sense experience. They became aware of the process through which they synthesized various sensorial stimuli and spontaneously reacted to otherworldly encounters with video and sound projections. In *Techniques of the Observer*, Jonathan Crary explains that modern spectators were far from passive subjects of spectacle. He points out that they were involved not only in the viewing of moving images, but also in their actual production by manipulating such protocinematic instruments as the phenakistiscopes and zootropes.⁶⁵⁸

Moeller and Lozano-Hemmer's works recall these earlier genres of aesthetic experience that required the viewer to become actively engaged in the production of sensorial stimuli. Their environments give participants a chance to re-discover what it feels like to create sounds or set images in motion by means of one's own kinetic involvement. In the case of *Audio Park*, it can be argued that the experience was more theatrical than cinematic since participants turned into ad-hoc musical performers on a stage. However, the installation partook of both spectatorial modes. The deck in *Audio Park* resembled a screen against which people pressed their bodies to activate sounds by interacting with light sensors. As if by magic, acoustic representation substituted visual representation. When lights were dimmed, sounds emerged more powerfully.

Under Scan more directly illustrated the tendency towards rekindling the public's fascination for early protocinematic experiments. Shadows turned from an object of perception and representation into an interface for the video portraits. This type of experience contrasts with the cinematic one described by Christian Metz in *The Imaginary Signifier*. According to the film theorist, cinematic projections both resemble and differ from mirrors in significant ways. While they trigger self-reflective processes by encouraging viewers to identify with the characters that

⁶⁵⁸ Jonathan Crary, *Techniques of the Observer. On Vision and Modernity in the Nineteenth Century* (Cambridge, Mass.: MIT Press, 1990), pp. 129-133.

appear on the screen, they also undermine this parallelism established between the subjects and the objects of perception because audience members cannot see themselves seeing while watching the movie.⁶⁵⁹ Thus, they become somewhat oblivious of their bodily presence. It is precisely this state of self-forgetfulness that Moeller and Lozano-Hemmer seek to supersede by creating responsive environments in which visual or acoustic representations become possible only as a result of viewers' active bodily engagement.

Neither in *Audio Park* nor in *Under Scan* did images and sounds form a unitary whole. The virtual segmentation of the sensorial stimuli in the context of the two environments impeded a completely immersive experience and contributed to the intimate atmosphere the two works conveyed. Participants in the environments blurred the distinctions between the visual or acoustic signals they triggered and their broader surroundings. They paid attention to changes that simultaneously occurred in the real and virtual spaces they inhabited.

In addition to their correlations with protocinematic experiments, Moeller and Lozano-Hemmer's environments recall modes of cinematic spectatorship from the 1920s and film experiments from the 1960s. The performative and social dimension of the participatory experience in the two environments is somewhat reminiscent of Dada cinema. Thomas Elsaesses holds that the Dadaist films do not stand out from other experimental movies of the same period thanks to their distinctive formal characteristics, but thanks to the uninhibited reactions of spectators and their awareness of the social dimension of the viewing experience. He forcefully argues that a "certain physicality and body-presence of the first cinema audiences is what might be called the Dada element in film."⁶⁶⁰ He opposes this spectatorial mode to the immersive one

⁶⁵⁹ Metz (1977, 45)

⁶⁶⁰ Thomas Elsaesses, "Dada/Cinema," Rudolf E. Kuenzali ed., *Dada and Surrealist Film* (New York: Willis Locker and Owens, 1987), p. 18.

characteristic of Surrealist movies that encourage the identification of the viewer with the object of perception. Moeller and Lozano-Hemmer stimulated both forms of spectatorship. Some passers-by turned to aggressive behavior towards the portraits projected in *Under Scan*. They purposefully stamped on images of people's heads or on their limbs when they realized that they appeared to refuse to respond to their commands. These spectators chose to react violently in order to stir interaction. Their behavior could also be motivated by their disappointment with the fact that cyberspace rules of interaction did not seem to apply in this case. Even the way in which the encounter between spectators and portraits was staged implied some level of subliminal aggression since it presupposed the invasion of the bodily space of both performers and witnesses as the projections of their body images overlapped. Participants in *Audio Park* also engaged in brutal actions as they tried to exert as much pressure upon the light sensors as possible. Yet, their behavior appeared less vicious since they interacted with sensors rather than with anthropomorphic representations catalyzed by their shadows.

In addition to challenging these aggressive reactions reminiscent of responses to Dada events, *Audio Park* and *Under Scan* also elicited more immersive forms of spectatorship closely associated with Surrealist films. Moeller and Lozano-Hemmer share Surrealists' fascination with the merger of reality and dream-like realms.⁶⁶¹ Spectatorial responses to *Under Scan* alternated between an objectification of the performing subjects in the video portraits and an intimate identification with them. Similarly, people walking on the deck of *Audio Park* could choose

⁶⁶¹ In an article dwelling on multiple correlations between Surrealism and new media art, Marsha Kinder states that "dreams are the ultimate model of interactive database narrative." Moeller and Lozano-Hemmer's installations are also inspired by such a model. *Audio Park* includes segments from live radio broadcast and *Under Scan* is partly based on a video database of portraits created specifically for the purpose of this project. See Marsha Kinder, "Hot Spots, Avatars, and Narrative Fields Forever: Bunuel's Legacy for New Digital Media and Interactive Database Narrative," *Film Quarterly*, Volume 55, issue 4, Summer 2002. Retrieved from www.filmquarterly.org/issue_5504_right.html on 04/04/09.

between various interactive modalities. Some of them moved across the sensors whereas other sat down next to them, occasionally touching them in a gentle or harsh manner.

Another aspect that links the two installations to Dada and Surrealism is their unpredictability. Passers-by who came across *Under Scan* did not know whether they would encounter the portrait of a friendly or hostile person in their shadow. Likewise, ad-hoc performers in *Audio Space* did not know whether the sounds they planned to trigger through their movements would harmoniously intertwine with the ones activated by others. In the contemporary period, the illusion of pure chance and completely endless possibilities is shattered. Lozano-Hemmer suggests that not even computers can produce purely random operations as “mathematics show that uncertainty is inseparable from the system being observed.”⁶⁶² Moeller also seems to be skeptical of utterly arbitrary effects as he combines the sounds excerpts from radio broadcasts with the ambient sound composed by Peter Namlook.

The re-consideration of experiments with prototypical images or sounds, as well as contemporary artists’ increased fascination with unpredictable processes, emerges at a time when our faith in the visual sense and in the power of reason is increasingly put to the test. In Ridley Scott’s *Bladerunner*, humans fail to identify replicants that perfectly mimic the gestures and reactions of humans. The five senses are a contested terrain when it comes to distinctions between humans, machines, and animals. Many animals have much better sensorial abilities than humans. Moreover, machines are fitted with sensors and can often provide more exact sensorial data than people. The definition of humanity based on reasoning abilities has also proved flawed and little remains uniquely characteristic of the human species. In the next section, I will expand

⁶⁶² Rafael Lozano Hemmer in conversation with José Luis Barrios (2007, 150)

the analysis of *Audio Park* and *Under Scan* by examining the ways in which they highlight the interconnections between affect and the potential for unpredictable change.

5.3 AFFECTIVE IMPULSES IN RHIZOMATIC NETWORKS

Audio Park and *Under Scan* blur the boundaries between humanity, animality, and technology. Passers-by were caught-up in a game with unknown stakes as they interacted with these works. The environments resembled both a labyrinthine computer network and a self-generating amoebic body. The relation of humans to animals and machines is fraught with tension precisely because we feel that we lack complete control over them. Even though we don't often like to acknowledge it, we are always intuitively aware of the fact that it is not only non-human beings that don't understand us, but that we ourselves lack the ability to make sense of human behavior and unpredictable reactions. Yet, this fear is not limited to encounters with non-human others. Being posthuman ultimately means being aware of the fact that one is actually the source of indetermination, as much as one is under the impact of unforeseen events. The behavior of participants in *Audio Park* and *Under Scan* was at times instinctual and impulsive. They intuitively learned what the response to their movements might be, but the overall evolution of the mechanism or organism remained to a certain extent a mystery. Passers-by could not discover all the 1000 video portraits in *Under Scan*, but one of them could one day have an uncanny encounter with a person they spotted in their shadows in the square and expect some sort of instant recognition since they both belonged at one point in time to the same half-real, half-virtual system. Similarly, participants in *Audio Park* could not get to know all the sounds

that composed the unpredictable score of the acoustic environment, but felt an affinity with all the other users who could not attain control over this complex musical system.

The questioning of one's power over visual or acoustic stimuli produced in responsive environments, as well as the interrogation of authentic artistic intent, brings *Audio Park* and *Under Scan* close to art and technology projects and film experiments of the 1960s. The way in which Lozano-Hemmer manipulated the expectations of the public and directed the production of the video portraits was reminiscent of Andy Warhol's *Screen Tests* films (1964-1966) in which the camera was left rolling while individual from the Silver Factory, or visitors, performed mundane actions or simply gazed at the recording device. Lozano-Hemmer delegated filmmakers from the East Midlands to film portraits for *Under Scan*. They informed volunteers that they were to self-direct their performance while looking into a monitor showing images of their performance. The only condition was that the performers look directly at the camera at one moment during the recording. The portraits were filmed from a height of 8.2 ft. The volunteers lay on a black cloth that could be easily edited out from the video images. Hence, the figures appeared to emerge and evolve against the public square pavement, which momentarily turned into a cinematic screen. The neutral background, the non-diachronic images, the lack of sound, and the fixed camera are common attributes of structural films from the 1960s. The lack of performative directions elicited an intense encounter of participants with the film machine itself. The volunteer performers in *Under Scan* addressed an imaginary viewer while being highly aware of the camera eye. They acted as if they were trying to defy the limitations of the setting and the fixity of the camera lens. David James's observations on structural films apply to Lozano-Hemmer's strategic use of a similar approach to filming the video portraits: "The camera is a presence in whose regard and against whose silence the sitter must construct himself. As it

makes performance inevitable, it constitutes being as performance.”⁶⁶³ Some performers in *Under Scan* abruptly decided to stand up and force a close-up encounter challenging the flatness of the image. A woman flashed a torch at the camera as if to communicate to viewers that they themselves were being watched and a young girl with braids imitated the piercing gaze of the Medusa head threatening to petrify curious viewers. Many people twisted their bodies in awkward poses or mimicked spontaneous reactions of surprise, terror or rebellion. By far the most intense moments in the videos were the ones in which ‘performers’ turned their eyes towards the camera, seemingly trying to communicate their isolation. At these points, their movements seemed to slow down or to come to a complete standstill, as if they became aware that it is only through the exchange of gazes that they can truly transmit what they are experiencing. Thus, the performers mirrored the bluntness of the camera eye and beckoned passers-by to respond to them by adopting similar performative roles.

The spatial confinement of the portraits in *Under Scan* enhanced the affective dimension of perception. In his theory on cinema, Deleuze asserts that “the more the image is spatially closed, even reduced to two-dimensions, the greater its capacity to open itself up to a fourth dimension which is time.”⁶⁶⁴ The video portraits rendered passers-by highly aware of the duration of their experience because they interfered with their movements and invited them to dedicate time to observing others. The temporal dimension seemingly expanded when they came to a standstill and tried to figure out whether the people in the portraits could actually see them or react to their motions. Based on Deleuze’s theory, the *Under Scan* videos are examples of images of movement rather than movement images since the camera is static and motion

⁶⁶³ David James in Paul Arthur. *A Line of Sight. American Avant-Garde Film since 1965* (Minneapolis: University of Minnesota Press, 2005), p. 31.

⁶⁶⁴ Deleuze (1986, 17)

“remains attached to elements, characters and things which serve as its moving body or vehicle.”⁶⁶⁵ He believes that the former belong to the beginnings of cinema and do not succeed in conveying the impression of a temporal continuum, whereas the latter instill a sense of a fourth temporal dimension thanks to the fact that they suggest a greater depth of field due to camera movements. However, it can hardly be argued that the video portraits that belong to Lozano-Hemmer’s installation lack duration. The positioning of the camera above the performers challenged the flatness of the visual plane. Images of movement framed by the camera rendered viewers highly aware of the temporal dimension of the videos. This greatly contributed to the affective impact of the images.

Deleuze associates affection with the camera close-up. When the face or body of someone is filmed at close range one can vividly note the slightest changes in expression or gestures even when the rest of the body is not moving.⁶⁶⁶ In *Under Scan*, it was the spectator rather than the camera lens that performed a zooming in operation when he/she decided to stop and observe the video projections that appeared in his/her shadow. The encounter was highly affective because of its temporary character and its dependence upon multiple variables. The connection between the participants and the performers in the portraits was both intense and transitory since it was contingent upon such an ethereal bodily marker as a shadow cast against a strongly lit background. The passers-by experienced more than a visual sensation triggered by external stimuli given the fact that the portraits emerged out of their dark silhouettes. The physical presence of the observers was the primary catalyst for the appearance of the images. Thus, Hemmer highlighted the embodied character of vision, which depends as much on what

⁶⁶⁵ Deleuze (1986, 24)

⁶⁶⁶ Deleuze (1986,70)

we perceive and on the physiology of seeing, as on the individual characteristics of our eyesight, our mental processes, and our bodily movements.

By underlining the interdependent relation between internal and external factors that influence vision, *Under Scan* encouraged participants to question their control over what they select to perceive since they never knew which figure will be selected by the tracking mechanism to appear in their shadow. The experience was highly intense because passers-by sensed that their presence was both a condition for the cinematic projections and an apparent object of close scrutiny for the portrait subjects. The performers in the video projections gazed towards the viewers seemingly asking them to mirror them back by returning their gaze. Deleuze defines affect as “a coincidence of subject and object, or the way in which the subject perceives itself, or rather experiences itself ‘from the inside.’”⁶⁶⁷ In *Under Scan*, the relation between spectators, shadows, and the figures in the portraits was both reflective and refractive. The shadow, a somewhat loose marker of the self, turned into a screen for the other, represented in this case by the performers, who temporarily invaded its virtual space. Passers-by established an interpersonal relation to the images of anonymous figures. They recognized themselves in some of the performers’ acts, but they also defined themselves in contrast with them as they stood on the brink between the virtual and the real. The absence of sound of the videos catalyzed a primeval form of connectivity that stimulated visual self-recognition in the other’s image.⁶⁶⁸ Yet, mirroring processes were also partly suspended because one had to acknowledge the fact that the interface was far from fully transparent. It was this crude realization that intensified the affective

⁶⁶⁷ Deleuze (1986, 65)

⁶⁶⁸ Paul Arthur discusses about the same mirroring effect in the context of silent avant-garde film portraits from the 1960s. He comments that spectators feel the urge to identify with the subjects in these videos in order to compensate for the lack of a narrative and for the neutrality of the background: “As if staring into a mirror, we gradually become aware of how the sitter’s posture and fidgeting might parallel our own confining situation. As in other silent studies, consciousness of the weight and physiotemporal restriction of bodies produces an eerie jolt of self-recognition.” (2005, 34)

experience. The mobility of passers-by was not impeded, yet it was restricted to the shadow frame in which performers evolved for as long someone watched them. The moment spectators decided to abandon the projections, video images started to fade away and performers seemed to abandon their vain attempts at communication.

Audio Park also implied an affective spectatorial dimension. It is somewhat similar to art and technology projects from the 1960s, such as Howard Jones's *Sonic Room* (1968) and Robert Rauschenberg's *Soundings* (1968). Yet, many artists of the 1960s hid the signs of mediation as they attempted to enhance the magic-like effects of the installations. Instead, Moeller fully exposed the sensor interface and enhanced the unpredictability of the system by adding to it live radio broadcasts. The experience envisioned by Moeller largely depended on a collectivity of viewers and subordinated the visual elements to the acoustic ambience. Participants could not fully identify with the sounds they produced through the movements of their bodies because they never really knew for sure what kind of soundtrack would be activated. The impossibility of anticipating the exact result of their interaction with the system suspended habitual perceptual patterns and triggered an affective experience. Participants resorted to intuitive modes of interaction with the sensors and with other people. They listened to the acoustic ambient hoping they could identify sounds that were similar to the ones they had produced. The discontinuous sounds challenged participants to yearn for a temporal continuum. This may be one of the reasons why many of them lingered on the deck for a prolonged period of time witnessing the performance of other passers-by lured by the otherworldly sounds and lights. Moeller noted that "The piece had regulars; hundreds of people, every evening, literally occupying the place and making it their own."⁶⁶⁹ Thus, they were transforming what used to be a merely non-place - a

⁶⁶⁹ Moeller (2004, 89)

transitory zone they crossed on their way to another location, into a place where they could rediscover the acuity of their senses and feel that they temporarily belonged to an ad-hoc collectivity.

The two installations highlight some of the attributes most commonly associated with the essence of humanity. Being able to dialectically define yourself in relation to the Other's gaze or being conscious of the fact that the shadow is indelibly linked to your own body are two defining aspects of self-awareness. Although these supposedly salient features of humanity are evoked by *Under Scan* at the level of the concept of self-portraiture and recognition, they are also cunningly subverted. Passers-by may have tried to discover themselves in the portraits, but they could not fully identify with them since they experienced a sense of unsurpassable distance. The role of their shadows as markers of bodily identity was also challenged because they were covered by video projections of other people's bodies. Shadows have often been judged as merely imperfect reflections and were often associated with an uncanny double of the self in the Renaissance period.⁶⁷⁰ Many of the participants' reactions could be seen as a manifestation of a desire for self-mirroring. Some passers-by tried to take photos of their shadows and the projected portraits. One of the 'performers' in the videos eagerly searched for his self-portrait until he eventually managed to come across it and photograph it. A large number of people responded to the portraits by mimicking their gestures, hence enacting mirror images of their performance. Yet, these acts of behavioral mirroring may not always be a sign of filiation. It also betrays an attempt at intuitively finding a means of communicating with others. This behavior is more animalistic than human from this perspective. By mirroring the other, one alleviates the fears and anxieties stirred by the encounter with a stranger. Certain animals tend to imitate the gestures of people

⁶⁷⁰ See Victor Ieronim Stoichita, *The History of the Shadow* (London: Reaktion Books, 1997)

even though they cannot understand their signification. Verbal communication, another distinctively human characteristic, was temporarily put on hold in *Under Scan*. Body language seemed to be the only means of transmitting messages to the silent portraits. When even this failed and passers-by realized that there was no direct relation between their actions and the reactions of performers, some people started to behave aggressively, virtually torturing the portraits as if punishing them for their inability to speak back. Faced with the inability to communicate verbally, they revealed their own animality. Posthumans enjoy the idea of virtually inflicting suffering upon video projections or machines just as much as they subconsciously experienced a sense of pleasure at the thought of making animals or other humans suffer. One of the interviewed participants confessed his enchantment with dominating the portraits: “I was behaving stupidly because I wanted to stand on them. I don’t know why but when you see them it just brings out this feeling inside that you want to jump on them. I don’t know why.”⁶⁷¹ This attitude disproves philosopher Luc Ferry’s statement that “there is no such thing as sadism towards inanimate objects.”⁶⁷² In the posthuman age, one feels tempted to take violent action against machines or immaterial projections as if they somehow had the potential to become animate. Aggressive reactions towards the shadows also reflected a desire for retrieving a primeval tactile connection to the portraits through direct bodily contact.

Under Scan participants used their bodies and shadows as prostheses for gaining access to the video portraits and staying in touch with them. In *Bodies in Code: Interfaces with Digital Media*, Hansen explains that our bodies’ “technicity (.) must be understood to be a constitutive

⁶⁷¹ Lozano-Hemmer and Hill eds. (2007, 96)

⁶⁷² Luc Ferry, “Neither Man Nor Stone,” Matthew Calarco and Peter Atterton eds., *Animal Philosophy: Essential Readings in Continental Thought* (London; New York: Continuum, 2004), p. 149.

dimension of embodiment from the very start.”⁶⁷³ At a time when we still operate computers by touching their keyboard rather than through a seemingly telepathic way, the primary prosthetic function of our bodies is evident. Touch is also the means through which individuals first define themselves in relation to others before reaching the mirror stage. The desire to aggressively take control over the image of the other in the video projections in *Under Scan* betrayed the inherent animality of humans and the primacy of tactility in self-definition. The behavior of participants who attacked the portraits ultimately called to mind Lacan’s description of monkeys’ interaction with mirrors as they exhausts their energy by trying to gain “control over the uselessness of the image”⁶⁷⁴ instead of establishing a playful relation to the reflected image as a child would do at the mirror stage.

In *Audio Park*, many participants reacted in equally impulsive ways. The sensors were repeatedly pressed with increasing force to make the sounds last longer or to create rhythmic acoustic patterns. Some participants used not only their bodies to interact with the environment, but also other objects. In a short video documenting the installation,⁶⁷⁵ one can note a little girl trying to activate a sensor with the pointed corner of a paper sheet as if a different kind of body would elicit a different response. A young man decided to skateboard across the sensors to test what sounds he could produce when the speed of the interaction and the pressure exerted upon the deck changed. Just as in the case of Rokeby’s *Very Nervous System*, participants wanted to have more influence over the sounds. They wanted the deck to be more of an instrument - an object that obeyed their commands. In *Audio Park*, participants were highly conscious of the fact

⁶⁷³ Mark B. Hansen, *Bodies in Code: Interfaces with Digital Media* (New York; London: Routledge, 2006) p. x

⁶⁷⁴ Jacques Lacan, Bruce Fink, Heloise Fink, Russell Grigg, *Ecrits: A Selection* (New York: W.W. Norton & Company, 2004), p. 3.

⁶⁷⁵ The video documenting the installation is available at: www.christian-moeller.com/display.php?project_id=13

that they acted as a group or a pack and not solely as individuals. They wanted to generate sounds that mirrored their actions. Yet, the signals they produced were not autonomous from those created by others or from sources external to the on-site acoustic system. Every sound merged with other sounds produced on the deck in more or less harmonious ways. Participants could try to respond to certain rhythmic patterns produced by others in a different area of the stage by trying to replicate them, without even knowing the person who initially created a similar acoustic signal. This action resembled a wide call in the forest or an email forwarded to a group of people one may not actually know. The interaction with the sensors was not so much a process of self-representation as it was a mode of making one's presence known to others. Affective affinities arose as sound sequences overlapped or were heard at more regular intervals. One's movements had repercussions upon the entire sound environment. As Deleuze and Guattari explained in their writings on animality, affect always implies a connection to a multiplicity: "The affect is not a personal feeling, nor is it characteristic; it is the effectuation of a power of the pack that throws the self into upheaval and makes it reel."⁶⁷⁶ According to their theory, affect emerges from a process of imperfectly mirroring a collectivity to which one does not belong and with which one can never fully identify.

This alliance with others, which is observable at the level of the sound signals transmitted in *Audio Park* from one deck area to another in the absence of a face to face encounter, was also at play in *Under Scan*. Many performers did not represent their human self in the video self-portraits. Instead, they attempted to present their indelible Otherness. One could argue that they actually performed the process of becoming animal. The portraits did not appeal to the human eye of the passers-by, but to the animal inside them, which sensed not only the gaze of the

⁶⁷⁶ Gilles Deleuze and Félix Guattari, "Becoming-Animal," Linda Kalof and Amy Fitzgerald eds., *The Animals Reader: The Essential Classic and Contemporary Writings* (New York: Berg, 2007), p. 40.

performer, but also the quivering of his/her body in front of the camera. Many performers acted instinctively, shifting the position of their bodies nervously as if they were unable to decide how they wanted to be seen by others. They stylized their movements, adopted awkward bodily posture or changed their facial expression gradually. Some of them acted as animals or insects, frantically moving their limbs as if caught in a trap. But their behavior was not necessarily consistent as “a line of becoming has neither beginning nor end, departure, not arrival, origin or destination.”⁶⁷⁷ The video portraits did not have a linear narrative either. They simply disappeared into thin air when one left them behind. Their actions were not simply imitative, but synthesized the idea of bodily or psychic alterity. Their animal behavior thwarted easy identification. Even though they turned their gaze towards passers-by as if to connect with them at a human level, their performance often verged on the anomalous. Performers who embraced such roles tried to form alliances with ‘pack’ members that had become oblivious to their Otherness. Some passers-by reacted to the alien call of the ad-hoc performers and spontaneously responded to them by moving erratically or by maintaining a seemingly uncomfortable static pose since they were unable to discard behavioral norms in public space.

Under Scan triggered an alliance not only with the animalistic behavior of some of the performers, but also with the robotic mechanism tracking the position of passers-by in the public square. Pedestrians were constantly inscribed within its virtual body since cameras continuously followed their movements and transmitted live information to computers. During the ‘interlude,’⁶⁷⁸ spectators became highly conscious of their coupling with the machine since the virtual tracking grids turned into light beams projected across the square. For many people, this

⁶⁷⁷ Gilles Deleuze and Félix Guattari, “Becoming-Animal,” Atterton and Calarco eds. (2004, 94)

⁶⁷⁸ This is the term Lozano-Hemmer uses in order to refer to this periodic transformation of the public square environment.

aspect of the environment represented the most engaging part of the installation. Passers-by started moving across the multiple intersections of the grids that would be constantly shifting. Their behavior became more dynamic. Once their ties with the portraits were broken, they no longer had to maintain a fairly static position in order to relate to the installation. Rafael-Lozano Hemmer described the ‘interlude’ as a period of respite in which passers-by are liberated from the gaze of the people in the video projections: “The portraits had a lot of power, they had agency, and they could be quite invasive. But during the interlude people were relieved from that gaze, they instead related to one another, to a more familiar situation.”⁶⁷⁹ Since the gaze has frequently been associated with inflicting guilt upon the viewer and passing moral judgments, the performers’ intense look may have impeded highly spontaneous modes of interaction as passers-by contemplated the video portraits that appeared in their shadows.

The interlude was not initially conceived as a primary component of the installation. During this stage in the evolution of the responsive environment, the computer system automatically readjusted as an organic being regenerating its cells. People became fascinated by the interlude because they felt immersed in a non-Euclidian space in which bodily boundaries were challenged and it was almost impossible to retrieve a sense of orientation. In an interview, one of the participants described the experience in the following way:

Suddenly you have no point of reference and suddenly all these grids appear that become your reference to movements. Even if you are standing still, you feel like you’re sort of swimming in space. (...) You feel like you’re sort of moving through the darkness.⁶⁸⁰

Space is no longer defined in opposition with one’s own body. When visual coordinates become unstable, one has to resort to proprioception to move in a certain direction. In this process of

⁶⁷⁹ Lozano-Hemmer in conversation with Nadja Mounajjed, “Interview with Rafael Lozano-Hemmer,” Lozano-Hemmer and Hill eds. (2007, 30)

⁶⁸⁰ Interviews with *Under Scan* participants, *Under Scan* DVD.

becoming machines evident in the interlude stage, the grids stood for the multiplicity of the pack. Participants could not fully identify with any of these geometric structures since they were perpetually shifting. When they finally stabilized they became invisible and light flooded the square once again. During the interlude, people entered into a symbiotic relation with the machine. These reactions reinforced the analogies between humans, animals, and machines. They reflected Brian Massumi's view that: "The pseudopod is a better model of the technological supplementation of the human body than the reigning model of the 'prosthesis.'"⁶⁸¹ The technicity of participants' bodies was momentarily suspended. The interface engulfed participants' bodily presence; they were encapsulated within its virtual womb and responded to its nervous impulses. Their bodies were contiguous with it and they could no longer define themselves in binary opposition with the system. As the grids projected over their bodies, part-whole distinctions were blurred.

The pseudopod metaphor also applies to the type of interactions first envisioned by Moeller for *Audio Park*. Initially, he wanted to create a three-dimensional sound environment so that the relation between the space of the installation and the human body would be more fluid. Such an environment would have more closely resembled Rokeby's *Very Nervous System*. By moving in relation to it, participants would have activated sounds by interfering with light beams spreading in different patterns across the stage. However, Moeller had to abandon this plan the evening before the opening because the installation did not seem to work. In a presentation on *Audio Park*, he declared his frustration with this failure by stating that he became "obsessed with the idea of designing a huge, outdoor, three-dimensional sound space, but there was no

⁶⁸¹ Brian Massumi, "Expressing Connection. Relational Architecture," Rafael Lozano-Hemmer ed., *Alzado Vectorial. Arquitectura Relacional no. 4/Vectorial Elevation. Relational Architecture no. 4* (Mexico City: Ediciones San Jorge, 2000), p. 191.

opportunity to carry out a realistic prototype on this scale.”⁶⁸² In spite of the fact that Moeller had to abandon this concept, his installation still made one think of the complex connections between humans and technology in terms of organic transformations. The ambient sounds of *Audio Park* evolved in relation to people’s movements and mingled with a pre-recorded composition and with randomly selected radio broadcasts. All these combined signals formed an acoustic rhizome. *Audio Park* had no cohesive underlying structure; its effects did not depend entirely upon the way people activated the sensors. As Deleuze and Guattari emphasized in their discussion of human alliance with animals, a rhizome cannot be construed from the outside and hence it cannot be pre-ordained: “Make a rhizome. But you don’t know what you can make a rhizome with, you don’t know which subterranean stem is effectively going to make a rhizome, or enter a becoming, people your desert. So experiment.”⁶⁸³ Both Lozano-Hemmer and Moeller created installations over which they did not have complete control. Participants became part of an open-ended network that developed most when the degree of unpredictability of performative and communicative gestures increased.

In the context of these responsive environments, the rhizomatic patterns were neither purely human nor purely technological. Moeller’s acoustic environment was constantly fluctuating since it was a bricolage of sounds transmitted from remote locations. Commenting on *Audio Park*, Andreas Broeckman remarked the complexity of the acoustic variations and their hybrid origins: “the combination of chance and uncontrolled natural effects with the concrete and yet uncoordinated actions of multiple users, creates surprising aesthetic results that oscillate

⁶⁸² Moller (2004, 89)

⁶⁸³ Gilles Deleuze and Félix Guattari, “Becoming-Animal,” Linda Kalof and Amy Fitzgerald eds. (2007, 47)

between ambient noise and sublime expressiveness.”⁶⁸⁴ *Under Scan* was an equally intricate hybrid environment. The rhizome expanded unpredictably due to people’s diverse responses to the large number of video portraits as well as to the labyrinth of scanning grids projected onto the pavement during the interlude. According to Lozano-Hemmer, entropic transformations are still possible in pre-programmed environments. He believes that an installation is successful when it offers surprises both to its author and to the public. In a conversation with José Luis Barrios, Lozano-Hemmer suggests that the aura of art is making a comeback in the digital age when spectators are turned into users. In the same interview, he maintains that: “the machine can have certain autonomy and expression because you simply capture the initial ‘algorithmic conditions,’ but do not pre-program the outcome” and enthusiastically added that for him this is a “gratifying post-human message.”⁶⁸⁵ The post-human condition does not consequently inspire only fears of isolation and disembodiment, but grants new opportunities for uncovering affective symbioses between human and non-human beings.

In the posthuman context, contiguities between the real and the virtual become more and more pronounced to the point that one can no longer tell where one starts and the other one begins. *Audio Park* and *Under Scan* propose rhizomatic modes of affective participation in which the distinctions between subjects and objects, as well as between causes and effects are blurred. Just as Rokeby, their new media precursor, Moeller and Lozano-Hemmer create responsive environments in which dialectical modes of self-definition are suspended and a sense of belonging can be re-established only as long as one perceives himself/herself as a hybrid being – part human, part machine, part animal.

⁶⁸⁴ Andreas Broeckman, “Public Spheres and Network Interfaces,” *The Cybercities Reader* (New York: Routledge, 2004), p. 380.

⁶⁸⁵ Rafael Lozano Hemmer in conversation with José Luis Barrios (2007, 145)

6.0 CONCLUSION

This thesis has shown that one of the defining characteristics of the transition from modern to contemporary art has been the emergence and diversification of interpersonal modes of art spectatorship that involve an enhanced awareness of perceptual and mental processes in response to the artwork, the display context, and the other viewers partaking in the aesthetic experience. The private encounter with art, which is primarily oriented towards a parallel relation between the beholder and the art object, has not been completely displaced. Yet, it has been complemented by spectatorial forms that encourage participants to be alert to the public dimension of art reception and the variations they can bring to the perception of the artwork. Their simultaneous interaction with the work and with other museum visitors has become an important component of what is now a shared, multidimensional experience.

Since the 1960s, these transformations have been evident across a wide range of mediums, including sculpture, performance, art and technology projects, and video art. They can be most clearly seen in the context of works that elicit mirroring processes, not only between the individual viewer and those art objects that have reflective properties, but also between multiple viewers united by an expanded and variable perceptual field that challenges interpersonal awareness. I argue that such contemporary art practices inspire a mode of spectatorship that I call “the mirror affect,” which is characterized by a heightened sense of the empathetic ties established between art participants, who feel closely connected to each other by shared

perceptual or socio-political conditions, without however being able to identify fully with the individual or collective frame of mind of others. Instead, works that incorporate spectators' mirror images or provide feedback to their actions highlight the slight, but unsurpassable, disjunctions that exist between their perceptual, behavioral, and emotional acts in spite of their involvement in the same information or social system.

The term "mirror affect" is essentially an oxymoron because on the one hand it suggests a perfect correspondence, similar to that existing between a person and his/her reflection in a non-distorting mirror, while on the other hand it points to the ineluctable differences that exist between self and others despite strong connections. In Deleuzian philosophy, affect points to an incomplete becoming, which is built upon one's desire to establish an alliance with others.⁶⁸⁶ Artworks or new media environments that build upon this inclination invite viewers to explore the potential for self-transformation and critical distance from the social or political systems in which they are entangled. Mirror affect is a catalyst for refractive processes that allow individuals to develop a greater social consciousness as a result of the inevitable distinctions that exist between the way they perceive themselves and the ways others perceive them or between the roles they choose voluntarily and the ones they embrace inadvertently. Contemporary artists have created works that elicit this genre of response in order to deepen awareness of personal and interpersonal responsibility, sensitize viewers to the variability of aesthetic experience, and unveil the less immediately visible ties that connect them to others.

Depending on the catalyst of perceptual and mental reflection and the relationship established between the artwork and the viewers, one can distinguish between three types of mirroring processes that elicit the mirror affect: 1) visual mirroring between a viewer and an

⁶⁸⁶ See Deleuze and Guattari (1987, 256-341); and Deleuze and Guattari (1994, 163-199).

object or environment with reflective surfaces that incorporates and often multiplies images of the display context (e.g. Robert Morris's *Untitled (mirror cubes)*, 1965-71; Anish Kapoor's *Cloud Gate*, 2004); 2) behavioral mirroring between viewers who react in similar ways to a reflective interface that incorporates their mirror images or responds to their presence through sensorial stimuli (e.g. Howard Jones's *Sonic Game Room*, 1968; Olafur Eliasson's *Take your time*, 2008); 3) mental mirroring between viewers who experience similar sensorial and emotional reactions or who feel intimately tied to one another since they are exposed to shared perceptual or social conditions (e.g. Lynn Hershman's *25 windows*, 1976; Ken Lum's *Pi*, 2006). These are not exclusive categories. Some works may elicit all three types of mirroring processes by channeling viewers' attention to the contingent relations between perceptual observations, behavioral acts, and mental pictures. For instance, Dan Graham's *Public Space/Two Audiences* (1976) encourages participants to notice and ponder the emerging consistencies or disjunctions in mirror images and behavioral responses to the installation. His juxtaposition of interfaces with slightly different reflective qualities discloses his interest in instilling doubt in visual representation and in calling for an active examination of the changing conditions of perception and social interaction. Graham's installations engender affective responses by catalyzing an acute awareness of perceptual differences and perpetual interpersonal transformations in spite of close correlations or highly similar behavioral tendencies.

Prior approaches to the analysis of works that trigger mirroring processes have neglected their affective dimension, focusing instead on their phenomenological impact at an individual level or on the way they replicate and critique surveillance or consumerism. In this dissertation, I have examined both the personal and the interpersonal dimension of installations, performances, and responsive environments that elicit reflective acts and I have elucidated the deep socio-

political implications they carry as they expose ubiquitous, yet inconspicuous mechanisms of control and supervision. Rather than concentrate solely on the visible effects of these works, I have dwelt on the more complex ensemble of perceptual, affective, and social ties they generate at both a behavioral and an imaginary level. Distinctions in terms of mediums, stylistic categories, or genres have prevented art historians from pairing the works of Dan Graham with those of Lynn Hershman or the works of David Rokeby with those of Olafur Eliasson. While mirroring processes have been separately analyzed in the context of Minimalist sculpture, video art, or new media, no prior art historical narrative has offered an account of the proliferation of these reflective acts across mediums since the 1960s. Moreover, even though the notions of “participation,”⁶⁸⁷ “interaction,”⁶⁸⁸ and “relationality”⁶⁸⁹ have been repeatedly investigated and there have even been some attempts at reconciling these terms,⁶⁹⁰ spectatorial relations have been mainly conceived in terms of individual engagement in completing the artwork or collective involvement in convivial activities, which come to constitute the object of aesthetic experience. The more nebulous field of variable relations between spectators who become conscious of the limitations of individual agency as they inadvertently relate to loose group formations triggered by reflective installations has received little critical attention. This thesis suggests that these participatory modes are not peripheral, but are constitutive of a new

⁶⁸⁷ See Popper (1975) and Bishop (2006).

⁶⁸⁸ See Frank Popper, *Art of the Electronic Age* (New York: Harry N. Abrams, 1993); Simon Penny ed. *Critical Issues in Electronic Media* (New York: SUNY, 1995); Roy Ascott ed. *Art, Technology, Consciousness. mind@large*. (Bristol: Intellect Books, 2000); Margaret Morse, “The Poetics of Interactivity,” Judy Maloy ed., *Women, Art, and Technology* (Cambridge, Mass.: MIT Press, 2003), pp. 16-33. Oliver Grau ed. *MediaArtHistories* (Cambridge, Mass.: MIT Press, 2007); Edward Shanken, *Art and Electronic Media* (London, New York: Phaidon, 2009).

⁶⁸⁹ See Bourriaud (2002) and Bishop (2004).

⁶⁹⁰ See Daniel Palmer, *Participatory Media: Visual Culture in Real Time* (Saarbrücken: VDM Verlag, 2008); Rudolf Frieling, *The Art of Participation: 1950 to Now* (San Francisco: Museum of Modern Art, 2008); Alison Oddey and Christine White eds., *Modes of Spectating* (Bristol, UK; Chicago, USA: Intellect Books, 2009); Jeni Walwin ed., *Searching for Art’s New Publics* (Bristol, UK; Chicago, USA: Intellect Books, 2010).

spectatorship, which is characterized by affectivity, indirectness, enhanced mediation, and versatility, and can be traced back to the 1960s, a key decade of transition from modern to contemporary art. Works that foster mirroring acts are prime examples of it because they situate viewers on the boundary between real and virtual spaces of interaction by inviting them to relate to other museums visitors engulfed in a shared perceptual field that may be connotative of shared social or cultural conditions.

There are diverse factors for the sharp increase in the number of works, which encourage interpersonal spectatorship starting with the 1960s. Many artists such as Lucas Samaras or Michelangelo Pistoletto chose to employ reflective materials in order to trigger a counter-reaction to Abstract Expressionism or Art Informel by banishing highly subjective forms of expression from the act of art production. They considered Mylar, reflective foil, or mirror screens to be highly impersonal and assembled them in various configurations in order to direct viewers' attention to their creative and expressive role in the process of art reception. This shift in orientation in terms of art production and art experience was not equivalent to a reinforcement of the individual viewer's subjectivity. It opened the way to a consideration of an enlarged sphere of interaction with the artwork that is influenced by the presence and the actions of co-present gallery visitors.

The social movements of the 1960s in Europe and US, as well as the protests against dictatorial regimes in South America, contributed to the consolidation of art practices that inspired participants to acquire a sense of collective awareness and to explore their relations to others not only in terms of shared identities, but also in terms of looser alliances based on social causes or affective experiences. The design and increased dissemination of technological devices (e.g. hand-held video cameras, closed-circuit television) that improve communication and

supervision, as well as enable personal and collective expression, strengthened the tendency towards reflecting on the plasticity of identity and the social constraints one has to face in closely networked societies. During the second half of the 20th century, the growing research in group behavior (e.g. Ralph T. Turner) and interpersonal perception (e.g. R.D. Laing) confirmed the expanded understanding of the numerous and variable factors that shape the sense of selfhood and escape individual control.

By studying mirroring processes in the context of a wide range of art practices from the past five decades, I have noticed pronounced changes in art production and reception that correspond to shifting notions of interaction, identity, and publicness. While in the 1960s artists employing mirror-like materials often aimed to challenge psychic involvement in order to slow down perception and hinder enchantment with spectacular sensorial effects that engender self-obliviousness (e.g. Stanley Landsman, *Infinity Room*, 1968; E.A.T., *Pepsi Pavilion*, 1970), artists from more recent decades are more inclined towards using these materials to create interpersonal engagement and enhance the public dimension of visual experience (e.g. Ken Lum, *Photo-Mirror series*, 1998; Olafur Eliasson, *The Weather Project*, 2003-4). Nonetheless, the latter do not completely avoid the staging of immersive experiences. Interpersonal awareness does not preclude intense states of mental absorption. In fact, it can be argued that contemporary artists frequently increase the affective potential of their works by having museum viewers oscillate between seemingly contradictory experiences such as narcissistic and voyeuristic drives, mental reflection and bodily interaction, or private introspection and public encounter with other museum visitors. They emphasize disjunctions because they seek to strengthen the sense of personal agency and social interconnectedness. Artists Dan Graham and Lynn Hershman cultivated these asymmetrical interpersonal relations in the 1970s by staging mirroring processes

between viewers and artworks or viewers and performers with the explicit purpose of unmasking the mechanisms of surveillance and consumerism and showing the lack of complete autonomy of individuals. Their works placed participants in catch-22 situations in which they had to negotiate their roles and evaluate the degree of control they can have over the way they are perceived by others. If, during the 1960s, phenomenological concerns tended to override the social critique implicit in mirror-based projects, then, during the 1970s, the analogies between mirror or video screens and socio-political frameworks became increasingly overt. As process-based art practices started to develop and the controlling aspects of mass media and video technology became strikingly apparent, artists were intent on using reflective interfaces to subvert the inclination towards personal identification with broadcast images and the desire for complete immersion in visual spectacle. Graham and Hershman created installations that plunged art participants deeper into the public sphere rather than give them the illusion of freedom from the socio-political constraints that influence self-perception and interpersonal relations.

Shifting views on spectatorship represent another marked change highlighted by works that elicit mirroring acts. In the 1960s, most artists who created interactive works still had in mind binary forms of feedback between the object or the responsive interface and the viewer. Some of them gradually came to realize that their works held the potential for group interaction. A case in point is Howard Jones's *Sonic Games Room* (1968). The artist initially conceived the work as an interface that would enable participants to create acoustic portraits by interacting with light-sensitive sensors that would activate sounds, yet his environment turned out to spur collective engagement as the acoustic stimuli produced by multiple participants intermingled to create a more complex orchestration. Increasingly, contemporary artists designing responsive environments refused to establish rules of individual or collective participation and started to

envision digital-based platforms that offer unexpected possibilities for interaction and collaboration between participants. David Rokeby stages environments that are shaped by human interaction across long periods of time. Similarly, Rafael Lozano-Hemmer creates interactive platforms that take him by surprise since they are purposefully designed to allow for multiple participatory modes. Often, these artists emphasize the variability of human behavior and cybernetic systems in order to expose widespread misconceptions about deterministic models of interaction with technology, which are based on perfect correspondences between input and output. Moreover, an increasing number of artists are creating works that require the presence of multiple participants in order to be activated or become complete. For example, Scott Snibe's new media environment *Body Functions* (2003) becomes responsive when at least two people move across its space and animate a shifting system of grids. Mariko Mori has also highlighted the complex networks established between art participants. In the case of *Wave UFO* (1999-2002), she invited three people to enter an environment shaped like an alien spaceship in order to give them a chance to witness the similarities and disjunctions that exist between their brain waves as they watched graphic renditions of each other's mental activity.

Since contemporary artworks with reflective properties are often purposefully designed to generate complex and interdependent spectatorial responses, prior models of art reception analysis need to be thoroughly revised in order to take into consideration how art experience is influenced by the versatile correlations between perceptual, behavioral, and mental reactions of multiple art spectators. While in the 1960s curators and art critics such as Jane Livingston and David Antin were concerned about the deterministic implications of works that encouraged participants to act in specific ways to activate responsive interfaces, in recent decades it is no longer disturbing to think of art galleries as technological or social laboratories in which visitors test out the interactive potential

of an installation or the conviviality of a proposed situation. This transformation is partly informed by the fact that many contemporary artists such as Olafur Eliasson and David Rokeby blatantly unveil the way their installations or new media environments have been constructed. It is also prompted by the deeper realization that cybernetic systems and human behavior are not only adaptable, but are also highly dynamic and variable since they depend on a broader range of factors including prior cognitive processes and predictions about potential future reactions.

Contemporary artists increasingly conceive the audience as a heterogeneous group of art visitors with looser or stronger connections based on their diverse psychological and social profiles. In their turn, audience members more often expect contemporary artworks to respond to their actions. A relevant example would be the fact that some visitors to Millenium Park wanted the public artworks on display to offer greater interactive possibilities.⁶⁹¹ Such expectations concerning art experience are shaped by our use of digital interfaces to perform quotidian tasks or communicate with others on a daily basis. Major art museums are trying to respond to these transformations, which help them showcase their growing accessibility. In addition to exhibiting more installations that shed light on their public dimension, they have created online platforms where visitors can leave comments on their response to works that call for participatory forms of spectatorship. Tate Modern has created interactive films of the installations of Rachel Whiteread, Carsten Höller, and Doris Salcedo to enable online museum visitors to pick a certain angle from which they can see the works and even watch other visitors approach them, inspect their components, and take photos of them.⁶⁹² Embracing a similar endeavor to generate interaction and enable people to examine a full range of

⁶⁹¹ See survey respondents' comments on *Cloud Gate* in Conard (2008, 158)

⁶⁹² Available online at: <http://www2.tate.org.uk/unileverseries/index3.html> on December 12, 2011.

responses to artworks, SFMoMA set up a website for Olafur Eliasson's "Take your time" exhibition where viewers could post blog entries about their encounter with specific artworks.⁶⁹³

Hence, as the message of art becomes increasingly contingent upon its reception, the sources of information on art experience diversify. While gathering data on the interpersonal dimension of encounters with contemporary art I have resorted to information both from more conventional art historical documents such as catalog essays, interviews, and exhibition reviews, and from more unorthodox sources such as visitor surveys, blog posts, or photos from Flickr. The broad availability of publicly available databases of images and personal testimonies concerning art experience offer new venues for the investigation of responses to art. They also contribute to transformations in the very process of art production, which is increasingly networked and often enables viewers to share their reactions to artworks with multiple others, as well as to participate in testing competing perceptual and interactive possibilities.

These changes in art production, art reception, and museum experiences have been influenced by shifts in processes of self-definition. As sociologist Michel Maffesoli has suggested, identities have become more mutable in contemporary societies because individuals define themselves in relation to a larger number of groups with whom they share similar creeds or empathetic ties and to which they feel committed only for short spans of time. The increased variability of affiliations with others, which the sociologist describes in terms of an "affectual nebula,"⁶⁹⁴ has been heavily influenced by the accelerated speed of mass communication and has contributed to the emergence of a more fluctuating sense of identity. Contemporary artists are

⁶⁹³ Available online at: <http://sfmoma.wordpress.com/360-degree-room-for-all-colours-2002-2/> on December 12, 2011.

⁶⁹⁴ Maffesoli (1996, 72)

exploring the growing versatility of interpersonal relations and create opportunities for viewers to observe and model alliances between themselves and others.

Whether they are all engulfing and create a sense of intimacy or whether they project one's reflection or response outside the safe confines of a restricted sphere of public interaction, a large number of contemporary artworks with mirroring properties function as interfaces that stimulate participants to ponder the plasticity of social ties. These works often challenge conflicting states of mind and inspire viewers to acquire both a sense of shared vulnerability in the face of societies of surveillance and a sense of potential empowerment through interpersonal awareness and self-transformation. They call for a constant and lucid assessment of alliances with others and reveal the increased disillusionment with the cult of subjective individuality and the cult of collectivities driven by a pre-established set of ideals. Works such as Eliasson's *Take your time*, Lum's *Pi*, or Rafael Lozano-Hemmer's *Under Scan* frame precarious situations in which viewers totter from a disruptive personal observation to an unstable relation to more or less cohesive social groups. They inspire both hope in a potentially shared condition, which might alleviate individual alienation, and mistrust because the promise of belongingness to a comforting collectivity may prove untenable or simply short-lived. Given the potential of these installations to offer temporary empathetic relief, they can be described as symptomatic of the contemporary condition of "cruel optimism" defined by Lauren Berlant in terms of a desire for maintaining attachment to the fantasy of a better or more secure life even though individuals are perfectly aware of the fact that this wish cannot be truly fulfilled.⁶⁹⁵ Far from embracing a belief in large-scale transformations that can ensure a better future, numerous contemporary artists bring into the public eye the desires and insecurities of diffuse collectivities of

⁶⁹⁵ Lauren Berlant, *Cruel Optimism* (Durham, NC: Duke University Press, 2011)

art viewers in order to boost the potential for affective relatedness and for heightened awareness of shared problems that cannot be easily solved.

The main contribution of this study has been to identify and analyze the emergence of interpersonal modes of contemporary art spectatorship that are consonant with the widespread and increasing search for affective connectivity at a time of growing uncertainty in most societies. By tracing multiple changes in the production and reception of works that trigger reflective processes, I have outlined a theory of mirror affect which explains the empathetic, behavioral, and mental attunement between art viewers involved in a shared experiential field that publicly exposes their images or responses, as well as their limited individual autonomy. This study has revealed that, since the late 1960s, a significant number of contemporary artists have created environments that engender slightly incongruent relations between viewers and cybernetic systems in order to challenge the controlled seamlessness of social ties that contributes to the consolidation of surveillance societies and consumerist cultures. Bridging the gap between art and new media, artworks that elicit viewer-object/responsive interface interaction promote the development of interpersonal or collaborative relations between multiple art participants. More precisely, I have shown that the theory of relational aesthetics can be extended to include artworks that stimulate the formation of elusive groups of strangers that feel intimately connected to each other in spite of a lack of direct contact or communication. These mediated affective encounters reflect the expanding web of loose connections between individuals and collectivities and typify contemporary social life. Even though these ties sometimes appear too ethereal and diffuse to have a visible impact upon society, their proliferation has been conducive to changes in notions of selfhood and group formation.

This study has attempted to offer a more profound understanding of how reflective installations have contributed to the growing publicness of art experience, the questioning of

individual autonomy, and the exposure of ubiquitous, yet invisible, mechanisms of social control. I hope that it can open the way for new interpretive approaches to art reception that take into account the complexity of interpersonal responses to artworks and the way changes in art spectatorship reflect new modes of self-definition in relation to increasingly heterogeneous and volatile group formations. This thesis lays the ground for a revision of the current historical account of how modern art became contemporary by indicating that the interrogation of the autonomy, materiality, and permanence of the art object has been accompanied by an opening of spectatorial experience to a more complex set of variable factors that shape the appearance of the art object and/or the art environment. The interpersonal relations prompted by installations with reflective qualities call for astute negotiations between control and playfulness, distance and proximity, aesthetic immersion and active behavioral responses. Above all, they showcase the emergence of a new spectator that is not only an astute receiver and negotiator of sensorial information, but is an active producer of experience and representation together with multiple others concomitantly engaged in affective, perceptual, and cognitive exchanges that may or may not acquire visible or tangible form, yet significantly contribute to an enhanced awareness of the complexity and plasticity of human consciousness, cybernetic networks, and society.

APPENDIX

Table 1: Mirroring Processes in Art since the 1960s

Reflective sculptures, mixed-media and environments	Marcel Duchamp, <i>The Bride Stripped Bare by Her Bachelors, Even (Large Glass)</i> , 1915-1923, oil, varnish, lead foil, lead wire, and dust on two glass panels
	Marcel Duchamp, <i>To Be Looked at (from the other side of the glass) with One Eye, Close to, for Almost an Hour</i> , 1918, oil, silver leaf, lead wire, and magnifying glass (cracked), mounted between panes of glass in a standing metal frame
	Robert Rauschenberg, <i>Minutiae</i> , 1954, freestanding combine
	Stephen Gilbert, <i>Structure 14c</i> , 1961, aluminum and acrylic sheet
	Gillian Wise, <i>Brown, Black and White Relief with Prisms</i> , 1962, acrylic and mixed media on board
	Arnaldo Pomodoro, <i>Sphere no. 1</i> , 1963, bronze
	Lucas Samaras, <i>untitled</i> , 1963, mirror, glass, nails, yarn

	Jasper Johns, <i>High School Days</i> , 1964, mirror spot on shoe cast attached to the canvas
	Michael Baldwin, Mel Ramsden, <i>Untitled Painting</i> , 1965, mirror on canvas
	Hugo Demarco, <i>Metamorphose</i> , 1963, wall-mounted box with motorized convex mirror
	Howard Jones, <i>Escalation, K.C.</i> , 1965, installation
	Robert Morris, <i>Untitled (mirror cubes)</i> , 1965-1971, mirror and wood
	Robert Smithson, <i>Four sided vortex</i> , 1965/1967, stainless steel, four mirrors
	Yayoi Kusama, <i>Infinity Mirror Room - Love Forever</i> , 1966, mirror, light bulbs, stainless steel, wood
	Julio Le Parc, <i>Continuel Mobil</i> , 1966, Plexiglas and metal
	Mary Martin, <i>Inversions</i> , 1966, metal, oil, and wood (96 reflective plates inclined at different angles)
	Christian Megert, <i>Mirror Object</i> , 1966, mirror and electric engine in a box
	Lucas Samaras, <i>Room #2</i> , 1966, wood and mirrors
	Andy Warhol, <i>Silver Clouds</i> , 1966, helium-filled metalized plastic film
	Stanislav Filko, <i>Cosmos</i> , 1968, environment (mirror floor, film projections)
	Les Levine, <i>Star Machine</i> , 1967, environment
	Les Levine, <i>Slipcover: A Place</i> , 1967, environment
	Enzo Mari, <i>Modulo 856</i> , 1967, sculpture

	Enzo Mari, <i>Omaggio a Fadat</i> , 1967, sixty-four lamps, four transparent sheets
	Lucas Samaras, <i>Corridor #1</i> , 1967, mirror and crystal spheres
	Robert Whitman, <i>Pond</i> , 1967, mirrors
	Robert Morris, <i>Untitled (Threadwaste)</i> , 1968, threadwaste, asphalt, mirrors, copper tubing and felt
	Larry Bell, <i>Plate glass installation</i> , 1969, installation
	Katharina Sieverding, <i>Maton</i> , 1969-1996, mixed media
	Keith Sonnier, <i>Mirror Act</i> , 1969, two mirrors, fluorescent paint, black light, mirror size
	E.A.T., <i>Pepsi Pavilion (Mirror Dome)</i> , 1970, environment
	Robert Janz, <i>Portrait Sequence</i> , 1970, acrylic, metal, motors, neon, 4 discs each
	Horacio Garcia-Rossi, <i>Math Ball</i> , 1970, Perspex, motor
	Adolf Luther, <i>Mirror-Object</i> , 1970, concave mirrors, wood, motor
	Daniel Buren, <i>Transparence venetienne avec reflets</i> , 1972-2009, site-specific installation
	Sylvia Stone, <i>Another Place</i> , 1972, Plexiglas
	Waltercio Caldas, <i>Mirror of Light</i> , 1974, mirror with wood frame and electric light in metal fixture
	Sylvia Stone, <i>Grand Illusion</i> , 1974, glass and Plexiglas
	Lynn Hershman, <i>25 Windows: A Portrait of Bonwit Teller</i> , 1976, installation

	Peter Cripps, <i>Public Project (Fiction)</i> , 1993, installation
	Oscar Munoz, <i>Aliento</i> , 1996-2002, installation
	Franz West (with Michelangelo Pistoletto), <i>Mirror in Cabinet with Adaptives</i> , 1996, installation
	Carlos Alonso, Nora Asian, Mireya Baglietto, Diana Dowek, Leon Ferrari, Rosana Fuertes, Carlos Gorrarena, Adolfo Nigro, Luis Felipe Noe, Daniel Ontiveros, Juan Carlos Romero, Marcia Schwartz, <i>Identity</i> , 1998, 24 wall texts, 132 mirrors, 224 photographs
	Anish Kapoor, <i>Iris</i> , 1998, stainless steel
	Tatiana Trouve, <i>Reminiscence Module</i> , 1999, mirror cylinders, scraps of papers with messages inside
	Edward Krasinski, <i>Untitled</i> , 2001-2003, mirrors and blue tape
	Ken Lum, <i>Mirror Maze with 12 Signs of Depression</i> , 2002, installation
	Isa Genzken/Wolfgang Tillmans, <i>Science Fiction/ Hier und jetzt zufrieden sein</i> , 2003, installation
	Jitish Kallat, <i>Public Notice</i> , 2003, burnt adhesive on acrylic mirror, wood, and stainless-steel frames
	Olafur Eliasson, <i>The Weather Project</i> , 2003-2004, installation
	Doug Aitken, <i>The Moment Is the Moment</i> , 2004, automated mirror sculpture
	Anish Kapoor, <i>Cloud Gate</i> , 2004, stainless steel
	Eva Schlegel, <i>Installation, Secession</i> , 2005, installation

	Anish Kapoor, <i>S-Curve</i> , 2006, polished steel
	Soo-ja Kim, <i>To Breathe</i> , 2006, light filters, reflective material, sound of the artist's breathing
	Ken Lum, <i>Pi</i> , 2006, installation
	Andrey Bartenev, <i>Lost Connection</i> , 2007, 50 revolving light-emitting diode balls in mirror tunnel
	Robert Pulie, <i>W</i> , 2007-2009, mixed media
	Olafur Eliasson, <i>Take your time</i> , 2008, installation
	Haegue Yang, <i>Three Kinds</i> , 2008, installation
	Christian Cappuro, <i>White Breath (Passenger)</i> , 2009, mirrors covered in paint except for small edges
	Mikala Dwyer, <i>IOU</i> , 2009, mirror acrylic
	Mischa Kuball, <i>Platon's Mirror</i> , 2011, installation
Mirror screens as intrapersonal or social interfaces	Carolee Schneemann, <i>Eye Body</i> , 1962-1963, body action
	Michelangelo Pistoletto, <i>The Visitors</i> , 1962-1968, mixed media
	Marta Minujín, <i>Circuit</i> , 1967, interactive project
	Michelangelo Pistoletto, <i>Pistoletto's End</i> , 1967, performance
	Michelangelo Pistoletto, <i>Who Are You</i> , 1967, performance
	Joan Jonas, <i>Oad Lau</i> , 1968, performance

	Milton Cohen, <i>Space Theater</i> , 1969, mirrors, prisms, lights, film, slide projectors
	Frank Gillette and Ira Schneider, <i>An Interactive Experiment</i> , 1969, one monitor, 4 seats turned with the back towards each other, 4 cameras, 2 mirrors, control room outside
	Joan Jonas, <i>Mirror Piece I</i> , 1970, performance
	Joan Jonas, <i>Jones Beach Piece</i> , 1970, performance
	Joan Jonas, <i>Mirror Piece II</i> , 1970, performance
	Adrian Piper, <i>Food for the Spirit</i> , 1971, private performance
	Stephen Laub, <i>Projection with Live Performance</i> , 1972, performance
	Jim Pomeroy, <i>Composition in Deed</i> , 1975, performance
	Judith Baca, <i>Las Tres Marias</i> , 1976, installation
	Dan Graham, <i>Public Space/Two Audiences</i> , 1976, installation
	Dan Graham, <i>Performer/Audience/Mirror</i> , 1977, performance
	William Anastasi, <i>You Are</i> , 1978, performance
	Ulriche Rosenbach, <i>Meine Macht ist meine Ohnmacht</i> , 1978, video performance
	Paul Sermon, <i>Telematic Vision</i> , 1993, interactive installation
	Denis Beaubois, <i>In the Event of Amnesia the City Will Recall</i> , 1993-1996, video performance

	David Rokeby, <i>Silicon Remembers Carbon</i> , 1993-1995, interactive video installation
	Alba D'Urbano, <i>Touch Me</i> , 1995, interactive video installation
	Lynn Hershman, <i>Paranoid Mirror</i> , 1995, interactive video installation
	Oscar Muñoz, <i>Aliento</i> , 1996, interactive installation
	Lynn Hershman and Fabian Wagminster, <i>Time and Time Again. A Distributed Interactive Media Environment</i> , 1999, interactive installation
	Dias and Riedweg, <i>Voracidad Máxima</i> , 2003, video installation
	Karrie Karahalios, <i>Telemurals</i> , 2003, interactive sound and video installation
	Karen Lancel, <i>StalkShow</i> , 2003-2005, interactive installation
	Greyworld, <i>World Bench</i> , 2005, interactive installation
	Rafael Lozano-Hemmer, <i>Underscan</i> , 2005-2006, interactive environment
	Leandro Erlich, <i>The Tower</i> , 2007, installation
	Joshua Sampson, <i>Dodge Draw</i> , 2010, new media performance
Cybernetic mirrors	Nicholas Schöffer, <i>CYSPN</i> , 1956, performance and cybernetic sculpture
	Nicholas Schöffer, <i>Spatiodynamic Tower</i> , 1961, cybernetic environment
	François Dallegret, <i>La Machine</i> , 1966, interactive light installation

	Thomas Shannon, <i>Squat</i> , 1966, interactive sculpture
	Jud Yalkut, Yukihisa Isobe, <i>Vibrations</i> , 1967-1968, Mylar, water, Plexiglass cubes, geodesic and polyhedral structures, sound and light projections, photoelectric cells
	Roland Baladi, <i>Cinetone</i> , 1968, interactive installation
	Hans Haacke, <i>Photo-Electric Viewer-Controlled Coordinate System</i> , 1968, responsive environment
	Howard Jones, <i>Sonic Games Room</i> , 1968, interactive acoustic environment
	Robin Parkinson with Eric Martin, <i>Toy-Pet Plexi Ball</i> , interactive sculpture
	Robert Rauschenberg, <i>Soundings</i> , 1968, interactive environment
	Robert Rauschenberg, <i>Mud Muse</i> , 1968-1971, interactive acoustic environment
	Terry Riley, <i>Time Lag Accumulator</i> , 1968, acoustic environment
	James Seawright, <i>Electronic Peristyle</i> , 1968, interactive installation
	Wen-Ying Tsai, <i>Cybernetic Sculpture</i> , 1968, sound activated steel rods
	Myron Krueger (with Dan Sandin, Jerry Erdman, Richard Veneszky), <i>Glow Flow</i> , 1969, interactive environment
	Ted Kraynik, <i>Video Luminar #4</i> , 1969-70, light installation
	John Lifton, <i>Event One</i> , 1969, interactive acoustic system

	PULSA, <i>Project for Sculpture Garden</i> , MoMA, 1970, light and sound environment
	Stephen Willats, <i>Visual Homeostatic Information Mesh</i> , 1970, interactive cybernetic system
	David Tudor, <i>Rainforest</i> , 1973, performance
	Myron Krueger, <i>VIDEOPLACE</i> , 1974, interactive installation (artificial reality system)
	Andy Warhol, <i>Invisible Sculpture</i> , 1985, mixed media
	Shawn Brixey and Laura Knott, <i>Photon Voice</i> , 1986, optical transmission performance
	David Rokeby, <i>Very Nervous System</i> , 1986-1990, acoustic environment
	Michael Schuster, <i>Autofocusfalle</i> , 1989-1991, interactive photographic installation
	Luc Courchesne, <i>Portrait One</i> , 1990, interactive installation
	Chico MacMurtrie and Rick Sayre, <i>Tumbling Man</i> , 1991, interactive sculpture
	Monika Fleischmann and Wolfgang Strauss, <i>Liquid Views – Narcissus’ Virtual Mirror</i> , 1993-2008, interactive installation
	Christian Moeller, <i>Audio Park</i> , 1995, interactive acoustic environment
	Stelarc, <i>Fractal Flesh. Split Body: Voltage In/Voltage Out</i> , 1995-1996, performance
	Stephan von Huene, <i>Greetings</i> , 1996, interactive sound sculpture
	Tiffany Holmes <i>Nosce Te Ipsum</i> , 1998, interactive animation

	Scott Snibbe, <i>Boundary Functions</i> , 1998, interactive environment
	Simon Penny, <i>Traces</i> , 1999, VR environment
	Daniel Rozin, <i>Wooden Mirror</i> , 1999, interactive sculpture
	Camille Utterback and Romy Achituv, <i>Text Rain</i> , 1999, interactive installation
	Mariko Mori, <i>Wave UFO</i> , 1999-2002, interactive installation
	Lars Spuybroek, <i>D-Tower</i> , 1999-2004, interactive architecture
	Brian Knepp, <i>Healing I</i> , 2003, interactive environment
	Brigitta Zics, <i>Mirror_SPACE</i> , 2004-2005, interactive installation
	Richard Siegal and others, <i>If/Then Installed</i> , 2005, interactive installation
	Mathieu Briand, <i>UBIQ: A Mental Odyssey</i> , 2006, interactive environment (augmented reality)
	John Maeda, <i>Mirror, Mirror</i> , 2006, interactive installation
	Gina Czarnecki, <i>Contagion</i> , 2008, interactive video installation
	Susanna Hertrich, <i>Reality Checking Device II Poetic information device</i> , 2008, interactive installation
	Brigitta Zics, <i>Mind Cupola</i> , 2008, interactive environment
	rAndom International, <i>Audience</i> , 2009, installation
	Rivane Neuenschwander, <i>Alarm Floor</i> , 2010, interactive acoustic environment

Video/Cinematic mirrors	Man Ray, <i>Emak-Bakia</i> , 1926, film
	Robert Whitman, <i>Bathroom Sink</i> , 1964, film installation
	Rubén Santantonín, Marta Minujín and others, <i>La Menesunda</i> , 1965, environment
	Marta Minujín, <i>Simultaneity in Simultaneity</i> , 1966, happening
	William Anastasi, <i>Viewing a Film in/of a Gallery of the Period and Audition</i> , 1967, film installation
	William Anasatasi, <i>Free Will</i> , 1968, black and white video camera, monitor
	Will Hindle, <i>Chinese Firedrill</i> , 1968, film
	Shigeo Kubota, <i>Chess</i> , 1968-1975, installation
	Les Levine, <i>Iris</i> , 1968, installation
	Frank Gillette and Ira Schneider, <i>Wipe Cycle</i> , 1969, installation
	Nam June Paik, <i>Participation TV</i> , 1969, interactive television installation
	Allan Kaprow, <i>Hello</i> , 1969, television program
	Les Levine, <i>Contact: A Cybernetic Sculpture</i> , 1969, installation
	Robert Morris with Robert Fiore, <i>Finch College Project</i> , 1969, film installation
	Paul Ryan, <i>Everyman's Moebius Strip</i> , 1969, installation
Frank Gillette, <i>Amps, Volts, and Watts</i> , 1970, installation	

	General Idea, <i>Double Mirror Video</i> , 1970, video
	Ken Jacobs, <i>Nervous System</i> , 1970-1980, filmic performances
	Bruce Nauman, <i>Empty Room/Public Room</i> , 1970, video installation
	Bruce Nauman, <i>Live Taped Video Corridor</i> , 1970, video installation
	PULSA, <i>Television Environments</i> , 1970, delayed and real-time transmission of images
	Eric Siegel, <i>Body, Mind, and Video</i> , 1970, closed-circuit television installation
	Telewissen, <i>The Magic Mirror</i> , 1970, interactive video installation
	Douglas Davis, <i>Electronic Hokkadim</i> , 1971, interactive telecast
	Paul Kos, <i>MAR MAR MARCH</i> , 1971, interactive video installation
	Peter Campus, <i>Interface</i> , 1972, glass plate, projector, live video
	Peter Campus, <i>Shadow Projection</i> , 1972, video installation
	Dan Graham, <i>Two Consciousness Projection</i> , 1972, performance
	Shigeo Kubota, <i>Marcel Duchamp's Grave</i> , 1972-5, installation
	Vito Acconci, <i>Air Time</i> , 1973, video
	Don Hallock, <i>Videola</i> , 1973, video installation
	James Byrne, <i>Tangent</i> , 1974, video

	David Hall, <i>Progressive Recession</i> , 1974, multi-screen interactive video installation
	Bill Lundberg, <i>Charades</i> , 1976, film installation
	Rotraut Pape, <i>Markstr. 1A</i> , 1977, video
	Peter Weibel, <i>Observation of the Observation: Uncertainty</i> , 1977, video installation
	Dan Graham, <i>Identification Project</i> , 1977, performance
	Vito Acconci, <i>You Are</i> , 1978, video installation
	Dan Graham, <i>Video piece for showcase window in a shopping arcade</i> , 1978, installation
	Kit Galloway and Sherrie Rabinowitz, <i>Hole in Space</i> , 1980, video conference
	Ute Aurand, <i>Silently Absorbed in Conversation</i> , 1981, 16mm film
	Andras Szirtes, <i>Mirror-reflection</i> , 1981, video
	Judith Barry, <i>Imagination/Dead/Imagine</i> , 1991, installation
	Liisa Roberts, <i>to derive an approach</i> , 1998-99, video installation
	Song Dong, <i>Broken Mirror</i> , 1999, video
	Maria Sester, <i>Access</i> , 2003, video project
	Michelle Teran, <i>Life: A User's Manual</i> , 2003-2006, performance
	Ricardo Basbaum, <i>Would you like to participate in an artistic experience?</i> , 2007, media installation

	Bernhard Hildebrandt, <i>The Corridor</i> , 2007, video installation
	Oliver Lutz, <i>The Lynching of Leo Frank</i> , 2010, CCTV installation, revealed image

BIBLIOGRAPHY

- “2 Boutiques,” *Interior Design*, Vol. 40, 1963, pp. 130-133.
- 200 Years of American Sculpture* (New York: Whitney Museum of American Art, 1976)
- Agamben, Giorgio. *What Is an Apparatus? And Other Essays*. Transl. David Kishik and Stefan Pedatella. (Stanford, CA: Stanford California Press, 2009)
- Alberro, Alexander, *Two-Way Mirror Power. Selected Writings by Dan Graham on His Art* (Cambridge, Mass.: MIT Press, 1999)
- Alonso, Rodrigo. “Art and Technology in Argentina: the Early Years,” *Leonardo Electronic Almanac*, Vol. 13, No. 4, April 2005. Available online at: http://roalonso.net/en/arte_y_tec/primeros_anios.php on 08/30/2010.
- Altieri, Charles. *The Particulars of Rapture: An Aesthetics of the Affects* (Ithaca, NY: Cornell University Press, 2003)
- Anish Kapoor. Whiteout*. Exh. cat. (Milan: Charta, 2004)
- Antin, David. “Art and the Corporations,” *ARTnews*, Vol. 70, no. 5, (September 1971), pp. 22-26, 52-56.
- Arendt, Hannah. *Between Past and Future. Eight Exercises in Political Thought* (New York; London: Penguin Books, 1993)
- Arthur, Paul. *A Line of Sight. American Avant-Garde Film since 1965* (Minneapolis: University of Minnesota Press, 2005)
- Art in Public Space Vienna, “A Sign for Karlsplatz – A Square for Art” (2005/6?). Available online at: http://www.publicartvienna.at/presse/Ken_LUM_PI_e_2.pdf on September 10, 2010.
- Artner, Alan G. “Revealing ‘The Bean.’ A Look behind the scenes at one of the most important additions of public art in decades,” *Chicago Tribune*, April 25, 2004. Available online at: http://articles.chicagotribune.com/2004-04-25/news/0404250487_1_sculpture-art-institute-plates on October 20, 2010.

- Ascott, Roy ed. *Art, Technology, Consciousness. mind@large*. (Bristol: Intellect Books, 2000)
- Asselin, Olivier, Lamoureux, Johanne, Ross, Christine. *Precarious Visualities. New Perspectives on Identification in Contemporary Art and Visual Culture* (Montreal & Kingston: McGill-Queen's University Press, 2008)
- Augé, Marc. *Anthropology for Contemporaneous Worlds* (Stanford: University Press, 1999), c. 1994.
- Azioni Materiali* (Cologne: Verlag der Buchhandlung König, 1999)
- Bachelard, Gaston. *The Poetics of Space* (Boston, MA: Beacon Press, 1994), c. 1958.
- Baker, Kenneth. "David Rabinowitch: The Claims of Experience," *Arts Magazine*, Vol. 49, Issue 5, January 1975, p. 54-56.
- Bann, Stephen. "The Magic Theatre" in *L'Oeil*, no. 164-165, (August – September, 1968), pp.
- Baracks, Barbara. "Dan Graham, Sperone Westwater Fischer Gallery," *Artforum* (May 1976), Vol. XIV, No. 9, pp. 67-68.
- Bateson, Gregory. *Steps to an Ecology of Mind* (San Francisco: Chandler Publishing, 1972)
- Battcock, Gregory. "Coktails at Bonwit's," *The Soho Weekly News*, November 4, 1976, p. 22.
- Battcock, Gregory. "New York – art exhibitions," *Domus*, January 1977, no. 566, p. 53-55.
- Battcock, Gregory. *Why Art. Casual Notes on the Aesthetics of the Immediate Past* (New York: E.P. Dutton, 1977)
- Battcock, Gregory ed. *New Artists Video. A Critical Anthology* (New York: E.P. Dutton, 1978)
- Baume, Nicholas ed. *Anish Kapoor. Past, Present, Future. Exh. cat.* (Cambridge, Mass., London: MIT Press, 2008)
- Baxandall, Michael. *Shadows and Enlightenment* (New Haven: Yale University Press, 1995)
- Bell, Jane. "Art in a Department Store's Windows," *St. Louis Dispatcher*, November 21, 1976, p. D.5.

- Benjamin, Walter. *The Arcades Project*. Transl. Howard Eiland and Kevin McLaughlin (Cambridge, MA: The Belknap Press of Harvard University Press, 1999)
- Bennett, Jill. *Empathic Vision. Affect, Trauma and Contemporary Art* (Stanford, CA: Stanford University Press, 2005)
- Benthall, Jonathan. *Science and Technology in Art Today* (New York, Washington: Praeger Publishers, 1972)
- Berger, John. *Ways of Seeing* (London: British Broadcasting Corporation and Penguin Books, 1977)
- Berger, Maurice. *Labyrinths: Robert Morris, Minimalism, and the 1960s* (New York: Harper & Row Publishers, 1989)
- Berlant, Lauren. *Cruel Optimism* (Durham, NC: Duke University Press, 2011)
- Biesenbach, Klaus, London, Barbara, Eamon, Christopher. *Video Acts. Single Channel Works from the Collection of Pamela and Richard Kranlich and New Art Trust* (New York: P.S. 1 Contemporary Art Center, 2002)
- Bion, Wilfred R. *Experiences in Groups, and Other Papers* (New York: Basic Books, 1961)
- Birnbaum, Daniel, Grynsztejn, Madeleine, Speaks, Michael eds. *Olafur Eliasson* (London, New York: Phaidon, 2002)
- Birringer, Johannes H. "Video Art/Performance: A Border Theory," *Performing Arts Journal*, September 1991, Vol. 13, no. 3 pp. 54-84.
- Birringer, Johannes H. "Dance and Media Technologies," *A Journal of Performance and Art*, January 2002, Vol. 24, Issue 1, pp. 84-93.
- Bishop, Claire. "Antagonism and Relational Aesthetics," *October*, 110, Fall 2004, pp. 51-79.
- Bishop, Claire. *Installation Art. A Critical History* (New York: Routledge, 2005)
- Bishop, Claire. "But is it Installation Art?" *TATE ETC.* (Issue 3, Spring 2005)
- Bishop, Claire. *Participation* (Cambridge, MA: MIT Press and London: Whitechapel Gallery, 2006)
- Bock, Anja. "Olafur Eliasson: Blurring Spectacle and Critique," *Art Papers*, Vol. 32, no. 6, (November/December, 2008), pp. 22-27.

- Bogue, Ronald. *Deleuze on Cinema* (London and New York: Routledge, 2003)
- Bourdon, David. "Plastic Man Meets Plastic Man," *New York Magazine*, February 10, 1969, Vol. 2, No. 6, pp. 44-46.
- Bourdon, David. "Disposable Art," *Life*, Vol. 67, No. 8, August 22, 1969, p. 62-67.
- Bourdon, David. "Folie Legères: Busting Out of Bonwit's," *The Village Voice*, November 8, 1976, p. 85.
- Bourdon, David. "A Critic's Diary: The New York Art Year," *Art in America* (July/August 1977), Vo. 65, no. 4, pp. 67-78.
- Bourriaud, Nicolas. *Relational Aesthetics* (Dijon: Les Presses du Réel, 2002)
- Boursier, Guido. "Far scattare nella gente meccahnismi di liberazione," *Sipario*, No. 276, (April 1969), p.17.
- Breton, André. *Nadja*. Transl. Richard Howard (New York: Grove Press, 1960), c. 1928.
- Broeckman, Andreas. "Public Spheres and Network Interfaces," Stephen Graham, *The Cybercities Reader* (New York: Routledge, 2004), pp. 378-384.
- Broeker, Holger ed. *Olafur Eliasson: Your Lighthouse: Works with Light 1991-2004*
- Brouwer, Joke ed., *TransUrbanism* (Rotterdam: V2_Publishing/NAi Publishing, 2002)
- Brouwer, Marianne ed. *Dan Graham Works 1965-2000*. Exh. cat. (Düsseldorf: Richter Verlag, 2001)
- Browne, Alix. "An I for an Eye, Louis Vuitton Gets a New Look," *New York Times Magazine* (November 5, 2006)
- Buchloh, Benjamin D. ed. *Dan Graham. Video-Architecture-Television. Writings on Video and Video Works 1970-1978* (Halifax: The Press of Nova Scotia College of Art and Design; New York: New York University Pres, 1979)
- Buchloh, Benjamin H. D. "From Gadget Video to Agit Video: Some Notes on Four Recent Video Works," *Art Journal*, Vol. 45, No. 3. Video: The Reflexive Medium (Autumn, 1985), pp. 217-227.
- Bullivant, Lucy. "Interactive Urban Design as Event: Christian Moeller," *Architectural Design*, Vol. 75, No. 1, (February 2005), pp. 62-67.
- Bullivant, Lucy. *Responsive Environments – Architecture, Art and Design* (London: V&A Contemporary, 2006)

- Buren, Daniel, Eliasson, Olafur. "In Conversation: Daniel Buren & Olafur Eliasson," *Artforum*, Vol. 43, no. 9, (May 2005), pp. 208-214.
- Burn, Ian, Ramsden, Mel. "A Question of Epistemic Adequacy," *Studio International* (October 1971), Vol. 182, no. 937, pp. 132-135.
- Burnham, Jack. "System Esthetics," *Artforum*, Vol. 6, No. 1 (September 1967): 30-35.
- Burnham, Jack. *Beyond Modern Sculpture. The Effects of Science and Technology on the Sculpture of this Century* (New York: George Brazillier, 1968)
- Burnham, Jack. "Real Time Systems," *Artforum*, Vol. 8, No. 1 (September 1969): 49-55.
- Burnham, Jack. "Les Levine, Business as Usual," *Artforum*, Vol. VIII, no. 8, April 1970, pp. 40-43.
- Burnham, Jack. "Corporate Art," *Artforum*, Vol. X, no. 2, (October 1971), pp.
- Burt, Jonathan. *Animals in Film* (London: Routledge, 2000)
- Busby, Cathy. "'I Say, Come On! Open Your Eyes!' An Interview with Ken Lum," *National Gallery of Canada Review*, Vol. II, 2001, pp. 89-104.
- Cage, John. *A Year from Monday. New Lectures and Writings*. (Middletown, Connecticut: Wesleyan University Press, 1975)
- Calarco, Matthew and Atterton, Peter eds. *Animal Philosophy: Essential Readings in Continental Thought* (London, New York: Continuum, 2004)
- Cameron, Eric. "Dan Graham: Appearing in Public," *Artforum*, (November 1976), Vol. XV, no. 3, pp. 66-68.
- Carroll, Noel. "Joan Jonas: Making the Image Visible," *Artforum*, April 1974, Volume XII, No. 8, pp. 52-53
- Carter, Curtis L. "Aesthetics, Video Art and Television," *Leonardo*, Volume 12, No. 4, Autumn 1979, pp. 289-293.
- Cartwright, Dorwin, Zander, Alvin eds. *Group Dynamics. Research and Theory* (New York, Evanston and London: Harper & Row Publishers, 1968)
- Celant, Germano. *Anish Kapoor* (Milan: Edizioni Charta, 1996)
- Celant, Germano. *Identité italienne. L'art en Italie depuis 1959* (Paris: Centre Georges Pompidou, 1981)

- Clough, Patricia Ticineto with Jean Haley. *The Affective Turn: Theorizing the Social* (Durham, NC: Duke University Press, 2007)
- Coe, Ralph T. *Sound, Light, Silence: Art that Performs* (Kansas City: National Gallery – Atkins Museum, 1966)
- Coe, Ralph T. *The Magic Theater. Art, Technology, Spectacular* (Kansas City: Circle Press, 1970)
- Comolli, Jean-Louis. “Machine of the Visible,” Teresa de Laurentis, Stephen Heath ed., *The Cinematic Apparatus* (New York: St. Martin’s Press, 1980), pp.
- Conard, Corrin. *Where Is the Public in Public Art? A Case Study of Millenium Park* (MA thesis), Ohio State University, 2008.
- Cooper Douglas, “Very Nervous System. Interview with David Rokeby,” *Wired*, Issue 3, March 1995. Available online at: <http://www.wired.com/wired/archive/3.03/rokeby.html> on 07/21/2011.
- Corraze, Jacques ed. *Image speculaire du corps* (Toulouse: Privat, 1980)
- Crary, Jonathan. *Techniques of the Observer: on vision and modernity in the nineteenth century* (Cambridge, Mass.: MIT Press, 1990)
- Crary, Jonathan. “Perceptual Modulations: Reinventing the Spectator,” *Outer and Inner Space: Pipilotti Rist, Shirin Neshat, Jane & Louise Wilson and the History of Video Art*. Exh. cat. (Richmond: Virginia Museum of Fine Arts, 2002), pp. 22-27.
- Crimp, Douglas. “De-Synchronization in Joan Jonas’s Performances,” *Joan Jonas. Scripts and Descriptions (1968-1982)*. (San Francisco: University of California, Berkeley, 1983), p. 8.
- Dan Graham: Beyond*. Exh. cat. (Cambridge, MA: MIT Press, 2009)
- Daubner, Ernestine. “David Rokeby: Interactive Strategies and Dialogical Allegories.” Available online at: <http://homepage.mac.com/davidrokeby/daubner.html> on August 2, 2011.
- David Rokeby. The Giver of Names*. Exh. cat. (Guelph, Ontario: Macdonald Stewart Art Center, 1998)
- David Rokeby*. Exh. cat. (Oakville, Ontario: Oakville Galleries, 2004)
- David Rokeby: Plotting Against Time*. Exh. cat. (Windsor, Ontario: Art Gallery of Windsor, 2008)

- Davis, Darryl. *Visions of Mind: Architectures for Cognition and Affect* (Hershey, PA: Information Science Publishing, 2004)
- Davis, Douglas. "Video Obscura," *Artforum*, Vol. X, No. 8, April 1972, pp. 65-71.
- De Certeau, Michel. *The Practice of Everyday Life* (Minneapolis: University of Minnesota Press, 1984)
- Debord, Guy. *The Society of the Spectacle* (New York: Zone Books, 1994), c. 1967.
- De Loisy, Jean and Locke, Adrian ed. *Anish Kapoor* (London: Royal Academy of Arts, 2009)
- Deleuze, Gilles and Guattari, Félix. "1730: Becoming Intense, Becoming Animal, Becoming Imperceptible," *A Thousand Plateaus: Capitalism and Schizophrenia*. Translated by Brian Massumi. (Minneapolis: University of Minnesota Press, 1987), pp. 256-341.
- Deleuze, Gilles and Guattari, Felix. "Percept, Affect and Concept" *What Is Philosophy?* Translated by Hugh Tomlinson and Graham Burchell. (New York: Columbia University, 1994), pp. 163-199.
- Deleuze, Gilles. *Cinema 1. The Movement Image*. Transl. Hugh Tomlinson and Barbara Habberjan (London: The Athlone Press, 1986)
- Dent, Tory. "First Person Plural," *Art Magazine*, Vol. 65, no. 3, November 1990, pp. 87-89.
- Derrida, Jacques. *Dissemination* (Chicago: University Press, 1981)
- Deutsche, Rosalyn. *Evictions. Art and Spatial Politics*. (Cambridge, Mass.: MIT Press, 1996)
- Dewdney, Andrew, Ride, Peter. *The New Media Handbook* (London and New York: Routledge, 2006)
- Di Pellegrino, G., Fadiga, L., Fogassi, L., Gallese, V., & Rizzolatti, G. "Understanding motor events: a neurophysiological study," *Experimental Brain Research*, (October, 1992), Vol. 91, no. 1, pp. 176-180.
- Diehl, Carol. "Northern Lights," *Art in America*, October 2004, Vol. 92, no. 9, p. 108-115.
- Dietz, Steve. "Ten Dreams of Technology," *Leonardo*, Vol. 35, no. 5. Tenth Anniversary New York Digital Salon (2002), pp. 509-513, 515-522.

- Dimond Sara ed. *Computer Voices/Speaking Machines*. Exh. cat. (The Walter Phillips Gallery: Banff, Alta, 2001)
- Dinkla, Söke. "Female Archetypes of the Present – from Roberta Breitmore to CyberRoberta." Available online at: http://telematic.walkerart.org/telematic/hershman_hershman.html on April 4, 2011.
- Dinkla, Söke. "The History of the Interface in Interactive Art." Available online at: http://www.kenfeingold.com/dinkla_history.html on April 2, 2011
- Doane, Mary Ann. "Film and the Masquerade: Theorising the Female Spectatorship," *Screen* 23, (September-October 1982), pp. 74-88.
- Dodsworth, Clark Jr. ed. *Digital Illusion. Entertaining the Future with High Technology* (Reading, MA: ACM Press, 1998)
- Dunn, David ed., *Pioneers of Electronic Art* (Linz: Ars Electronica, 1992)
- Dupuy, Jean ed., *Collective Consciousness. Art Performances in the Seventies* (New York: Performance Arts Journal Publications, 1980)
- Eco, Umberto. *Semiotics and the Philosophy of Language* (Bloomington, IN: Indiana University Press, 1986)
- Edgerton, Samuel Y., *The Mirror, the Window, and the Telescope. How Renaissance Linear Perspective Changed Our Vision of the Universe* (Ithaca and London: Cornell University Press, 2009)
- Ehrenzweig, Anton. *The Psychoanalysis of Artistic Vision and Hearing. An Introduction to a Theory of Unconscious Perception* (New York: George Braziller, 1965)
- Ehrlich, George. "The Magic Theater Exhibition: An Appraisal," *Art Journal*, Vol. 29, no. 1 (Autumn 1969), pp. 40-44.
- Eliasson, Olafur, Cerizza, Luca eds. *TYT [Take Your Time]*, Vol. 2 (Cologne: Verlag der Buchhandlung Walther König, 2009)
- Eliasson, Olafur, Koch, Andreas, Eggel, Caroline. *Olafur Eliasson: Your Chance Encounter*. Exh. cat. (Baden: Lars Müller Publishers, 2010)
- Eliasson, Olafur. "Statement on *The collectivity project*," 2nd Tirana Biennial (2005). Available online at: www.lego.com on 11/23/2007.
- Eliasson, Olafur. *Olafur Eliasson: Your Only Real Thing is Time* (Boston: Institute of Contemporary Art; Ostfildern: Hatje Cantz, 2001)
- Eliasson, Olafur. *The Mediated Motion*, Exh. cat. (Köln: König, 2001)

- Eliasson, Olafur. *Your engagement has consequences: on the relativity of your reality* (Baden: Lars Müller Publishers, 2006)
- Eliasson, Olafur. *Your mobile expectations. BMW H₂R project.* (Berlin: Lars Müller Publishers, 2008)
- Elkins, James. *The Object Stares Back* (San Diego, New York, London: Harcourt, 1997)
- Engberg-Pedersen, Anna ed. *Studio Olafur Eliasson. An Encyclopedia* (Taschen: Cologne, London, Los Angeles, Madrid, Paris, Tokyo, 2009)
- Fanon, Frantz. *Black Skin, White Masks*, c. 1952 (New York: Grove Press, 2008)
- Farrow, Clare. "Anish Kapoor. Theatre of Lightness, Space and Intimacy," *Art and Design*, no. 33, 1993, pp. 52-59.
- Fernandez, Maria. "Illuminating Embodiment: Rafael Lozano-Hemmer's Relational Architectures," *Architectural Design*, vol. 77, np. 4, July/August, 2007, pp. 78-87.
- Ferry, Luc. "Neither Man Nor Stone," Matthew Calarco and Peter Atterton eds., *Animal Philosophy: Essential Readings in Continental Thought* (London; New York: Continuum, 2004), pp. 147-156.
- Fifer, Sally Jo, Hall, Doug, *Illuminating Video: An Essential Guide to Video Art* (New York: Aperture in association with Bay Area Video Coalition, 1990)
- Fifield, George, ed. *Act/React: Interactive Art*, Exh. cat. (Milwaukee: Milwaukee Art Museum, 2008)
- Fink, Eugen. *Le Jeu comme symbole du monde* (Paris: Les Editions de Minuit, 1966)
- Fitzgibbons, Ruth Miller. "Windows of the world: the new display art," *Interiors*, Vol. 136, 1977, pp. 92-95.
- Flaxman, Gregory ed. *The Brain is the Screen: Deleuze and the Philosophy of Cinema* (Minneapolis: University of Minnesota, 2001)
- Foucault, Michel. *Discipline and Punish. The Birth of the Prison.* Transl. Alan Sheridan. (New York: Pantheon Books, 1977) c. 1975.
- Foucault, Michel. "Of Other Spaces" (1967). Available at: <http://foucault.info/documents/heteroTopia/foucault.heteroTopia.en.html> on 02/15/2011.
- Frankenstein, Alfred. "Magic Theatre in Kansas City," *San Francisco Chronicle*, Sunday, June 2, 1968.

- Frieling, Rudolf. *The Art of Participation: 1950 to Now* (San Francisco: Museum of Modern Art, 2008)
- Frohne, Ursula, Schieren, Mona, Guiton, Jean-François eds. *Present continuous past(s): media art - strategies of presentation, mediation and dissemination* (Wien, New York: Springer, 2005)
- Fry, Edward. "Robert Morris: The Dialectic," *Arts Magazine*, September 1974, Volume 49, No. 1, p. 24.
- Gaché, Sherry. "Interview: Anish Kapoor," *Sculpture*, Vol. 15, No. 2, February 1996, pp.
- Geert, Lovink. "Real and Virtual Light of Relational Architecture," *Uncanny Networks: Dialogues with the Virtual Intelligentsia* (Cambridge: MIT Press, 2002), pp. 304-312.
- Gilbert, Margaret, *Sociality and Responsibility. New Essays in Plural Subject Theory* (Lanham, MD: Rowman & Littlefield Publishers, 2000)
- Gilfoyle, Timothy J. *Millenium Park: Creating a Chicago Landmark* (Chicago: University of Chicago Press, 2006)
- Gilman, Claire. "Pistoletto's Staged Subjects," *October 124*, Spring 2008
- Giunta, Andrea. *Avant-Garde, Internationalism, and Politics. Argentine Art in the Sixties* (Durham & London: Duke University Press, 2007)
- Goffman, Erving. *The Presentation of Self in Everyday Life* (New York: Anchor Books, 1959)
- "Going On About Town," *The New Yorker* (May 19, 2008), p. 14.
- Gossen, E.C. "The Artist Speaks: Robert Morris," *Art in America*, May-June 1970, Vol. 58, No. 3, p. 106.
- Graham, Dan. "Ambienti. Riflessioni Ritardate. Environment/Time-Delayed Reflections," *Casabella*, Vol. 411, (1976), pp. 29-34.
- Graham, Dan. "Architecture Video Projects," *Studio International*, Vol. 170, no. (September, 1975), pp. 143-146.
- Graham, Dan. "Three Projects for Architecture and Video/Notes," *Tracks: a journal of artists' writings*, Vol. 3, no. 3, (Fall 1977), pp. 52-61.
- Graham, Dan. *Buildings and Signs* (Chicago: Renaissance Society at the University of Chicago, 1981)

- Graham, Dan. *For Publication* (Los Angeles: Otis Art Institute of Los Angeles County, 1975)
- Graham, Dan. *Theatre* (Gent: Anton Herbert, 1977)
- Graham, Stephen. *The Cybercities Reader* (New York: Routledge, 2004)
- Grau, Oliver. *Virtual Art: From Illusion to Immersion* (Cambridge, MA: The MIT Press, 2004)
- Grau, Oliver ed., *MediaArtHistories* (Cambridge, Mass.: MIT Press, 2007)
- Greenberg, Clement. "Avant-Garde and Kitsch" (1939) in John O'Brian ed., *Clement Greenberg: The Collected Essays and Criticism. Perceptions and Judgments, 1939-1944. Vol. 1* (Chicago: University of Chicago Press, 1988), pp.
- Gregory, Richard. *Eye and Brain. The Psychology of Seeing* (Princeton, NJ: Princeton University Press, 1990), c. 1966.
- Grove, Nancy. "Dan Graham, Sperone Westwater Fischer," *Arts Magazine*, 1976, Vol. 50, no. 8, p. 18
- Groys, Boris. "Politics of Installation Art," *e-flux*, no. 2 (January 2009). Available online at: <http://www.e-flux.com/journal/view/31> on February 10, 2009.
- Groys, Boris. "Politics of Installation," *Going Public* (Berlin: Sternberg Press, 2010), pp. 50-69.
- Grynsztejn, Madeleine ed. *Take Your Time*. Exh. cat. (London: Thames and Hudson, 2007)
- Guralnik, Nehama ed. *Anish Kapoor*. Exh. cat. (Tel Aviv: Tel Aviv Museum of Art, 1993)
- Hansen, Mark B. N. *New Philosophy for New Media* (Cambridge, Mass.: MIT Press, 2004)
- Hansen, Mark B.N. *Bodies in Code* (London: Routledge, 2006)
- Hansen, Mark B. N. "Expanded Consciousness or Cognition? Digital Media and Transcendental Sensibility," University of Pittsburgh, April 2nd, 2009.
- Haraway, Donna J. "A Manifesto for Cyborgs: Science, Technology and Socialist Feminism in the 1980s," Sean Redmond ed., *Liquid Metal: The Science Fiction Film Reader* (London: Wallflower Press, 2004), pp.

- Hardt, Michael, Negri, Antonio. *Empire* (Cambridge, Mass.; London: Harvard University Press, 2000)
- Harrington, Stephanie. "TV: Awaiting Genius," *The Village Voice*, May 29, 1969, p. 29.
- Hayden, Malin Hedlin. *Out of Minimalism: The Referential Cube. Contextualizing Sculptures by Antony Gormley, Anish Kapoor and Rachel Whiteread* (Uppsala: Uppsala Universitet, 2003)
- Hayles, N. Katherine. *How We Became Posthuman: Virtual Bodies in Cybernetics, Literature, and Informatics* (Chicago: University of Chicago Press, 1999)
- Hays, Michael ed. *Oppositions Reader* (New York: Princeton Architectural Press, 1998)
- Heinrich, Falk. "The Aesthetics of Interactive Artifacts – Thoughts on Performative Beauty," *DIMEA, Proceedings of the Second International Conference on Digital Interactive Media in Entertainment and Arts* (2007), 58-63. Available online at: <http://dl.acm.org/citation.cfm?id=1306832> on August 15, 2011.
- Heiss, Alana. "Lynn Hershman. (Interview with Alana Heiss)," *Currant*, August/October, 1976, p. 44, p. 50.
- Hemmings, Clare. "Invoking Affect: Cultural Theory and the Ontological Turn," *Cultural Studies*, Vol. 19, no. 5 (September 2005), 548-567.
- Hershman Leeson, Lynn ed., *Clicking In: Hot Links to a Digital Culture* (Seattle: Bay Press, 1996)
- Hershman, Lynn. "Art-ificial Sub-versions, Inter-action, and the New Reality," *Cameraworks: A Journal of Photographic Arts*, Vol. 20, No. 1, Spring/Summer 1993, pp. 21-25.
- Hershman, Lynn. "Difference Engine #3," *Leonardo*, Vol. 32, no. 4, 1999, pp. 269-270.
- Hershman, Lynn. "Reflections on the Electric Mirror," in Gregory Battcock ed., *New Artists Video. A Critical Anthology* (New York: E.P. Dutton, 1978), pp. 36-39.
- Hershman, Lynn. "The Floating Museum," *Data*, Volume 27, (July-September 1977), pp.1-3
- Hershman, Lynn. "The Raw Data Diet, All-Consuming Bodies and the Shape of Things to Come," *Leonardo*, Vol. 38, no. 3, 2005, pp. 208-212.
- Hershman, Lynn. "Touch-Sensitivity and Other Forms of Subversion: Interactive Artwork," *Leonardo*, Vol. 26, no. 5, Art and Social Consciousness: Special Issue (1993), pp. 431-436.

- Hershman, Lynn. "Visual arts at the Edinburgh Festival," *Studio International* , Volume 186, no. 959, October 1973, pp.158-160.
- Hershman, Lynn. *Captured Bodies of Resistance* (Warsaw: Centrum Sztuki Współczesnej, 1996)
- Hershman, Lynn. *Chimaera. Monographie* (Herimoncourt: Centre International de Creation Video Montbeliard Belfort, 1992)
- Hershman, Lynn. *Paranoid Mirror*. Exh. cat. (Seattle: Seattle Art Museum, 1995)
- Herzfelde, Wieland. "Introduction to the First International Dada Fair." Translated and introduced by Brigid Doherty. *October*, No. 105, Summer 2003, pp. 93-104.
- Hoch, Michael, Schwabe, Detlev. "Group Interaction in a Surround Screen Environment," *Computer Animation Conference Proceedings*, Geneva, 1999, pp. 93-98.
- Huebner, Jeff. "Millenium Pork and the Bean," *Public Art Review*, Vol. 18, no. 1, Issue 35 (Fall/Winter 2006), pp. 70-71.
- Iacoboni, Marco. *Mirroring People. The New Science of How We Connect with Others* (New York: Farrar, Straus and Giroux, 2008)
- Iles, Chrissie ed. *The Projected Image in American Art 1964-1977*. Exh. cat. (New York: Whitney Museum of American Art, 2001)
- Interface. Encounters with New Technology*. Exh. brochure. (Ottawa: Canadian Museum of Contemporary Photography, 1998)
- Io Sono l'Altro. Michelangelo Pistoletto*. Exh. cat. (Torino: Galleria Civica d'Arte Moderna e Contemporanea, 2000)
- Jäger, Joachim, Knapstein, Gabriele, Douglas, Stan, Husch, Anette. *Beyond Cinema: The Art of Projection. Films, Videos, and Installations from 1963 to 2005*. Exh. cat. (Ostfildern: Hatje Cantz, 2007)
- Jean, Marcel, with the collaboration of Arpad Mezei. *Histoire de la peinture surréaliste* (Paris: Seuil, 1959), p. 281-282.
- Joan Jonas Works 1968 – 1994*. Exhibition catalogue (Amsterdam: Stedelijk Museum, 1994)
- Joan Jonas*. Exh. cat. (Southampton: John Hansard Gallery in association with Wilkinson Gallery, 2004)
- Jones, Amelia. "This Life," *Frieze*, published on 09/09/08, online

- Jones, Caroline A. *Sensorium: embodied experience, technology, and contemporary art* (Cambridge, MA: MIT Press, 2006)
- Joselit, David. "The Video Public Sphere," *Art Journal*, Volume 59, No. 2, (Summer 2000), pp. 46-53.
- Kacunko, Slavko, "On the Observation of Observation." Available online at: <http://www.slavkokacunko.de/index.php?id=102> on July 3, 2011.
- Kalof, Linda and Fitzgerald, Amy eds., *The Animals Reader: The Essential Classic and Contemporary Writings* (New York: Berg, 2007)
- Kapoor, Anish. "Descent into Limbo," *Tate Magazine*, Issue 1, 2002. Available online at: <http://www.tate.org.uk/magazine/issue1/descent.htm> on 11/28/2010.
- Kaprow, Allan. "The Shape of the Art Environment. How Anti Form Is "Anti-Form," *Artforum*, Vol. VI, No. 10, Summer 1968, p. 33.
- Kaprow, Allan. "Video Art: Old Wine, New Bottle." *Artforum*, Vol. XII, No. 10, June 1974, p. 48.
- Katz, John. *How Emotions Work* (Chicago and London: The University of Chicago Press, 1999)
- Katzenstein, Inés ed. *Listen, Here, Now! Argentine Art of the 1960s: Writings on the Avant-Garde* (New York: MoMA, 2004)
- Ken Lum*. Exh. cat. (Winnipeg: Winnipeg Art Gallery, 1990)
- Ken Lum. Recent Work*. Exh. cat. (Oakville, Ontario: Oakville Galleries, 1994)
- Kenneth Baker. "David Rabinowitch: The Claims of Experience," *Arts Magazine*, Vol. 49, Issue 5, January 1975, p. 55.
- Kent, Rosemary. "Drama Department: Comedy, Sex and Violence in Store Windows," *New York Magazine*, May 24, 1976, pp. 82-85
- Kepes, Gyorgy ed., *Arts of the Environment* (New York: George Braziller, 1972)
- de Kerckhove, Derrick. "Communication Arts for a New Spatial Sensibility," *Leonardo*, Vol. 24, no. 2. Connectivity: Art and Interactive Telecommunications (1991), pp. 131-135.
- Kester, Grant. *Conversation Pieces: Community and Communication in Modern Art* (Berkeley and Los Angeles, CA: University of California Press, 2004)

- Kinder, Marsha. "Hot Spots, Avatars, and Narrative Fields Forever: Bunuel's Legacy for New Digital Media and Interactive Database Narrative," *Film Quarterly*, Volume 55, issue 4, Summer 2002. Retrieved from www.filmquarterly.org/issue_5504_right.html on 04/04/09.
- Kitnick, Alex ed. *Dan Graham* (Cambridge, Mass.: MIT Press, 2011)
- Klüver, Billy, Martin, Julie and Rose, Barbara ed., *Pavilion* (New York: Dutton & Co., 1972)
- Klüver, Billy. "Theater and Engineering. An Experiment. Notes by an engineer," *Artforum*, Vol. 5, no. 6, (February, 1967), pp.
- Klüver, Billy. "Experiments in Art and Technology," *MoMA, Members Newsletter*, No. 3 (January – February, 1969) p. 5 (pp ?)
- Kostelanetz, Richard. "Artistic Machines," *Chicago Review*, Vol. 23, No. 1, (Summer 1971), pp. 116-133.
- Krauss, Rosalind. "Video: The Aesthetics of Narcissism," *October*, Volume I, Spring 1976, pp. 50-64.
- Kraynak, Janet ed. *Please Pay Attention Please: Bruce Nauman's Words. Writings and Interviews*. (Cambridge, Mass.: MIT Press, 2003)
- Kristeva, Julia. *Strangers to Ourselves*. Trans. Leon S. Roudiez. (New York: Columbia University Press, 1991)
- Kuenzali, Rudolf E. ed., *Dada and Surrealist Film* (New York: Willis Locker and Owens, 1987)
- Lacan, Jacques. "The Mirror Stage as Formative of the Function of the I, as Revealed in Psychoanalytic Experience," *Écrits: A Selection*. Translation by Alan Sheridan. (London: Tavistock Publications, 1977), pp. 3-10.
- Lacan, Jacques, Fink, Bruce, Fink, Heloise, Grigg, Russell. *Écrits: A Selection* (New York: W.W. Norton & Company, 2004)
- Lacy, Suzanne ed. *Mapping the Terrain. New Genre Public Art* (Seattle, WA: Bay Press, 1995)
- Laing, R.D. Phillipson, H., Lee, A.R. *Interpersonal Perception. A Theory and Method of Research*. (London: Tavistock Publications, 1966)
- Laing, R.D. *Self and Others* (Baltimore: Penguin Books Inc., 1971)

- Laing, R.D. *Knots* (New York: Pantheon Books, 1970)
- Latner, Joel. *The Gestalt Therapy Book* (Toronto, New York, London: Bantam Books, 1974)
- Lebel, Robert ed. *Marcel Duchamp* (New York: Paragraphic Books, 1959)
- Le Bon, Gustave. *The Crowd. A Study of the Popular Mind* (London: T.F. Unwin, 1896)
- Lefebvre, Henri. *The Production of Space* (Oxford: Blackwell Publishing, 1991), c. 1974.
- Lefort, Claude ed. *Maurice Merleau Ponty. The Visible and the Invisible.* (Evanston: Northwestern University Press, 1968)
- Le Grice, Malcolm. *Abstract Film and Beyond* (The MIT Press, Cambridge, MA, 1977)
- Lee, Pamela. *Chronophobia. On time in the art of the 1960s* (Cambridge, Mass: MIT Press, 2004)
- Levin, Kim. *Lucas Samaras* (New York: Harry N. Abrams, 1975)
- Levine, Les. "For Immediate Release," *Art and Artists*, Vol. 4, No. 2, May 1969, pp. 46-51.
- Levine, Les. "Urban Guerilla Learning," *Design Quarterly. New Learning Spaces & Places*, No. 90/91, 1974, pp. 27-32.
- Lingis, Alphonso. *The Community of Those Who Have Nothing in Common* (Bloomington, IN: Indiana University Press, 1994)
- Lippard, Lucy. *Get the Message? A Decade of Art for Social Change* (E.P. Dutton: New York, 1984)
- Lippard, Lucy. *Six Years: the Dematerialization of the Art Object* (New York, Washington: Praeger Publishers, 1973)
- "Living Statue Tries Experiment," *The Surrey Leader*, July 5, 1978, p. 12.
- Livingston, Jane. "Kansas City," *Artforum*, Vol. VII, No. 1, (September 1968), pp. 66-67.
- Livingstone, Marco. *Anish Kapoor. Feeling into Form. Le Sentiment de la forme, la forme du sentiment* (Lyon: Le Nouveau Musée, 1983)
- Loeffler, Carl Eugene, Anderson, Tim eds., *The Virtual Reality Casebook* (New York: Van Nostrand Reinhold, 1994)

- Lozano-Hemmer, "Utterance 4 – Relational Architecture," *Performance Research*, Vol. 4, no. 2, Summer 1999, pp. 52-56.
- Lozano-Hemmer, Rafael ed. *Alzado Vectorial. Arquitectura Relational No. 4/Vectorial Elevation. Relational Architecture No. 4* (Mexico City: Ediciones San Jorge, 2000)
- Lozano-Hemmer, Rafael. *Some Things Happen More Often Than All of the Time* (Madrid: Turner, 2007)
- Lozano-Hemmer, Rafael and Hill, David eds. *Under Scan* (Montreal: Antimodular Research, 2007)
- Lucas Samaras*. Exh. cat. (New York: Whitney Museum of America Art, 1972)
- Lucas Samaras: Paraxena*. Exh. cat. (Athens: Hellenic Ministry of Culture, 2009)
- Lum, Ken. "Something's Missing," *Canadian Art*, Volume 23, No. 3, Winter 2006, pp. 54-60.
- Lum, Ken. *Speculations* (Ghent: Imschoot, 1992)
- LYNN HERSHMAN is not ROBERTA BREITMORE*. Exh. cat. (San Francisco: Fringe Press, 1978)
- Machine Life*. Exh. cat. (Kingston: Agnes Etherington Art Center; Toronto: The Koffler Gallery, 2004)
- Maffesoli, Michel. *The Time of the Tribes. The Decline of Individualism in Mass Society* (Sage: London, 1996)
- Maisonneuve, Jean. *La Dynamique des Groupes* (Paris: Presses Universitaires de France, 1973)
- Manniz, Elizabeth A., Neale, Margaret A., Goncalo, Jack A. eds. *Creativity in Groups. Research on Managing Groups and Teams* (Bingley: Emerald Group, 2009)
- Marchessault, Janine. *Mirror Machine. Video and Identity* (Toronto: YYZ Books, 1995)
- Massumi, Brian. "The Autonomy of Affect," *Deleuze: A Critical Reader*, Paul Patton ed. (Oxford: Blackwell, 1996), pp.
- Massumi, Brian. "Strange Horizon – Buildings, Biograms and the Body Topologic," *Architectural Design*, Vol. 69, no. 9-10, 1999, pp. 12-19.
- Massumi, Brian. *Parables for the Virtual. Movement, Affect, Sensation* (Durham & London: Duke University Press, 2002)

- Margolies, John. "TV – the Next Medium," *Art in America*, Vol. 57, No. 5, September-October, 1969, pp. 48-55.
- Mark, Lisa Gabrielle ed. *Ken Lum, Photo-Mirrors*. Exh. cat. (Toronto: Walter Philips Gallery and the Banff Center for the Arts, 1998)
- Mark, Lisa Gabrielle ed. *WACK! Art and the Feminist Revolution!* (Cambridge, MA, London: MIT Press, 2007)
- Maturana, Humberto R. and Varela, Francisco. *Autopoiesis and Cognition. The Realization of the Living* (Boston: Reidel Publishing Company, 1972)
- Max Kozloff, "The Multimillion Dollar Art Boondoggle," *Artforum*, Vol. X, no. 2, (October, 1971), pp. 72-76.
- Maxwell, Douglas. "Anish Kapoor Interviewed by Douglas Maxwell," *Art Monthly*, No. 136, May 1990, pp. 6-12.
- May, Susan ed. *Olafur Eliasson. The Weather Project* (London: Tate Publishing, 2003)
- Mayer, Rosemary. "Dan Graham: Past/Present," *Art in America* (November-December 1975), Vol. 63, no. 6, pp. 83-85.
- McArthur, Evan and Lum, Ken. *Transcript: a Journal of Visual Culture*, Vol. 2, no. 1, 1996, pp. 25-36.
- Joel McKim, "Of Microperception and Micropolitics. An Interview with Brian Massumi," *INFLeXions*, Issue 3, October 2009. Available online at: http://www.senselab.ca/inflexions/volume_3/node_i3/massumi_en_inflexions_vol03.html on September 1, 2011.
- McLuhan, Marshall and Powers, Bruce R. *The Global Village. Transformations in World Life and Media in the 21st Century* (New York, Oxford: Oxford University Press, 1989)
- McLuhan, Marshall, Fiore, Quentin. *The Medium Is the Massage. An Inventory of Effects*. (New York, London, Toronto: Bantam Books Inc., 1967)
- McLuhan, Marshall. *Understanding Media. The Extensions of Man* (New York, Toronto, London: McGraw-Hill Book Company, 1964)
- Media Projects and Public Advertisements*. Exh. cat. (Luzern: Mai 36 Galerie, 1988)
- Melchior-Bonnet, Sabine. *The Mirror: A History*. Transl. by Katharine H. Jewett. (London: Routledge, 2001)
- Merleau-Ponty, Maurice. *The Phenomenology of Perception* (New Jersey: Routledge, 2006), c. 1962

- Metz, Christian. *The Imaginary Signifier. Psychoanalysis and the Cinema* (Bloomington: Indiana University Press, 1977)
- Meyer, James. "No More Scale: The Experience of Size in Contemporary Sculpture," *Artforum*, Vol 42, No. 10, (Summer 2004), pp. 220-228.
- Michelangelo Pistoletto. A Minus Artist.* (Florence: Hopeful Monster, 1988)
- Milgram, Stanley. *The Individual in a Social World* (Reading, MA, Melo Park, CA: Addison-Wesley Publishing Company, 1977), pp. 51-53.
- Millis, Diane. "Millenium Park, Chicago, USA," *Green Places*, Issue 13 (March 2005), p. 35.
- Mirror – Works.* Exh. cat. (Institute for the Arts: Houston, 1983)
- Mirror Mirror: Then and Now.* Exh. cat. (Brisbane: Institute of Modern Art, 2010)
- Mitchell, W.J.T. and Hansen, Mark B.N. eds. *Critical Terms for Media Use* (Chicago and London: The University of Chicago Press, 2010)
- Moeller, Christian. *A Time and Place. Media Architecture, 1991-2003.* (Baden: Lars Müller Publishers, 2004)
- Montano, Linda M. ed. *Performance Artists Talking in the Eighties.* (Berkeley: University of California Press, 2000)
- Moore, Alan. "Jean Dupuy," *Artforum*, October 1974, Vol. XIII, no. 2, pp. 72-75.
- Moore, Ethel ed. *Letters from 31 Artists to the Albright-Knox Art Gallery* (Buffalo: The Buffalo Fine Arts Academy, 1970)
- Morais, Maria, Koerner von Gustorf, Oliver. "Cultural History, Not Natural History," *Deutsche Bank Kunst Magazine* (Issue 6, 2006). Retrievable online at /www.deutsche-bank-kunst.com, on 12/02/2006.
- Morellet, François. *Mais comment taire mes commentaries* (Paris: Ecole Superieure des beaux-arts, 1999)
- Morris, Robert "Notes on Sculpture, Part II," *Artforum*, October 1967, Vol V, no. 2, pp. 20-23.
- Robert Morris, "Notes on Sculpture. Part III. Notes and Nonsequiturs," *Artforum*, June 1967, Vol. V, no. 10, pp. 24-29.

- Morris, Robert. "Notes on Sculpture. Part IV: Beyond Objects," *Artforum*, Vol. VII, no. 8, April 1969, p. 51.
- Morris, Robert. "The Present Tense of Space," *Art in America*, Vol. 66, No. 1, January – February 1978, pp. 70-81.
- Morse, Margaret, "The Poetics of Interactivity," Maloy, Judy ed., *Women, Art, and Technology* (Cambridge, Mass.: MIT Press, 2003), pp. 16-33.
- Moure, Gloria ed. *Dan Graham: Works and Collected Writings* (Barcelona: Ediciones Polígrafa, 2009)
- Mumford, Lewis. *Technics and Civilization* (New York: Harcourt, Brace and Company, Inc., 1934)
- Nancy, Jean-Luc. *Being Singular Plural* (Stanford, CA: Stanford University Press, 2000)
- Newman, Jay Hartley and Newman, Lee Scott. *The Mirror Book. Using Reflective Surfaces in Art, Craft and Design* (New York: Crown Publishers, 1978)
- Newman, Thelma R. "The Artist Speaks: Les Levine," *Art in America*, Vol. 57, No. 6, November-December, 1969, pp. 86-93.
- Novaes, Sylvia Caiuby. *Play of Mirrors. The Representation of Self Mirrored in the Other*. Translated by Izabel Murat Burbridge. (Austin: University of Texas Press, 1997)
- Obrist, Hans Ulrich and Boutoux, Thomas ed. *Interviews. Volume 1*, (Milan: Edizioni Charta, 2003)
- O'Doherty, Brian. *Inside the White Cube: The Ideology of the Gallery Space* (Berkeley: University of California Press, 1976)
- O'Sullivan, Simon. "The Aesthetics of Affect: Thinking Art beyond Representation," *Angelaki: Journal for the Theoretical Humanities*, Vol. 6, no. 3 (December 2001), pp. 25-35.
- Oddey, Alison and White, Christine eds. *Modes of Spectating* (Bristol and Chicago: Intellect Books, 2009)
- Olafur Eliasson. Minding the World*. Exh. cat. (Ostfilder-Ruit: Hatje Cantz Verlag, 2004)
- Olafur Eliasson and Ma Yansong: Feelings Are Facts*. Exh. cat. (Ullens Center for Contemporary Art: Beijing, 2010)
- Osborn, Alex F. "Applied Imagination. Principles and Procedures of Creative Thinking" (New York: Scribner, 1953).

- Packard, Vance. *The Naked Society* (New York: David McKay, Inc., 1964)
- Palmer, Daniel. *Participatory Media: Visual Culture in Real Time* (Saarbrücken: VDM Verlag, 2008)
- Parnes, Laura. "Lynn Hershman Leeson, History=Future", *P.S.1 Newspaper Special Edition, WACK!*, Long Island City, NY, Spring 2008. Available at: <http://ps1.org/newspaper/view/article/17> on 04/22/2011.
- Paulus, Paul B. and Nijstad, Bernard A. *Group Creativity. Innovation through Collaboration* (Oxford: Oxford University Press, 2003)
- Peckham, Morse. *Man's Rage for Chaos. Biology, Behavior, and the Arts* (Philadelphia, New York: Chilton Company, 1965)
- Peltomäki, Kirsi. "Viewing Institutional Critique in the 1970s," *Art Journal*, Vol. 66, No. 4 (Winter 2007), pp. 36-51.
- Pelzer, Birgit, Francis, Mark, Colomina, Beatriz eds., *Dan Graham* (London; New York: Phaidon, 2001)
- Pelzer, Birgit. "Vision in Process," *October* (Autumn 1979), Vol 10, pp. 105-119.
- Penny, Simon ed. *Critical Issues in Electronic Media* (New York: SUNY, 1995)
- Perron, Jacques. "Lynn Hershman: Agent Ruby"
- Perrone, Jeff. "The Ins and Outs of Video," *Artforum* (Summer 1976), Vol. XIV, No. 10, pp. 53-57.
- Piene, Otto. *Elements*. Exh. cat. (New York: Howard Wise Gallery, 1965)
- Piene, Otto. *Light Ballet*. Exh. cat. (New York: Howard Wise Gallery, 1965)
- Pincus-Witten, Robert. "Bruce Nauman: Another Kind of Reasoning," *Artforum*, February 1972, Volume X, no. 6, pp. 30-37.
- Pistoletto, Michelangelo, Faber, Monika and Hegyi, Lorand ed. *Zeit-Räume*. Exh. cat. (Vienna: Museum Moderner Kunst Stiftung Ludwig, 1995)
- Plasencia, Clara ed. *Joan Jonas. Timelines: Transparencies in a Dark Room*. Exh. cat. (Barcelona: MACBA, 2007)
- Polanyi, Michael. *Personal Knowledge. Towards a Post-Critical Philosophy* (New York: Harper Torchbook, 1964).

- Popper, Frank. *Art – action and participation* (New York: New York University Press, 1975)
- Popper, Frank. *Art of the Electronic Age* (New York: Harry N. Abrams, 1993)
- Prather, Marla. *unrepentant ego. The Self-Portraits of Lucas Samaras*. Exh. cat.. (New York: Whitney Museum of American Art, 2004)
- Propositions visuelles du mouvement international. Nouvelle Tendence*. Exh. cat. (Paris: Musée des Arts Decoratifs, 1964)
- Psyllos, Steven. “Repeat viewing recommended. On Olafur Eliasson’s Take Your Time,” *New York Arts Magazine*. ? Available online at: http://www.nyartsmagazine.com/index.php?option=com_content&view=article&catid=164%3Anew-york&id=200487%3Aolafur-eliasson&Itemid=723 on August 20, 2009.
- Reid, Sir Norman. “The Limits of Collecting,” *Studio International*, (July-August 1971), Vol. 182, no. 935, pp. 38-39.
- Reise, Barbara. “A Tail of Two Exhibitions,” *Studio International*, July-August 1971, Vol. 182, No. 935, p. 30
- Reiss, Julie. *From Margin to Center: The Spaces of Installation Art* (Cambridge, Mass.: MIT, 1999)
- Reynolds, Michael and Vince, Russ ed., *Organizing Reflection* (Hampshire and Burlington, VT: Ashgate Publishing Company, 2004)
- Richard, Catherine, Tenhaaf, Nell eds. *Virtual Seminar on the Bioapparatus*. (Banff, Alta: The Banff Center for the Arts, 1991)
- Rice, Charles. “The Space-Time of Pre-Emption. An Interview with Brian Massumi,” *Architectural Design*. “*Post-Traumatic Urbanism*.” Vol. 80, no. 5 (September/October 2010), pp. 32-37.
- Rieser, Martin, Zapp, Andrea eds. *New Screen Media. Cinema/Art/Narrative* (London: BFI Publishing, 2002)
- Riesman, David, Denney, Reuel, Glazer, Nathan. *The Lonely Crowd* (New Haven: Yale University, 1950)
- Robert Morris*. Exh. cat. (Washington, D.C.: Corcoran Gallery of Art, 1969)
- Robert Morris. The Mind/Body Problem*. Exh. cat. (New York: Solomon R. Guggenheim Foundation, 1994)

- Robert Morris: Mirror Works, 1961-1978*. Exh. cat. (New York: Leo Castelli Ink, 1979)
- Rodowick, D.N., *The Virtual Life of Film* (Cambridge, MA: Harvard University Press, 2007)
- Rokeby, David. "Dreams of an Instrument Maker," (1985). Available online at: <http://homepage.mac.com/davidrokeby/dreams.html> on September 1, 2011.
- Rokeby, David. "Predicting the Weather," (1985/6). Available online at: <http://homepage.mac.com/davidrokeby/weather.html> on August 3, 2011.
- Rokeby, David. "The Harmonics of Interaction" (1990). Available online at: <http://homepage.mac.com/davidrokeby/harm.html> on August 3, 2011.
- Rokeby, David. Lecture for "Info Art," Kwangju Biennale (1996). Available online at: <http://homepage.mac.com/davidrokeby/install.html> on July 3, 2011.
- Rokeby, David with David McCallum and Gayle Young. "A Vision of Hearing. Artistic Explorations of Sight, Sound and Silence," *Musicworks*, Fall 2003, Issue 87, pp. 14-23.
- Rokeby David, "The Computer as Prosthetic Organ of Philosophy," *dichtung-digital*, 2003. Available online at: <http://www.brown.edu/Research/dichtung-digital/2003/issue/3/Rokeby.htm> on July 21, 2011.
- Rokeby, David. "Challenges in the Intermodal Translation of Art." Available online at: <http://web.me.com/davidrokeby/intermodal/> on September 2, 2011.
- Rose, Barbara. *A New Aesthetic* (Washington, D.C.: The Washington Gallery of Modern Art, 1967)
- Rose, Barbara. "The Politics of Art. Part II," *Artforum*, January 1969, Vol. VII, No. 5, pp. 44-49.
- Rose, Barbara. "Television as Art, 'inevitable.'" *Vogue*, August 15, 1969, p. 36.
- Ross, Christine. "The Temporalities of Video: Extendedness Revisited," *Art Journal*, Vol. 65, No. 3, Fall 2006, pp. 82-99.
- Ross, Christine. *The Aesthetic of Disengagement. Contemporary Art and Depression* (Minneapolis and London: Minnesota University Press, 2006)
- Roth, Moira. "Toward a History of California Performance: Part One," *Arts Magazine*, (February 1978), Vol. 52, no. 6, pp. 94-103.
- Ruesch, Jurgen, Bateson, Gregory. *Communication. The Social Matrix of Psychiatry* (New York: W.W. Norton & Company, Inc., 1968)

- Ryan, Paul. "Letter to Howard Wise," March 2, 1969, *Paul Ryan Papers 1943-2008*. Smithsonian Archives of American Art. Available at: http://www.aaa.si.edu/collections/searchimages/images/image_9940_26132.htm on 09/05/2010.
- Ryan, Paul. *Cybernetics of the Sacred* (Garden City, NY: Anchor Books, 1974)
- Ryan, Zoë. "New Park Is Cloud Nine," *Blueprint*, no. 224, (October 2004), pp. 36-37.
- Samaras, Lucas. "An Exploratory Dissection of Seeing," *Artforum*, Vol. VI, Issue 4, December 1967, p. 27.
- Sault, Nicole ed. *Many Mirrors. Body Image and Social Relations*, ed. Nicole Sault (New Brunswick, NJ: Rutgers University Press, 1994)
- Sawyer, R. Keith. *Group Creativity. Music, Theater, Collaboration* (Mahwah, NJ; London: Lawrence Erlbaum Associates, 2003)
- Sayre, Nora. *Sixties Going on Seventies* (New York: Arbor House, 1973)
- Seiberling, Dorothy, "Windows: Whodunit First?," *New York Magazine*, May 24, 1976, p. 86
- Sayres, Sohnya, Stephanson, Anders, Aronowitz, Stanley, Jameson, Frederic ed. *The 60s without Apology* (Minneapolis: University of Minnesota Press, 1984)
- Schmidt, Johann-Karl ed. *Joan Jonas: Performance Video Installation, 1968-2000*. Exh. cat. (Ostfildern-Ruit: Hatje Cantz, 2001)
- Schneider, Ira and Gillette, Frank. "An Interactive Experiment," *Radical Software*, Vol. 2, No. 5, (Winter 1973), p. 13.
- Schneider, Ira and Korot, Beryl eds., *Video Art: An Anthology* (New York and London: Harcourt Brace Jovanovich, 1976)
- Schwabsky, Barry. "Michelangelo Pistoletto. Mirrors to Monuments," *The Widening Circle. The Consequences of Modernism in Contemporary Art* (Cambridge: Cambridge University Press, 1997), pp. 115-126.
- Schwartz, Heinrich, "The Mirror of the Artist and the Mirror of the Devout. Observations on some paintings, drawings and prints of the fifteenth century," in *Studies in the History of Art Dedicated to William E. Suiza on His Eightieth Birthday* (London: Phaidon Press for the Samuel Kress Foundation, 1959), pp. 90-105.
- Schwartzman, Allan. *Street Art* (New York: The Dial Press, 1985)

- Scott, Kitty and Hanna, Martha eds. *Ken Lum. Works with Photography* (Ottawa: Canadian Museum of Contemporary Photography 2002)
- Scott, Peter. "Bread and Circuses: The Mayor, the Waterfalls and the Art of Neo-Liberalism," *Art Monthly*, Issue 322 (December 2008-January 2009), pp. ?
- Sennett, Richard. *The Fall of Public Man* (New York: Alfred A. Knopf, 1977)
- Sennewald, Charles A. and Christman, John H. *Retail Crime, Security, and Loss Prevention Crime. An Encyclopedic Reference.* (Oxford: Butterworth-Heinemann, 2008)
- Shamberg, Michael. "Television – the Medium. Taking Waste out of the Wasteland," *Time*, May 30, 1969, p. 74.
- Shankarkumar, Shanthi. "A Silver Bean for Chicago," *Rediff on the Net*, November 26, 1999. Available online at: <http://www.rediff.com/news/1999/nov/26us2.htm> on September 20, 2010.
- Shanken Edward, Nicolas Bourriaud in a discussion with artist Michael Joaquin Grey and ZKM Chairman Peter Weibel. The conversation was moderated by Edward Shanken at Art Basel (June 19, 2010). Available online at: <http://www.art.ch/go/id/mhv/> on July 5, 2010.
- Shanken, Edward, *Art and Electronic Media* (London, New York: Phaidon, 2009)
- Shanken, Edward. "New Media and Mainstream Contemporary Art: Toward a Hybrid Discourse?," unpublished paper delivered at Transforming Culture in the Digital Age, Tartu, Estonia, 15 April 2010. Received from the author via email.
- Shaw, Jeffrey, Weibel, Peter eds., *Future Cinema. The Cinematic Imaginary after Film* (Karlsruhe: ZKM, 2003)
- Simon, Joan. "Scenes and Variations: An Interview with Joan Jonas," *Art in America*, Vol. 83, No. 7, (July 1995), 76.
- Simondon, Gilbert. *L'individuation psychique et collective* (Paris: Aubier, 1989)
- Sitney, Adam. *Visionary Film. The American Avant-Garde* (New York: Oxford University Press, 1974)
- Slipcover*. Exhibition brochure. (Toronto: Art Gallery of Ontario, 1966)
- Smith, Roberta. "In Installation Art, a Bit of a Spoiled Brat," *New York Times*, Arts & Leisure Section, January 3, 1993, p. 3.
- Smith, Terry. *The Architecture of Aftermath* (Chicago: University of Chicago Press, 2006)

- Smith, Terry. *What Is Contemporary Art?* (Chicago: Chicago University Press, 2009)
- Solomon, Alan. "An Interview with Lucas Samaras," *Artforum*, October 1966, Vol. 5, Issue 2, p. 41.
- SOOTHBRUSH blog. Available online at: <http://www.soothbrush.com/cloud-gate-chicago-sculpture/> on October 30, 2010.
- Stallabrass, Julian. "Reflections on Art, Poverty and Time: An Interview with Michelangelo Pistoletto." Retrieved from www.cittadellarte.it on 02/05/10.
- Statinski, Robert and Petersson, Frans-Josef. "Interview with Ken Lum," (September 2004). Available online at: www.whywedoit.wordpress.com/interviews on 11/15/2010.
- Stephen, Kyle. "Women Art Revolution: Interview with Lynn Hershman. Interview with Kyle Stephen," October 26, 2006. San Francisco, CA. Digital collection presented by Stanford University Libraries.
- Stiles, Kristine and Shanken, Edward A. "Missing in Action: Agency and Meaning in Interactive Art" (2000). Available at: http://artextra.com/Docs/Stiles_Shanken_Missing_in_Action.pdf on 07/20/2010.
- Structures for Behavior. New sculptures by Robert Morris, David Rabinowich, Richard Serra and George Trakas.* Exh. cat. (Ontario: Art Gallery of Ontario, 1978)
- Sturken, Marita. "TV as a Creative Medium: Howard Wise and Video Art," *Afterimage*, Vol. 11, No. 10, (May 1984), pp. 5-9.
- Stengel, Richard, "Only Connect," *Time* (December 15, 2010). Available online at: http://www.time.com/time/specials/packages/article/0,28804,2036683_2037181_2037179,00.html on December 27, 2010.
- Stern, Daniel N. *The Interpersonal World of the Infant: A View from Psychoanalysis and Developmental Psychology* (New York: Basic Books, 1985)
- Stern, Robert A. M., Mellins, Thomas, Fishman, David eds. *New York 1960. Architecture and Urbanism between the Second World War and the Bicentennial* (New York: The Monacelli Press, 1993)
- Stocker, Gerfried, Schöpf, Christine. *Takeover: who's doing the art of tomorrow?* (Vienna, New York: Springer, 2001)
- Stoichita, Victor Ieronim. *The History of the Shadow* (London: Reaktion Books, 1997)

- Sullivan, Jenny, "Body Movies," *I.D. – Interactive Media Design Review*, Vol. 49, no. 7, November 2002, pp. 60-61.
- Swanson, Guy E. "A Preliminary Laboratory Study of the Acting Crowd," *American Sociological Review*, Vol. 18, No. 5, (October 1953), pp. 522-533.
- Tamblyn, Christine. "Lynn Hershman's Narrative Anti-narrative," *Afterimage*, Summer 1986, Volume 14, no. 1, pp. 8-10.
- The Machine as seen at the end of the mechanical age*. Exh. cat. (New York: The Museum of Modern Art, 1968)
- Thrift, Nigel. "Intensities of Feeling: Towards a Spatial Politics of Affect," *Geografiska Annaler. Series B, Human Geography*, Vol. 86, No. 1, Special Issue: The Political Challenge of Relational Space (2004), pp. 57-78.
- Tromble, Meredith ed. *The Art and Films of Lynn Hershman Leeson. Secret Agents, Private I* (Berkeley, Los Angeles, London: University of California Press and Seattle: Henry Art Gallery, University of Washington, 2005)
- Tuan, Yi-Fu. *Space and Space: the Perspective of Experience* (Minneapolis: University of Minnesota Press, 1977)
- Tuchman, Maurice ed. *A Report on the Art and Technology Program of the Los Angeles County Museum of Art. 1967-1971* (Los Angeles: Los Angeles County Museum of Art, 1971)
- Tuer, Don, "Disembodied States: Vision, the Body and the Virtual." Available online at: <http://homepage.mac.com/davidrokeby/Tuer.html> on August 2, 2011.
- Turner, Ralph T. "Collective Behavior," Robert E. L. Faris ed., *Handbook of Modern Sociology* (Chicago: Rand McNally & Co., 1964), pp. 382-425.
- Varian, Elayne H. "Interview with Les Levine," *Schemata 7*, (New York: Finch College Museum of Art, 1967), no pagination.
- Veeder, Jane. "Viewer into Player: Notes on the Interactive Computer Art Installations at the 1988 SIGGRAPH Exhibition of Computer Art," *Leonardo*, Vol. 23, No. 1 (1990), pp. 136-138.
- Verón, Eliseo. "La obra" (1967), *Ramona*, no. 9-10, 2000-2001, pp. 46-50.
- Wagner, Anne. "Performance, Video, and the Rhetoric of Presence," *October*, Vol. 91, Winter 2000, pp. 59-80.
- Walwin, Jeni ed. *Searching for Art's New Publics* (Bristol and Chicago: Intellect, 2010)

- Watson, Scott. "Ken Lum," *Documenta 11_Platform 5: Exhibition. Short Guide*. (Ostfildern-Ruit: Hatje Cantz, 2002), p. 148.
- Watts, Allan. *The Tao of Philosophy* (Boston: Charles E. Tuttle Company, 1995)
- Weibel, Peter ed. *Olafur Eliasson, Surroundings Surrounded. Essays on Space and Science* (Karlsruhe: Engelhardt and Bauer, 2002)
- Whitman, Simone. "Theater and Engineering. An Experiment. 1. Notes by a participant." *Artforum*, Vol. V, no. 6, (February, 1967), pp.
- Whyte, Shirley A. ed. *Participatory Video. Images that Transform and Empower*, (London: Sage Publications, 2003)
- Whyte, William H. *The Organization Man* (New York: Simon and Schuster, 1956)
- Wiener, Norbert. *Cybernetics: or Control and Communication in the Animal and the Machine* (Cambridge, Mass.: MIT Press, 1965)
- Wilson, Simon. The Venice Biennale, *The Burlington Magazine* (October 1976), Vol. 118, no. 883, pp. 723-727
- Wise, Howard. *TV as a Creative Medium*. Exhibition brochure. (New York: Howard Wise Gallery, 1969)
- Woodruff, Paul. *The Necessity of Theatre. The Art of Watching and Being Watched* (Oxford: Oxford University Press, 2008)
- Wong, Cheryl Wing-Zi. "On 'Vibrations' by Olafur Eliasson," *Art and Education* (December 2007). Available online at: <http://www.artandeducation.net/paper/on-vibrations-by-olafur-eliasson/> on March 20, 2010.
- Yalkut, Jud. "TV as a Creative Medium at Howard Wise," *Arts Magazine*, Vol. 44, No. 1, (September-October, 1969), pp. 18-22.
- Youngblood, Gene. *Expanded Cinema*. (New York: J.P. Dutton, 1970)
- Zacks, Rebecca "Dances with Machines," *Technology Review*, May/June 1999, pp. 58-62.
- Zapp, Andrea ed. *Networked Narrative Environments* (Manchester: Manchester Metropolitan University, MIRIAD; Liverpool: FACT, 2004)
- Zarin, Cynthia. "Seeing Things. The Art of Olafur Eliasson," *The New Yorker*, (November 13, 2006)

Zics, Brigitta. "Toward an Affective Aesthetics: Cognitive-Driven Interaction in the Affective Environment of the *Mind Cupola*," *Leonardo*, Vol. 44, no. 1, (2011) pp. 30-37.

Zivic, Jan. "Women Art Revolution: Interview with Lynn Hershman. Interview with Jan Zivic," March 4, 2005, Davis, CA. Stanford University libraries.

Žižek, Slavoj. *Organs without Bodies* (Routledge: New York, London, 2004)

Zournazi, Mary. "Navigating Movements: An Interview with Brian Massumi," *21c Magazine*, Issue 2, 2003. Available online at: <http://www.21cmagazine.com/issue2/massumi.html> on 03/02/2010.