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From Fine Art to Natural Science Through Allegory

Silvana Barbosa Macêdo-Lamb

**A thesis submitted in partial fulfilment
of the requirements of the
University of Northumbria at Newcastle
For the degree of Doctor of Philosophy in Fine Art
School of Arts and Social Sciences**

September 2003

THESIS CONTAINS

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Abstract

This research examines the process of representing nature by art and science, while making use of allegorical theory. The study reveals the importance of the art, science and nature debate in artistic, theoretical, methodological and ecological terms within the late 20th century.

The thesis clarifies some aspects of recent art and science collaborative ventures, tackling problems both theoretically and practically, but discussed from my perspective as a practicing artist. In collaboration with the Finnish artist Henna Asikainen, we have explored the relationship between art, science and nature in a series of works discussed as case studies in the thesis. We have used digital technology, combining visual and sound elements in multiple projection video installations, so there is a reference to the discussions around video and installation art in the case study Chapters, although this is not the primary theme of the thesis.

The contribution to the knowledge of contemporary visual arts, specially to recent art and science collaborative practices, is in the production of artworks which engage and contribute to the art, science and nature debate. At a theoretical level, the contribution is in the demonstration of how the use of allegory provides an appropriate framework to examine the polarity of art and natural science, and that it is a valuable instrument for artists working in this area or developing collaborations with scientists. This research focuses on the early Romantic concept of the fragment and its relevance to the post-modern debate on allegory, critically engaging with the main texts and authors on allegory and evaluating their relevance to artistic practice. The research is also innovative in the exploration of the philosophical roots of allegory in early Romantic theory, which is very useful for art practice and to the forging of a theory of allegory outside the more normative readings. The allegorical dynamic offers a model to deal with the antithetical relation of aesthetics and politics, art and science, nature and culture, bringing a fresh and appropriate perspective to the reception and production of art which intersects with natural science.

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Accompanying the single volume of the thesis, are: one music CD with the sound of the installation *the first mild day of March*, and one DVD - R compatible with commercial DVD players. The DVD contains the video *oceans* and extracts of videos which were part of the installations *nest*, *the first mild day of March*, and documentation of the *air* video installation.

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Introduction

In this research, I investigate the transitional space between contemporary art and natural science, where artists have started to travel recently, moving back and forth, establishing bridges between the two fields. Through partnerships with scientists, artists bring their theories and research interests to the context of art. In this



an interdisciplinary concept in its infancy. Also, part of the field related to the representation of nature in the language of art and natural science. The concept of nature alone is part of a long philosophical tradition, which goes well beyond the scope of this research: the subject of individuality (Kant, 1996). The method (as its etymological sense means path) I take is through the investigation of issues involved in the representation of nature, such as scientific research, scientific research networks, which intersect with natural science. Thus, it is through the analysis and discussion of specific artworks that contemporary scientific knowledge come into consideration. I refer to other disciplines, such as philosophy, social science, science and technology studies (STS), anthropology, and other areas within the field of art, such as art criticism, in order to bring the discussion to the context of the production and reception of artworks which relate to natural sciences. In this interdisciplinary field, I examine to

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Introduction

In this research I investigate the transitional space between contemporary art and natural science, where artists have started to transit recently, moving back and forth, establishing bridges between the two fields. Through partnerships with scientists, artists bring their theories and research outcomes to the context of art. In this movement from fine art to natural science, artists 'steal', misinterpret, appropriate and destabilize ideas and concepts from science, sometimes celebrating it, or causing some disruptions with the process. In this space I indirectly examine the various layers of meanings and discourses built around nature.

From the infinitely small to the vastness of outer space, nature is a concept which embraces such an endless number of beings, spaces, processes, that it can be regarded as an ungraspable concept in its totality. Also vast is the field related to the representation of nature in the languages of art and natural science. The concept of nature alone is part of a long philosophical discussion, which goes well beyond the scope of this research: the subject is indeed very extensive. The method (in its etymological sense means path) I found to investigate the multiplicity of issues involved in the representation of nature, was to undertake a journey through recent artworks, which intersect with natural science. Thus, it is through the production and discussion of specific artworks that issues related to other areas of knowledge come into consideration. I refer to other disciplines, such as philosophy, natural science, science and technology studies (STS), sociology of science, and other areas within the field of art, such as art criticism, in order to bring their discussions to the context of the production and reception of artworks which relate to natural sciences. In this interdisciplinary field, I examine to

what extent the tools and structure of allegory can illuminate the complex relations between art, science and nature, and give an original contribution to such a debate in contemporary art.

It is an important task to attempt some kind of definition of nature, because it is a central concept to which the artworks and ideas in this research are related. At the same time this is not an easy task, as nature is a fluid concept, with a constantly changing meaning throughout different historical periods. Nature can also assume a multiplicity of interpretations from one culture to another, and from different perspectives within the same culture. Thus, it is perhaps impossible to define nature in absolute terms, to assert a stable or definitive meaning to it.

The concept of nature does not result from a direct experience of the surrounding environment, but is constructed and modified by culture throughout history. Before science, myths and religious interpretation of natural phenomena were ways of understanding the world and our place in it. With the development of science in Western society, our perception of nature becomes mediated by scientific information, and the history of the term nature becomes inseparable from that of science.

Philosophy, art and poetry, also with their histories, provide other ways of engaging with nature, conceptualizing and representing it from a different perspective and epistemological position.

The work of the natural philosopher René Descartes (1596-1650) marks an important moment in the history of science and development of a scientific approach to nature. In his *Discourse on Method* he describes the four rules which became foundational principles for science:

The first rule was to accept as true nothing that I did not know to be evidently so: that is to say, to avoid carefully precipitancy and prejudice, and to apply my judgements to nothing but that which showed itself so clearly and distinctly to my mind that I should never have occasion to doubt it.

The second was to divide each difficulty I should examine into as many parts as possible, and as would be required the better to solve it.

The third was to conduct my thoughts in an orderly fashion, starting with what was simplest and easiest to know, and rising little by little to the knowledge of the most complex, even supposing an order where there is no natural precedence among the objects of knowledge.

The last rule was to make so complete an enumeration of the links in an argument, and to pass them all so thoroughly under review, that I could be sure I had missed nothing.¹

This emphasis on rationalism, reductionism, fragmentation, and mathematization of knowledge, as well as a decontextualization and objectification of nature, have formed the basis of the scientific methodology in the natural sciences until today, although they have been greatly challenged by new scientific approaches and questioned by many critics of science in recent years. Another important point for the division of nature and culture, made by Descartes, is that for him the essence of man is the mind which is dissociated from the body as a quality of the soul: 'Thus the self, or rather the soul, by which I am what I am, is entirely distinct from the body [...].'² The body and mind divide led to his distinction between animals and humans, as he argues that, because animals are not capable of language they cannot think, concluding that they do not exist in the same way that a human being exists, thereby regarding animals as mere organic machines: 'They [animals] have no intelligence at all, and that it is nature working in them according to the disposition of their organs. Thus a clock, composed only of wheels and springs, can count the hours and measure the time more accurately than we can, for all our foresight.'³ The mind and body dichotomy from the Cartesian scientific method is at the core of the nature and culture divide, and marks the historical move from an organic conception of nature to a mechanistic one.

¹ René Descartes, *Discourse on Method*, (first published in 1637) trans. Arthur Wollaston, Penguin Books, London, 1960, p. 50.

² *Ibid.* p. 61.

With the Scientific Revolution of the 17th century, nature becomes an object dispossessed of mind or soul, and this mechanistic perspective becomes dominant in the Enlightenment in the 18th and 19th centuries which led to the Industrial Revolution. Romanticism emerges in the arts as a reaction to the social transformations, which followed the industrialization of Western societies. In the Romantic movement there is a revival of the mythic concept of nature, which becomes associated with positive cultural values, while culture is regarded as corruption.

More recently, the scientific approach to nature has been the subject of much criticism. One of the most important is the critique of instrumental reason and the logic of the domination of nature, from the discourse of the Enlightenment, by the Frankfurt School. Some authors associated with the Frankfurt School provide the main theoretical framework for this investigation, specially the theory of allegory by Walter Benjamin, and his dialectical concept of nature and history. Benjamin's concept of nature-history is part of a broader project of social critique to capitalism, together with Theodor Adorno's and Max Horkheimer's seminal book *Dialectic of the Enlightenment*, which has greatly informed the approach of contemporary critics of science.

This research is concerned with the investigation of this dynamic between nature and culture, which can be conceived in dialectical terms, as Benjamin articulates it. For Benjamin, nature and history are inseparable and constitutive of one another, yet ontologically distinct. Susan Buck-Morss explains that in this dialectical view of nature and history, Benjamin inverts the logic of the Social Darwinism from the late 19th century, which had applied the theory of evolution of species to sociology, in order to

³ Ibid. pp. 81-82.

naturalize the ideology of capitalism in the discourse of social progress. Social Darwinism also legitimized racist and patriarchal ideologies in its naturalization of culture. Benjamin does the opposite, taking history as a transitory process which decays with the passage of time, like nature. Buck-Morss explains: '[...] Benjamin's aim was not merely to criticize 'natural history' as ideology; it was to show how, within the right configuration, the ideational elements of nature and history could reveal the truth of modern reality, its transitoriness as well as its primitive nature.'⁴ Thus, Benjamin's analogy of culture with nature was to show that, in industrial societies, the value of cultural objects, architecture, fashion, all commodities, and most importantly, the power of political regimes, are transitory: they disintegrate and die.

Kate Soper in *What is Nature?* has presented a comprehensive survey on the current areas of meaning related to the concept of nature in Western society. She proposes three distinct contemporary definitions of nature: *metaphysical*, *realist* and *lay*. She explains that the *metaphysical* concept relates to a philosophical argument which is based on human difference to nature, in which 'nature' is the opposite of 'human' or the 'cultural.' According to her, the *realist* concept refers to the structures, laws, processes and causal powers that are operative in the physical world, and provide the objects of study for the natural sciences. And finally, she describes the *lay* concept as the everyday, literary, surface concept, which refer to ordinarily observable features of the world, the 'natural' as opposed to the urban or industrial environments, including rural landscape, wilderness, domestic and wild animals, the physical body and raw materials. Soper remarks that the *lay* concept is the realm of immediate experience and aesthetic

⁴ Susan Buck-Morss, in *The Dialectics of Seeing: Walter Benjamin and the Arcades Project*, The MIT press, Cambridge, MA, 1990, p. 68.

appreciation, and is where the causal laws of the processes of the *realist* concept are empirically observable. Opposed to this broad and all embracing *lay* concept of nature, is the narrow and excluding *metaphysical* one.

If nature stands as the opposite of culture, then, there is no longer any nature left in this planet, as humans have succeeded in colonizing the entire earth, if not physically or chemically present (through pollution), then through technology, human culture has turned the whole world into a managed environment. Inhospitable deserts, untouched jungles, deep oceans, and remote places can all be monitored and observed via satellites, radar and other equipment. Despite this pervasive presence, it is important to note, as Soper does, that *realist* nature is the precondition and constraint to all human and non-human activities.

Soper has also argued that the current debate on nature has been polarized into two positions, described as: eco-green politics ('nature friendly') and social construction ('nature skeptical').⁵ Social construction claims that nature is a changeable concept influenced by social, cultural and historical circumstances, while the eco-political discourse is concerned with more tangible or 'realist' issues related to the environment. This division reflects the problematic around nature and its history, yet most contemporary artists dealing with the representation of nature do have real ecological concerns, and are also aware of the unavoidable mediation of culture in our relation to nature. The dynamic of these dichotomies are an important aspect of the work by the artists that I discuss in this thesis, as well as in the debate between natural scientists and scholars from the field of humanities who engage with the criticism of natural science, to which I refer in Chapter 5.

⁵ Kate Soper, *What is Nature?*, Blackwell Publishers, Oxford, 2000, pp. 4-9.

Part of the dialectics of the culture and nature are the ideologies associated with them. Soper remarks that the valorization of nature as a source of purity and authenticity from the Romantic discourse, has, on the one hand, been a component of all forms of racism and oppression of sexual minorities, arguing that the preservation of a 'natural order' of ecological naturalism has a danger of lending ideological support to oppressive discourses against sexual and racial minorities. On the other hand, she acknowledges that the Romantic and aestheticizing approaches to nature also provide a critique to capitalism. Soper points to yet another tension between the two aspects, noting that the insistence in the textuality of nature puts the signifier in evidence, with a focus only on the play of the 'sign' of nature, while real species are disappearing. Thus, it is important to understand the complex relation of culture with nature in terms of a dialectic, in which none of the polarities is over emphasized. In this dynamic, as artists working with the representation of nature, we have sought to balance the realist and socially constructed aspects, as to address issues of real environmental problems, as well as avoiding essentialist discourses and falling into nostalgic sentimentalism for a lost mythic past.

I have been interested in issues of the representation of nature, since my landscape paintings, from early to mid 1990s, up to my most recent collaborative work.⁶ Since the beginning of my artistic practice, the ecological movement has been an important frame of reference for me, and through my work I have engaged in the discussion on the fate of the rain forests and broader issues of human interaction with nature. The interest in bringing natural science to the context of my artistic practice, came from the contact with an entomologist, Lenira Pinto (who I met in the Amazon, in 1993), whose research

was influential for my artistic orientation. At that time, I became interested in imagery produced by scientists, willing to explore their expertise and technology in the production of art. Subsequently, I started working with the aid of a microscope and produced series of paintings of magnified insects and organic structures.

This short story of my background as a painter introduces some of my long-standing concerns, which are still part of my current investigation. The experimentation with scale and issues related to the representation of nature in art and science, are elements that I continued to investigate in a series of collaborative works (from 1997 to the present) which I developed with the Finnish artist Henna Asikainen, who I met during the MA in Fine Art at the University of Northumbria at Newcastle (1997-99). Although I had experimented with installation before, it was through this collaboration that I started to explore more systematically the medium of installation as the main area of my artistic practice. During this research I have developed and examined a series of installations and projects developed in collaboration with Henna (who is also undertaking a PhD research in this university, examining our jointly produced work from another theoretical perspective).

Collaborative practice challenges conventional Romantic ideas about genius, authorship and originality, since in collaboration, authorship is turned into a social process.

Through my joint practice with Henna I have had the opportunity of experiencing more closely the allegorical, dialectical dynamic in an intimate and profound way.

Collaborative practice is essentially a sharing experience, which presupposes a kind of generosity. Initial ideas may come from either partner, but they develop further through

⁶ I started painting the farmed landscape of Goiás, centre-western region of Brazil, and later, explored notions of 'primitive nature,' in paintings of the low forests of the Cerrado (savannah of central Brazil), and the Amazon rain forest.

an intense exchange, in which ideas are tested and developed through a built-in criticism, and are subjected to a series of manipulations and transformations. In the end, it is not possible or desirable to dissect the process to find out who contributed with what idea or to claim individual ownership to any aspect of the work. This would be a movement against the idea of collaboration, where the two views become indissociable. For this reason, throughout the thesis I refer always to 'we' or 'our' when making reference to the artworks.

As we have used distinct theoretical frameworks to examine the same works in separate PhD theses, the double (indissociable) authorial voice becomes split. Our individual writings have developed autonomously, in a way analogous to the hands of a person, if they were disconnected with the unity of the body, and one hand did not know what the other was doing. Yet, from the start, this double structure works in favour of my thesis, because allegory is by definition a structure consisting of two or more antithetical voices, in a dynamic relation which can lead to an infinity of possible interpretations. The fact that we, as authors, can write two distinct PhD theses about the same artworks, supports my point. The use of distinct theories to examine the outcomes of our collaborative projects, is a compelling experiment, which may reveal what distinct theoretical tools can do for the reception and discussion of contemporary art. Each thesis can be regarded as an allegory of the collaborative work, autonomous from each other, but also forming interacting parts of a larger text which is the endless interpretation or the reception of the work by others.

In my particular theoretical approach to the relationship between art and natural science, I apply the theories of allegory, which are based on Benjamin's dialectical model and the later Derridean deconstruction. A number of theorists have researched the potential

of allegory in the interpretation of art works, but artists have not yet fully explored their possibilities in the production of art. In this research I, as an artist, transpose the idea of allegory to the problem of art, science and nature. Nature is regarded as part of a dialectical dynamic with history and language, which natural science constructs in the process of naming and classification. It is through a critical engagement with the natural history discourse that we explore issues related to the concept of nature. This indirect approach is a way of acknowledging the mediation of science in our contemporary concept of nature.

While manipulating appropriated scientific material as part of the production of some installations, our aim is to re-articulate and re-function such fragments in new contexts, hoping to grasp a new facet of them, while re-codifying them from science into art forms. This transposition into art intends to critically examine the process of construction of the scientific discourse, which frames the natural source material, but does not attempt to produce a more dominant discourse than the scientific one. The questioning is towards both discourses: artistic and scientific. This self-critical position is possible because allegory has a double structure where conflicting polarities are in constant dynamic, each one working alongside its opposite, without privileging of any one term.

My title: *From Fine Art to Natural Science, through Allegory* refers to this investigation's centering on my perspective as an artist, when examining scientific material. The aim is to observe the emergence of different meanings through the transposition of fragments of 'nature' into scientific and, then, into artistic contexts. Through allegorical procedures such as appropriation, quotation and interventionist

approaches to different contexts, the scientific and the artistic perspectives are brought together.

Although art and science are distinct categories, their separation has never been very sharp or a strictly defined border.⁷ Through this research I investigate some questions that emerge when artists bring the two areas together: what can science 'do' to art and vice versa? What can artists gain from and give to scientists? Can the theories of allegory contribute to the investigation and clarification of these questions? How is the relationship between artists and scientists established? In the evaluation of such questions, I start from the principle that collaboration is a non-hierarchical relation, where people from different fields bring their perspectives to examine a common theme. In such dialogue, it is important that artists engage independently and critically with science, in order to avoid developing a relation of servitude and instrumentality, in which the artist would become a mere disseminator of scientific ideas.

The movement from fine art to natural science reflects a moment in contemporary art in which artists have become interested in exploring other disciplines and areas of knowledge, extending their concerns to an engagement with social, political and ecological aspects of the world, beyond the conventional institutions of art. This movement towards society is a development of a project of institutional critique, which was the concern of artists since the 1960s, with its roots in the anti-art movements of the historical avant-garde of the early 20th century, that marked an important phase of self-criticism in the history of Western art. A variety of practices emerged in this period, such as minimalism, conceptual art, video art, installation, site-specificity, and performance, in order to challenge the hegemony of painting and the commodity status

of art in high Modernism. These new artistic practices became theorized as 'postmodern,' and identified with allegory by the American critic Craig Owens, to whose work I refer in Chapter 1. The first Chapter outlines the philosophical aspects of allegory which are important to its application in contemporary visual arts, and presents the theoretical framework which is used in the subsequent Chapters. It explores the concept of the fragment in early German Romanticism, which was an important category in the philosophical reformulation of allegory by Walter Benjamin. In this Chapter I follow a single traceable 'historical axis' concerning allegory, from the work of Friedrich Schlegel and Novalis; then, to the writings of Walter Benjamin and more recently, the work by Paul de Man and contemporary art critics and historians, such as Craig Owens, Benjamin Buchloh, Fred Orton and Gail Day.

In Chapter 2, I discuss the work of two contemporary artists, Mark Dion and Cornelia Hesse-Honegger, who have made valuable contributions to the current art and natural science debate. Through a discussion of their work many issues concerning the representation of nature are explored, such as subjectivity and objectivity in art and science, the social constructed and realist notions of nature, and the tension between the politics of representation and aesthetics. The approaches taken by Dion and Hesse-Honegger to science vary in many respects, and have triggered different reactions in the fields of science in which they have intervened. While Dion moves from the context of art into natural science, Hesse-Honegger enacts the same movement but in the opposite direction. Dion is concerned with tangible ecological problems. At the same time he is aware of the ideological and discursive aspects of nature as a social construct. Hesse-Honegger is more engaged with a 'realist' concept of nature, and its accurate

⁷ The boundary between art and science has been explored by many artists throughout the history of (Western) art. In this research I do not intend to present a historical survey of this area, but to focus on specific projects, in order to analyze the dynamic between the two perspectives in the structure of the artwork.

representation in scientific work. Through her research projects on the environmental impact of nuclear technology, the relation of scientific production with society becomes the most important area of tension, revealing how social, economic and political aspects get in the way of scientific neutrality and objectivity. The discussion of the work of these two artists introduces the problematic of our thematic field of enquiry and outlines the context in which our collaborative artworks, (asikainen&macêdo's installations) have developed.

The following case studies engage with the production and discussion of three of our projects, the video installations *oceans*, *the first mild day of March* and *air*. The analysis of these works presented in Chapters 3, 4 and 5 is only one 'version' of the many possible interpretations of these artworks. Chapter 3 starts with a brief discussion of the historical aspects of the medium of video installation, in order to situate our approach in relation to the medium with which we work, although this is not the central theme of the thesis. The video installation *oceans* is considered in relation to the theory of allegory, with a focus on the strategy of appropriation. The analysis of the work explores the polarities of art and science, fact and fiction, with a reference to debates around the deconstruction of subjectivity in art and objectivity in science.

A debate on site-specificity opens the discussion in Chapter 4, and introduces issues explored in the dynamic of the installation *the first mild day of March*, and its site, the Bird Gallery of the Hancock Museum of Natural History, at Newcastle, with consideration to the physical, institutional and discursive aspects of the work. The relation of animals to the natural history museum and the artwork is explored, with reference to Michel Foucault's discourse theory, and Walter Benjamin's theory of allegory. In both approaches, nature and culture are regarded as indistinguishable.

History and cultural products, in Benjamin's perspective, are subject to a melancholic tendency as they deteriorate and lose their symbolic value. In Foucault's thought, there is also a tension between a culturally constructed and imposed order (natural history discourse) and an 'inner' order in nature, which takes us back to the dichotomy of 'realism' and 'social construction.' This artwork explores such tensions in the site.

Our interdisciplinary project entitled *air* is the last case study of this thesis, presented in Chapter 5. The *air* project is introduced with a debate on climate change, and the emergence of a new paradigm in science, which is characterized by a shift towards multidisciplinary. It is in such a multidisciplinary context that the 'science wars' take place, which are a heated exchange between natural scientists and researchers from the field of the humanities. At the core of their debate, is the tension between the polarity of 'realism' and 'social-construction.' I consider the arguments of each side of the 'science wars' in relation to the 'Lomborg case,' another controversy in the scientific world, and more specifically related to the debate on global warming. The 'Lomborg case' introduces the political, social and economic context in which the *air* project developed. In the *air* project, we extend our collaboration to work with natural scientists researching climate change, during two residencies in the hot and cold forests of Brazil and Finland.

In the following Chapters, I explore these tensions between a 'realist' and a 'socially constructed' notion of nature, reflecting on the reception and process of production of art which engages with political, economic, scientific, social, ideological, philosophical and ecological debates around nature.

Figure 1

Allegorical Calligraphic Fragment

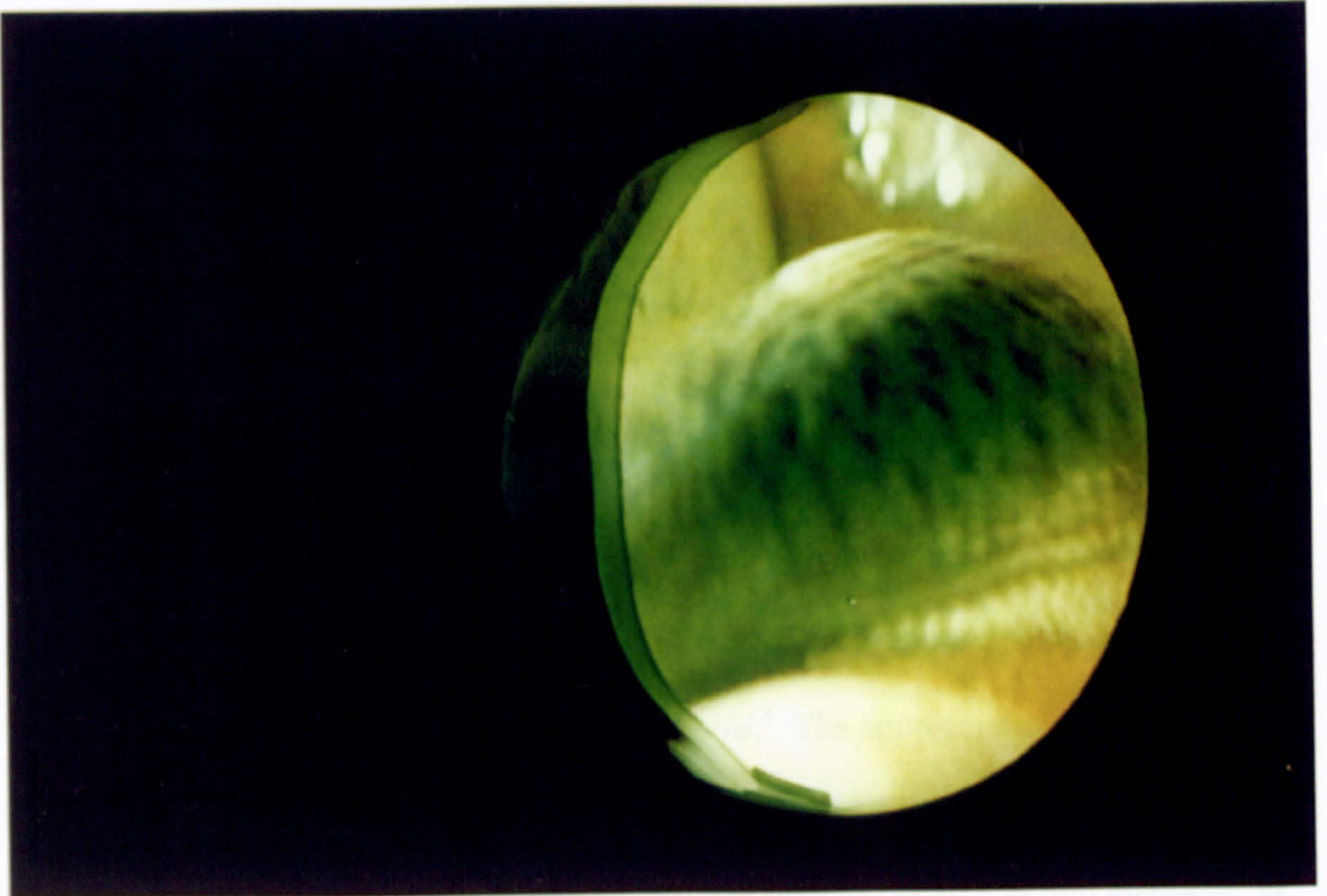
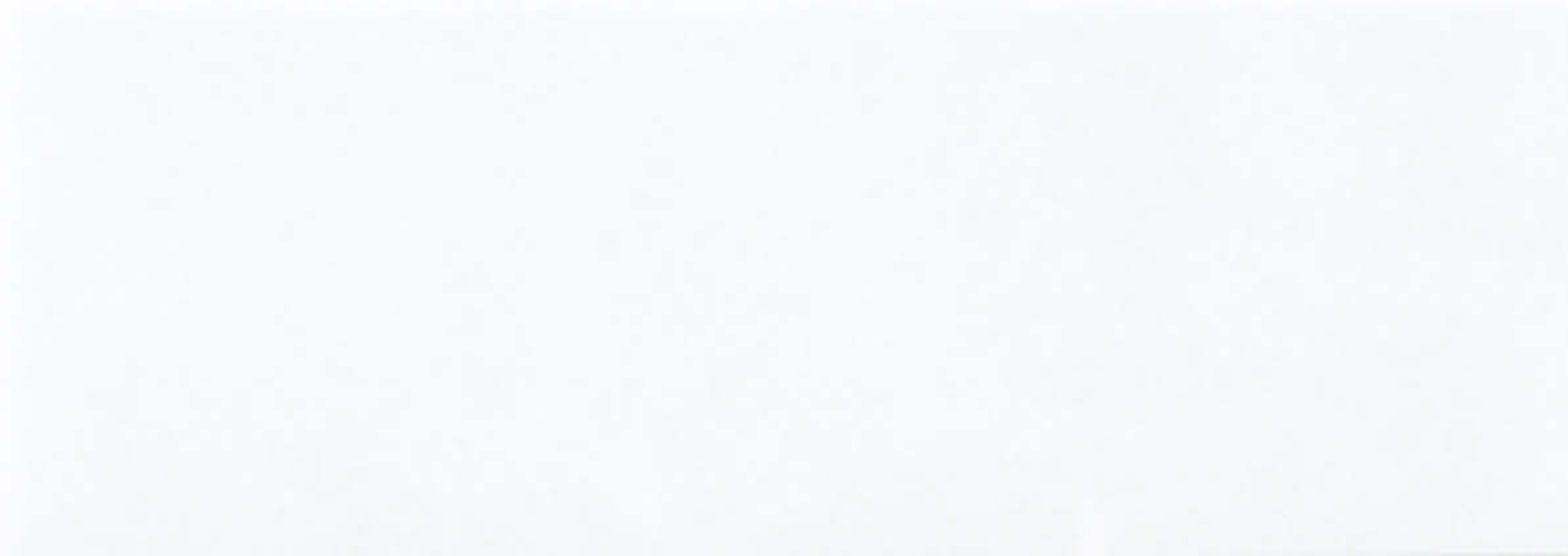


Figure 1. Calligraphic fragment of a signature and, at the same time, being related to the scientific
 knowledge and the way it was produced, analyzed and presented. At the core of this
 fragment of the calligraphy, an image is visible simultaneously to two distinct
 structures. The presence of such a duality at a structural level is characteristic of
 allegory.

¹ Figure 1 illustrates some of the main characteristics, which are specific. These strategies have been described by the author and published through the author's work, "The Allegorical Image: Toward a Theory of the Image," *Journal of the American Academy of Arts and Sciences*, vol. 13, Summer 1972, pp. 51-52. Also published in *Allegory and Symbolism*, Department of Art and Architecture, University of California, Irvine, 1972, pp. 51-52.

Chapter 1

Allegory, the Endless Fragment



3. Still from *nest*, asikainen&macêdo, 1999

The starting point of my interest in allegory came from a video installation of ours, *nest* (1999). In *nest* we used some ‘allegorical’ strategies, such as appropriation and recontextualization to explore the discursive aspects of some images found in a nature film entitled *The Ten Deadliest Snakes in the World*.¹ The appropriated imagery was dissociated from the scientific narrative which framed it, re-edited and re-contextualised in a gallery space, as part of *nest*. In the gallery, the images became hybrid elements, as a constitutive part of an artwork and, at the same time, being related to the scientific context in which they were produced, distributed and presented. At the core of this piece we find this duplicity, an image that relates simultaneously to two distinct discourses. The presence of such a duality at a structural level is characteristic of allegory.

¹ For more information about the video installation *nest*, please see appendix I. These strategies have been described by the American critic Craig Owens as allegorical, in his famous essay ‘The Allegorical Impulse: Toward a Theory of Postmodernism’, *October* no. 12, Spring 1980, pp. 67-86; and no. 13, Summer 1980, pp. 59-80. Also published in his *Beyond Recognition: Representation, Power and Culture*, Berkeley, University of California Press, 1992, pp. 52-87.

Allegory began as a rhetorical figure with the Greeks. Jules Pépin,² remarks that the Greek Plutarch was the first critic to use the word 'allegory.' The etymology of the word comes from two Greek words: *allos* + *agoreucin* (other + speak openly). A simple definition of allegory given by Angus Fletcher is based on the polysemic character of language: 'allegory says one thing and means another.'³ Thus, allegory is the opposite of straight forward communication, it paradoxically reveals and conceals its meaning simultaneously.

According to Maureen Quilligan, after the use of allegory as rhetorical persuasion by Greek and Latin critics, narrative allegory emerged as a defined literary genre under the influence of Christian theology in the Middle Ages. Narrative allegory as a genre is mainly characterized by its intertextuality. The narrative is built in relation to a preceding text. In this way, allegory can be understood as a commentary on a pretext, and as a form of criticism. In the Medieval and Renaissance periods, the Bible was a strong authoritative text, standing as the most important reference for truth. For this reason the Bible stood as the original text or the pretext to most narrative allegories, providing the code to decipher the hidden message of such literary works.

If we transpose this literary model to the reading of *nest*, the pretext appears to be the scientific discourse, arguably a strong reference of truth in contemporary society.

Science could be considered the 'religion' of our time, with its texts having the (quasi-transcendental) authority, and claims of truth, that the Church once had in medieval society.⁴

² Jules Pépin, in *Mythe et Allégorie*, Paris, 1958, pp. 87-88, also cited by Angus Fletcher in his *Allegory: The Theory of a Symbolic Mode*, Cornell University Press, New York, 1964, p.2.

³ *Ibid.* p. 2.

⁴ Such a dogmatic view of science is a matter of much debate, to which there will be references in later chapters. In the discussion of Cornelia Hesse-Honegger's work in chapter 2; also in chapter 3 with reference to Kuhn's criticism of positivism; and in chapter 5 when I refer to the 'science wars.'

An example is the genre of nature film, where the scientific discourse is used to present the animal as a species, securing its position in the evolutionary and taxonomic order, with an emphasis on its biological role in the ecosystem of its habitat. In this 'realistic' presentation there are implicit references to many scientific theories that translate the complex totality of nature into an ordered and knowable universe. In *nest*, the framing of the images as art, temporarily suspends this rigid scientific frame around the images, opening them to other interpretations, allowing more room for the flow of free association in the reception of the images. Snakes are highly codified animals and there is a vast quantity of texts - mythological, religious, literary - as well as linguistic expressions, folklore, paintings, objects, furniture that are built upon (and contribute to the proliferation of) the rich symbolism of snakes.

The more fluid discourse of art allows more easily this prolific web of associations to take place, destabilizing the authoritative discourse of science. The scientific information about the snakes continues to be associated with them, but in this new context, it becomes only one of the many possible ways to relate to these animals, as part of their long semantic chain. In the dynamic within this dual structure of artistic and scientific references, there is no hierarchy, but a 'symbolic power struggle,' as Angus Fletcher remarks: 'At the heart of any allegory there is this conflict of authorities.'⁵ The dynamic between the two polarities in the allegorical work can be conceived as a dialectics, according to Walter Benjamin, or as a deconstructive strategy, as Paul de Man argues.⁶ In the case of *nest*, art questions the authority of science, but at

⁵ Angus Fletcher in his *Allegory: The Theory of a Symbolic Mode*, op. cit. p.22. Fletcher also argues that 'Allegories are far less often the dull systems that they are reputed to be than they are symbolic power struggles. If they are often rigid, muscle bound structures, that follows from their involvement with authoritarian conflict.' p. 23.

⁶ Paul de Man in *Allegories of Reading*, Yale University Press, New Haven and London, 1979; *Blindness and Insight: Essays in the Rhetoric of Contemporary Criticism*, Minnesota University Press, Minneapolis, 1983; and in *The Resistance to Theory*, Manchester University Press, Manchester, 1986.

the same time does not impose itself as beholder of a superior position. The tension between the two perspectives is not resolved, but the two views run in parallel relating with a further common pretext. Maureen Quilligan explains that the relation between an allegorical text and its pretext is a deep connection:

The pretext is not merely a repository of ideas, it is the original treasure house of truth, and even if that treasure house has been plundered and is assumed to be empty, it still retains its privileged status in guiding not only interpretation but the possibilities of the allegory. And it is primarily the status of language in the pretext which determines the development of allegory; if its language can name truth, then the language of the allegorical narrative will be able to. If its language is not felt to have special powers of revealing reality, then the language of the allegory will have a corresponding difficulty in articulating the truth of the human condition.⁷

Thinking about this passage, a question emerges: what is really the 'treasure house of truth' of *nest*? The pretext of *nest* is not science, as it first appears, but nature. The reflection on the relation of the artwork with the scientific discourse, leads us to a further reflection on the relation of science with its original pretext, that is nature, revealing science to be an allegory too. In *nest*, both art and science have nature as a pretext, and both attempt to represent it in their distinct languages. Allegory is useful to examine the cultural representations of nature carried by both disciplines, because allegory examines the gap between the signified and signifier, which are involved in the process of representation. The intimate intertwining of culture and language with nature can be understood as a dialectical relation in the model of allegory proposed by Benjamin, in which nature and history are constitutive of one another and cannot be separated. In this dynamic, there is not a fixed or unique concept of nature, but various interpretations for its constantly deferred meaning, changing in different historical periods. Access to the 'reality' of nature is necessarily always mediated by culture and

⁷ Maureen Quilligan, *The Language of Allegory: Defining the Genre*, Cornell University Press, Ithaca and London, 1979, pp. 97-98.

the fluid structure of the languages which conceptualize and 'translate' nature into culture. On the other hand, culture and history are conceived by Benjamin as transitory and decaying nature. The dialectics of history and nature is represented in the allegorical emblem of the ruin, to which I will refer later in this chapter when discussing Benjamin's theory of allegory.

In *nest*, the use of video as a medium is also significant, because of the indexical⁸ relation of the image with the world, and can also be regarded as an allegorical medium, together with photography.⁹ The animals represented in *nest* were once in front of the camera and their birth was documented by the filmmaker. Then, the scientist appropriated this 'fragment' of the world for allegorical interpretation, which was subsequently reinterpreted through the artwork, creating an endless chain of associations which is characteristic of allegorical constructions. The accumulation of a multiplicity of meanings associated with one image in allegory, leads to illegibility, as Paul de Man argues,¹⁰ because it becomes impossible to decide in favour of one interpretation, as in deconstruction there is not an 'ultimate' meaning or transcendent signified. In the absence of a 'true' fixed meaning, all multiple interpretations acquire an equal status. Thus, in deconstruction the 'treasure house of truth' is empty, leaving the reader with an endless dynamic of competing perspectives, which lead to further interpretations.

⁸ In Charles Sanders Peirce's (1839-1914) semiotics, index is the third type of sign (icon and symbol are the other two), which has a causal link with a real object. Peirce regards photography as indexical: 'Photographs, especially instantaneous photographs, are very instructive, because we know that in certain respects that they are exactly like the objects that they represent. But this resemblance is due to the photographs having been produced under such circumstances that they were physically forced to correspond point by point with nature. In that respect then, they belong to the ... class of signs known as the index.' in *The Collected Papers of Charles Sanders Peirce*, ed. Charles Hartshorne and Paul Weiss, Cambridge, Harvard University Press, 1931, vol. 2, p. 159.

⁹ Photography is regarded by *October* critics (Craig Owens, Hal Foster, Benjamin Buchloh and Douglas Crimp) as an allegorical medium, because of the power of photography to fix transitory moments, to rescue and recover the past to the present. This idea is an articulation of Benjamin's writings on allegory, photography and film, to which I refer in chapter 3.

¹⁰ Paul de Man in *Allegories of Reading*, op. cit., p. 205.

At the level of authorship I can again draw from allegory, because the production of *nest* (and other pieces) involved two authors, Henna and myself. This duplicity at the level of production reinforces the appropriateness of allegory as a theoretical tool to analyze our collaborative works. As I indicated in my introduction, in our collaborative practice it is not possible to separate who did what, as ideas are shared and modified, manipulated by both in the production of the work. The use of appropriated imagery in *nest* makes the aspect of authorship even more complex, because the production of the footage was carried out by yet, another person. The appropriated images of discarded footage which were used to build the artwork, can be regarded as 'fragments.' The concept of the fragment will be explored in this chapter, as it is a key concept for the understanding of allegory, especially to its application to the debate of art, science and nature. Artists and scientists, who are engaged with the representation of nature, are always dealing with fragments, small appropriated pieces of the infinite and ungraspable totality of nature.

Allegory has been a useful interpretative tool for art historians and art critics in the discussion of contemporary visual arts, and I see its potential to elucidate the complex relation between art, science and nature. In this chapter I will outline the most relevant aspects of allegory for the production and reception of artworks, by focusing on a single traceable 'historical axis' concerning allegory: from the work of the early German Romantics Friedrich Schlegel and Novalis; then, to the writings of Walter Benjamin and more recently Paul de Man and Craig Owens.

I start by exploring the concept of the fragment in early German Romanticism, which was an important category in the philosophical reformulation of allegory by Walter Benjamin. This is followed by a study of some important aspects of the dynamics of

allegory proposed by Benjamin, which are part of the modern and postmodern debate around allegory. I also refer to the work of Paul de Man, which links 'Benjaminian' allegory with deconstruction, as these two authors' influences form the basis of the revival of allegory in the field of contemporary visual arts.¹¹

The Romantic Fragment

In the 19th century allegory became a negative concept in the discourse of late Romantic aesthetics.¹² Allegory was regarded as a lower genre, conventional, rational and artificial as opposed to the spontaneity, insightfulness and the organic wholeness of the symbol. This opposition between allegory and symbol turned allegory into all that was undesirable in art. It is in relation to this debate that Walter Benjamin reformulates the concept of allegory, articulating its importance in philosophical terms.

Walter Benjamin wrote his doctoral thesis on the concept of criticism in the German Romantic movement (1919), and this study provided the basis of Benjamin's account of allegory and his analysis of the German Baroque mourning play [*Trauerspiel*] in *The Origin of the German Tragic Drama* (1928), a seminal text for the allegory debate. In his reformulation of allegory in the *The Origin of the German Tragic Drama* Benjamin

¹¹ Craig Owens, Douglas Crimp, Benjamin Buchloh, Fred Orton, Gail Day, amongst others.

¹² It is important to note the distinction between early and late Romanticism, made by many authors, who identify early German Romanticism (or the poets known as Jena Romantics), with a philosophical and critical pre-modern movement with radical and subversive ideas; in contrast with the late Romantics, who articulated the aesthetic discourse of the genius and the expression of a transcendental symbol. Maurice Blanchot remarks: '[...] contrary to the idea that is now current, we observe as well that romanticism (at least in its first generation) may be regarded as a protest against the turbulence of genius. Novalis said that what is important is not the gift of genius, but the fact that genius can be learned [...]' in 'The Athenaeum', in his *The Infinite Conversation*, Minnesota University Press, 1993, p. 354. Philippe Lacoue-Labarthe and Jean-Luc Nancy, in their *The Literary Absolute: The Theory of Literature in German Romanticism*, Minnesota University Press, Minneapolis, 1989, remark that 'What is at stake in 'early romanticism' - in other words the *romanticism of Jena*, a toponymic appellation to which we will return - can also be referred to, at least a first approximation, as *theoretical romanticism*, and more precisely as what we will have to examine as the inauguration of the *theoretical project in literature*.' (p. 2) Lacoue-Labarthe and Nancy associate this early romantic theoretical project with the one of modern literature. They remark that the Jena romantics did not call themselves romantics in the sense of a 'literary school', but used the word ironically (pp. 6-7).

uses the Romantic concept of fragment as an opposition to the notion of the symbol as a totality:

It is not possible to conceive of a starker opposite to the artistic symbol, the plastic symbol, the image of organic totality, than this amorphous fragment which is seen in the form of allegorical script.¹³

The fragment is a philosophical concept and is intimately linked with Benjamin's theory of allegory, art and criticism. Here the fragment is identified with writing and allegory. It is a concept taken from the theory of art of early German Romanticism. The fragment for the Romantics is the solution to a philosophical problem of the presentation of Ideas. This is also the case in Benjamin, and becomes clear when he argues, in the 'Epistemo-Critical Prologue' of *The Origin of the German Tragic Drama*, that Ideas are the object of philosophical investigation, and their representation is the task of philosophy and art. Benjamin defines Ideas, as not derived from phenomena nor a product of the intellect, but as metaphysical elements, 'pre-existent essences.' Benjamin remarks that although Ideas are not derived from the world of phenomena (from experience), they become part of empirical reality in the linguistic form, in the word, which has double meanings, the profane and the symbolic (philosophical level). Benjamin argues that the philosopher's task is to engage in the reading of the symbolic level, which is the allegorical level.

In this prologue Benjamin introduces his (early Romantic) concept of criticism, that is a philosophical approach to art, concerned with the representation of philosophical ideas in individual artworks. Benjamin criticizes the aesthetic historical view which is engaged in defining general rules of genres against which to judge artworks. In his view, the attention of the critic should not be focused only on the historical contingency of the artwork, but in the search for truth:

¹³ Walter Benjamin, *The Origin of the German Tragic Drama*, Ed. Verso, London and New York, 1998, p. 176.

The object of philosophical criticism is to show that the function of artistic form is as follows: to make historical content, such as provides the basis of every important work of art, into a philosophical truth. This transformation of material content into truth content makes the decrease in effectiveness, whereby the attraction of earlier charms diminishes decade by decade, into the basis for a rebirth, in which all ephemeral beauty is completely stripped off, and the work stands as a ruin.¹⁴

Benjamin associates the image of the ruin, with the dialectical relation between history and nature, where history is presented as decaying nature. Benjamin shows that culture, history and artworks are also transient and decay, and for this reason they need to be revived through allegorical appropriation, re-articulating their truth content through criticism. Benjamin remarks that the Baroque genius is a master of manipulation, and his task 'is one of arranging' material from historical sources, critically reinterpreting it.¹⁵ It is in this act of revival, or 'recycling' of the old that the new emerges. The old is transformed in this process, because in the melancholic death of its meaning, it becomes 'exposed to the allegorist, it is unconditionally in his power.'¹⁶ The allegorist transforms the meaning of the ('dead') appropriated fragment, in an act of philosophical criticism.

The historical perspective of allegory in Benjamin is also clearly articulated in his use of the concept of origin [*Ursprung*]:

The term origin is not intended to describe the process by which the existent came into being, but rather to describe that which emerges from the process of becoming and disappearance. Origin is an eddy in the stream of becoming, and in its current it swallows the material involved in the process of genesis. That which is original is never revealed in the naked and manifest existence of the factual; its rhythm is apparent only to a dual insight. On the one hand it needs to be recognized as a process of restoration and re-establishment, but on the other hand, and precisely because of this, as something imperfect and incomplete.¹⁷

¹⁴ Ibid. p. 182.

¹⁵ Ibid. p. 179.

¹⁶ Ibid. pp. 183-4.

¹⁷ Ibid. p. 45.

Benjamin argues that the philosophical understanding of allegory is the dialectical understanding of its double structure. In the Romantic fragment we also find this tension between antithetical ideas and the idea of incompleteness. In the *Athenaeum Fragment* 121, Friedrich Schlegel writes: 'An idea is a concept perfected to the point of irony, an absolute synthesis of absolute antitheses, the continual self-creating interchange of two conflicting thoughts.'¹⁸ The idea/ fragment is conceived in dialectical terms, and transcends itself in an endless dialectical dynamic. 'Ideas are infinite, independent, unceasingly moving in themselves, godlike thoughts'¹⁹ (*Ideas* 10). This is also true for Benjamin's interpretation of allegory. The double structure is a dialectical one, that is present in the tension between written and spoken language, concrete and abstract words, sound and silence, image and text, world of dreams and reality, and so on.

According to Philippe Lacoue-Labarthe and Jean-Luc Nancy²⁰ the early work of August and Friedrich Schlegel (both were philologists), is concerned with a revival of Antiquity, like the Baroque authors. In the *Athenaeum*²¹ period, the Schlegels trace the tragic and mystical 'vein' of Greek Antiquity which underlies the 'serenity' of Greek classical art. Lacoue-Labarthe and Nancy remark that by engaging with these contradictory aspects of Greek art, 'the Schlegels invent what becomes known (under various names) as the opposition of the Apollonian and the Dionysian'²² (later explored by Nietzsche). Thus, the early Romantics also regard the production of art as recreation, in their will to perform a 'synthesis' of the Ancient with the Modern. As Lacoue-

¹⁸ Friedrich Schlegel, *Philosophical Fragments*, University of Minnesota, Minneapolis and London, 1991, p. 33.

¹⁹ *Ibid.* p. 95.

²⁰ Philippe Lacoue-Labarthe and Jean-Luc Nancy, *The Literary Absolute: The Theory of Literature in German Romanticism*, op. cit., p. 10.

²¹ *The Athenaeum* was a short lived journal (1798- 1800), in which the early Romantics published their collective fragments. The main authors were the brothers August and Friedrich Schlegel and Novalis, but another seven writers and poets contributed to the journal.

Labarthe and Nancy explain it, their aim is to remake in the modern mode, the great classical work that the period lacks, fulfilling the incomplete aspects of Antiquity.²²

Among the early Romantic authors, Friedrich Schlegel is the most committed to the form of the fragment developing it further in his writings. For the Romantics the fragment is a form of writing that resists definition, because they conceive writing and language as an open and fluid system. According to Rodolphe Gasché, the fragment emerges from the association of Fichte's philosophy with a tradition of fragmentary writing employed by English and French moralist writers.²⁴ Gasché explains that the Romantics articulate the model of the fragment with the problematic of presentation of ideas (*darstellung*) in systematic philosophy. The question of *darstellung* can be formulated as follow: 'How can the absolute (infinity) be presented, if presentation is finite?'²⁵ The Romantics argue that the fragment is a way to resolve this problem of presentation.

The fragment as a finite element, makes a claim to present the absolute, but can only present it incompletely. Peter Osborne explains that by being explicit about its incompleteness the fragment can present the unrepresentable. The fragment, thus, is not merely a broken part of a missing whole, but is a particularization of the absolute, 'it makes a metaphysical claim.'²⁶ Thus, the fragment paradoxically presents the infinite through its incompleteness. The fragment's recognition of its failure to present the absolute leads to an endless process of production of more fragments. This conception is radically opposed to the concept of symbol promoted by later Romantics, such as

²² Philippe Lacoue-Labarthe and Jean-Luc Nancy, *The Literary Absolute: The Theory of Literature in German Romanticism*, op. cit., p.10.

²³ *Ibid.* p. 11.

²⁴ Rodolphe Gasché, in 'Ideality in Fragmentation', foreword to Schlegel's *Philosophical Fragments*, p. viii.

²⁵ Peter Osborne explained this in a lecture on Romantic Aesthetics at the University of Middlesex, on 31/10/2001.

Coleridge, who saw in the organic totality of the symbol the possibility to directly present the absolute. The concept of the fragment clarifies the idea of totality of the organic symbol, because the fragment is conceived as incomplete, but is an individual or a miniature system. Schlegel uses the metaphor of embryo to explain the paradox of completion and incompleteness of fragments: 'All individuals are systems at least in embryo and tendency.'²⁷

Benjamin uses this concept of fragment in his articulation of allegory and criticism. The fragment is the artwork: a finite object, which can be sensibly grasped, but cannot be reduced to what can be said about it. In other words, the meaning of an artwork is beyond what can be conceptualized about it. Although artists may use particular objects or make statements about specific subjects in the process of artistic production, the meaning of an artwork cannot be fixed or pinned down definitively by one interpretation. Thus, the artwork is limited and finite, but it leads to an infinite number of interpretations.

In 'The Concept of Criticism in German Romanticism,' Benjamin examines what he regards as the epistemological presuppositions that form the basis of the Romantic notion of criticism. He identifies reflection as their most important epistemological concept: thinking that reflects on itself, generating more thinking in an infinite process which leads to new intuitions.²⁸ Benjamin shows how the Romantics take the idea of reflection from Fichte's philosophy and transform it in the formulation of their theory of art. Benjamin points to Fichte's definition of reflection (in *The Science of Knowledge*) as reflection on a form, which has the 'I' as the point of reflection; and

²⁸ Statement made by Stewart Martin in a lecture on Romantic Aesthetics at the University of Middlesex, 1/10/2002.

²⁷ Friedrich Schlegel, *Philosophical Fragments*, Athenaeum Fragment 242, p. 51.

notes that Schlegel, on the other hand, focuses on the reflection of art rather than on the 'I'. As Benjamin explains: 'The Romantic intuition of art rests on this: that in the thinking of thinking no consciousness of the 'I' is understood. Reflection without the 'I' is a reflection in the absolute of art.'²⁹ Benjamin says that Schlegel's concept of the absolute is a 'medium of reflection', or a way to reflect.

Benjamin argues that in the Athenaeum period, Schlegel thinks of art as the absolute medium of reflection and notes that this is the basic systematic conception of that period. Benjamin explains that, because art is a medium of reflection, the task of art criticism is the knowledge of the reflective process in the artwork. Benjamin compares the engagement with an artwork to the idea of 'magical observation' or 'experimentation' with natural objects elaborated by Novalis. Benjamin argues that the knowledge of nature, or all knowledge for Novalis is self-knowledge, which can be gained through the merging of two centres of reflection, the observer and the observed: 'No question put to nature lies at the base of this experiment. Instead, observation fixes in its view only the self knowledge nascent in the object; or rather it, the observation, is the nascent consciousness of the object itself.'³⁰ In magical observation there is an emphasis on both the subject and the object, in a mediating position between rationalist and empiricist priority to the subject and object respectively. Benjamin transposes the logic of magic observation of nature to the reception of art. He argues that Romantic criticism engages with the reflection process of the artwork. This form of criticism was an opposition to historical criticism (to which Benjamin reacted against), which provided negative judgements of artworks, comparing them to an ideal of the genre, or

²⁸ Walter Benjamin, *Selected Writings*, vol 1, 2000, pp. 120-121.

²⁹ *Ibid.* p. 134.

³⁰ *Ibid.* p. 148.

an idealized form exterior to the work.³¹

Benjamin promotes this notion of Romantic criticism which does not judge artworks against an ideal, through application of rules or laws. He argues that criticism works to complete the artwork in its reception by engaging with the existing reflective process in the work. The Romantics see artworks as finite fragments, as incomplete in relation to the absolute of art, which is an infinite medium of reflection. Because artworks are incomplete, they lead us to an infinite process of reflection and interpretation, which means that criticism cannot give the last word or fix 'the proper' meaning to a work. Benjamin suggests that the more interpretations to a work there are, the closer we become to its truth content. It is in this sense that criticism completes an artwork, by engaging with the reflective process of its production.

This discussion is important because this notion of criticism is a central idea in Benjamin's theory of allegory and is closely linked to the concept of the fragment. Criticism is a reflection on form, which is what limits the work, making it a unity or individuality. This limitation is necessary, because it is through the finite form of the fragment/artwork that we can reflect on the infinite. Allegory is a kind of criticism, as it appropriates or creatively interprets previous art (or other objects). So, in allegory, the criticism is done by the work, as Schlegel explains that '*Poetry can only be criticized by way of poetry*' (Critical Fragment 117).³² Analogously, art can only be criticized by

³¹ Benjamin opposes the deductive method of aesthetics, used by R. M. Meyer and other critics, that, according to Benjamin was based on the comparison of artworks to 'outstanding representatives of each genre, rules and laws with which to judge the individual product. And by means of a comparison of the genres it seeks to discover general principles which apply to every work of art.' In the 'Epistemo-Critical Prologue, *The Origin of the German Tragic Drama*, op. cit., p. 42. Benjamin joins Benedetto Croce's criticism of the deductive concept of the genre, remarking that Croce considered each artwork individually, 'furnished with its own rules', and noting that no artwork 'can be translated into another', but should be considered philosophically without the interference of the genre. Here Benjamin cites passages from Croce's *The Essence of Aesthetic*.

³² Friedrich Schlegel, *Philosophical Fragments*, op. cit., p. 14.

way of art, and this is precisely the 'methodology' of allegory, as articulated by Benjamin. In allegory criticism and art become the same thing.

Benjamin takes the model of the fragment to explain the Romantic concept of criticism he wants to promote, in which the artwork is the finite fragment, but contains in itself the possibility of infinite reflection, which is actualized in the reception. Benjamin explains that, in this sense, criticism completes the work: 'criticism in its central intention is not judgement but, on the one hand, the completion, consummation, and systematization of the work and, on the other hand, its resolution in the absolute.'³³ The 'consummation' of the work is in the reception, as it is through the reading that the work functions as art: when there is a process of reflection. Thus, it is the role of the viewer as an active reader that completes the work.

I find this concept of fragment of fundamental importance for my work in many ways. It clarifies the difficulty involved in the representation of nature encountered in the art, science and nature debate. Nature in its infinity, can be considered an ungraspable concept, which (some) artists and natural scientists try to represent in their finite discourses. Within their finitude, artworks (and perhaps also scientific works) are also ungraspable, as Benjamin argues, because their meanings cannot be fixed. So, the model provided by the fragment of the paradox of presentation of the unrepresentable, through incompleteness, is very useful to examine the work of both artists and scientists engaged in questions of representation of nature. If we transpose Benjamin's concept of criticism of art, to the artistic and scientific 'readings' of nature, with further interpretations, we may get closer to the 'truth content' of nature.

³³ *Ibid.*, p. 159.

This concept of criticism with its emphasis on the reception of art becomes an important aspect in the criticism and production of visual art in early modernism and postmodernism. The close relation of allegory with writing and reading is a key aspect for its revival, because it coincides with post-structuralist debates on language that are very influential in the field of contemporary art. The concept of the fragment has been linked with the openness and indeterminacy of postmodern art, and fragmentation has become an important term in opposition to the essentialist notion of the organic symbol in later Romanticism and formalist modernism.

Allegory and Symbol

While considering German Baroque mourning plays, in the *The Origin of the German Tragic Drama*, Benjamin engages with the discussion on symbol and allegory of the 19th century. Through the reading of the work by the critic Friedrich Creuzer (1819), Benjamin concludes that the formal definition of the relationship between allegory and symbol is given by the category of time. The symbol has a momentary quality, analogous to a 'mystical instant' when the essence, or meaning 'incarnates' form. Allegory on the other hand, is identified as a 'progression in a series of moments,'³⁴ where meaning becomes separate from form, because of an excessive accumulation of symbols, which become like a text to be read, rather than an image to be contemplated. Benjamin notes, then, that access to meaning in allegory is not acquired by an immediate perception of form, but that it emerges from the reading of a series of signs.

³⁴ Creuzer cited by Benjamin, in *The Origin of the German Tragic Drama*, op. cit., p. 165.

The symbol is identified with the presentation of (transcendental) ideas through form, while allegory has a more conceptual or semiotic character. Benjamin explains that the strong opposition to allegory is based on its logical or discursive aspect, because for the advocates of the symbol, to add an extra meaning to a form is regarded as an artificial procedure. Benjamin cites Schopenhauer's criticism to the conceptual dimension of allegory:

[...] when, therefore, an allegorical picture has also artistic value, this is quite separate from and independent of what it achieves as allegory. Such a work of art serves two purposes simultaneously, namely the expression of a concept and the expression of an Idea. Only the latter can be the aim of art; the other is a foreign aim, namely the trifling amusement of carving a picture to serve at the same time as an inscription, as a hieroglyphic...³⁵

Thus allegory was seen as a structure with a conventional relationship between an image and 'foreign' abstract concepts attached to it. In order to join the series of images and symbols to interpret allegorical works, a conventional 'code' or 'pretext' was used. Allegory in the visual arts in the Middle Ages had the Bible as the main 'pretext.' In the Renaissance, allegorical painting still referred to the Bible, but also to mythological stories while interest in Egyptian mysticism became very fashionable, and represented important source material for many allegorical paintings. Benjamin explains that the Baroque allegory was different from medieval allegory, that was Christian and didactic, arguing that Baroque allegory descended (as the allegory of the Renaissance) from Egyptian and Greek antiquity, and was the product of 'a combination of artistic freedom (Greeks) and artistic constraint (Egyptians).'³⁶ Renaissance and Baroque artists were interested in the enigmatic and esoteric aspects of allegory, the mysterious message of antique wisdom encoded in the hieroglyphs.

³⁵ Ibid. cited by Benjamin, pp. 161-2.

³⁶ Ibid. p. 169.



4. Albrecht Dürer, *Hieroglyphic Image of Emperor Maximilian*, 1515
Detail from a woodcut of the Ehrenpforte, 11, 1/2 x 9, 3/4 feet

Albrecht Dürer's *Hieroglyphic image of Emperor Maximilian* (1515), is an example in the 16th century visual arts of the interest in Egyptian 'pictorial language.' According to Benjamin, his work anticipates a Baroque sensibility. The image of the emperor is surrounded by a condensation of animal-signs to be read. Erwin Panofsky decodes the message:

Maximilian [the Emperor himself] - a prince [dog draped with stole] of great piety [star above the Emperor's crown], most magnanimous, powerful and courageous [lion], ennobled by imperishable and eternal fame [basilisk on the Emperor's crown], descending from ancient lineage [the sheaf of papyrus on which he is seated], Roman Emperor [eagles embroidered in the cloth of honour], endowed with all the gifts of nature and possessed of art and learning [dew descending from the sky], and master of a great part of the terrestrial globe [snake encircling the scepter] - has with warlike virtue and great discretion [bull] won a shining victory [falcon on the orb] over the mighty king here indicated [cock on a serpent, meaning the king of France], and thereby watchfully protected himself [crane raising its foot] from the stratagems of said enemy, which has been deemed impossible [feet walking through water by themselves] by all mankind.³⁷

³⁷ Erwin Panofsky, *The Life and Art of Albrecht Dürer*, Princeton University Press, Princeton, N.J., 1955, p.177.

In the example above, images function as words, and their reading in the Renaissance and Baroque periods was made possible through the knowledge of conventional symbols (in this case, based on the 'Hieroglyphica of Horapollo')³⁸ to represent abstract qualities attributed to the emperor. So, the message is publicly displayed, but its meaning is hidden, and can only be decoded by the 'initiated' viewer who has access to the code. The reception of the artwork follows the logic of the religious Egyptian hieroglyphic, in which mysterious wisdom is simultaneously openly displayed for everyone, but protected by a secret code. Thus, access to meaning in the allegorical artwork is associated with a conventional code. Allegory is dismissed because of this conventional mode of expression.

The important contribution made by Benjamin to the discussion of allegory, is the claim that the allegorical level of meaning in the Baroque and modern artwork is not conventional, but is philosophical. According to Benjamin, the meaning in allegory emerges through a close reading of the dialectical structure of the work, instead of derived from a conventional code for interpretation (without the help of the rules of the genre, for instance). Benjamin articulates the dynamics of the allegorical work as a dialectics of expression and convention, which is analogous to the religious dialectic of divine and profane content: '[...] all the things which are used to signify derive, from the very fact of their pointing to something else, a power which makes them appear no longer commensurable with profane things, which raises them onto a higher plane, and which can, indeed, sanctify them. Considered in allegorical terms, then, the profane

³⁸ According to Rudolf Wittkower in *Allegory and the Migration of Symbols*, Thames & Hudson, London, 1977, the 'Hieroglyphica of Horapollo' was a Greek manuscript from the fifth century, that appeared in Florence (in 1422). It was alleged to be a translation of an Egyptian text which explained the meaning of hieroglyphics. Wittkower explains that although it didn't provide a correct interpretation of the Egyptian hieroglyphics, it had a great impact on Renaissance thought. It was also one of the inspirations for emblem books, which became a popular literary genre in the 16th century.

world is both elevated and devalued.’³⁹ Thus, Benjamin demonstrates that allegory is constituted of two opposites: expression and convention, explaining that ‘allegory of the seventeenth century is not convention of expression, but expression of convention,’ that is the same as the expression of authority. He argues that, analogous to the religious object, where the power to signify comes from the religious authority, and not from the object itself; the power of the Baroque artwork to signify comes from the authority of its classical origin.

Benjamin also links the authority of expression with spoken language, and convention with allegory and religious writing, which implies a ‘correct reading.’ The reception of the artwork involves the decoding of the message, like in the hieroglyphics, involving a ‘conflict between sacred standing and profane comprehensibility.’⁴⁰ It is here that the image becomes intertwined with writing: in the hieroglyph, the images function as text, they become words to be read. In other passages, Benjamin remarks that text also functions visually, as allegorical language is full of figures of speech. He observes this dialectic of image and writing in the mixture of abstract concepts and concrete words in the titles of some Baroque plays such as *Poison of Vainglory*, *Cedars of Innocence*, *Blood of Friendship*. He sees these visual and textual polarities of allegory as a dynamic structure, where the opposites give rise to a dialectic which is not resolved in a stable synthesis: ‘[it is] a synthesis not so much in the sense of a peace as a *treuga dei* between the conflicting opinions.’⁴¹ Thus, Benjamin proposes an infinite dialectic play between the polarities, which does not find a permanent closure in a stable or fixed synthesis, but only a temporary solution.

³⁹ Benjamin, in *The Origin of the German Tragic Drama*, op. cit., p. 175.

⁴⁰ Ibid. p. 175.

⁴¹ Ibid. p. 177.

Benjamin claims that the rejection of allegory by its critics is based on their misunderstanding of its dialectical dynamic; it is mistrusted as ambiguity. He quotes

Cohen:

the basic characteristic of allegory, however, is ambiguity, multiplicity of meaning; allegory, and the Baroque, glory in richness of meaning. But the richness of this ambiguity is the richness of extravagance; nature, however, according to the old rules of metaphysics, and indeed also of mechanics, is bound by the law of economy. Ambiguity is therefore always the opposite of clarity and the unity of meaning.⁴²

Thus the fragmentation of the written language, the disjunction between signifier and signified found in allegory is the basis of its rejection, in favour of the unity and clarity offered by the Romantic symbol.

Benjamin claims that the controversy around the opposition of symbol and allegory is based on a misconception of the symbol. This is because there is an ambiguity in the interpretation of the concept of symbol in late Romanticism. For the German Romantic poet Friedrich Schlegel, 'the symbol is a part that contains the whole, striving for meaning, but failing to achieve it,'⁴³ as we have seen in the concept of the fragment. This philosophical view of early Romanticism contrasts with another Romantic (dominant) account of the symbol as an organic totality, articulated by Coleridge, which is, according to Benjamin, derived from a misinterpretation of the theological symbol:

The unity of the material and the transcendental object, which constitutes the paradox of the theological symbol, is distorted into a relationship between appearance and essence. The introduction of this distorted conception of the symbol into aesthetics was a Romantic and destructive extravagance which preceded the desolation of modern art criticism.⁴⁴

⁴² Ibid. Hermann Cohen cited by Benjamin, p.177.

⁴³ As Peter Osborne explained in a lecture on Romantic Aesthetics at the University of Middlesex, 31/10/2001.

⁴⁴ Benjamin *The Origin of the German Tragic Drama*, op. cit., p. 160.

The formalist tendency in 19th century Romanticism was identified with 'high modernism' (Expression theory), because both regard the symbol as a form which gives direct access to meaning (essence). Fred Orton argues:

For Coleridge, a symbol was a consubstantiation of the truth it conducted. In the modern epoch it becomes a work of art that carries feeling or a state of mind from its creator to its reader or beholder. The Modernist or dominant theory of modern art is a variation on the theory of the symbol and the Romantic ideology of art as the manifestation of genius, of creative powers that lie beyond the reach of mere craft, learning or applied technique. Clement Greenberg is Modernism's Coleridge.⁴⁵

Thus, the organic symbol and the modernist expressive work, offer an account of representation that tries to do away with the linguistic level of meaning; but this is not possible because nothing can be directly symbolic, as it goes through the process of signification. The symbol stands in a dialectical relation with allegory, because of its rhetorical aspects, as Orton remarks:

The troped and figured character of the symbol always disrupts its symbolic form and so provides it with a negative moment which works against its symbolic effect and the claims made in virtue of its transcendence by forcing to mind the constitutive gap that there is in language between words, or visual images, and the reality or experience of reality that they try to evoke.⁴⁶

Allegory makes explicit this gap between meaning and form, between an experience or feeling and its representation through art. Such disjunction is clearly articulated by Benjamin: 'In the context of allegory the image is only a signature, only the monogram of essence, not the essence itself in a mask.'⁴⁷ Thus, the 'essence' does not coincide with the form, as in the fragment, the form fails to present the totality (essence) directly, and it is because of this disjunction that the artwork leads to an infinite number of possible interpretations.

⁴⁵ Fred Orton, in his *Figuring Jaspers Johns*, Reaktion Books, London, 1994, p. 201.

⁴⁶ Fred Orton, 'Out of Time', unpublished paper presented at the College Arts Association Annual Conference, New York, February 1994, cited by Gail Day, in her *Political Transformations and the Practices of Cultural Negation in Contemporary Art Theory*, PhD thesis, Leeds University, 1996, p. 225.

Allegory and Deconstruction

While Benjamin articulates the double structure of allegory as a dialectic dynamic, Paul de Man articulates these antinomies as deconstruction. Deconstruction is a term difficult to define because it is based on the idea that language is a fluid medium in which meaning travels incessantly without the possibility of finding a definite point of rest. This is similar to the early Romantics notion of language. Deconstruction is not a method in the sense that it follows a set of rules, but can be thought of as a kind of method, as suggested by Derrida in his essay 'Living on: Borderlines.'⁴⁷ Derrida describes deconstruction as *pas de methode*, a word game in French, meaning at the same time not method and a methodological step. Deconstruction is a specific reading of text, without approaching it with a preconceived methodology. In this way, deconstruction is close to Benjamin's idea of criticism, which deals with each work without comparing it to the rules of a genre. In deconstruction, it is through a close reading of the structure of a particular text, that its meaning is revealed. Deconstructive reading aims at surfacing the 'unconscious' of the text; that is, the foundational concepts upon which the text is built, which may have been suppressed (either consciously or not), by the author, but are structurally present in the text. Thus, deconstruction is also concerned with the double structure of works, and the interpretation of their literal and allegorical meanings.

According to Derrida, the task of deconstruction is to rethink the conceptual foundations of the Western tradition. Derrida says that Western thought is structured, since Plato and Aristotle, in terms of binary oppositions, in which there is always a privileging of a

⁴⁷ Ibid. p. 214.

⁴⁸ Jacques Derrida, 'Living on: Borderlines', trans. J. Hulbert, in H. Bloom et al. (eds.), *Deconstruction and Criticism*, Seabury Press, New York, 1979, p. 96.

term over another. Derrida, in *Of Grammatology*, argues that the concept of speech is privileged over the concept of writing in the Western tradition. He writes that Western thought is governed by the idea of a stable or essential meaning, that is ultimately fixed by a 'transcendental signifier', which is the logos in the logocentric view of the world. This desire for a single, fixed and 'authoritative centre' is close to the desire for the unity of essence and form that we find in the later Romantic symbol.

Benjamin's questioning of the capacity of the symbol to directly present an 'essence,' is a line of thought which is continued by Paul de Man's deconstructive articulation of allegory. In his essay 'The Rhetoric of Temporality' (1971) de Man deconstructs the polarity allegory and symbol, by showing in the literary work of the Romantic poets how their supposedly direct and immediate apprehension of nature is mediated by certain traditions in the language of poetry. De Man starts by noting that allegory and symbol were synonymous for a long time, and their opposition emerged in the latter half of the eighteenth century, with the development of a Romantic aesthetics that valued the symbol above all other figures of language. He refers to Hans-Georg Gadamer's (1960) analysis of late Romanticism in German literature (Goethe, Schiller and Shelley). Gadamer argues that the privileging of the symbol by those poets is based on the idea of unity between an experience and its representation, and it is through the work of the genius that his experiences are transformed into general truth.⁴⁹ This mystification of the self in the discourse of the genius is directly related to the claim of the symbol to a unity between signifier and signified. A critique of the mystification of the self forms the basis of Paul de Man's argument.

⁴⁹ Paul de Man is referring to a discussion by Gadamer on this subject, in de Man's essay 'The Rhetoric of Temporality,' in his *Blindness and Insight: Essays in the Rhetoric of Contemporary Criticism*, University of Minnesota Press, Minneapolis and London, 1983, pp. 188-9.

Paul de Man argues that it is because of this mystification of the self, that a pseudo dialectic between the self and nature is established leading Romanticism to an impasse: if, on the one hand, the focus of Romanticism is on the subject, then it is criticized by its solipsism; on the other hand, if the focus is on nature, then it is accused of a nostalgic longing for an unreachable past.⁵⁰ De Man remarks that this is not a real dialectic but a contradiction that started with a misconception of the symbol: '[...] we should make certain that we have indeed been dealing with the main Romantic problem when we interpret the Romantic image in terms of a subject- object tension. For this dialectic originates, it must be remembered, in the assumed predominance of the symbol as the outstanding characteristic of Romantic diction, and this predominance must, in its turn, be put into question.'⁵¹ So, the concept of the symbol is identified as the unstable point of the Romantic discourse, and de Man sets off to deconstruct it. He starts by questioning the distinction made by Coleridge (in *The Statesman's Manual*, published in 1875, written in 1816) between symbol and allegory. Coleridge dismisses allegory for its 'immateriality,' its tendency to abstraction and lack of substance, but at the same time characterizes the symbol as 'translucence.' De Man dissolves the false opposition of symbol and allegory by revealing their similarities: both modes share a transcendental source. This fundamental common ground between the two is systematically overlooked in the reception of Romantic works by critics and poets in their promotion of the symbol.

De Man claims that allegory is structurally present in the Romantic work, but this aspect is suppressed by criticism. He suggests that the influence of Coleridge's conception of the symbol on English and American criticism has caused the study of metaphor and imagery to be privileged over metrics and thematic considerations (which are related to

⁵⁰ Ibid. p. 198.

allegory). De Man analyses the reception of the Romantic poetry by critics such as William Wimsatt, Meyer Abrams, and Earl Wasserman, who side analogy with allegory in reference to the *paysage moralisé* (moralized landscape). According to de Man, they argue that in allegory, analogy is what links mind and nature in contrast with the monism and unity advocated by Coleridge where 'Nature is made thought and thought nature.'⁵²

The same claim to subject-object synthesis is found in French Romanticism, as de Man points out. Here, through a close reading of Rousseau, de Man reveals the allegorical presence in the structure of the novel *La Nouvelle Heloise*. According to de Man, the central emblem of the novel is the garden of the character Julie, in which de Man finds explicit literary allusions to Defoe's *Robinson Crusoe* and the *Roman de la Rose*, as well as making parallels with the image of the garden in medieval literature. So, de Man shows that Rousseau is not expressing his immediate feelings for a specific landscape, but is making use of a figural language from an 'inherited typology'⁵³ from French literature. Similarly, in the reading of some passages of Wordsworth's poetry ('crossing the Alps,' 'the ascent of Mount Snowdon,' 'poems on the river Duddon'), de Man also identifies the influence of a 'traditional and inherited typology', instead of a spontaneous engagement with a specific site.⁵⁴

The question here is related to the mystification of the self, with a denial of influence from a literary tradition, in order to claim a certain priority and immediacy to self-expression. But the problem is that the process of signification gets in the way of self-

⁵¹ Ibid. p. 198.

⁵² Ibid. Coleridge cited by de Man, p.195.

⁵³ 'Inherited typology' is a pejorative term used by Abrams to refer to culturally received literary traditions, in his defence of the Romantic symbol, which related to the spontaneous feelings evoked by a specific locality and did not make use of an inherited typology.

⁵⁴ Ibid. pp. 204-207.

expression. This avoidance or negation of influence is a consequence of the discourse of the symbol, genius and originality. De Man argues that allegory by being open about its sources, '[...] designates primarily a distance in relation to its own origin, and, renouncing the nostalgia and the desire to coincide, it establishes its language in the void of this temporal difference.'⁵⁵ Thus, in allegory the disjunction between signified and signifier is made explicit by this temporal distance and awareness of the 'interference' of language in the 'encoding' of a meaning. Paul de Man articulates the temporal disjunction in the structure of allegory, in terms of the incompleteness and failure to directly signify, that is the model of the fragment:

The idea of totality suggests closed forms that strive for ordered and consistent systems and have an almost irresistible tendency to transform themselves into objective structures. Yet, the temporal factor, so persistently forgotten, should remind us that the form is never anything but a process on the way to its completion... Understanding can be called complete only when it becomes aware of its own temporal predicament and realizes that the horizon within which the totalization can take place is time itself.⁵⁶

Thus, the fragmentary form is a 'process on the way to completion', close to Schlegel's idea of system as an 'embryo' incomplete but becoming complete in the reception through endless interpretations, as Benjamin argues. The allegorist is simultaneously in the place of reception and production of artworks, recreating the old, inherited from an existing 'typology,' in a process of philosophical criticism.

The deconstructive approach to allegory is discussed in contrast to the dialectical one, by Gail Day in an essay entitled 'Allegory: Between Deconstruction and Dialectics.'⁵⁷ Day focuses on the opposition of dialectics and deconstruction identified with the work of Walter Benjamin and Paul de Man. Day argues that the correspondence of those

⁵⁵ Ibid. p. 207.

⁵⁶ Paul de Man, 'Form and Intent in the American New Criticism,' *Blindness and Insight: Essays in the Rhetoric of Contemporary Criticism*, second edition, Minnesota University Press, Minneapolis, 1983, pp. 31-32.

⁵⁷ Day, Gail; 'Allegory: Between Deconstruction and Dialectics', *Oxford Art Journal*, v 22, n 1, 1999, Oxford University Press, pp.103-118.

positions to these authors is not as clear as it first appears. Paul de Man's critique of premature synthesis of contradictions (sublation) in dialectics is regarded by Day as simply a refusal to closure of the dialectic, a position that is part of the traditions of dialectical thinking. Day also traces the vestiges of Hegelian and Heideggerian influences in de Man's account of deconstruction. On the other hand, Day is suspicious of Benjamin's dialectical position, which is clearly stated in the *Origin of the German Tragic Drama*. Day shows that Benjamin also refuses to provide a 'dialectical solution to allegory's antinomies.'⁵⁸ Instead, she explains that the synthesis Benjamin proposes is always contingent, a temporary suspension of the tensions of extremes, which will again resurface. This process is very similar to the constant dynamic of deconstruction, which will always lead to further deconstructive readings. Day demonstrates that both deconstruction and dialectics will keep the interplay of polarities as unresolved: this is the important point. In the dynamic of the fragment we find the same level of indeterminacy described by Day, because the finite and incomplete nature of the fragment leads to an endless reflection and interpretation. The open dialectics of Benjamin, and de Man's endless deconstruction are different ways to articulate the infinite play of antithetical ideas of the fragment as Schlegel describes it.

Allegory and the Avant-garde

In the political and anarchic radicalism of the historical avant-garde (1910-30), we find many parallels with the irreverent and revolutionary spirit of the early Romantics in the *Athenaeum* period (1798-1800). Lacoue-Labarthe and Nancy refer to the *Athenaeum*

⁵⁸ *Ibid.* p. 117.

group as 'the first avant-garde group in history.'⁵⁹ Around the *Athenaeum* journal, gathered a kind of 'community' of intellectuals and their lovers (officially, around ten people), described by Schlegel as a secret society, with a behaviour that defied the bourgeois moral principles of the time.⁶⁰ Many aspects of their modes of expression can be found in the Dada and Surrealist movements, such as the use of the manifesto, belief in the freedom of poetry and a tendency to collaboration. The Romantics promote the notion of collective writing, and the *Athenaeum Fragments* consist of a collection of unsigned and collectively written fragments. In the anti-artistic tendency of the avant-garde we also find this critique of conventional notions of authorship and attacks on the values of bourgeois society. In their critique of the institutions of art, avant-garde artists intend to cease the production of art, and engage with the aestheticization of life. This attitude is similar to the one we find in the Romantics, when Novalis says that the world must be Romanticized.⁶¹ There are many similarities between the ideas of the two groups, but perhaps the appropriation of the concept of the fragment is the most important one from the point of view of my investigation. The Romantic fragment emerges in the avant-garde work as montage, a procedure which disrupts the notion of totality of the symbol, typified in the aesthetics of the 'organic artwork.'

Peter Bürger in his *Theory of the Avant-Garde* claims that the idea of the non-organic artwork is realized by the avant-garde, and that it is Benjamin's experience of avant-gardiste works that led him to develop his concept of allegory.⁶² Bürger argues that avant-gardiste procedures and allegory's fragmentary nature are both in opposition to

⁵⁹ Philippe Lacoue-Labarthe and Jean-Luc Nancy, *The Literary Absolute: The Theory of Literature in German Romanticism*, op. cit., p 8.

⁶⁰ Ibid., p. 8.

⁶¹ Cited by Maurice Blanchot, in 'The Athenaeum', in his *The Infinite Conversation*, Minnesota University Press, 1990, p. 356.

the totality of the organic symbol. The technique of montage is identified as an allegorical gesture, which encapsulates the idea of recontextualization of appropriated fragments, with the positing of new meaning in the avant-garde work. The avant-gardiste approach to material differs from what Bürger calls the classicist attitude, which is concerned with the creation of organic artworks: 'The classicist correspondingly treats the material as a whole, whereas the avant-gardiste tears it out of the life totality, isolates it, and turns it into a fragment.'⁶³ Bürger says that this fragmentation of the totality of the organic work is the realization *in the artwork* of the radical avant-gardiste intention to destroy art institutions.⁶⁴

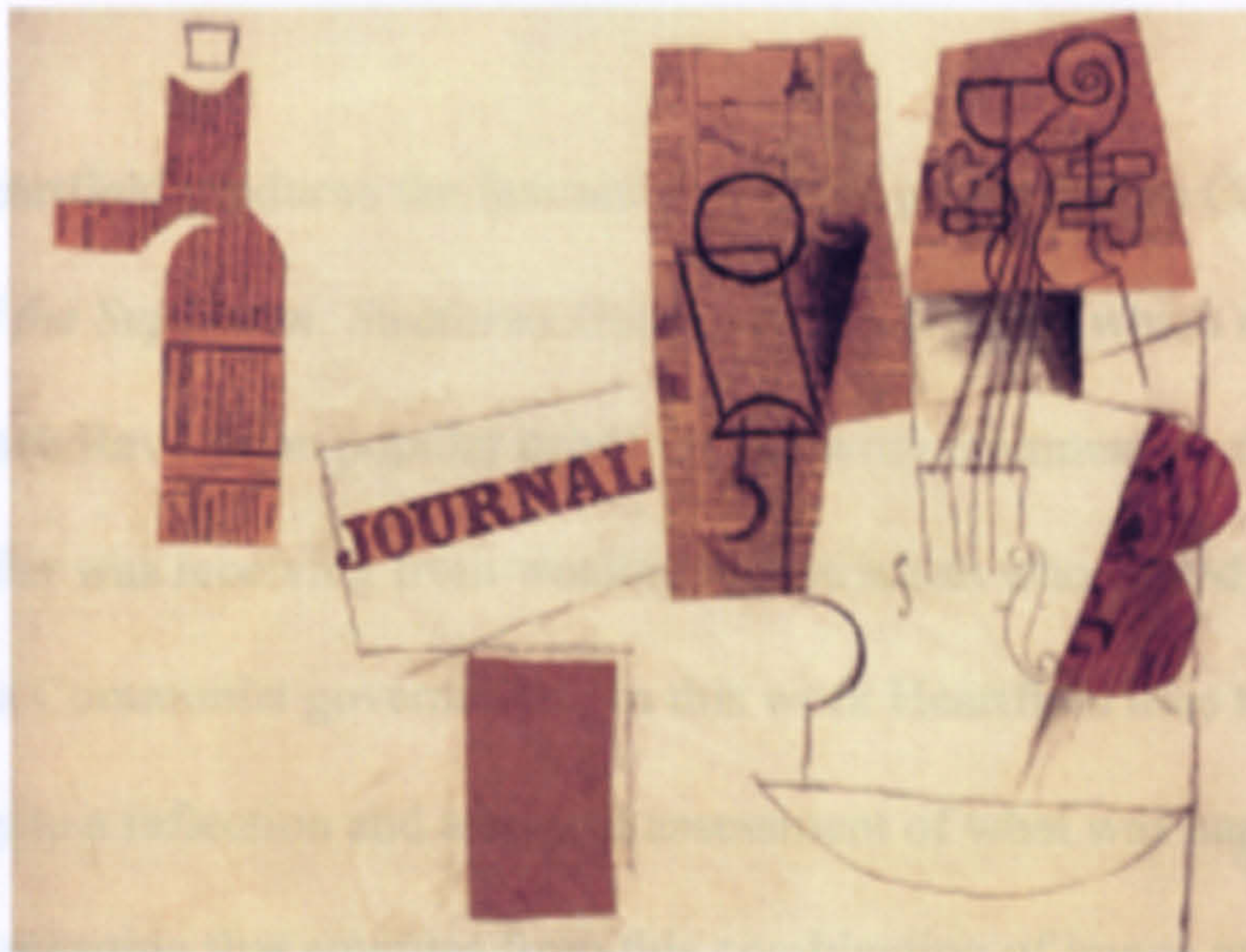
The concept of montage exemplifies the connection of the avant-gardiste work with life and allegorical fragmentation. The aim of the avant-garde is to destroy the traditional aesthetic art object; and their object of interest becomes real life and society. Bürger explains that by appropriating fragments of newspapers, adverts and non-artistic materials into their practices, avant-garde artists engage their artworks with contingent elements of life. Bürger makes a distinction between the montage (*papiers collés*) in cubist paintings and John Heartfield's photomontages, by arguing that the aim of the cubist painting is to create an aesthetic object, while Heartfield's photomontages are first of all political weapons. Bürger puts an emphasis on this difference of intention, and seems to favour the political over the aesthetic in his discussion of avant-garde works. He remarks that in Pablo Picasso's cubist collages, the insertion of newspaper cuttings brings reality fragments into the work, and suggests that the aim is to transform the bits of the world into art. Bürger notes that the fragments disturb the

⁶² Peter Bürger, *Theory of the Avant-Garde*, translated by Michael Shaw, University of Minnesota, Minneapolis, 1989, p.68.

⁶³ *Ibid.* p.70.

⁶⁴ *Ibid.* p.72.

notion of the organic whole, as the painting doesn't point to reality outside, but presents it directly.



5. Pablo Picasso, 1912, pasted paper and charcoal
47 x 62.5 cm, Moderna Museet, Stockholm

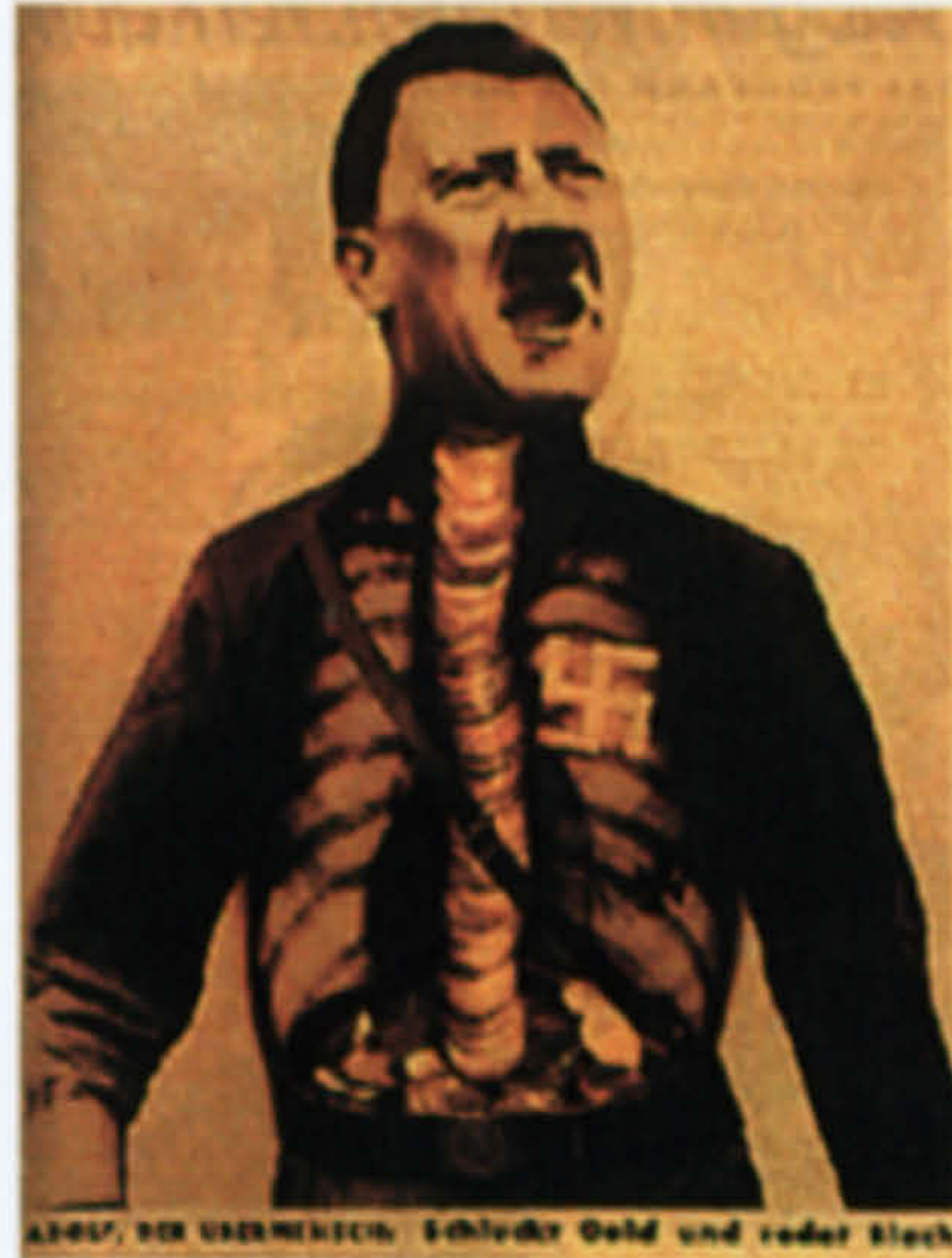
Bürger contrasts the political photomontage in the work of the Dada artist John Heartfield with the aestheticizing tendency of the cubist collage, arguing that Heartfield radicalises the idea of engaging with life, by not producing art, but by using his artistic skills for political propaganda. Bürger regards this as a more radical way of questioning and reacting to what was happening in the world and the society the artist was living in. Heartfield's aim is clearly not to produce artworks for an art market. This can be observed in the circulation and distribution of his work, as the main outcome of his practice is destined to Dada manifestos and publications, political magazines and newspapers. In the 1930s, he produces many front covers for the anti-Nazi newspaper *AIZ* (*Arbeiter-Illustrierte Zeitung*), and devotes his career to criticizing the Nazi party. Bürger presents Heartfield's work as an example of the Dada's radical destructive attitude towards art, to which art should end, and the artist's role should be concerned with a critique of society. Bürger compares Heartfield's use of image and text with the

structure of emblem books.⁶⁵ Heartfield appropriates the discourse of the Nazi party, to subvert their intended message through the use of clever visual puns, intertwining image and text.

In July 1932 Heartfield produces the famous anti-Hitler poster for the Communist party elections, *Adolf the Superman: Swallows Gold and Spouts Junk* (which refers to a 'pretext,' a French Revolution popular print). It is a witty comment on the financial support that Hitler was receiving from wealthy industrialists who feared Germany would vote for a Communist government. In this work Heartfield uses the power of the images to instigate a reflection and a critical assessment of what was happening in Germany. The meaning that emerges from this combination of image and text is much stronger than the simple enunciation, which states that this is about industrialists giving money to Hitler. The figurative language used, reverses the metaphor of the alchemic power to transform matter into gold. Hitler is not Midas, and his power is a destructive one, it transforms what he touches into junk. The meaning of the political message is made more powerful through the form in which it is presented. Heartfield uses allegorical strategies of intertextuality, montage and sensitivity to context, in a similar construction to hieroglyphic compositions of the 16th century, but where the code for interpretation is given by the political context in which the work is produced. Heartfield builds his images by manipulating appropriated fragments and arranging them to serve his purposes. Thus, it is through this interplay between its formal and discursive aspects that the work operates.



Most pages of a typical emblem book consisted of a title, a picture, and a short poem that explained the allegorical meaning of the image named in the title and shown in the picture.



6. John Heartfield, *Adolf the Superman: Swallows Gold and Spouts Junk*, 1932

After Hitler's victory in the elections, Heartfield continued his critique of Nazi ideology from abroad. In *Dialogue at the Berlin Zoo*, 1934, Heartfield ridicules the perverse use and distortion of science by Hitler, to justify his project of ethnical extermination that followed. By using humour, Heartfield conveys a serious warning and important critique. The tension between the terror of the Nazi power and the humorous aspect of the image, is what makes the work a dialectical dynamic, and the viewer is captured in this impossible situation between laughter and dread. The text which accompanies the image is a conversation between the animals. The monkey is reading the anti-semitic newspaper *Der Sturmer*:

MONKEY: I read in the paper that some people think Jews are animals, and so forth. Does this mean they will soon be put into the zoo with us?

MARABOU: Phoo! The Jews will be put on church steeples-that's much more clever!

MONKEY: But tell me why.

MARABOU: Because the Jews are the best lightning rods.



7. John Heartfield, 1934, *Dialogue at the Berlin Zoo*

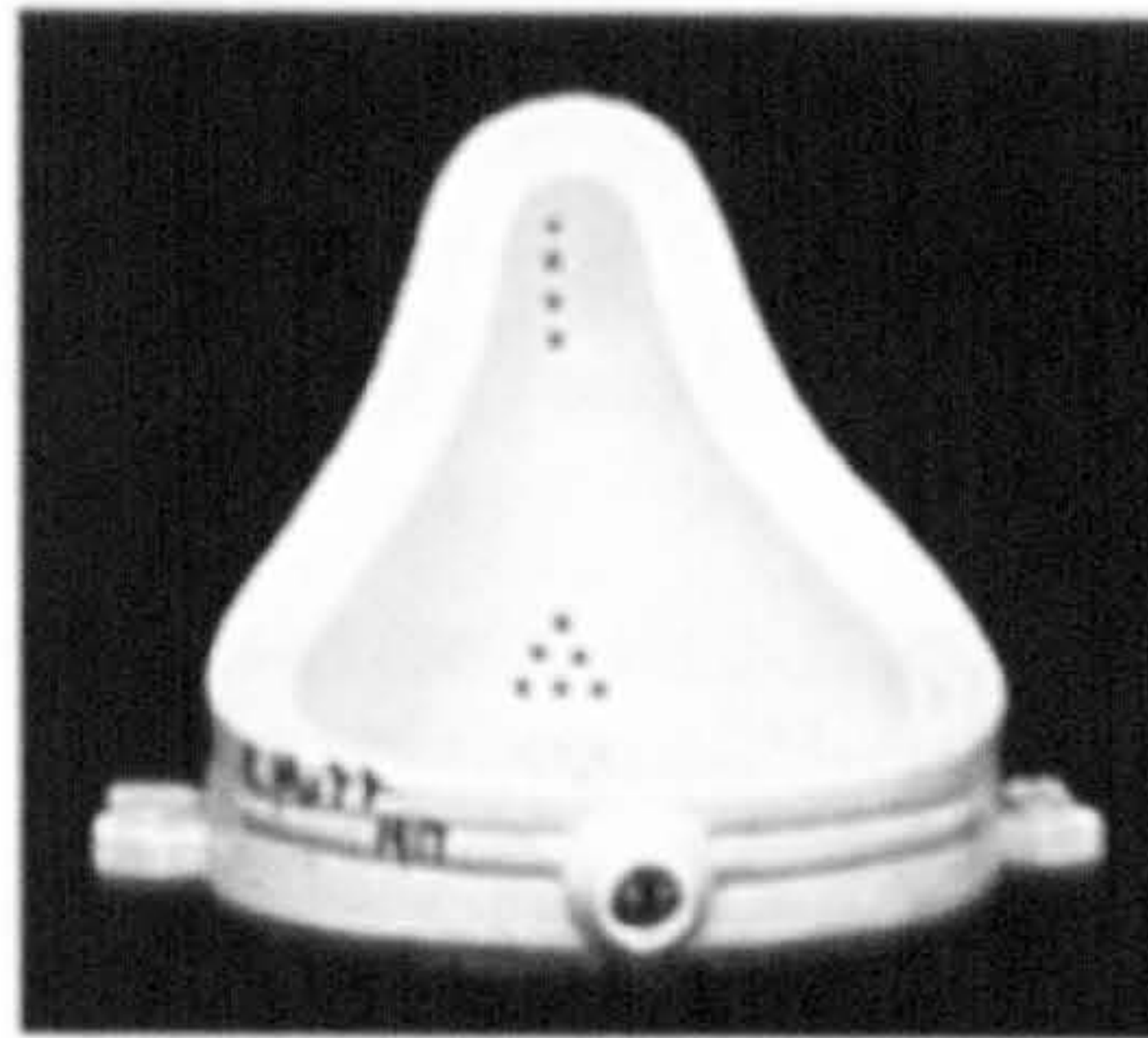
As Bürger argues, the use of the fragment by Picasso and Heartfield was very different. Picasso can be inserted into an aesthetic and formalist tradition which developed in the direction of abstract expressionism. The semiotic or more conceptual use of imagery in the photomontage of Heartfield, is similar to the experimental approach of the neo-avant-garde artists of the sixties and seventies. But this division is not a 'clear cut' line, and the formalist and semiotic polarity can be understood as tendencies simultaneously present in the works, but only with a certain level of predominance of one over another. We should not have to repress or overlook the formal aspects of Heartfield's work, because it is through the manipulation of imagery and articulation of structural elements that the meaning of the work emerges. It would equally be a mistake to regard the aesthetic collage of Picasso as a work disconnected from its historical and social context.

Benjamin Buchloh also regards montage as an allegorical gesture.⁶⁶ Buchloh focuses on a later (Marxist) version of allegory in Benjamin's 'fragments' on Baudelaire in *The Arcades Project*, where Benjamin explores the relation between allegory and the commodity. As I have explained, Benjamin remarks that in the Baroque dialectics of the religious and profane object, there is a devaluation involved in the process of signification. This devaluation of objects is comparable to the commodification of objects in the capitalist mode of production, which devalues objects from their use value in favour of their exchange value. Buchloh transposes this idea of allegorical devaluation, to the discussion of postmodern artworks, which appropriate mass-produced objects. When incorporated in the structure of artworks, the mass-produced object suffers a second devaluation, losing its value as a commodity, in order to gain another symbolic value as art.

Buchloh argues that the procedure of montage in the avant-gardiste artwork shows allegorical strategies such as the dissolution of the linguistic sign (separation of signifier and signified), appropriation and fragmentation. He thinks that the most radical examples of allegorization are found in Marcel Duchamp's ready-mades, because they negate the traditional construct of the artistic sign (the originality of the artist's unique touch, and the importance of aesthetic form). By appropriating mass-produced objects, Duchamp suspends their usual mundane meanings when presenting them in the context of the museum or art gallery. In this way, traditional ideas of authorship and originality disappear from the artwork. The question of the artistic value of the appropriated object doesn't point to its form, but to its conditions of reception. Thus, the meaning of the work doesn't come from the artwork itself, but from its 'frame' as art, provided by the

⁶⁶ Benjamin Buchloh, in an essay entitled 'Allegorical Procedures: Appropriation and Montage in Contemporary Art', *Artforum*, September, 1982, refers to Ansgar Hillach's (1976) theorising of montage in the avant-garde of the 1920s in relation to Walter Benjamin's concept of allegory.

art institutions that display them. The ready-mades, consequently, make explicit the role of social institutions of art and in assigning meaning and value to art objects. This opens a long discussion of institutional critique in the 1960s and 1970s art practices, which Buchloh (and other critics associated with the *October* magazine) promoted as postmodern art, in opposition to the Modernism defended by the American critic Clement Greenberg.



8. Marcel Duchamp, *Fountain*
1964 (replica of 1917 original)
63 x 46 x 36 cm

Buchloh looks at the implications of Duchamp's ready-mades to the art of the 1960s and 1970s, noting that appropriation and montage become the basic procedures since art is no longer concerned with creation but with the appropriation of fragments of the world for allegorical interpretation. American Pop Art's use of images from mass culture are regarded by Buchloh as a 'successful synthesis of relative radicality and relative conventionality.'⁶⁷ This ambiguity is precisely the point that Benjamin makes when he refers to allegory as a dialectics between 'expression of convention' and 'convention of expression.' Buchloh notes that Robert Rauschenberg and Jasper Johns appropriate and incorporate images from mass culture in their paintings from the 1950s, but argues that they still present some degree of craftsmanship and individual gesture. Buchloh regards this as a far more conventional approach than the radicalism of the unaltered Duchampian ready-made. Yet, it is precisely this ambivalent attitude between

⁶⁷ Buchloh, Benjamin, 'Allegorical Procedures: Appropriation and Montage in Contemporary Art,' op. cit., p.46.

the personal and the mass-produced that make their art allegorical, as argued by Fred Orton.⁶⁸ Here, similarly to Bürger, Buchloh reveals an anti-aestheticism that was characteristic of the postmodern discourse around allegory, revived as a reaction against formalist modernism. Such anti-aestheticism privileges the discursive and political aspects of postmodernism with allegory, against aesthetics and modernism, which became associated with the symbol.

As part of the debate on allegory in the 1980s, Craig Owens published his essay 'The Allegorical Impulse: Toward a Theory of Postmodernism' (1980). In this essay Owens links allegory with postmodern art and post-structuralist theory. In his analysis of the allegory and symbol opposition, Owens traces the historical links between allegory and modernism, arguing that the allegorical aspect of modernity was in fact repressed by formalist theories that favoured the symbol (expression theory). Owens demonstrates that allegory was in fact only repressed by criticism, but was structurally present in modern artworks. This argument in the visual arts parallels Paul de Man's critique of Romantic poetry. Owens makes reference to the first avant-garde (1850s onwards) in which Courbet and Manet break with the conventions of past classicist art, but at the same time use some allegorical strategies, such as the manipulation of historical sources. The connection of allegory and modernism becomes even more evident when Owens refers to theories of modernity of Benjamin and Baudelaire.

Baudelaire defines modernity as a combination of two contradictory elements the transient and the eternal: 'the transient, the fleeting, the contingent; it is one half of art, the other being the eternal and the immovable.'⁶⁹ For Baudelaire, it is because the

⁶⁸ Fred Orton, in *Figuring Jasper Johns*, op. cit., pp. 11-13.

⁶⁹ Baudelaire 'The Painter of Modern Life,' cited by Craig Owens in his 'The Allegorical Impulse: Toward a Theory of Postmodernism,' in *Beyond Recognition: Representation, Power and Culture*, op. cit., pp. 60.

modern is fleeing that it needs to be rescued for eternity by art, at the same time, Baudelaire also attempts to recuperate the classical (eternal), through modernity, 'distilling it from the contingent.' This can be regarded as an allegorical attitude, since in Benjamin's concept of modernism there is a superimposition of the modern with the ancient and classical.

Thus, by referring to these allegorical aspects of modernism, Owens demonstrates that the allegorical 'seed' is present in the beginning of modernism, but it is suppressed by criticism because of the discourse of the symbol. In the *Origin of the German Tragic Drama*, Benjamin argues that the suppression of the allegorical is analogous to the suppression of writing in favour of speech. Benjamin's discussion of language and his reflections on the discursivity of allegory provide the key to its importance in relation to the postmodern debate. At the end of the 1970s and the early 1980s the general theoretical concept of postmodernism emerges in criticism. It engaged with artistic practices from the 1960s onwards that developed a semiotic and discursive approach to art. In Owens' words: '[...] the allegorical impulse that characterizes postmodernism is a direct consequence of its preoccupation with reading.'⁷⁰ Linguistic and semiotic interpretations of meaning instead of sensibility to form become the main ground of signification of artworks from this period. It is for this reason that allegory becomes linked with postmodernism and the symbol with modernism.

Owens sees some strategies used by neo-avant-gardiste artists as allegorical gestures, such as appropriation and site-specificity. Owens reads the (most of the time underwater) site-specific work by Robert Smithson, the *Spiral Jetty*, as an allegory. Owens links the concept of site-specificity with the Benjaminian notion of the ruin, which represents the history and nature dialectics, in which 'the works of man are

⁷⁰ Craig Owens in his 'The Allegorical Impulse: Toward a Theory of Postmodernism,' in *Beyond Recognition: Representation, Power and Culture*, op. cit., p. 74.

reabsorbed into the landscape.⁷¹ Owens regards site-specific works as close to prehistoric monuments such as Nazca lines and Stonehenge. This notion of site-specificity as a ruin is more appropriate for land art, rather than to site-specificity in general, because not all sites are in the landscape and becoming gradually absorbed by it. Yet, the sense of ephemerality associated with the ruin, can be extended to other kinds of site-specific artworks that intervene in urban or institutional spaces.



9. Robert Smithson, *Spiral Jetty*, Rozel Point
Great Salt Lake, Utah, April 1970

Owens notes that Smithson's concept of non-site and site in his 'earthworks' and other site-specific projects are important to the understanding of the dynamics of the *Spiral Jetty*. The non-site is the museum where the documentation of the spiral built in the lake is presented. Owens regards the relation of the site and non-site as a dialectical one, and this relation is mediated by the use of photography, film and text. Owens reflects on the allegorical character of photography: 'As an allegorical art, then, photography would represent our desire to fix the transitory, the ephemeral, in a stable and stabilizing image.'⁷² Thus, photography as documentation of ephemeral artworks becomes regarded as an allegorical medium.

⁷¹ Ibid. p. 55.

The use of appropriated imagery by Sherrie Levine, Troy Brauntuch, Robert Longo, Robert Rauschenberg, amongst others, is also associated with allegory by Owens, who considers it a postmodern strategy. Owens explains how the appropriated imagery acquires new meanings from the allegorist:

Allegorical imagery is appropriated imagery; the allegorist does not invent images but confiscates them. He lays claim to the culturally significant, poses as its interpreter. And in his hands the image becomes something other (*allos* = other + *agoreuei* = to speak). He does not restore an original meaning that may have been lost or obscured: allegory is not hermeneutics. Rather, he adds another meaning to the image. If he adds however, he does so only to replace: the allegorical meaning supplants an antecedent one; it is a supplement.⁷²

Thus, Owens links allegory with deconstruction. He associates the Benjaminian concept of allegorical appropriation, in which the object becomes melancholic thereby losing its meaning only to be given a new significance by the allegorist, with the Derridean notion of the 'dangerous supplement.'⁷⁴ Owens also makes reference to the work of Paul de Man and his deconstructive reading of allegory. He focuses on de Man's insistence on the illegibility of allegory, the constant deferral of meaning and its refusal of closure. Owens applies this deconstructive notion of illegibility to the reception of the work of Laurie Anderson, Robert Rauschenberg and Cindy Sherman, and finishes his essay by identifying the postmodern and allegorical impulse with deconstruction:

Postmodernism neither brackets nor suspends the referent but works instead to problematize the activity of reference. When the postmodernist work speaks of itself, it is no longer to proclaim its autonomy, its self-sufficiency, its transcendence; rather, it is to narrate its own contingency, insufficiency, lack of transcendence. It tells of a desire that must be perpetually frustrated, an ambition that must be perpetually deferred; as such, its deconstructive thrust is aimed not only against the contemporary myths that furnish its subject matter, but also against the symbolic, totalizing impulse which characterises modernist art.⁷⁵

⁷² Ibid. p. 56.

⁷³ Ibid. p. 54.

⁷⁴ Jacques Derrida, in *Of Grammatology*, trans. Gayatri Chakravorty Spivak, Johns Hopkins University Press, Baltimore, 1997, p. 144, argues that writing is a supplement to speech, '[...] writing is added to it, is adjoined, as an image or representation. In that sense, it is not natural. It diverts the immediate presence of thought to speech into representation and the imagination. This recourse is not only "bizarre," but dangerous.'

⁷⁵ Craig Owens, in 'The Allegorical Impulse: Toward a Theory of Postmodernism,' op. cit., p. 85.

Although Owens recognizes that allegory is present in the modernist artwork, and is suppressed only by criticism, he reverts the discourse of the symbol, and ends up giving priority to allegory, reinstating the opposition he aims to deconstruct. Orton explains this contradiction:

[...] the discourse that ratifies and values Post-Modernist art knows that all visual art has to be understood as troped and figured. It knows that Modernist and High-Modernist art is self-consciously troped and figured to affect us as if it isn't, to affect us as symbol, and that Post-Modernist art is self-consciously troped and figured to make us aware that it is, to affect us as allegory. Both symbol and allegory are alike as troped and figured forms and effects of language. There is no representation, no visual art or verbal language, without a trace of allegory. The distinction between Modernist and Post-Modernist art should now be seen and understood as blurred. Why then does Post-Modernist criticism - which knows the distinction is blurred - want to hang on to it?⁷⁶

Thus, Orton shows that the relation between the symbol and allegory must be understood in dialectical terms or endless deconstruction, without choosing between one or another aspect, but keeping the dynamic in constant movement. With the suppression of the aesthetic, by postmodern criticism, conceptual art and other discursive practices, there is a kind of closure, a premature synthesis to the dialectics, which is contrary to the dynamic of allegory as argued here, in the works of Schlegel, Benjamin, de Man, Orton and Day.

⁷⁶ Fred Orton, in *Figuring Jasper Johns*, op. cit., p. 13.

Conclusion

Through the theoretical discussions on allegory in the work of the early German Romantics, then by Walter Benjamin, Paul de Man and more recent art critics, it becomes clear that the philosophical and critical character of the fragment is a crucial concept for the understanding of allegory. The dynamic of antithetical ideas within the fragment, is an endless movement, in which meaning emerges and disappears, is recreated and constantly transformed. This model offers clues for a deeper understanding of many strategies used by contemporary artists, and also throws a light on the old discussion of form and content. In Benjamin's model of allegory, the meaning of an artwork emerges from the dialogue between its formal and conceptual aspects, and is a model that allows a discursive reading of art, without a suppression of its visuality. This makes allegory a very relevant theory for contemporary art, which is concerned with social and political issues, but at the same time, is interested in exploring the aesthetic and formal aspects of art.

The long disputes against allegory, as Benjamin, de Man, Orton and Day have demonstrated, are based on a misconception of the concept of the symbol. The distinction between allegory and the symbol is only a sharp one if the symbol is understood in terms of the late Romantic concept of symbol, as an organic totality. If the symbol is understood as the early Romantics have proposed, as a paradox of completion and incompleteness, then it is indeed inseparable from the fragmentary nature of allegory. The finite aspect of the fragment, which strives for meaning but fails to directly signify, can indirectly find completion through reception, which leads to the production of more fragments, in an infinity of subsequent readings (as production of

art). In this way, the symbol and allegory are two aspects of the fragment, that are indissociable, either conceived as an open dialectics or endless deconstruction.

The modern and postmodern binary, as presented by the postmodern critics, becomes re-established instead of dissolved in the deconstruction of their differences.

Postmodern critics are preoccupied with the revival of allegory and suppression of the symbol, inverting the polarity by making allegory what is desirable in art and rendering negative or uncritical, all that has to do with the symbol. This is felt in the anti-aesthetic tendency in the postmodern discourse of Buchloh, Hal Foster and Owens also in Bürger's discussion on the neo-avant-garde movement. The suppression of aesthetics in favour of discursivity is in stark contradiction with the theories of allegory by Benjamin and de Man, on which postmodern critics have based their arguments, because allegory is fundamentally an infinite play of antithetical ideas, and if the play becomes fixed or biased toward one aspect, the works cease to function as allegory. The postmodern discourse of allegory is also structured as an opposition to Romanticism because it challenges the traditional notions of authorship, originality and genius which were 'dear' to the late Romantics. Yet, if Romanticism is identified with the early German Romantic movement, then postmodernism is indeed very close to Romanticism, as the neo-avant-garde or postmodern artists are precisely reviving the strategies of the historical avant-garde, which were reviving the Athenaeum strategies of collaboration, anti-bourgeois behaviour, aestheticization of life, and articulating a philosophical, self-critical and theoretical approach to art.

After the intense debates on postmodernism in the 1980s, artists started taking new routes in their artistic explorations. During the 1990s many artists engaged in multidisciplinary research and started looking beyond the previous self-referential

institutional critique that went on for more than 20 years in art practice and criticism.

The artist Mark Dion⁷⁷ comments on this change of direction, which many artists undertook:

One of the things that motivated this shift for me was the situation of 'endgameness' in which many conceptualist critiques of the gallery found themselves. Because of their repetitive type of game play, at one point it seemed as if these practices were heralding a new kind of formalism. I remember talking to Gregg Bordowitz about this, at the point when we were both really looking elsewhere: he was very involved in the foundations of queer politics, I was at that time trying to catch up and learn about the basics of biology. So we were both pondering over this when he said; 'Look, I have no more questions for white walls!' Neither of us found the museum/gallery system (the way patronage works, etc.) very complex.⁷⁸

This 'looking elsewhere' mentioned by Dion, brings us to the current exchange between visual art and natural science, which is the field Henna and I have been exploring through our practice. In the next chapter, I extend the discussion on allegory to the art practices that are engaged in the eco-socio-political debate on art, science and nature. These practices have incorporated much of the allegorical strategies used by avant-gardiste artists as well as continuing the self-critical awareness inherited from conceptual art, but without rejecting the aesthetic aspect of the artwork.

In interdisciplinary projects involving contemporary art and the field of natural science, the notion of intertextuality in allegory provides a useful structure for a close analysis of the dynamic between the two disciplines. Through the production and discussion of artworks related with natural science, this research aims to be critical of both art and science discourses, in the Benjaminian sense of criticism, which means to engage with the immanent reflection of each field. The artwork and the references to the works of

⁷⁷ Mark Dion is an American artist who emerged in the 1980s. He was a student of Robert Smithson, Craig Owens and other authors associated with the *October* circle, which are important promoters of Critical Theory in America. Mark Dion was very influenced by the writings of these authors and this comes across in his work, which deals with the cultural representation of nature.

⁷⁸ Mark Dion in 'Field Work and the Natural History Museum,' interviewed by Alex Coles, in *The Optic of Walter Benjamin*, ed. Alex Coles, *de-, dis-, ex-*.vol. 3, London, Black Dog Publ. Ltd., 1999, p.46.

natural scientists or scientific theories, are considered in this investigation as a fragment (without a fixed meaning) which presents and conceals its message while pointing to other meanings beyond itself and producing an endless semantic chain. In the next chapter I observe more closely in specific artworks the presentation and withholding of meaning in art, science and nature, which Novalis poetically expresses:

Poems, merely fine-sounding and full of beautiful words but without any meaning or coherence - no more than a few verses of which are comprehensible - like fragments of the most heterogeneous objects. True poetry can, at most, have an allegorical meaning as a whole, and its effect can, at most, be an indirect one, like that of music etc. Nature is therefore purely poetic, and so it is a magician's den, a physicist's laboratory, a children's nursery, an attic and a lumber-room.⁷⁹

⁷⁹ Novalis cited by Benjamin, in *The Origin of the German Tragic Drama*, op. cit., p. 188.

Chapter 2

From Art to Science and Back: The Art, Science and Nature Debate

Introduction

The debates around the concept of nature are very complex and are tackled differently



Scullion, Joseph Rony, Hans Haeckel, Luther Paragoreus, Mark Lind, Jan Fabre, Cornelia Hesse-Honegger and Joan Fontcuberta, amongst others, have explored topics

¹ See Martin Kemp, *Life/De/struction*, Dennis Porterbridge, *Caroline Jones, Peter Galloway, Barbara Stafford, Dennis Flaxbury, Roberto Mengoni, Julia Grew and Steve Jolly*.

² *Avantgarde* meant an art science exhibition in the UK, see *The Quicksand the Dead: Art and Anatomy*, a national touring exhibition organized by the Hayward Gallery and the Arts Council of England, and curated by Dennis Porterbridge, bringing together visual arts and the natural sciences. Venue: Royal College of Art, Oct-Nov 1997; Royal Gallery, Coventry, Jan-March 1998; Leeds City Art Gallery, March-May 1998. *How Natural History met a living exhibition* curated by Val Williams and Greg Galloway in 1998, which explored contemporary photographic relation with the natural world. Venue: National Museum of Photography, Film & Television, Bradford, Sept-Nov 1998, and Fossilized Centre, Göttingen, Jan-Feb 2000. The *International Symposium on Art, the Art and Science of the Human Body from Leonardo da Vinci*, at the Hayward Gallery, Eng 2000, Jan 2001, was curated by Martin Kemp and Martin Williams, and presented a historical survey of representations of human body in scientific sciences and art since the Renaissance to contemporary collaborations in art and science works. The *Greenhouse Effect*, at the Hayward Gallery, London, April-May 2000, curated by David Nagall and Lisa G. Caplan, investigated the relation between contemporary visual arts and nature. Withheld Youth Gallery has held many exhibitions in connection with visual arts and medical science.

³ To mention only UK based exhibitions: *Art Capital*, *Art Lab*, *Intercity*, *The Spirit Connections*, *Speculative Projects*, *Wilderness Trust*, amongst others.

Chapter 2

From Art to Science and Back: The Art, Science and Nature Debate

Introduction

The debates around the concept of nature are very complex and are tackled differently by many disciplines in various historical periods. Thus, the breadth of nature as a subject is extremely vast, as are the disciplines of natural science and fine art. Art and science have overlapped in the work of many artists throughout the history of art. Recently many authors have explored this rich history.¹ There has also been an extensive proliferation of art and science collaborations including a broad range of disciplines: from various branches of natural and medical sciences, to music, photography, painting, performance, video and installation art. This can be observed through a number of recent exhibitions,² publications and artists' residencies in scientific and natural history museums, and organizations that promote art-science collaborations.³ Many artists, such as Joseph Cornell, Marcel Broodthaers, Robert Rauschenberg, Joseph Beuys, Hans Haacke, Lothar Baumgarten, Mark Dion, Jan Fabre, Cornelia Hesse-Honegger and Joan Fontcuberta, amongst others, have explored topics

¹ See Martin Kemp, Ludmilla Jordanova, Deanna Petherbridge, Caroline Jones, Peter Galison, Barbara Stafford, Donna Haraway, Roberta McGrath, Jasia Reichardt and Steve Baker.

² Amongst recent art & science exhibitions in the UK, are: *The Quick and the Dead: Artists and Anatomy*, a national touring exhibition organized by the Hayward Gallery and the Arts Council of England, and curated by Deanna Petherbridge, bringing together visual arts and the medical sciences. Venues: Royal College of Art, Oct-Nov 1997; Mead Gallery, Coventry, Jan-March 1998, Leeds City Art Gallery, March-May 1998. *New Natural History* was a touring exhibition curated by Val Williams and Greg Hobson in 1999, which explored contemporary photographers relation with the natural world. Venues: National Museum of Photography, Film & Television, Bradford, Sept-Nov 1999, and Hasselblad Center, Gothenburg, Jan-Feb 2000. The exhibition *Spectacular Bodies: the Art and Science of the Human Body from Leonardo to Now*, at the Hayward Gallery, Oct 2000- Jan 2001, was curated by Martin Kemp and Marina Wallace, and presented a historical survey of representations of human body in medical sciences and art since the Renaissance to contemporary collaborative art and science works. *The Greenhouse Effect*, at the Serpentine Gallery, London, April- May 2000, curated by Ralph Rugoff and Lisa G. Corrin, investigated the relation between contemporary visual arts and nature. Wellcome Trust Gallery has held many exhibitions in connection with visual arts and medical science.

³ To mention only UK based organizations: Arts Catalyst, ART Lab, Interalia, The Sciart Consortium, Spacetime Projects, Wellcome Trust, amongst others.

related to scientific and artistic accounts of our present idea about nature, and have enriched the tools available to artists to tackle problems of its representation.

Considering the breadth of art and natural science, I will approach this subject through a close examination of recent artworks (1980s to the present) which refer to the intersection between art and natural science. My intention is not to present a comprehensive survey including all artists dealing with natural science. Instead, I focus on specific artworks and examine how the formal and discursive aspects of representing nature are investigated, articulated and negotiated in the production of art, making use of allegory as a tool to disentangle the complexities involved in this task. In this chapter I will consider the work of two artists who have significantly contributed to the debate in this field: the American installation artist Mark Dion and the Swiss artist and scientific illustrator Comelia Hesse-Honegger.

In the establishment of collaborations between art and science, specially from the perspective of funding agencies, the relationship between the disciplines appears to be described as an equal exchange, but in fact a hierarchy is implied:

Science and art have a lot to offer each other. Art, music, film and the performing arts provide fresh and exciting ways of communicating scientific information, intriguing and captivating spectators and engaging a wide range of audiences in science. In turn, science - with its vivid history, complex contemporary advances and the social, ethical and emotional issues it raises - offers an inexhaustible supply of inspiration for the arts.⁴

Here, science is clearly defined as the source of inspiration and content for art, the role of which is to offer an exciting 'package' for the scientific 'truths' which need to reach wider audiences. The agenda of these funding organizations is clear, they want to give assurances to the scientists who might get involved, but they also are promoting an

⁴ Publicity material for the *sciart* award scheme, launched by the Wellcome Trust, 2003, which funds art and biomedical projects. www.wellcome.ac.uk/sciart

instrumental role for art in its relation to science. I cannot agree with this limiting role for art in an interdisciplinary exchange. I am interested in investigating the outcomes of *real* collaborative projects. What I call *real* collaboration, is a non-hierarchical relation, where people from various disciplines bring their different perspectives, concerns, discussions, methodologies, concepts and theories to a dialogue which can be enriching or challenging for both sides. In this chapter I look at the work of two artists who engage independently and critically with science, each one in their own way, producing artworks which give a broader perspective to the social, political, ideological and historical contexts in which scientific work develops.

I introduce some relevant aspects concerning allegory and collaboration between contemporary art and natural science through an investigation of Mark Dion's installation works and the paintings of Cornelia Hesse-Honegger. Dion has explored sites of production in the 'official' discourse on nature through a critical engagement with natural history museums and fieldwork activities. He is concerned with ecological questions of extinction, pollution, genetic manipulation, as well as historical aspects of collecting and the politics of representation. Secondly, I approach the polarity of subjectivity and objectivity in art and science by examining the work of Cornelia Hesse-Honegger. This polarity emerges almost immediately when one thinks about the encounter of art with science, despite the fact that the traditional notions of subjectivity and objectivity have been deconstructed in both disciplines. While considering Hesse-Honegger's research projects on the environmental impact of nuclear technology, I explore the relation of artistic and scientific production with society.

From Fine Art to Natural Science

The American artist Mark Dion has explored issues of the representation of nature in a series of installations since the 1980s. Dion studied with influential critics and artists such as Benjamin Buchloh, Craig Owens, Hal Foster, Douglas Crimp, Martha Rosler, Joseph Kosuth and Barbara Kruger, who were intensively engaged in the discussion and production of post-modern and conceptual art in the seventies and eighties in America.⁵

The focus on these debates was centered on the institutional critique of art and the development of a more politically and socially engaged artistic practice. Dion received this theoretical and self-reflective 'inheritance' from conceptual art, and would later use some of its strategies as tools to examine the discourses and ideas around nature.

The work of Dion has used allegory and ironic humour in his critical engagement with 'eco-realist' and 'socially constructed' accounts of nature. His approach draws on the dialectical relation of these two positions, as his work reveals strong ecological concerns and a commitment with 'real' nature which is being destroyed, while, at the same time, being very critical of the use of nostalgic rhetoric, imagery of rurality and charming animals by ecologists in conservation campaigns. Dion has also explored notions of truth and fiction in the history of science, by focusing on the economic, social and political contexts in which knowledge of nature is developed. He describes his work as involved in 'producing elaborate fictions that parallel - and so call into question and destabilize - the "true" fictions that the museum tells.'⁶ Dion has developed these ideas through two interconnected areas of his practice, both of which I want to consider: the fieldwork and the work related to natural history museums. First,

⁵ Mark Dion studied at the School of Visual Arts in New York (1982-84), and attended the Whitney Museum of Modern Art Independent Study Program (1984-85) where these influential artists and critics taught.

⁶ Mark Dion, 'Field Work and the Natural History Museum,' in *The Optics of Walter Benjamin*, ed. by Alex Colea, *de-, dis-, ex-* volume 3, p. 44.

I will examine three projects which involved fieldwork in the production of the installations: *On Tropical Nature* (1991), *A Meter of Jungle* (1992), and *The Great Munich Bug Hunt* (1993). Later I will consider his explorations of natural history museums and ideas around 16th century cabinets of curiosity, the *Wunderkammern*, exploring the installation works *An Account of Six Disastrous Years in the Library for Animals* (1992), *The Library for the Birds of New York* (1996) and *Frankenstein in the Age of Biotechnology* (1991).

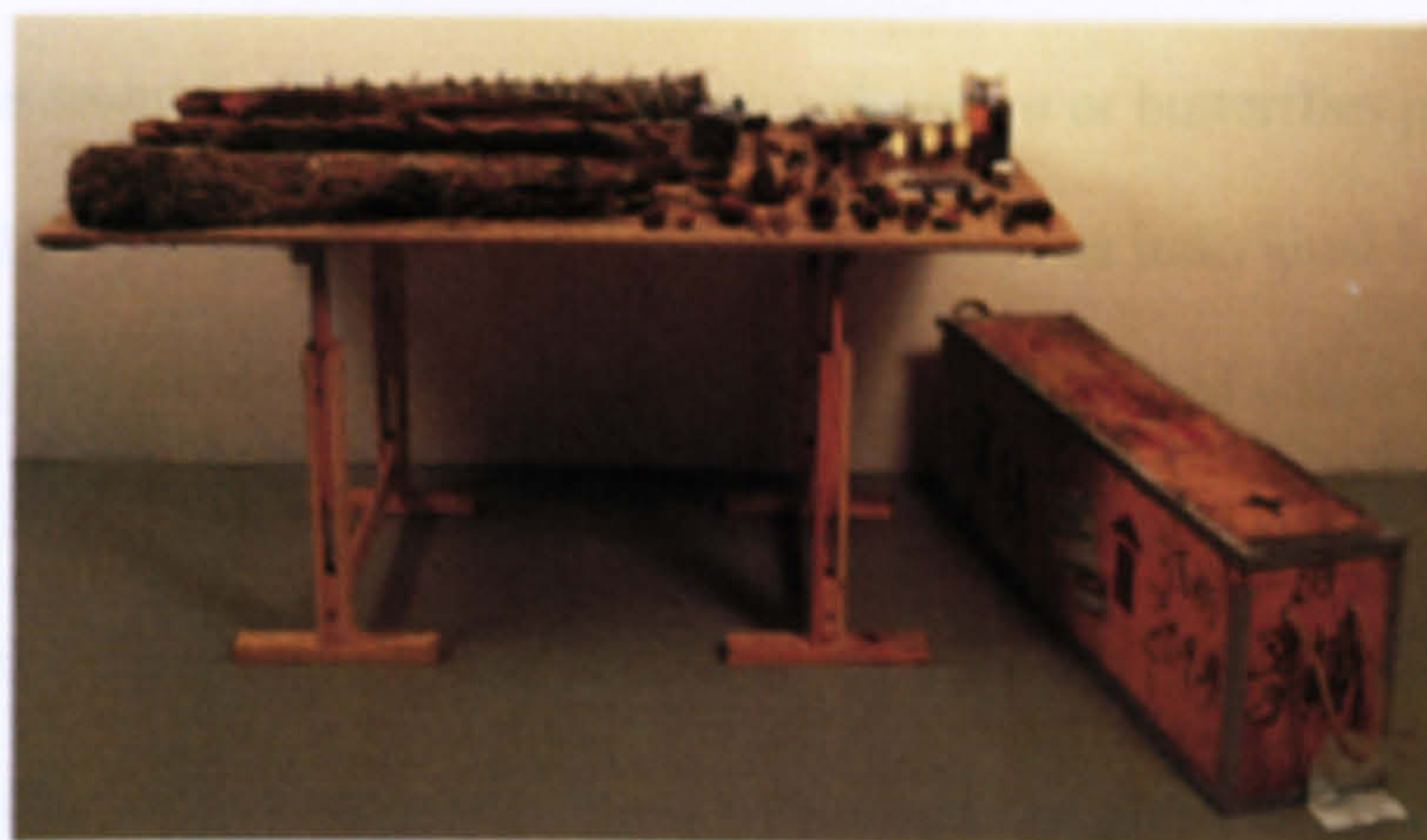
Fieldwork

In *On Tropical Nature* Dion re-enacted the activities of scientists by appropriating their methodology of field research as a central part of the production of his artwork. In later projects, such as *A Meter of Jungle* and *The Great Munich Bug Hunt*, Dion developed collaborations with scientists in the production of his installations. Dion's works often make parallels between the historical aspects of the natural sciences and post-modern artistic practices. He makes this analogy even more explicit through his comments:

Historically, the pursuit of nature started in the laboratory, the home, the collection. Things that live at a distance were brought into one's own environment to be studied as specimens. Which is to say, what was thought to be observation of life was actually the study of death. Then came the breakthrough when naturalists became field scientists, not only observing nature's operations in its own context, but discovering nature as a system of relationships, an ecology. Similarly, making art is no longer confined to the institutional spaces that we've created for such activity. It's more in the 'field' now. The focus is on relations and processes - an ecology of art if you will - and not solely on decontextualized objects that are like natural specimens.⁷

In this way, Dion bridges conceptually the practice of contemporary artists and biologists, as both are concerned with the context in which they operate. In *On Tropical Nature* the emphasis in the process of production and focus on context and site was very evident. The project lasted three weeks during which Dion was based in a forest site in

the Venezuelan Amazon region. At the same time, an exhibition at an art museum, the Sala Mendoza, in Caracas, opened with empty tables which were gradually filled with objects, specimens and material collected in the field, and delivered weekly throughout the period of the exhibition. The completed installation consisted of crates used in the transport of material from the field, and tables displaying instruments, notebooks, equipment, collected insects, seeds, bird nests, soil samples, leaves and plants.



11. *On Tropical Nature*, 1991

There was a strong performative element to this installation, as the activities of the artist working in the field were a central part of the piece, and were reflected in the constantly changing installation in the gallery. Through this strategy a link between the gallery space and the jungle was established, this created a rich ground for the viewer to explore how various frames around objects of nature affected their meaning. The communication between a site in the landscape and the 'non-site' space of the art gallery or museum was explored by Robert Smithson both in his writings and *earthworks* series (1960s and 1970s).⁸ Dion has combined this idea explored by Smithson, with his ecological concerns and interest in scientific discourse.

⁷ Mark Dion interview with Miwon Kwon in *Mark Dion*, Phaidon Press, London, 1997, p.22.

⁸ Smithson's *earthworks* were ephemeral installations in some significant sites in the landscape. The documentation of the work and objects taken from the sites were later constitutive elements of other works presented in gallery spaces. Smithson was interested in exploring this tension between the unchanging 'neutral' space of the modernist gallery and the dynamic of the world outside it.

In *On Tropical Nature* the dialogue established between the jungle and the gallery can be regarded as a dialectical relationship, and the artwork as an allegory of nature and science. Through the observation of the fragments of nature collected in Dion's pseudoscientific fieldwork, the viewer in the gallery was drawn to a reflection on the vast forest where those small parts came from. The artwork brought together the two polarities of culture and nature which are in constant movement, mutually affecting and constituting one another. There are many ways in which to interpret the constitutive elements of the artwork. We can relate to the *colcoptera* or butterflies presented from a phenomenological perspective, regarding them as nameless individual beings, part of the same complex world we inhabit. Here we are not concerned with any function these animals might have in the system, but are just looking at them with amazement as to their existence. This poetic approach is part of the aesthetic experience that Dion might have had when he encountered these living animals in the complex environment of the forest. The emotion of such an encounter can be traced in another work (*The Delirium of Alfred Russell Wallace*), where Dion speaks through Wallace's mouth:

Yesterday I found a perfectly new and most magnificent species of butterfly. The beauty and brilliancy of this insect are indescribable, and no one but a naturalist can understand the intense excitement I experienced. On extracting it from my net and opening the glorious wings, my heart began to beat violently, blood rushing to my head, and I felt like fainting. So great was the excitement, produced by what will appear to most people an inadequate cause. Even in taking its life, there was the thrill that in death this creature's beauty would last forever.⁹

Although the quote refers to the excitement of discovering a new species (with ironic humorous tones), the excitement in finding such a glorious and beautiful insect is close to the initial impact the individual living animal might have had on the artist. Once the animal was killed and became a part of a collection, it lost its uniqueness as an individual being and became an emblem - a signifier - and a signified representing a species in a scientific text. But, its body was at the same time a referent, a real presence

in its materiality. Here Dion explored the tension between other possible meanings related to the animal's existence and a fixed meaning attached to it by a scientific discourse. Science has created an allegory of nature, a system of signs that breaks the world into logically ordered small parts and regulating laws. Dion's installation built its structure over this scientific text, and by doing so, problematized the reading of the animals, plants, stones and soil samples laid out on the tables. Dion destabilized their scientific meaning by bringing them into the context of the art gallery thereby adding another frame around them.



12. *On Tropical Nature*, 1991, detail of installation

Here Dion is working with this double aspect of cultural representations of nature (social construction), and its 'extra discursive' reality, to which Kate Soper refers:

⁹ This quote is part of a text 'spoken' by a stuffed fox, in the installation *The Delirium of Alfred Russell Wallace*. Exhibited at the Ikon Gallery, Birmingham, 1997, published in *Mark Dion*, op. cit., p. 127.

It is true that we can make no distinction between the 'reality' of nature and its cultural representation that is not itself conceptual, but this does not justify the conclusion that there is no ontological distinction between the ideas we have of nature and that which the ideas are about: that since nature is only signified in human discourse, inverted commas 'nature' is nature, and we should therefore remove the inverted commas. In short, it is not language that has a hole in its ozone layer, and the 'real' thing continues to be polluted and degraded even as we refine our deconstructive insights at the level of the signifier.¹⁰

It is important to recognize this ontological distinction, even if the 'extra-discursive reality' of nature is beyond our grasp. But we can only make sense of the 'real' through culture, more specifically through language. Benjamin's theory of allegory is useful here, because it offers a model in which the polarity of nature and culture can be examined. Benjamin regards the allegorical structure as an infinite dialectical dynamic. The complex relation between nature and culture, its textuality, historicity as well as its physical reality, are part of a dialectics in which one is constitutive of the other, and the two cannot be separated. In this installation, Dion explores this disjunction between the signifier and signified, by using the structure of allegory in which disparate meanings are simultaneously possible. The animals and objects in the work are a presence and represent something other than themselves, given by the authority of science. In a second appropriation by the artist, the disjunction of the signified and signifier is manipulated in a way that leaves no priority to any meaning, but endless possibility of interpretation. The different values attributed to the fragments of nature in the art gallery, in the forest or as a part of a natural history museum collection (or in a shamanic ritual, if Dion picked by accident any sacred plant), coexist without any hierarchical order, none of them can claim a higher degree of truth over another, in the heterogeneous space created by the artist.

¹⁰ Kate Soper, *What is Nature?*, op. cit., p. 151.



13. *On Tropical Nature*, 1991

Considering the whole installation, the viewer becomes aware of another aspect of the work that is its strong focus on the experience of the ‘naturalist.’ Dion is interested in the medium of installation as a transposition of critical strategies from documentary film and photography to a sculptural field.¹¹ Here, this desire to tell a story through the presentation of documentation is clear. The careful display of the objects used in the trip, in another table, reveals an excitement about the adventure of visiting and exploring the exotic and dangerous jungle. The gas light, tapes, photographic camera, personal objects, a tin of *Baygon* mosquito repellent, notebooks, are like mnemonic tokens about a lived experience. This is the kind of display a biologist certainly would not undertake when presenting a scientific work. It presents the story of a journey that tells what it felt like to be there, sleeping, eating and working in an unfamiliar place. There is no attempt to produce a scientific work nor is a rigorous method employed in the selection of the material collected, but there is a focus on the social subject.

Miwon Kwon¹² questions Dion’s strategy of mimicking scientists, regarding it as a revival of a colonial masculinist fantasy and desire to discover and dominate exotic lands. Dion argues that his performance as ‘explorer’ is a critical gesture which exposes

¹¹ Miwon Kwon interview with Dion, published in *Mark Dion*, op. cit, p.8.

¹² Ibid. p. 20.

points to the different aims naturalists had from other colonialists involved with the slave trade and other more overtly destructive and exploitative ventures. The question of intention is a complex one because some naturalists and explorers can be seen as heroes who risked their lives in the name of science, but at the same time, others were destructive colonizers who contributed to the extinction of many species in the pursuit of this same 'noble' objective, while filling museums of natural history with large quantities of 'exotic' animals.¹³ The desire to know and order nature from the Enlightenment was never a disinterested passion for knowledge, but had a clear aim of dominating and exploiting nature for the benefit of (a few) humans.¹⁴ Dion is very critical of these contradictory aspects of science, and his work touches precisely on these unstable points in its discourse.



14. *On Tropical Nature*, 1991, detail of installation

Elsewhere, Dion has answered the same question, arguing that: 'today, someone researching termites in Venezuela is remarkably different from a *Shell Oil* geologist in

¹² Ibid. p. 20.

¹³ Gregg Mitman in *Reel Nature: America's Romance with Wildlife on Film*, 1999, comments on Theodore Roosevelt's 1910 African hunting expedition in which more than eleven thousand vertebrate specimens were killed (about 40 animals a day, per member of the expedition, for one year).

the same tropical jungle. This does not mean that they are not all part of the same colonial process, but it does history a great disservice to crush difference so dramatically.’¹⁵ I agree with Dion that it is difficult to generalize the variety of disciplines and scientific work under one unified idea of science because there are deep contradictions in scientific practice which have illuminating as well as destructive sides. Today, even within the same discipline there is great ambivalence towards the results of science for society and nature. Biology is a good example of these contradictory effects: in areas such as climate, ecology, botany, and zoology, scientists are engaged in the study and preservation of the environment; while in the field of genetics, there is great controversy regarding the ethical aspects of research outcomes for society and the environment, as well as concerns about science’s relation to the biotechnology industry.



15. & 16. *A Meter of Jungle*, 1992

In *A Meter of Jungle* (1992) Dion travelled to Belém do Pará, in Brazil, following the footsteps of the American naturalist William Beebe (1877 - 1962). In this project Dion repeated Beebe’s experiment of collecting one square metre of soil from the Amazon jungle for research on invertebrates. This time Dion established a collaboration with William Overall, an entomologist from the Museu Paraense Emílio Goeldi, in Belém.

¹⁴ As Theodor Adorno and Max Horkheimer argue in their *Dialectic of Enlightenment*, Verso Classics, London, New York, 1944, 1997.

¹⁵ Mark Dion, ‘Field Work and the Natural History Museum,’ in *The Optics of Walter Benjamin*, op. cit., p. 52.

Together they identified and classified the invertebrate species found in the sample and displayed their findings in an exhibition at the Museu de Arte Moderna in Rio de Janeiro.

The historical reference to a specific scientific research is an interesting move from Dion's previous project, because here, the artist gets closer to the content of the scientist's work. Dion's work can be regarded as an allegorical text constructed over the structure of the early scientific experiment carried out by Beebe. Considering the new historical, artistic and eco-political contexts in which the same activity is carried out, the viewer becomes more aware of the broader social and political web of relations around the production of the scientific discourse. Dion exposes the process of scientific production, but at the same time engages with the real content of the research, that is, the concern with biodiversity and the extinction of species. The artist is concerned with both the influence of social and institutional structures around the production of scientific work, and the content of the scientific work.

The artwork does not aim at producing science, but gives visibility to the amazing variety of microscopic species in the soil which play an important role in the balance of the forest ecosystem. Dion shifts the emphasis from the beautiful large mammals (largely used as a propaganda in ecological campaigns), to the more fundamental organisms at the base of the food chain.¹⁶ There is a didactic element in the work mixed with a sense of wonder and celebration of the rich biodiversity of that specific site. This

¹⁶ In another work, *Wheelbarrows of Progress* (1990), Dion criticizes the ecological discourse of the eighties. The installation consisted of wheelbarrows filled with plants, soft toy animals, covered with texts related to green issues that question conservation strategies, renewable energy plans among other matters. The wheelbarrow with cuddly toys, entitled 'The Survival of the Cutest (Who gets on the Ark?)', is an ironic comment to the strategies of environmentalists in using charismatic animals to raise public awareness on conservation campaigns, instead of addressing the public in a more instructive way.

is a common ground shared by the artist and the scientist in the handling of the same small fragment taken from the vast and complex environment of the Amazon jungle.

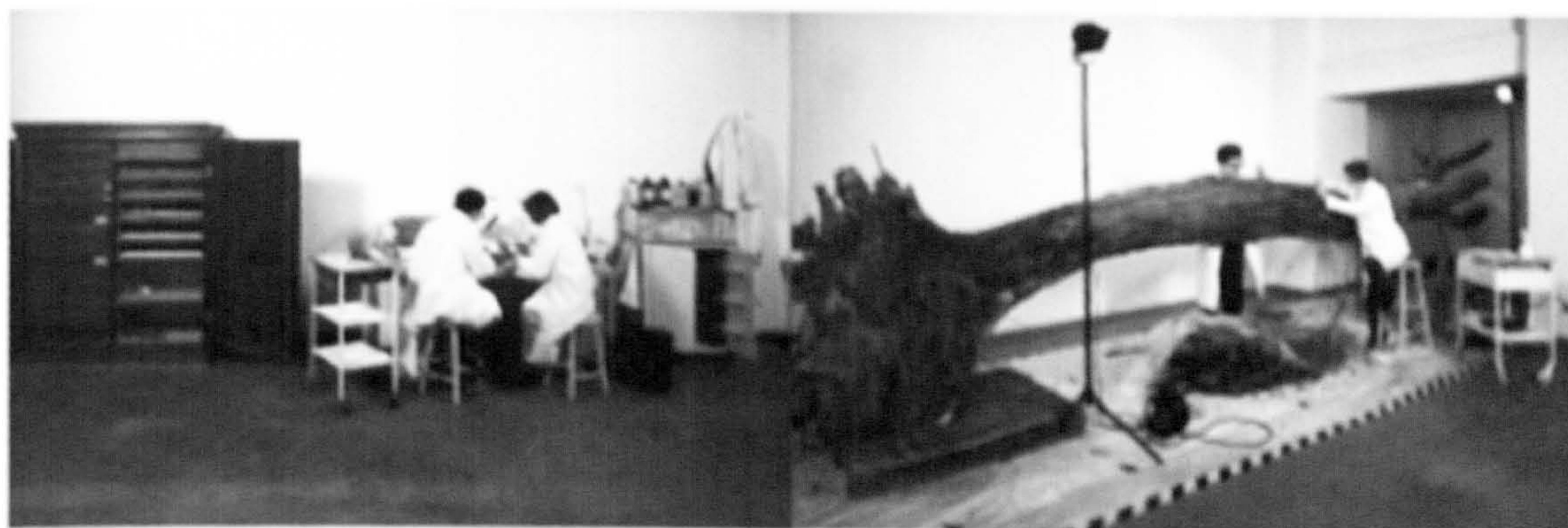


17. *A Meter of Jungle*, 1992
Museu de Arte Moderna, Rio de Janeiro

Museum and Art Gallery Sites

Dion continues to collaborate with scientists in other projects, such as *The Great Munich Bug Hunt* (1993) when he shifts his fieldwork from the tropical jungle to an European city. *The Great Munich Bug Hunt* involved bringing a decaying 'local' tree to the K-Raum Daxer Gallery in Munich. The gallery was transformed into a laboratory where Dion and his scientist collaborators collected, identified, classified and preserved all specimens found. These were then stored in glass jars and kept in an old fashioned and 'museum-looking' cabinet. Here, Dion superimposes the art space with the back door activities of natural history museums. In the gallery the scientists become performers and their scientific work is transformed into art. Dion does not rebel against the orthodox taxonomic ordering of nature, but engages with the scientists in the task of

identification and classification of the large quantity of organisms involved in the process of decomposition of organic material, drawing attention to the rich biodiversity within urban areas.



18. & 19. *The Great Munich Bug Hunt*, 1993

The design of the cabinet with the glass jars reveals the sources of reference and kind of things that excite Dion's imagination. Beautiful cabinets of old museums are all filled with amazing amounts of well preserved flamingos, swans, all kinds of colourful birds, butterflies, dazzling bugs, and other 'spectacular' animals lying dead inside plastic bags, with delicate labels carefully tied to their bodies, dated from centuries ago. This feeling of wonder and amazement for natural history museums comes through in many other pieces and statements made by the artist. There are also some artistic references in the formal aspects of the work. The wooden drawers with glass are close to the poetic arrangements of the boxes by the American Surrealist artist Joseph Cornell. There is a common sensibility between the two artists that goes beyond the coincidence of a thematic interest.¹⁷ The way the objects are presented in these works reveals a love of collecting, an interest in memory and a sense of wonder with regards to nature.

¹⁷ Dion acknowledges influence from Joseph Cornell among other artists, in *Mark Dion*, op. cit., p. 19.



20. *The Great Munich Bug Hunt*, detail of cabinet

Cornell's work has a poetic quality and his intriguing compositions do not present a straight forward message, but are dreamy, mysterious and magical in a sense. I see Cornell as an allegorist who appropriates objects in order to give them other meanings, building layers of signification that do not communicate anything specific, but that unfold in the mind of the viewer again and again, each time in different ways. The installations of Dion have a more evident discursive aspect, as his ecological agenda and the didactic aspects of the work are the first to strike the viewer. But once we start unpacking the complex structure of Dion's works, we also find this poetical level in it. Dion's interest in fiction and the fantastic, magical and imaginary worlds of cabinets of curiosity are close to the Surrealist's interest in the 'marvellous' and Cornell's world of dreams, memories, poetry and fictions. This aspect of Dion's work is what makes it touch something beyond the mere didactic.

The installation *An Account of Six Disastrous Years in the Library for Animals* (1992) has a similar logic to the one of cabinets of curiosity and the wonderful 'mess' of natural history museum's storage rooms. In his investigations in museums, Dion has

explored how these institutions have served the interests of dominant cultural groups in the construction and display of their truth about nature and presently represent its 'official story.' In stepping into the museum of natural history, Dion often acts as a deconstructive allegorist, exploring the layers of history behind the institutions, as well as identifying with the love of collecting which originated them. The resulting artworks oscillate between the antagonistic notions of order and disorder, which Benjamin associated with the activities of the collector and allegorist:

The allegorist is, as it were, the polar opposite of the collector. He has given up the attempt to elucidate things through research into their properties and relations. He dislodges things from their context and, from the outset, relies on his profundity to illuminate their meaning. The collector, by contrast, brings together what belongs together; by keeping in mind their affinities and their succession in time, he can eventually furnish information about his objects. Nevertheless - and this is more important than all the differences that may exist between them - in every collector hides an allegorist, and in every allegorist a collector.¹⁸

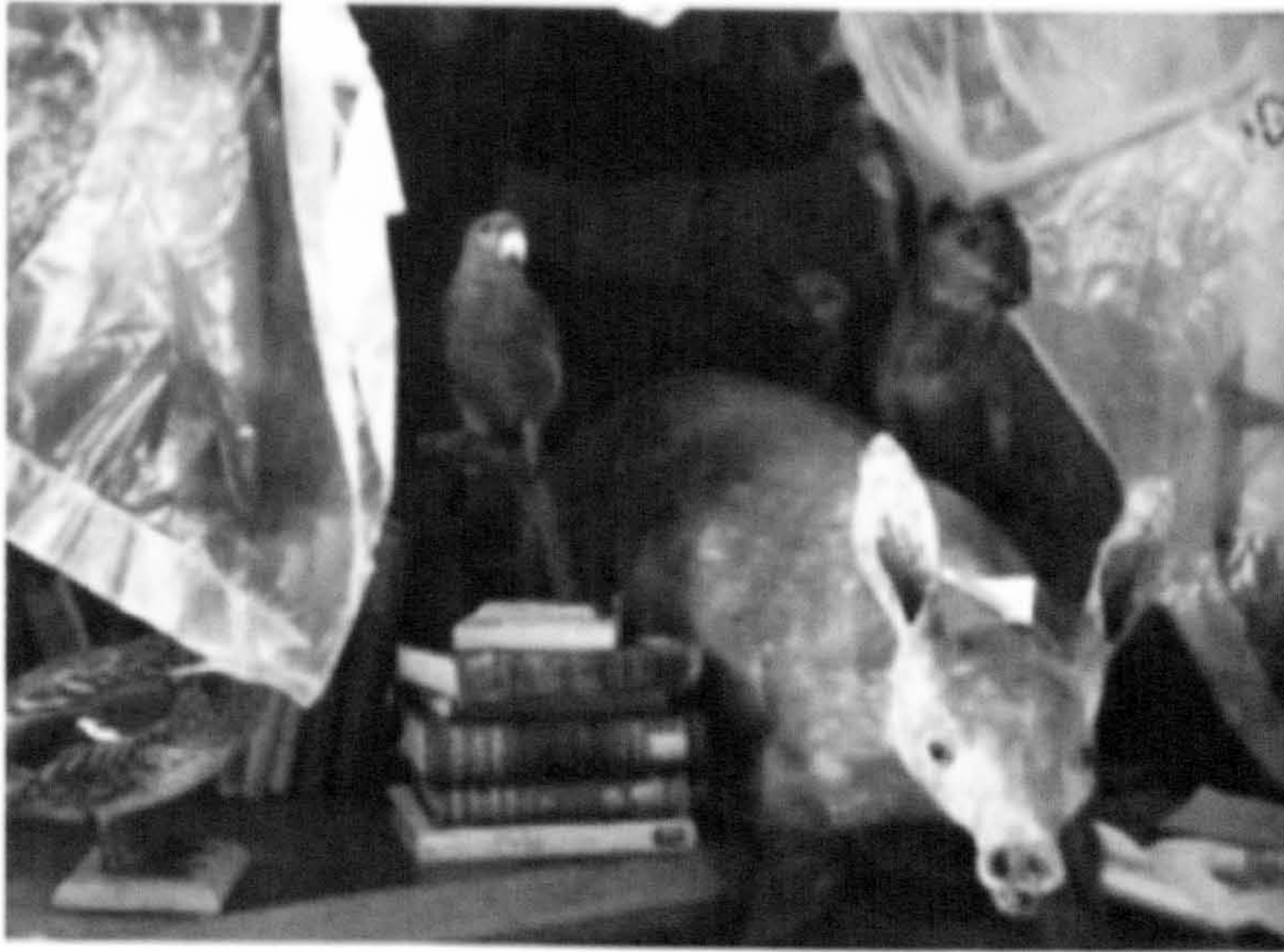


21. *An Account of Six Disastrous Years in the Library for Animals*, 1992
Installation at the Centrum Sztuki Współczesnej, Zamek Ujazdowski, Warsaw, Poland

The spirit of the collector, described by Benjamin can be found in the orderly presentation of nature in the collections on display in natural history museums, organized according to a specific criteria, which can vary among different institutions (e.g. geographic distribution, thematic or evolutionist order). Once we go beyond the

¹⁸ Walter Benjamin in 'The Collector', *The Arcades Project*, trans. by Howard Eiland and Kevin McLaughlin, The Belknap Press of Harvard University Press, Cambridge, Massachusetts, and London, 2002, p. 211.

front doors of the museum, we find a rich environment for the chaotic logic of the allegorist.



22. *An Account of Six Disastrous Years in the Library for Animals*, 1992, detail

In *An Account of Six Disastrous Years in the Library for Animals* Dion appropriates not only books and taxidermic animals from museum collections, but also the ‘mad’ logic of the first museums, the *Wunderkammern* (or cabinets of curiosity), in which objects of art, science and nature cohabited the same space, without a well defined boundary between fiction and fact, artifice and nature. In this installation Dion creates inventive arrangements which include all sorts of references to nature in a space where the mythical concept of ‘Mother Nature’ clashes with evolutionist and eco-political texts, references to influential naturalists, popular science books, magazines, as well as philosophical and literary texts. The installation is a collection of heterogeneous fragments; a patchwork of images, texts and large taxidermic animals covered with plastic. This allegorical structure dissolve authoritative claims of ‘truth’ by science, as all discourses are brought together in the same platform. All accounts become equal and representative of the distinctive attempts to interpret the ungraspable ‘extra discursive reality’ of nature. Each of these texts is part of an endless reflection on nature that cannot be dissociated from a particularly violent (disastrous) history.

In the allegorical model of criticism elaborated by Benjamin, a work of art is a medium of reflection leading to an infinite number of interpretations none of which is capable of fixing its 'real' meaning. The meaning of *An Account of Six Disastrous Years in the Library for Animals* and its theme – nature – cannot be pinned down, but float in an enormously rich conceptual space which is unfolded in the viewing of the artwork.



23. *The Library for the Birds of New York*, 1996

Dion addresses the hybrid nature-culture through the construction of other complex and poetic artworks. In the installation *The Library for the Birds of New York* (1996) he draws on the notion of the inseparability of nature from culture, through the irrational idea of a library for birds. The work points to the projection of human needs and desires on our perception and representation of nature. A great variety of books about birds – including natural historical, ecological and literary sources – are arranged

around and on a tree, together with bird cages, fruits, photographs, nests and a dead, tarred and feathered bird. This collection of references to the meanings given to birds by humans reveals as much about culture as it does about nature, as Dion argues:

Considering the abundant aesthetic, political and economic energy surrounding our avian compatriots, any investigation into the social history of birds and their representations and uses should reveal potent clues regarding our constantly shifting relationship with the natural world.¹⁹

The dramatic image of a dead tarred bird amongst all objects and illustrations is a powerful sign to the problem of extinction, which dominates current discussions about birds. This interpretation conforms with a statement made by Dion with reference to another work on birds (*Life Raft*, 1995): 'In the past, birds have been used to symbolize imperial power, divinity, the human soul, good and ill luck; today birds overwhelmingly indicate a single thing: the health of any particular environment.'²⁰ Thus, Dion makes reference to the symbolism of birds in culture, at the same time that he stresses the ecological role of birds in the ecosystem they inhabit, keeping the dialectic between 'realism' and 'social construction' open.

In the installation *Frankenstein in the Age of Biotechnology* and its accompanying newspaper *Daily Planet* (1991) Dion explores some tensions in the dynamic of nature and culture, by touching on the troubling relation of natural science with industry. In the newspaper his eco-activism comes through, in his vehement criticism of the 'altruistic' claims of the biotech industry. He points to the problems that genetic engineering can cause, such as species extinction and the potential for the emergence of 'super weeds,' if genetically modified species are cross bred with 'unwanted species.' Dion remarks: 'Who wants GMOs? Many of the most ecologically destructive and untrustworthy multinational corporations. It is they who will profit, and despite the

¹⁹ Mark Dion in *Mark Dion*, op. cit., p. 128.

utopian rhetoric, they have often proved to not work in the public interest. They cannot be trusted.²¹



24. *Daily Planet*, 1991, offset lithography on newsprint
detail of front page of the 4-page newspaper
55.5 x 35 cm each page

In the same newspaper, Dion creates an amusing dialogue between two fictitious characters: Clark Kent (Superman) and Dr. Frankenstein (from Mary Shelley's novel, 1816). The latter is allegorically appropriated and transformed into a respected microbiologist, who helps to develop the biotechnology industry and later starts to have ethical concerns over his creation (reviving his ethical conflicts from the original 'pretext'). Dion speaks through the scientist: 'Advanced science is something frightening to the public because it is a powerful and potentially destructive force with a history of abuse, because its goals and values are those of corporate or state leadership and because to many people the idea of progress translates into something which endangers our lives and futures.'²²

Here, Dion touches upon controversial areas of scientific enquiry, thereby balancing the celebratory mood of scientific knowledge of some of his works, with a fierce criticism of potentially destructive aspects of science and revealing a 'Frankfurtean' skepticism

²⁰ Ibid. p. 133.

²¹ Extract from the *Daily Planet* (1991).

²² Ibid., front page.

about the discourse of progress. Through the rich intertextual structure of these pieces, Dion presents his deep concerns and convictions in ironic and humorous ways, resulting in multi-layered and engaging works with a chilling message.



25. View of the installation *Frankenstein in the Age of Biotechnology*, 1991
at the Galerie Christian Nagel in Cologne, Germany

Through the use of an allegorical structure and its strategies, such as appropriation, consideration of site, intertextuality, and deconstructive reading, Dion explores the fictional, historical, sociological and ethical aspects of science, as I have argued in relation to the projects here discussed. When he re-enacts the activities of naturalists and biologists in an artistic and a different historical context – in *On Tropical Nature*, *A Meter of Jungle*, and *The Great Munich Bug Hunt* – a space for discussion on the ethical implications of scientific work opens up. In this way, the artwork creates room for scientists and scientific institutions to think about their practice as part of a broader social context, and get to grips with their discipline's violent history. Dion's interventions in natural history museums and art galleries also invite a wider public to reflect on the social aspects of science in the present, as in the installations *An Account of Six Disastrous Years in the Library for Animals*, *The Library for the Birds of New*

York and Frankenstein in the Age of Biotechnology, by pointing to both the negative and positive aspects of science.

In all of the areas of his interventions – the museum of natural history, fieldwork in urban or wild environments, and their representation in art spaces – Dion acknowledges the complexity of nature as a social construct, taking on board different linguistic meanings associated with it for centuries, with past and present ideological aspects attached to its discourse. In such engagements with the linguistic and cultural aspects of nature, Dion does not lose sight of nature as a signified, pointing to tangible problems of extinction and pollution.

Although Dion is critical of the controversial links of science with industry, he has also a genuine admiration for science that comes through his installations, writings and methodological procedures. Through various collaborations, Dion developed productive relationships with scientists, in which both sides brought forth their shared ethical concerns and interests in the production of hybrid artistic-scientific works. Yet, in this interdisciplinary field the relation between artists and scientists can also turn into a conflictual one, as was the case between Cornelia Hesse-Honegger and the mainstream scientific community in Switzerland in the 1980s and 1990s. I now turn to the impact of her work on discussions around contemporary art, science and nature.

Hesse-Honegger: Objectivity and Subjectivity in Art and Science



26. *Two negro bugs*, Corimelaenidae, from Swatara near Three Mile Island, Pennsylvania, USA
Watercolour, 29.7 x 42 cm, 1992

The work of Cornelia Hesse-Honegger offers a rich field for an exploration of objectivity and subjectivity in art and science. In contrast to Dion, she was trained as a scientific illustrator and developed a body of work which addresses the problem of radioactive pollution. As a scientific illustrator her work points to a historical relationship between the scientist and artist. The work of artists in scientific expeditions and in laboratory study of animals and plants was an important part of natural history, especially before the development of photography and other more advanced technologies. Still today, the scientific illustrator plays an important role in the production of natural science occupying a hybrid position between conventional associations of art with subjectivity and science with objectivity.

Hesse-Honegger's work was initially dismissed for not being either art or science, but with the development of her research she has become an effective interventionist in both fields. It is because Hesse-Honegger is in a hybrid position that her work is so open to be read as allegory. She is fluent in pictorial as well as scientific languages, and uses the context of contemporary art to open up science to a social critique. Hesse-Honegger

operates like a deconstructive allegorist, as she appropriates the language and tools of science to reveal their own inconsistencies. By remaining loyal to the rigorous discipline of the scientific method, by following the ideals of objective representation she denounces the flaws of this same discourse.

According to Hesse-Honegger, the reception of her work by the Swiss scientific community was very negative: 'The publication of my findings, documented with painted pictures, were therefore highly reproached by the scientific world ... the reproaches of the scientific world became even louder and more aggressive. I thought that by showing the malformations on insects, I could convince not only the public but also scientists, to at least reconsider their own research or to study these facts themselves.'²³ The main criticism was that her method was not scientific, not rigorous enough to be taken seriously, too 'artistic' or biased by subjectivity. Now, this rejection of her work is very revealing, because of the intensity of the response and anger of the scientists, it shows that the work exposed a much more serious, structural problem in the scientific community. The work questions cherished notions of neutrality and objectivity, established as positivist dogmas since the 19th century, that are still sensitive points for the scientific community today. Hesse-Honegger challenges these fundamental notions by showing how they can be lost in the complex relations of scientific institutions with society.

Objectivity and subjectivity are polarities which immediately emerge in the discussion of cross-disciplinary projects on art and science. Allegory is again useful here because it deals precisely with dichotomies that are both kept working in their contradictory ways within the same structure. I will also consider the clashes between nature and

history, and aesthetics and discursivity in the work of Hesse-Honegger. Her work can be divided into two phases: morphological studies of healthy insects produced before 1986 (with the exception of mutated laboratory flies in the 1960s); and the later work on mutation caused by artificial radiation. Firstly, I discuss a series of watercolours from Gockshausen (countryside near Zürich) produced between 1976 to 1985. Secondly, I focus on her second phase which started with the development of an independent research project in 1987 on the environmental effects of radiation in the fallout areas from the Chernobyl accident in Sweden and Switzerland.

Early Paintings: Collecting and Picturing Beauty



27. *Ladybird beetles*, watercolour, 21 x 29.7 cm, Gockshausen, 1976- 81

The paintings entitled *Ladybird beetles* and *Spider abdomen* are works from Hesse-Honegger's early period. They are not illustrations produced for academic publication or a scientific research but are products of her own aesthetic exploration. Here, she arranges colourful parts of the body of insects in a way that resembles insect boxes of natural history museum collections. What is depicted is only a part of the animals: their

²³ Letter to the editor of 'The Mule', an artist project which existed for 9 months between 31/10/1997 and 30/07/1998. The 26 artists participants created the news for one day (31/10/1997) and published it in 150,000 copies

body is fragmented and nature becomes fetishized in a desire to fix their transitory existence.



28. *Spider abdomen*, watercolour, 21 x 29.7 cm, Gockshausen, 1979

This wish to document the ephemeral can also be understood as an allegorical gesture. In this process, the living become dead, decontextualized, reassembled into a new system, be it scientific or artistic, and in Hesse-Honegger's case, both. I am not referring only to the violence of the literal death of the insects, but also to the repositioning of their meaning, which is transformed as they are taken from a context and subsequently enter the new one of a collection. In this process each fragment is petrified, in Benjamin's words, it 'turns into stone', and the meaning that emerges is the one given by the allegorist:

What is decisive in collecting is that the object is detached from all its original functions in order to enter into the closest conceivable relation to things of the same kind. This relation is the diametric opposite of any utility, and falls into the peculiar category of completeness. What is this 'completeness'? It is a grand attempt to overcome the wholly irrational character of the object's mere presence at hand through its integration into a new, expressly devised historical system: the collection. And for the true collector, every single thing in this system becomes an encyclopaedia of all knowledge of the epoch, the landscape, the industry, and the owner from which it comes. It is the deepest enchantment of the collector to enclose the particular item within the magic circle, where, as a last shudder runs through it (the shudder of being acquired), it turns to stone. Everything

remembered, everything thought, everything conscious becomes socle, frame, pedestal, seal of his possession.²⁴

The collection in front of us is a series of drawings of insects, representations rather than the animals themselves. Hesse-Honegger made a selection of beautiful insects, and chose attractive parts of their anatomy to be represented, she did so with an accurate and scientific fidelity to detail. The purpose of the paintings is not ultimately scientific, rather, it is to produce a harmonious artwork: 'For the moment I set aside anatomical questions and concentrated exclusively on the ornaments and the beauty of this rich world of forms and colours. [...] I placed each species - or rather the different colours - as to please my eye.'²⁵ Nevertheless, the clinical and orderly way the animals are depicted, as well as the technological apparatus which makes the production of the images possible, is representative of a scientific (Western) perspective on nature. The scientific code or convention of representation is subverted and used by the allegorist artist for her intended ends, that is, the aesthetic experience. There is a disjunction between the aesthetic (disinterested contemplation) aspect of the images and the formal presentation which is associated with a distinctive – scientific – epistemological position, which aims to know and describe the world by breaking it into small parts. Hesse-Honegger blurs the distinction between these two fields, by exploring the aesthetics of scientific representation (later she will also investigate the discursive and social aspects of science).

Hesse-Honegger's intentions are to raise ecological awareness through the aesthetic appreciation of the specimens portrayed and the celebration of their beauty is the first impact of the work. Her imagination dwells on the rich patterns found on spider abdomens and charming ladybirds which are magnified and their minute details are

²⁴ Walter Benjamin, 'The Collector', in *The Arcades Project*, op. cit., fragment [111a, 2], p. 204-5.

beautifully reproduced. With this strategy, a space is created for aesthetic contemplation which (the artist claims) can lead to a greater appreciation of the animals' existence and contribute to their preservation. The problematic aspect of this kind of strategy is that the use of attractive imagery from nature may not only lead to a greater ecological awareness, but also to the exploitation of nature in advertising thereby turning it into a saleable commodity. This argument can be linked to an anti-aesthetic tendency that is suspicious of beauty in art.²⁵ In the logic of an anti-aesthetic argument, beauty would weaken the artwork's critical capacity, involving the viewer in an uncritical experience of mere gratification of the senses. The suppression of the visual for the textual, the aesthetic for the political in my view is not necessary in order to make a work function critically. Allegory is a model constructed on the basis of contradictions where opposites enter into a dialectical dynamic. Thus, allegory is an important tool for visual art, as artists do not have to opt between one or another aspect of a work's meaning, but can explore an antithetical dynamic in the production of complex artworks. In a later stage of her work, Hesse-Honegger becomes a master in manipulating the contradictory aspects of beauty and political engagement, using this tension as a powerful critical tool.

Perhaps we could associate the images of these healthy bugs to an ideal of nature, a Platonic world of perfect forms, which give origin to the (not so perfect) physical world. But the critical point of these paintings is that the images are realistic representations of animal's body parts, not idealized forms. One could see the groupings of fragments of depicted insects as a historical document, that is, as Walter Benjamin's concept of a

²⁵ Cornelia Hesse-Honegger, in *Heteroptera: the Beautiful and the Other or Images of a Mutating World*, trans. Christine Luisi, Scalo, Zürich, Berlin, New York, 2001, p. 66.

²⁶ I have discussed anti-aesthetic tendencies in chapter 1, please refer back to the discussion on allegory, the avant-garde and neo-avant-garde. I also make further references to this tendency in chapters 3 and 4.

collection. Benjamin regards both nature and history as inseparable. The fragments of insects, displayed like jewellery in a treasure box, are (paradoxically) images of a transient nature recorded for eternity (nature becomes fetishized), and as historical documents of a rapidly changing world, as pictures of a society and its way of seeing and dealing with the world.



29. *Bug shields*, watercolour, 21 x 29.7 cm, Gockshausen, 1978- 80

The pictures of *Bug shields* show once again the colourful body parts of many insects, as if this were a study of comparative anatomy. In the first series of *Bug shields* (1978-80), Hesse-Honegger modified their shape, by making the top of the shields a straight line. This small change shows a desire for aesthetic freedom that was far from the strict discipline that the rules of scientific illustration would allow. Hesse-Honegger is producing her own paintings for her purposes, and this is a more liberating field than when producing illustrations for academic papers for scientists. The artist felt that this deviation from the scientific fidelity of reproduction brought her work closer to art than to science. In a later work *Bug shields* (1980- 83), she drew the anatomic parts as they were, reproducing the neckline of the shields. In the context of science this makes a dramatic difference, but in terms of art, the gesture is not so important. At that period,

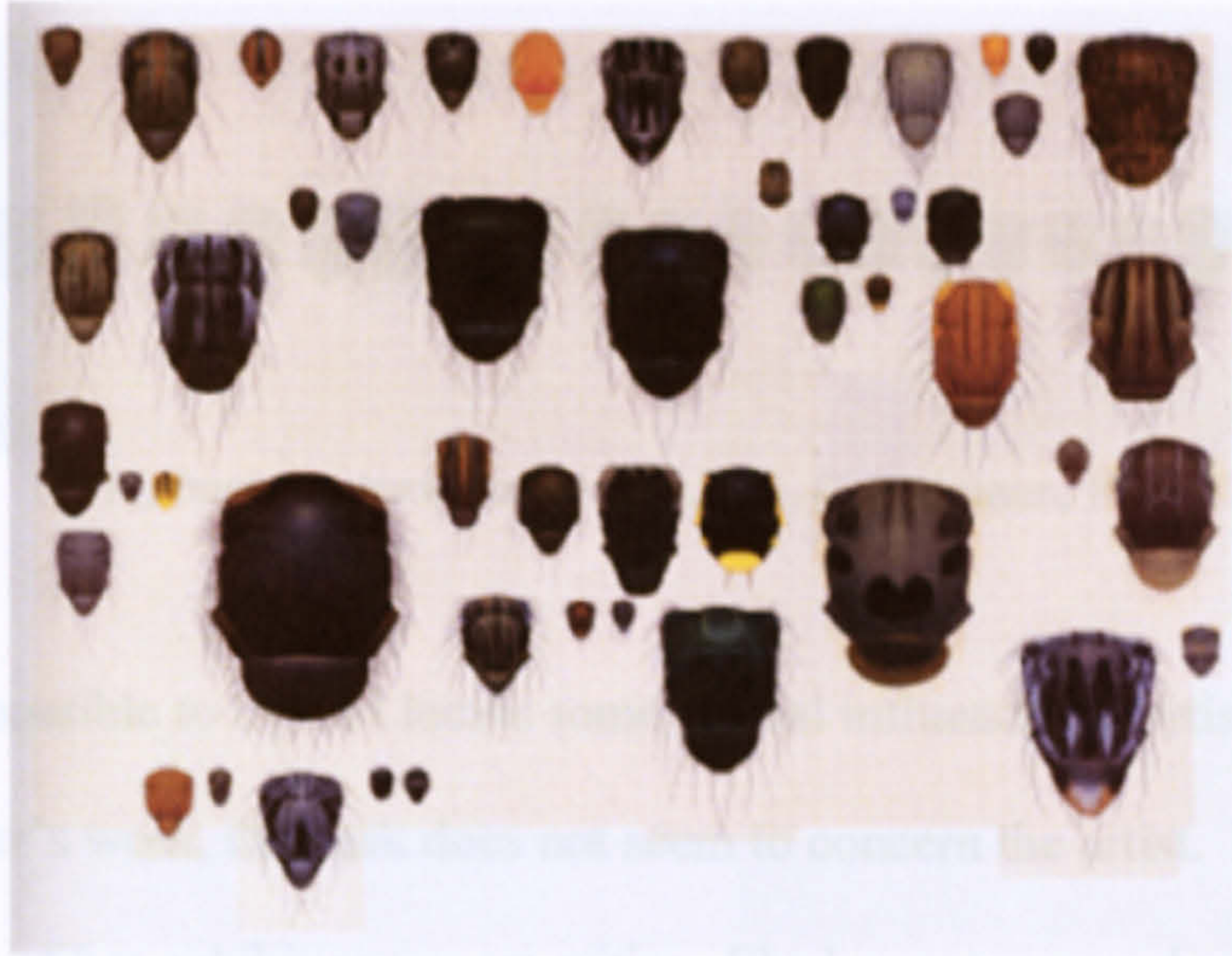
Hesse-Honegger's work did not attract neither artistic nor scientific interest. Perhaps this was because it did not challenge or contribute to science in any innovative way; and in the artistic context, these early paintings did not convey yet the powerful message of her later work.



30. *Bug shields*, watercolour, 21 x 29.7 cm, Gockshausen, 1980- 83

Towards the late seventies Hesse-Honegger noticed a decrease in the population of leaf bugs (Heteroptera) in the areas where they had been easily found in past years. She started painting flies because they were not an endangered species and were abundant in the small ecosystem of her flowerpots. In the *Fly backs* series Hesse-Honegger transformed the perception of 'disgusting' insects, such as flies, into pieces of wonder. Perhaps, these paintings of perfection and beauty are an important and necessary stage for the full appreciation of the grotesque malformations of her later series of works on mutation. *Fly backs* from 1981-2 and 1983-85 show some formal inventions, as Hesse-Honegger starts adding pieces of paper to include an extra drawing to the composition, breaking with the constraints of the standardized size of paper and rectangular format. These were minor details, that may have represented an exciting move from the constraints of scientific illustration, but the most dramatic and courageous move she

made, in artistic terms, was to start an independent research project on the effect of artificial radioactivity on nature.



31. *Fly backs*, watercolour, 45.3 x 57 cm, Gockshausen, 1983- 85

Fly backs (1981-82) below and some other paintings (for example the series of *Drosophila* flies heads with mutation, on page 110) appear at first sight, to be close to a minimalist aesthetics. The series of insect body parts are presented in a manner which formally resembles the austere and clinical ordering of elements in Minimal art, generally characterized by a structure of serial repetition of elements. The similarities are perhaps smaller than the many differences between Hesse-Honegger's approach and the aims and materials used by Minimalist artists, who worked mainly with three dimensional space, industrial materials and process of production. Contrary to minimalist units, which were usually identical, in Hesse-Honegger's work, the accuracy of representation of each individual element is crucial, and the variation in their forms are the very point of the work, specially in the mutated heads series. Artistic manual skill involved in the production of the paintings (completely irrelevant to minimal artists, who preferred industrial manufacture of the works) is also an essential part of the meaning because the conceptual basis of the work relies on the artist's ability to

represent the specimens with great precision so that the formal aspect of the artwork functions as evidence for a scientific argument.



32. *Fly backs*, watercolour, 21 x 59.2 cm, Gockshausen, 1981- 82

Although it is possible to try and locate some formal influences or artistic procedures in Hesse-Honegger's work, this task does not seem to concern the artist. It is rather a job for the curators of her exhibitions or art critics. She has not engaged with the articulation of her artistic practice in relation to art history or recent theoretical debates around art. In this respect, Hesse-Honegger seems much closer to a scientific context, as the influences she traces in her practice are all related to the scientific world: her role models are the German scientific illustrator Maria Sibylla Merian (1647-1717), the British scientist Mary Anning (1799-1847) and the Swedish taxonomist Carolus Linnaeus (1707-1778). Through the circulation of her work in art institutions, Hesse-Honegger's practice has been situated in relation to the work of other contemporary artists dealing with nature, ecology, and politically engaged art.²⁷

Picturing Mutation, A Disobedient Servant of Science?

When the radioactive accident in Chernobyl happened in April 1986, Hesse-Honegger was working with radiated flies, watching closely the horrifying effects radiation produced in later generations of exposed insects (see illustrations of mutated *Drosophila*

flies).²⁸ Hesse-Honegger became concerned with the possible effects that such catastrophic disaster would have on the health of the environment and humans, and expressed her concerns to the scientists with whom she was working. They were unanimous in assuring her and the public that the level of radiation released would be harmless to the environment and there were no reasons for panic.



33. *Housefly, mutant 'aristapedia'*
watercolour, 44 x 55 cm, 1985- 86



34. *Wild housefly*
watercolour, 44 x 55 cm, 1986

Hesse-Honegger was not easily convinced, especially because there was not enough scientific evidence for such assurances. She argued that, at that time there was not enough research on the environmental impact of low level radiation being carried out in the contaminated areas by the Chernobyl accident, and that all that had been done were measurements on the levels of radiation. According to her, the assurances from the scientific establishment were based on a laboratory study on radiated *Drosophila* flies, which concluded that low level radiation would not affect organisms exposed. At that time there was no research on the morphological defects of insect and plant population on the areas affected by the accident, so she undertook some independent research.

This started a new phase in her work and career.

²⁷ Her work has been shown alongside other artists interested in issues of the representation of nature, and interdisciplinary projects with science, such as: Mark Dion, Gerhard Lang, Matilda Downs, herman de vries, Rob Kessler, Susan Derges, Christine Borland, Kiki Smith, and Dorothy Cross, amongst other artists.

²⁸ In 1995 Hesse-Honegger worked for geneticists at the Zoological Institute in Zürich, who were experimenting with houseflies and inducing mutation with the use of X-rays. The two paintings above were produced as illustrations for these studies. Hesse-Honegger had already pictured mutated flies of the species *Drosophila subobscura* in 1967, at the same institution. In the sixties the scientists induced mutation by using mutagen substances which were added to the flies' food. Thus, Hesse-Honegger had some previous experience in depicting malformation when she took the job of illustrating X-ray induced mutations in laboratory experiments.

Hesse-Honegger's independent research led her to the formulation of a hypothesis that nuclear energy was dangerous for the environment and humans because of the mutagenic effects caused by radioactivity in low doses; doses which are constantly emitted by nuclear power plants. Hesse-Honegger's concerns and her scientific project have gradually been confirmed by the work of other scientists.²⁹ Although she did not have academic credentials or a conventional scientific background, she developed a systematic method of collection and documentation of the specimens found near nuclear accidents or power plants, which raised important questions on the effects of low radioactivity.



35. *Drosophila melanogaster* flies mutated by x-rays at the Zoological Institute at the University of Zürich, deformed heads and eyes, 29 x 21 cm, 1986

After the Chernobyl accident on the 26th April 1986, Hesse-Honegger studied maps³⁰ showing the trajectory of radioactive clouds over Europe, and identified two largely contaminated areas in Sweden and Switzerland. These she established as the starting

²⁹ Hesse-Honegger based her arguments on her observations that were compatible with the findings of other scientists, such as those of Dr. A. Petkau's research initiated in 1972. Dr. Petkau challenges the view of mainstream scientists regarding the linear dose-response in which high doses mean high risks. He has proposed a supra linear dose-response relation, in which the closer the dosage is to zero, the greater the possible effects. Hesse-Honegger also refers to the work of another scientist who concluded that low level radiation has a damaging effect: Prof. R. K. Whyte, of MacMaster University, California, who maintained that low radiation from official USA and UK governmental weapons tests during the 1950s and 60s had caused 320,000 infant deaths by 1980. The work of Dr. Ivan Bubriak on mutation in Chernobyl barley pollen was also mentioned by the artist. In a lecture at the Paul Scherrer Institute in 1991, Dr. Bubriak stated: 'Lower dose rates were more effective in producing mutations than higher dose rates, and greater genotoxicity was observed from mixed-irradiation than from the gamma-irradiation. It seems that mutagenic effect in plant cells do not depend entirely on the total dose, but also on specific radionuclide mixture and possible toxic-chemical synergism.' Cited by Hesse-Honegger, in 'Preface', *The Future's Mirror*, published by Locus+, Potts Printers, North Shields, 1996. Other references to Petkau's work can be found in Jay M. Gould, Benjamin A. Godman (ed.), 'Deadly Deceit', in *Four Walls, Eight Windows*, New York, 1991; and UNSCEAR 1982.

³⁰ Maps were printed in November 1986 by the Swiss Division of the Security of Nuclear Installations.

points for her research. She traveled to Sweden in the Summer of 1987 to collect the first generation of insects born after the accident. The plants and insects collected showed severe mutations. After observing some specimens from areas exposed with different levels of radiation, Hesse-Honegger started to suspect that deformations were not only linked to high but also to lower doses.

The following painting entitled *Head and neck plate of a soft bug* shows one of the insects found in a contaminated area. The composition of the painting and the delicate colours used, make it a harmonious image. Concealed in such beauty is a dark message. The depicted mutated feeler and underpinning information provided by the title, indicate the quiet and almost imperceptible deformations taking place in the site where the bug was collected.



36. *Head and neck plate of a soft bug* from Gysinge, Sweden, watercolour, 29.7 x 21 cm, 1987

Hesse-Honegger's next trip was to the South of Switzerland, to the region of Ticino, near the border with Italy, an area that received a lower level of radiation from Chernobyl than the region visited in Sweden. In September 1987 she collected insects, plants and some *Drosophila melanogaster* flies for breeding. The following pictures show the level of deformity found in the leaves, and flies that were born from the

exposed parent flies. The drawings of ivy leaves appear to be a creative formal exploration on a theme, but instead are realistic depictions of the dramatic changes in the pattern of the leaves. The painting *Drosophila melanogaster* shows two female flies, the one on the right is from the first generation and the left one the fourth generation of a couple of flies collected in Rancate, Ticino. The problem of radiation is that it provokes genetic changes which can go undetected for many generations. In January 1988 Hesse-Honegger published for the first time the results of her research in the magazine *Tages-Anzeiger*. The article entitled 'Ein Opfer von Tschernobyl?' included paintings of mutated leaf bugs from Sweden and Ticino, *Drosophila* flies, and a text contextualizing the work in relation to the Chernobyl accident.



37. Ivy leaves from Mendrisio, Ticino, Switzerland
watercolour, 29.7 x 21 cm, 1987



38. *Drosophila melanogaster*, two females from Rancate, Ticino,
Switzerland, (Mendrisio III, first and fourth generation)
watercolour, 29.7 x 21 cm, 1987

After the first project on Chernobyl contaminated areas, many of Hesse-Honegger's subsequent projects focused on the low level radiation near nuclear power plants in various countries.³¹ In 1988 she researched the Swiss region of Aargau and Solothurn where the nuclear power plants of Leibstadt, Beznau I and II, and Gosgen are located. Around these nuclear plants she found and documented a large number of mutated insects. She once again published the results of her study in the April 1989 issue of the magazine *Tages-Anzeiger* which was accompanied by two texts by concerned scientists.³² This publication caused great controversy in the mainstream Swiss scientific community. Prof. Nothiger wrote an article criticising Hesse-Honegger's work, arguing that disturbances in nature are normal within a certain frequency, noting that the artist had not provided any percentages of the occurrences she had observed.³³ Hesse-Honegger took notice of the criticism and improved her methodology of work, becoming more systematic in later research conducted in the same area from 1993-96. She started collecting the specimens at different distances from the power plants, and registering the percentage of mutations found in each location. The results are presented in various maps that reveal that the closer to the power plants the insects were found, the greater were the number of anomalies present in their morphology.

³¹ After 1988 Hesse-Honegger extended this project to study the effects of low level radiation (considered by most scientists as harmless to the environment) near nuclear power plants in Switzerland, Sellafield - UK, as well as areas affected by the Three Mile Island accident plant in the USA and Krummel nuclear power plant in Germany, the recent atomic bomb tests in the South Pacific as well as Nevada, USA, and the HAARP Project in Alaska, USA.

³² There was a text by the entomologist Prof. Sauter, from the ETH - Federal Technical Institute in Zürich, who argued that her findings were worrying and recommended further research; and an article by Ralph Gracub concerning low radiation and human health.

³³ Another claim Prof. Nothiger made was that the radioactivity from Chernobyl which had reached Switzerland in 1986, 20 mrem average for the Swiss population per year, was lower than the natural radiation (135 mrem), and that radiation from nuclear power plants was even lower, in *Das Magazin Tages-Anzeiger*, Zürich, Nr.15, April 1989.



39. Striped bug, *Graphosoma lineatum*, from Rohr, near Gosgen nuclear plant showing morphological damage to thorax

These images of mutated animals and plants which are accompanied with maps and information about their place of origin, can be regarded as dialectical images, which paradoxically encapsulate past and present historical time. Benjamin explains the concept of a dialectical image and its relation to history:

It is not that what is past casts its light on what is present, or what is present its light on what is past; rather, image is that wherein what has been comes together in a flash with the now to form a constellation. In other words: image is dialectics at a standstill. For while the relation of the present to the past is purely temporal, the relation of what-has-been to the now is dialectical: not temporal in nature but figural <*bildlich*>. Only dialectical images are genuinely historical - that is, not archaic - images. The image that is read - which is to say, the image in the now of its recognizability - bears to the highest degree the imprint of the perilous critical moment on which all reading is founded.³⁴

Thus, the legibility of an image, or access to its meaning is essentially historical, and the basis for its interpretation is the understanding of the dialectical movement between 'now' and what has happened.

³⁴ Walter Benjamin, 'On the Theory of Knowledge, Theory of Progress,' *The Arcades Project*, op. cit., fragment [N3,1], p. 463.

The paintings of malformed insects are powerful signs of the intrinsic intertwinement between nature and history. In these images, human technological and historical development is imprinted onto the genetic material of living organisms. The notion of progress in the discourse of the Enlightenment, which was the basis of the scientific, technological and industrial revolutions, resulted in horrific social and environmental scenarios, and Hesse-Honegger's paintings reveal to us to what extent this pervasive effect has been extended. In the beautiful images of insects, the mythic image of a past 'unspoiled nature' clashes violently with the alarming reality of the present state of affairs. In this dialectic between nature and history, science and economic-political power, the dichotomies cannot be separated, and Hesse-Honegger's images give a picture of this dialectics 'at a standstill'.



40. Cabbage bug, *Eurydema oleraceum*, from Rohr, Switzerland, watercolour, 76 x 56 cm, 1995

Benjamin's theory of history, nature and criticism and their relationship to the ideology of progress are concerns of other authors of the Frankfurt School. Theodor Adorno and Max Horkheimer in their seminal book *Dialectic of Enlightenment* have also explored the dialectical dynamic between science, society and nature. They analysed the social

²³ Theodor Adorno and Max Horkheimer, *Dialectic of Enlightenment*, op. cit., p. 4.

effects of the instrumentalization of reason in technological society and its relation to nature: 'What men want to learn from nature is how to use it in order wholly to dominate it and other men. That is the only aim. Ruthlessly, in despite of itself, the Enlightenment has extinguished any trace of its own self-consciousness.'³⁶ They point to the contradictory aspects of scientific discovery, which are progressive in technological and economical levels, but also have a regressive effect in social relations, increasing the power of dominant classes:

The fallen nature of modern man cannot be separated from social progress. On the one hand the growth of economic productivity furnishes the conditions for a world of greater justice; on the other hand it allows the technical apparatus and the social groups which administer it a disproportionate superiority to the rest of the population. The individual is wholly devalued in relation to the economic powers, which at the same time press the control of society over nature to hitherto unsuspected heights. Even though the individual disappears before the apparatus which he serves, that apparatus provides for him as never before. In an unjust state of life, the impotence and pliability of the masses grow with quantitative increase in commodities allowed them.³⁸

In this process the modern subject and nature are devalued, under the instrumental mentality of the discourse of the Enlightenment. Adorno and Horkheimer reveal how rationality turned into its opposite, creating violent and dominative consequences for humanity and nature.

Hesse-Honegger's mutated insects are the emblems of our nuclear age, telling not only a story about the physical effects of 'progress' inherited from the project of the Enlightenment, but also of how contemporary society relates to nature. Like a Baroque emblem book, the image is accompanied by a text (motto), which here, indicates the contaminated place where animals and plants were found. The meaning of the emblem emerges from a dialectical relationship between the image and the text. The insects portrayed are little fragments taken from a much larger (natural, socio-economic and

³⁵ Theodor Adorno and Max Horkheimer, *Dialectic of Enlightenment*, op. cit., p. 4.

political) context, which cannot be represented in its totality. Although it is impossible to represent the whole 'picture', the fragments can lead us to an endless reflection on various levels of the complex relation between nature, society, art and science.

Circulation of The Work

After the 1988 and 1989 publications in the *Tages-Anzeiger*, Hesse-Honegger's work gained wide exposure in the Swiss media, and she was invited to give interviews on the radio and television. Her findings raised concerns and contributed to a public debate on the safety of nuclear energy, which led the authorities to officially request further research, which was later carried out by Dr. J. Jenny.³⁷ In 1992 she represented Switzerland at the XVIII Triennial in Milan with the exhibition and book *After Chernobyl*. Later, this exhibition toured to several places in Switzerland, Vienna, Sweden, the UK and Canada. At this point Hesse-Honegger gained international recognition as an artist.

The work has been circulated in both artistic and scientific contexts through the publication of books and exhibitions in art galleries, natural history and science museums. The context in which the work is presented is an important aspect of it because it functions in different ways depending on the surrounding environment.

³⁶ Ibid. pp. xiv-xv.

³⁷ Hesse-Honegger collaborated with this scientist, with disappointing results. His dissertation dismissed her work, raising questions about her ability to discern between normal and mutated specimens, and concluded by saying that there was no correlation between the high numbers of abnormalities and radiation emitted from the power plants. Hesse-Honegger noted that he had not made a distinction between the types of deformities nor had he recorded the locations where they were found in relation to the distance from the power plants. This is something she did afterwards.

The exhibition *After Chernobyl*³⁸ was presented at the University Museum, Oxford, from November 1996- January 1997. The paintings were displayed on wooden panels which zigzagged across the central exhibition space of the University Museum. This arrangement contributed to the merging of the artwork with the surrounding displays. The factual presentation of nature encountered in other didactic panels and explanatory texts near display cabinets created a conflicting dynamic with the work. The authority of the context gave a frame of scientific validity to the work which had been denied by some scientists in the field of radioactivity. Because the paintings were displayed *as art*, the burden of proof was not a requirement, but the way in which the work was absorbed in the museum educational environment, and ‘encouraged’ the audience to take it as fact.



41. *After Chernobyl*, University Museum, Oxford, November 1996- January 1997

The ambiguous situation of the work *vis a vis* the mainstream scientific view also affected the stability of the meaning of the surrounding collection by showing that factual evidence is subject to interpretation, and until a consensual agreement is met, it cannot be accepted as ‘truth’. In the ordering of the museum displays according to

³⁸ This work was also presented in other natural history museums in the UK, such as the Hancock in Newcastle (July - August 1996) and Woollaton Hall Natural History Museum, Nottingham (October - November 1997).

evolutionary theories, nature is explained as a logical series of hard facts, as if the framing theories were an ultimate reality, rather than interpretations of it. And, as interpretations or socially constructed 'fictions', they can still change later if new theories become established as more revealing than the officially accepted ones.³⁹ So, when presented in a museum, the work created a tension between the didactic and fictional aspects of science.

In *The Future's Mirror* at the Middlesborough Art Gallery, the work assumed a different character.⁴⁰ The immaculate presentation of the paintings in the neutral and 'antiseptic' gallery space made their presence stronger as objects of aesthetic contemplation. In the artistic context the work entered into discussions in the field of contemporary art. The notion of site and site-specificity are the first references to come to mind because in Hesse-Honegger's work the relation between the images and the site where the animals were taken are crucial to the interpretation of their meaning. There were a series of mediations involved in the representation of nature from the site to the non-site space of the gallery: there was a gap between the images of the animals depicted (observed through the lenses of a microscope) and their ephemeral lives in their natural habitat. The institutional frame of the gallery around this scientific experiment gave it another layer of engagement by providing the space for a social critique of science. The space offered by art made room for the artist-scientist to self-reflect on the complex relation between science and the social and political spheres in technological societies.

³⁹ See the work of philosophers of science: Thomas Kuhn (1922), Karl Popper (1902- 1994), Imre Lakatos (1922- 1974), and Paul Feyerabend (1924- 1994), on how theories are formulated and fall in the history of science and shifts in paradigms operate in various historical periods.

⁴⁰ The paintings from *After Chernobyl* were also part of *The Future's Mirror* exhibition which was presented at various gallery venues in the UK tour: Tullie House in Carlisle (November 1996- January 1997), Leeds City Art Gallery (February - April 1997) and Middlesborough Art Gallery (April - May 1997).

Another important medium of circulation of Hesse-Honegger's work is through the publication of books. This is an effective way of disseminating her ideas and suits the didactic character of the work. The reception of the paintings also changes as the perception of different scales in the works is lost, but the works still have an effective impact on the viewer. In these publications, the artist brings a great deal of background information to each project, and also texts by scientists, which are better conveyed in the format of a book, than in otherwise too long texts displayed on gallery walls.

The Reception of Hesse-Honegger's Work in the Scientific Community

As I have previously discussed, Hesse-Honegger's work caused great controversy amongst mainstream scientists in Switzerland.⁴¹ Much of the arguments against her work were based on traditional (19th century) notions of objectivity and subjectivity in relation to art and science. It becomes important to examine the history of these terms if we are to consider the arguments with care. The elusive and changeable character of these terms reveals the ambiguity of the art and science relations to 'reality', or ways in which a knowledge of reality can be asserted by each discipline.

⁴¹ There are exceptions to this, and slowly her work is gaining recognition as a serious scientific study. Inge Schmitz-Feuerhake, Professor of Experimental Physics at the University of Bremen, comments on Hesse-Honegger's work: 'More than 60 years after American geneticist Herman J. Muller had shown that ionising radiation induces malformations, there are still many experts who represent the mainstream who will deny such effects are possible by low dose exposure of significant quantities. Cornelia Hesse-Honegger proved these effects did indeed exist within animals undergoing rapid alterations of generations, and, by extension, there is no reason to believe that similar defects will not occur in other species, all the way up to humans. She therefore exhibits a range of merits that can be associated with an independent and responsible scientist.' The scientist and teacher on ecology and ionising radiation biology, at Canterbury Christ Church University College, Georges B. Dussart praises her skills as illustrator: 'The technical expertise is breathtaking, even when measured alongside other great biological illustrators.' He also recognises the scientific validity of her discoveries: 'From a scientific viewpoint, Hesse-Honegger's illustrations raise questions which require answers and therefore, as well as being artistically delightful, have a high scientific value in themselves.'

Raymond Williams⁴² researched the historical changes in the meanings associated with subjectivity and objectivity in the English language. Williams says that in scholastic thought 'subjective' meant what things were in themselves (subject as substance); and 'objective' related to the way things were presented to consciousness ('thrown before' the mind). Williams argues that these uses of the terms reflected a world-view, developed from the 17th century, especially from Descartes, that proposed the thinking self as the first substantial area of knowledge. In that view, the subject was the central position from the operations of which the independent existence of all other things was to be deduced as objects thrown before the consciousness. Williams explains that it was also from German classical philosophy that most uses of the modern distinction originated, where subject was the active mind or the thinking agent and the object was that which was other than the active mind. According to Williams, such a distinction from the German tradition of idealist thought influenced the development of current modern English senses of subjective and objective. So, in early 19th century, objective became what was taken from an external object and subjective something which existed only in the mind. Later in the 19th century the term subjective became understood in relation to art and artistic style (the Romantic view of the artist as genius, which was the dominant thought in the arts of the 19th century). Williams argues that the dualism between subjectivity and objectivity developed even further in the positivist science of the 19th century, where objective came to mean the factual, fair-minded (neutral) and hence reliable, and the subjective as based on impressions, personal feeling and relatively unreliable judgements.

In the reception of Hesse-Honegger's work, the terms subjectivity and objectivity are often used in confusing ways by the scientists. It seems necessary to specify in what

⁴² Raymond Williams in *Key Words: a Vocabulary of Culture and Society*, Fontana Press, London, 1983, pp. 309-12.

way they are meant. If we consider the idealist sense, her work, as all scientific work, can be regarded as subjective, because it is the result of a rational account of the object 'thrown before the mind'. Scientists base their discourse heavily on reason, which, as a quality of the subject, renders all products of science subjective. In the positivist sense of the terms, her work can be more easily sided with objectivity, because it is based on an accurate depiction of the animals and plants represented. Her paintings are not expressionist or abstract representations of nature, but very realistic copies of it. This aspect of the work would 'disqualify' it as the kind of art which praises traditional notions of originality, subjectivity and authorship. Her work gains artistic and critical interest, precisely for being 'literal translations' of the insects portrayed. The dismissal of Hesse-Honegger's paintings by scientists, as 'subjective' in a positivist sense, makes no sense because of the way they are depicted. As the artist explains: 'I deliberately banned my own fantasy from my paintings. What I find in mutated flies, created in research laboratories - or in fallout areas of Chernobyl or on leaf bugs near nuclear power plants outstrips anything that might come from our imagination. In our laboratories we are producing the raw models of what we are doing on a vast scale in vivo.'⁴³

Hesse-Honegger sees the role of the artist as a critical agent, with the power to promote debate and raise questions of crucial importance for society. She conceives of subjectivity in terms of autonomy, as she perceives the position of the artist as less compromised than the one of the scientist within a capitalist system. This relative autonomy gives artists more room to articulate polemic issues in their work:

Even now scientists and intellectuals in our western society, which likes to believe, that individuality and freedom of expression is guaranteed, do not dare to speak up, or their research is not published if opposed to general thinking. Fear of losing research money or their jobs, causes many of them to cooperate - thus,

⁴³ Letter to the editor of 'The Mule.'

more than half of the scientists world-wide work for the military. At the moment artists, are almost the only independent voices in our society. They cannot be stopped by financial restrictions since they are not paid properly anyhow.⁴⁴

The question of subjectivity and objectivity is closely linked with notions of autonomy in art and science, which has been an issue for long debates in each discipline and in interdisciplinary discussions. The problem with such claims of autonomy for artists is that in the commodified society in which we live, artists are subject to similar pressures to the ones on scientists. It is only within the social constraints in which both scientific and artistic work are carried out, that it is possible to articulate a level of critical and ethical agency.⁴⁵

The use of the media of painting in Hesse-Honegger's work, relates to the historical collaboration between scientists and artists in a pre-photographic era, before the development of other technologies.⁴⁶ But it also can be connected to a new notion of subjectivity in science in the late 20th century, where the scientist emerges as an interpreter. Scientific drawing is combined with more accurate technological devices, and the subject can make interpretative decisions in the production of the images. Peter Galison has observed the emergence of subjectivity in contemporary science in an essay entitled 'Judgement against Objectivity'. In this essay, Galison traces changes towards objectivity in science, through an analysis of scientific atlases of various disciplines in different historical periods. He examines the scientific production of images in relation to changing notions of objectivity, and divides them into three different categories: metaphysical image, mechanical image and interpreted image.

⁴⁴ Letter to the editor of 'The Mule.'

⁴⁵ This is a long discussion in the field of contemporary art, to which I refer later, in chapters 3 and 4.

⁴⁶ Drawing is still largely used today, in combination with other media, because it gives in one image the information that would take many photographs to show. When a three dimensional object, such as an insect, is viewed under the lens of a microscope, it is possible to focus only some areas each time, while others become blurred. Illustration, then, is useful to visualize the whole animal with microscopic detail at one glance.



42. Four seed bugs, *Lygaeus equestris*, from Tubre and Santa Maria Madonna, Italy, watercolour, 47 x 55 cm, 1994-95

Galison argues that in the 17th and 18th centuries to be objective meant to represent the universal (Platonic) ideal of nature, the aim was to depict the world beyond distorted appearances. In the production of such metaphysical images the skill of the artist was essential to correct the ‘imperfections’ of a particular specimen in order to approximate it to its original perfect form. Galison says that it was later in the 19th century that the notion of objectivity as a mechanical process became dominant: ‘It [The notion of objectivity in the 19th century] had, by contrast, everything to do with a machine ideal: the machine as a neutral and transparent operator that would serve both as an instrument of registration without intervention and as an ideal for the moral discipline of the scientists themselves.’⁴⁷ Thus, in this view of objectivity, there was no room for artistic invention and the role of the scientist was one of a neutral observer; while photography⁴⁸ became the favoured tool to achieve the most scientific or ‘unmediated’ way of presenting nature. This technology was thought as the way in which nature was

⁴⁷ Peter Galison, ‘Judgement against Objectivity’, in *Picturing Science, Producing Art*, ed. by Caroline A. Jones and Peter Galison, Routledge, London, 1998, p. 332.

⁴⁸ There is a long and well documented discussion on the discourse of objectivity in the history of photography which shows how the process of framing, selection and other photographic strategies are far from offering a ‘realistic’ account of the world; this criticism becomes even more evident in the age of digital photography. In chapter 3 I will refer to part of this discussion in more detail, when considering Benjamin’s writings on film and photography.

able to 'speak for itself': 'on the mechanical-objective view, realism, accuracy, and reliability all were identified with the photographic.'⁴⁹

According to Galison, towards the end of the 19th and mid 20th centuries, the emphasis on scientific attitude shifted to judgement and interpretation of factual data collected either mechanically or through observation. The scientist was no longer a self-repressed observer, but emerged in the 20th century as an intellectual, an experienced and trained eye. Subjectivity became the centre of scientific production as Galison explains: 'what is needed is the subjective, the trained eye, and an empirical art, an "intellectual" approach, the identification of "patterns", the apperception of links "at a glance", the extraction of a "typical" sub-sequence within a wider variation.'⁵⁰ While handling a 20th century anatomy atlas, designed by medical doctors and anatomists, Galison notes that the scientist becomes the interpreter, conscious of an audience. The emphasis was on the didactic element, more than being true to nature. The scientists highlighted the abnormalities to teach their students to see them. Galison concludes by pointing to this shift of emphasis from objectivity to subjectivity in science as analogous to the 18th century move from the metaphysical to the mechanical.

The questioning of subjectivity in Hesse-Honegger's work is suggestive of the ambiguous attitude of scientists to it. If one considers the new subjectivity of the scientist, then the accuracy of the observation relies more on the authority of the observer than on the image itself. In order to be an adequate interpreter, one needs to be an experienced scientist, and this is the basis from which many scientists have not taken seriously the work of Hesse-Honegger. If her concerns are to be heard, she would need to have the credentials of a specialist, this means to be a respected scientist, to enter the

⁴⁹ Ibid. p. 334.

circuit of academic publication, the long career in the profession, and engage in what Bruno Latour and Steve Woolgar called 'the cycle of credibility.'⁵¹

Perhaps then, Hesse-Honegger's work would need to be dismissed for its objectivity, the power of the images in challenging the authority of the specialist, in provoking the viewer to question the relationship of the scientist to political and economic spheres of power. Hesse-Honegger deconstructs the discourse of scientific authority, by working with the scientist's own tools of objectivity, but as an independent researcher.

Deconstruction is a method of reading what is present in a text, but is not necessarily conscious to the author. It is a reading of the margins, which reveals the 'unconscious' aspects of a text. In Hesse-Honegger's work, the dichotomy of subjectivity and objectivity is deconstructed, revealing the presence of both in the making of science, where the objective evidence is closely associated with the subjective authority of the scientist involved. The work of the artist shows that the supposed priority given to the objective observation of facts does not prevail in this particular case. She has destabilized the traditional association of scientific research to objectivity.

⁵⁰ Ibid. p. 340.

⁵¹ Bruno Latour and Steve Woolgar, 'The Cycle of Credibility', in *Science In Context*, ed. by Barry Barnes & David Edge, 1982, p. 35. In the model proposed by Latour and Woolgar, the activities of scientists are compared with a market economy where they are investors of credibility: 'the forces of supply and demand create the value of the commodity, which fluctuates constantly depending on supply, demand, the number of investigators, and the equipment of the producers. Taking into account the fluctuation of this market, scientists invest their credibility where it is likely to be most rewarding.' (p.40) The goal of each investment is to extend the credibility cycle. Latour and Woolgar do not interpret the scientists' behaviour in relation to their motivations, but their model reveals how science actually works, from the perspective of its social relations. They argue that 'it makes no difference whether scientists variously insist on the primacy of credible data, credentials, or funding as their prime motivating influence. No matter which section of the cycle they choose to emphasize or consider as the objective of investment, they will necessarily have to go through all other sections as well.' (pp. 41-2) This analysis of the process of production of science in contemporary society is the basis of much debate in the area of science studies, which is a kind of sociology of science. The focus of this perspective is on the relation of science with the wider context in which it is

Conclusion

Hesse-Honegger comes from a hybrid artistic-scientific background, using the art world to circulate her scientific research, creating a context for a critical analysis of the practice of science. She can be regarded as a critical reader and producer of science, and the outcomes of her reading are ambiguous works belonging to an intermediary space between art and science. Dion's work also bridges the two areas, but Dion moves in the opposite direction than does Hesse-Honegger. He is an artist who steps into the area of science, bringing the discursive concerns from contemporary art practice to an exploration of science.

Through the discussion of the work of these two artists, I have explored some of the ways in which art and science can interact with one another. In neither case has art been a mere disseminator of scientific ideas, but the relation between the artists with other disciplines is structured in a non-hierarchical manner. In this egalitarian dialogue, the question that follows is: what have art and natural science to offer each other? In the works considered in this chapter, science has provided access to a rich field of knowledge, methodological strategies and technology for the artists, with which they investigate how Western society has built and transformed our ideas about nature, as well as nature itself. But, what have Dion and Hesse-Honegger offered to science?

In order to approach this second question, I want to refer to the work of the French sociologist Edgar Morin, who has written about the complexity of the relation between science and society. Morin argues that there are ambivalent forces within the development of science that have significant consequences for society. Alongside the

benefits of science, such as technological development, the enrichment of our understanding, health, comfort, amongst other aspects, it has also generated negative outcomes to humanity, such as the capacity to self-destruction, pollution and involvement with wars and great atrocities. Morin argues that, while the super-specialization of disciplines increases knowledge about a part of a field, it also produces ignorance of everything else that falls outside that narrow area. It also has a general effect on society, as he explains that the 'non-specialist renounces prematurely all possibility to reflect about the world, life, society, leaving these matters to the scientists, who don't have time, nor conceptual means to do so.'⁵² The other 'evil' side of science identified by Morin, perhaps the most dangerous one, is the increasing power of science to manipulate life and nature, and allied with this is the dramatic impotence of scientists in relation to this same power. Morin argues that a common way for scientists to answer this question is to blame politicians, society, capitalism or totalitarianism for the corruption of science. But Morin argues that the accusation of the politician by the scientist is a kind of self-delusion or denial of the complex interrelations of science with society and politics. Thus, it is important that the scientist engages in the ethical discussions around the effects of his or her work on society.



43. View of the installation *Frankenstein in the Age of Biotechnology*, 1991

⁵² Edgar Morin, *Ciência com Consciência*, (Science with Conscience), original title *Science avec Conscience*, Bertrand Brasil, Rio de Janeiro, 1998, p. 17. (my translation).

Morin argues that the problem lies in the fact that the scientific method, in classical science, removed the subject from its practice. He cites Husserl's argument that the split between subject and object, removed the observer as a real social agent, from the scientific work. Following this argument, Morin concludes that science doesn't have the instruments to reflect on itself. He adds that the relation of technology and science with society complicates this problem even more, as they transform society, which in its turn also transforms science. Morin explains that, in industrial societies, the State has an active role in promoting and financing some areas of scientific research; and in return it uses the powers gained by the scientific investigation. He argues that, this techno-bureaucratic structure, together with a super-specialization of scientific work leads to a generalized irresponsibility. So, scientists are important actors in the field of State and military politics, but seem to have little room for action. Morin urges citizens to join these discussions: 'Science is a too serious process to be left only in the hands of scientists. I would add that science has become too dangerous to be left in the hands of politicians. In other words, science has become a civic problem, a problem of citizens.'⁵³

It is in this area that I see the contribution of art to science. In creating a reflective space to discuss scientific questions in a wider context, the artist can be a catalyst in this civic debate. Because science has become very specialized, the participation of scientists can enrich the discussion by bringing a clearer understanding of the content of scientific work into a critical debate. Collaboration between artist and scientist can be fruitful in this way, whereas the artist can bring his or her critical tools and engage in a careful consideration of scientific works. It is crucial here to emphasize that the role of

⁵³ Ibid. p. 133.

the artist is not one of disseminator of scientific truths, but one of a critical reader, or allegorist, who will bring the cultural and artistic perspective to the dialogue.

Dion and Hesse-Honegger have created with their works such a critical space for the discussion of science. Dion's criticism to the progressive discourse of science and its hardly 'neutral' engagement with industry, has pointed to the antagonistic aspects of scientific practice for humanity and the environment. Hesse-Honegger's realistic depiction of the mutations in nature has revealed that the 'creative' agent behind her projects, is not her imagination, but science itself. The critical evaluation of science by these two artists, in their superimposition of the artistic with scientific discourses, leads to a reflection on the ethical and aesthetic aspects of science, which can be overlooked by scientists in their restrictive relations with the economic, political and military spheres of society. Paul Virilio has made an analogy between genetic science and art, using a similar perspective as that taken by Hesse-Honegger and Dion, and all of their critiques of the scientific establishment get to the same point of limits to the scientific manipulation of life. Virilio regards contemporary science and biology as a new expressionist art form, calling it *transgenic art*⁵⁴ and *genetic expressionism*,⁵⁵ in which the freedom of science has no limits: '*Ethics or aesthetics?* That is indeed the question at the dawn of the millennium. If freedom of SCIENTIFIC expression now actually has no more limits than freedom of ARTISTIC expression, where will *inhumanity* end in the future?'⁵⁶

While Virilio, as well as Dion, argue against the 'redesigning' of humanity and agriculture by genetic manipulation, Hesse-Honegger is dealing mainly with incidental

⁵⁴ Paul Virilio, *Art and Fear*, trans. by Julie Rose, Continuum, London, 2003, p. 49.

⁵⁵ *Ibid.* p. 59.

⁵⁶ *Ibid.* p. 61.

side-effects of nuclear energy, an area in which the 'creation of monstrosity' is even more alarming, because it is uncontrolled. The monitoring of the risks involved in the effects of radiation is in the hands of government agencies, which have clear conflicts of interest, because, as a self-regulating system, they are not inclined to fund research that could possibly make their activities illegal.⁵⁷



44. Soft bug, *Miridae*, from Santa Maria, Münstertal, Switzerland, watercolour, 42 x 29.7 cm, 1992-93

The works of Dion and Hesse-Honegger point to the necessity of bringing conscience to the practice of science. This is precisely the same point Virilio makes in relation to genetics: 'The expressionism of a MONSTER, born of the labour of a science deliberately deprived of a conscience ... As though, thanks to the progress of genetics, teratology had suddenly become the SUMMUM of BIOLOGY and the oddball the new form of genius - only, not a literary or artistic genius anymore, but a GENETIC

⁵⁷ The environmental scientist Georges Dussart explains: 'Governments invested heavily in these agencies, partly through the military-industrial-nuclear (MIN) complex, and nuclear processors developed their own enormous financial and administrative momentum. It therefore benefited the MIN complex to underestimate and under-report risks and events and even to falsify documents. The Windscale fire is an example of the former, and the Salter Duck debate is an example of the latter.' Cited by Hesse-Honegger, in her *The Future's Mirror*, op. cit., preface.

GENIUS.⁵⁸ Perhaps we could add here the work of the 'nuclear genius', who is really unaware of the art it is creating at the moment of creation. What is unconsciously determining the whole process of production are the economic and political pressures, within the institutions of science. Hesse-Honegger comes and reveals this process through a deconstructive reading of the scientific discourse.

Hesse-Honegger is engaged with a 'realistic' aspect of nature, in her empirical observation and documentation of its material aspects. In her approach she has not articulated her practice with discussions around the social construction of the concept of nature, yet, her work has a sociological dimension, revealing the social networks and complex relationship of science with society, which get in the way of a 'neutral' representation of nature. In this way, her paintings indirectly relate to the social construction of nature by science, as she exposes the interference of the social and economic spheres, in the representation of mutated nature by mainstream scientists in the field of nuclear energy. Dion's approach can be regarded as being closer to the one of a historian or ethnographer,⁵⁹ as he is concerned with the interpretation of the fluid meaning of the term 'nature' in a variety of contexts, combined with an activism that addresses urgent environmental problems that our society has created, thereby making it also relate to the 'realist' aspects of nature. Allegory has proved a incisive tool in my analysis of both these artists' practices and as means of discussing how they deal with the antithetical aspects of this interdisciplinary field. I have examined their work and considered allegory in relation to several themes including: social construction and realism, subjectivity and objectivity, aesthetic appreciation and scientific observation.

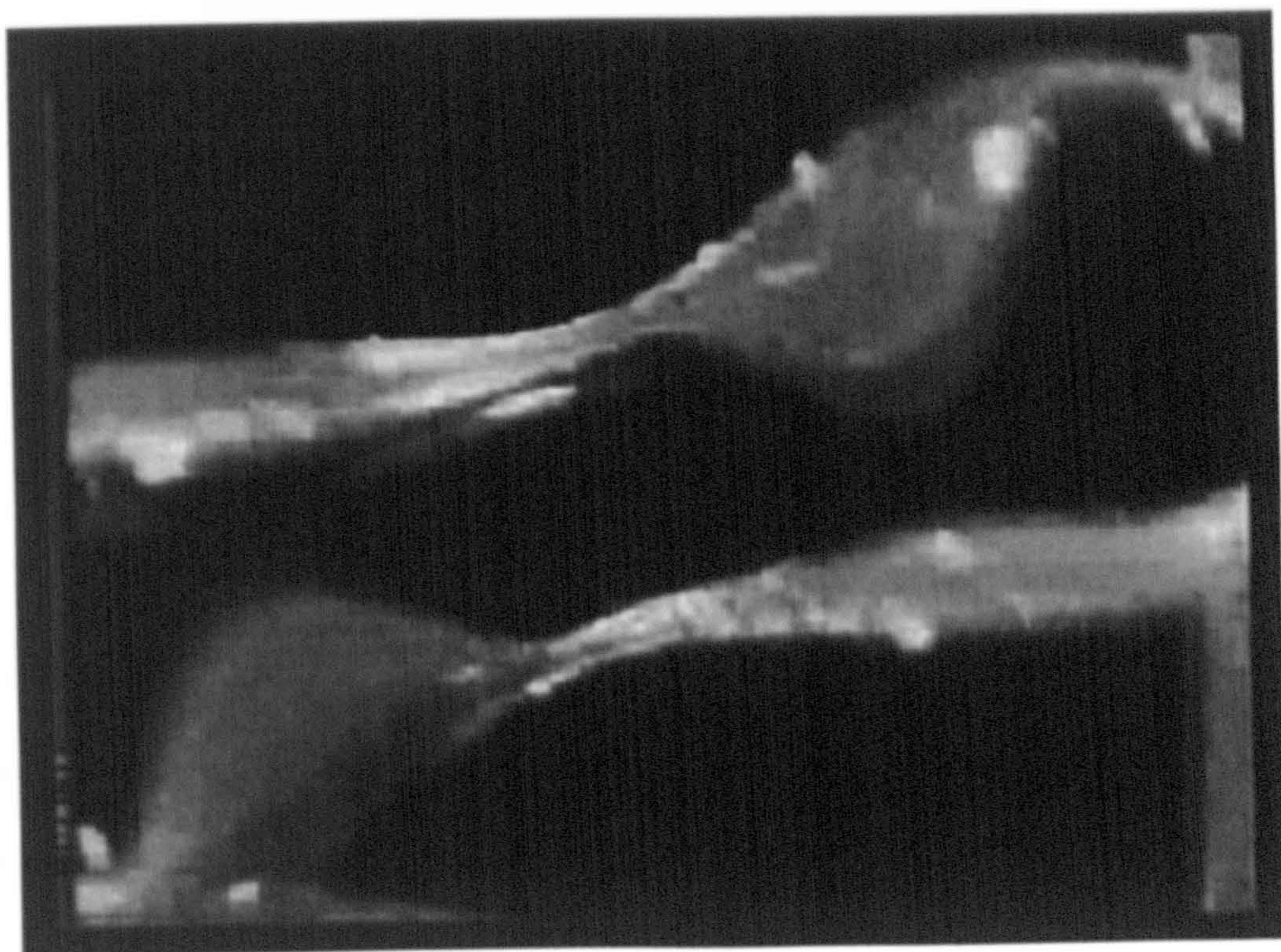
⁵⁸ Ibid. p. 50.

⁵⁹ As Hal Foster has remarked, in 'The Artist as Ethnographer', in *The Return of the Real: the Avant-Garde at the End of the Century*, the MIT Press, Cambridge, MA, 1996.

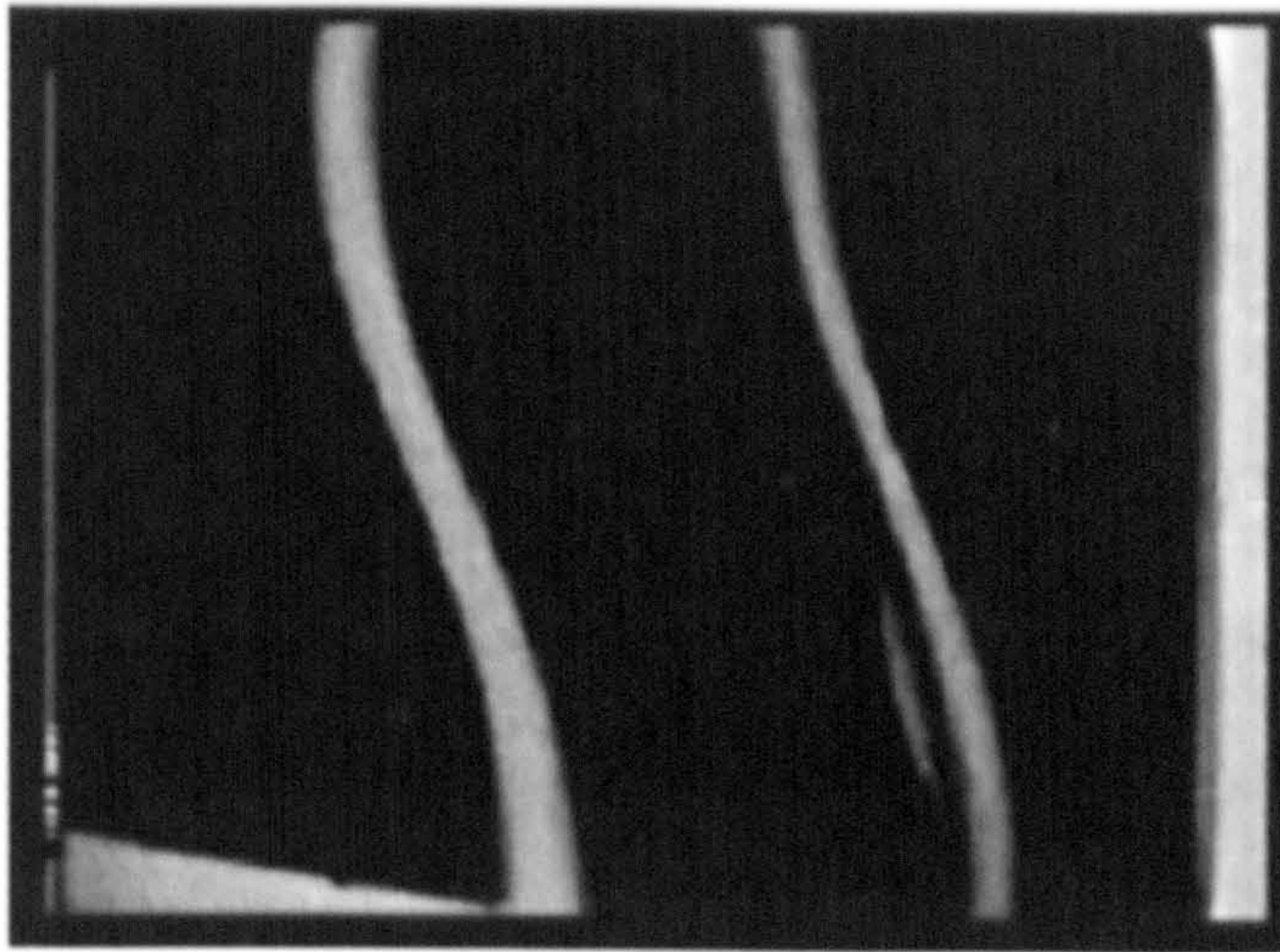
Dion and Hesse-Honegger, in their own way, are able to bridge the divide between such contradictory positions in their construction of complex and relevant artworks.

For both Dion and Hesse-Honegger, the context of art, through its social institutions, has provided a space for public scrutiny and debate on the issues of science and nature. I am interested in this reflective space as one that art can provide for society, even while knowing that it is, at various levels involved with the pressures and trends of an art market. Art is far from an autonomous field and artists are subject, as are scientists, to the rules of a 'cycle of credibility.' Yet, it is important to recognize that both artists and scientists need to have some degree of autonomy or agency in the production of their work, within the constraints of their social institutions, if art and science are to claim any critical and ethical stance for their practices.

Through the discussion of Dion and Hesse-Honegger's work, I have indicated issues concerning the field of art, science and nature, as a transitional space, a ground in which artists and scientists have started to move across, rather than a clearly defined area. It is in this blurred territory that our collaborative practice (asikainen&macêdo) has emerged. In the following chapters I will revisit some of the issues which surfaced in this chapter, in the discussion of three of our installations: *oceans*, *the first mild day of March*, and *air*.



Chapter 3

oceans, Invisible Seas46. Still from *oceans*, 2000

In this Chapter I examine the first case study of our collaborative work, the video installation *oceans* (2000). *oceans* is a collection of heterogeneous fragments taken from scientific and non-scientific sources. It focuses on the polarities of art and science, which, as discussed in the previous Chapter on Dion and Hesse-Honegger, are sometimes considered binary oppositions. *oceans* also reveals the instability of this polarisation, which identifies natural science with objectivity and provider of factual descriptions of the physical world, and regards all artistic approaches to nature as subjective, as in late Romantic and expressionist art.

Before engaging in a reading of *oceans*, I will discuss some of the historical aspects of video installation. This discussion serves to situate our approach in relation to this medium and its history. I focus on the history of video art which has been gradually written by artists, critics, curators and art historians. The combination of video art with installation in the 1990s, makes this history a complex one, because it brings early video works closer to sculpture and its traditional relation with institutions of art, which video artists in the 1960s were trying to oppose as part of an ‘utopian’ political project, as I argue in the following paragraphs.

Video Art and the Dialectics of Aesthetics and Politics

From its emergence in the 1960s, video art has been associated with politics. It is also indirectly related to discussions on art and technology (photography and film) which preceded its social appearance as an artistic medium. For example, Walter Benjamin regards technology as a powerful tool for artists and identifies it with the revolutionary project of the historical avant-garde. In his famous essay 'The Work of Art in the Age of Mechanical Reproduction' (1936) Benjamin argues that new technological developments in art 'brush aside a number of outmoded concepts, such as creativity and genius, eternal value and mystery'¹ and are 'useful for the formulation of revolutionary demands in the politics of art.'² Benjamin argues that the critical aspect of the technological media lies in the destruction of the ritualistic value of the work of art, that is, its 'aura.'³ Through mechanical reproduction the artwork loses its unique presence at a specific place and time. Benjamin argues that film and photography, are fundamentally different to painting and sculpture, because 'instead of being based on ritual, it begins to be based on another practice - politics.'⁴

This criticism is at the level of the medium and reception, not only at the level of subject-matter. In another text, 'The Author as a Producer' (1934) Benjamin argues that for an artwork to be of political significance, it needs to produce more than a thematic critique or exhibit the 'right (political) tendency', it also must have the right artistic

¹ Walter Benjamin, 'The Work of Art in the Age of Mechanical Reproduction', *Illuminations*, trans. by Harry Zohn, Fontana Press, London, 1992, p. 212.

² *Ibid.* p. 212. Benjamin makes a distinction between the critical and revolutionary use of film by Russian filmmakers and that of American cinema: 'Under these circumstances (capitalist exploitation) the film industry is trying hard to spur the interest of the masses through illusion-promoting spectacles and dubious speculations.' p. 226.

³ Walter Benjamin, defines aura: 'What is aura, actually? A strange weave of space and time: the unique appearance or semblance of distance, no matter how close the object may be.' in 'A Small History of Photography', *One Way Street*, Verso, 1998, p. 250. Photography and film destroy this distance between the viewer and a present object, by reproducing it to be viewed in various other contexts other than the original encounter with it.

tendency: '... the tendency of a work of literature can be politically correct only if it is also correct in the literary sense.'⁵ The criticism of traditional artistic media, produced at the level of the medium by photography and film, also assumed a political significance, because in the 1930s, traditional media in the style of social realism and neo-classicism were associated with totalitarian regimes (Soviet communism and Fascism), while avant-garde practices had been condemned and prohibited under those regimes. Thus, the critical power of an artwork does not lie only in the political orientation of the author, but also relies on its capacity to address conventions of representation. Later in the 1960s, video art developed as a reaction against Greenbergian formalist modernism, which had become associated with the American establishment, thus the medium assumed again a political character.

An anti-aesthetic attitude⁶ developed in art in the neo-avant-garde movements of the late 1950s and 1960s, which aimed at reviving the political principles of the historical avant-garde of the early 20th century and its anti-art practices. Video art emerged in this period,⁷ influenced by the possibilities opened for art from Duchamp's readymades, with an intensive questioning of the commodification of the art object and traditional notions of originality, authorship and subjectivity. Minimalism, conceptual art, performance, happenings, land art, video art, and body art emerged to challenge the hegemony of painting, and the aesthetics associated with it, as well as the commodification of art and issues of reception. Conceptual art was perhaps the most

⁴ 'The Work of Art in the Age of Mechanical Reproduction', op. cit., p. 218.

⁵ Walter Benjamin, 'The Author as a Producer', in *Understanding Brecht*, trans. By Anna Bostock, NLB, London, 1973, p. 86.

⁶ See Peter Bürger's discussion of the avant-garde and neo-avant-garde movements in Chapter 1, in which he privileges the political over the aesthetic. Hal Foster also calls post-modern art 'anti-aesthetic', which he defines as political: 'More locally, "anti-aesthetic" also signals a practice, cross-disciplinary in nature, that is sensitive to cultural forms engaged in a politic (e.g., feminist art) or rooted in a vernacular - that is, to forms that deny the idea of a privileged aesthetic realm.' 'Postmodernism: A Preface', in *The Anti-Aesthetic: Essays on Postmodern Culture*, edited by Hal Foster, first printed in 1983, First New Press, New York, 1998, p. xv.

⁷ Many authors consider Nam June Paik's 'Poop Video' produced in 1965 (with his Sony Portapak camera), the first piece of video art.

drastically iconoclast of all art practices that emerged in this period. The British collective Art&Language articulate one of their aims as: '...what conceptual art seems to be doing is questioning the condition that seems to rigidly govern the form of visual art - that visual art remains visual.'⁸ In arguing that a text could be considered an artwork, conceptual artists certainly expanded the limits of art, but, in doing so, they suppressed its visuality by identifying it with a 'conservatism without any acknowledgement as to how art can develop.'⁹ Some conceptual artists, such as Art&Language members, and Joseph Kosuth (art as an 'analytic proposition')¹⁰ sided the aesthetic and the visual with asocial, uncritical thinking, yet, their only subject-matter was art, and this kind of hermetic self-criticism and self-referentiality led them to disregard broader political, social and historical issues beyond the art world.¹¹

The suppression of the aesthetic and its opposition to politics is problematic, especially in relation to video art. Video is a visual medium but is also associated with conceptual art's legacy to contemporary art, that is, a conception of art in which the *idea* is a crucial part of the work. The medium of video can accommodate both the aesthetic and critical, visual and conceptual aspects of art in its reception, as argued by Benjamin: 'The conventional is uncritically enjoyed, and the truly new is criticized with aversion. With regard to the screen, the critical and the receptive attitudes of the public

⁸ Art&Language, 'Introduction' of the magazine's first volume (1969), in Alexander Alberro and Blake Stimpson, *Conceptual Art: A Critical Anthology*, MIT Press, Cambridge, MA, and London, 2000, p. 99.

⁹ Ibid., p. 104.

¹⁰ Joseph Kosuth in 'Art after Philosophy' argues: 'In this section I will discuss the separation between aesthetics and art; consider briefly Formalist art (because it is a leading proponent of the idea of aesthetics as art), and assert that art is analogous to an analytic proposition, and that it is art's existence as a tautology which enables art to remain 'aloof' from philosophical presumptions.' In *Conceptual Art: A Critical Anthology*, ed. A. Alberro and B. Stimpson, op. cit., p. 161.

¹¹ There are divisions in the theorization of conceptual art. While Terry Atkinson (Art&Language) argues that visuality was not relevant to the art status of an artwork, Lucy Lippard regards the visual aspect of conceptual artworks still artistically relevant, arguing that what was dematerialized was the *concept of art*, in her well-known essay 'The Dematerialization of Art' (1968). Lippard's idea of dematerialization does not mean that the art object is not materialized, but that art is not identical to the materials used to produce it: it is not medium-specific, but the artwork is in the idea, which takes various material versions.

coincide.¹² The argument against aesthetic or poetic artworks is that they would be apprehended uncritically by the viewer, but this is not necessarily always the case, as I will argue in this Chapter. This distinction between politics and aesthetics also permeates the discussions of the history of video art.

The association of video with mass media made it a rich medium for artists to realize the avant-garde ideal of blurring the boundaries between art and life. Television was used by early video artists with the intention of producing a critique of Western industrial society in the 1960s, as Martha Rosler argues: 'Not only a systemic but also a utopian critique was implicit in video's early use, for the effort was not to enter the system but to transform every aspect of it and - legacy of the revolutionary avant-garde project - to redefine the system out of existence by merging art with social life and making audience and producer interchangeable.'¹³ Early video artists had this ambition of subverting the media, by using it as a form of social empowerment. Rosler identifies two tendencies in early video art: a 'surrealist-inspired' one which explored its aesthetic and poetic aspects, and has been regarded as using video as a narcissistic or self-referential medium;¹⁴ and another 'documentary' stream, which is focused on social and political issues, carrying forward the 'utopian' avant-garde ideal.

Documentary art video gave rise to a diversity of forms, such as 'street video,' 'community or grass-roots video,' 'guerrilla television,' 'alternative TV,' and 'video essay,' which, according to Deirdre Boyle, were focused on counterculture issues, presenting the perspective of hippies, sexually liberated and drug-tripping urban culture,

¹² 'The Work of Art in the Age of Mechanical Reproduction', op. cit., p. 227.

¹³ Martha Rosler, 'Video: Shedding the Utopian Moment', in *Illuminating Video: and Essential Guide to Video Art*, Doug Hall and Sally Jo Fifer (eds), Aperture Foundation, New York, 1990, p. 31.

¹⁴ Rosalind Krauss has described early use of video by artists as narcissistic: 'artists endlessly talking to themselves.' In *A Voyage on the North Sea: Art in the Age of the Post-Medium Condition*, Thames and Hudson, London, 2000, p. 30. See also her article 'Video and Narcissism', *October*, no. 1, Spring 1976.

local community problems and the feminist, gay, anti-racist and post-colonial political movements.¹⁵ Boyle remarks that the most influential authors amongst video artists in the 1970s were Marshall McLuhan and Buckminster Fuller, who had the utopian project of decentralizing television through the use of video and cable TV as alternative and critical means for activist interventions. Boyle says that the low-quality and free-handling camera style of these documentary videos had an emphasis on the immediacy of the experience and the process of production rather than the end product, which distinguished them from mainstream commercial television. Boyle mentions underground video groups that emerged in the USA in the 1960s, such as Videofreex, People's Video Theater, Global Village, and Raindance Corporation.¹⁶

The 'Surrealist-inspired' or 'art video' category embraces a vast field of practices, including sculptural experiments with television sets, video projections and multimedia performances. This 'artistic' tendency is more interested in exploring the aesthetic and formal aspects of the medium, rather than focusing on its instrumental use as a communication tool, as in the 'documentary' tendency of art video. In early Fluxus multimedia installations,¹⁷ context becomes part of the content of the artwork, as architectural and sculptural elements are carefully considered in the video presentation, and this is the basis of video installation today. Other Fluxfilms of the 1960s and 1970s by Nam June Paik, Shigeo Kubota, Mieko Shiomi, Yoko Ono, Wolf Vostell used mainly television sets instead of projections for video presentation. In 1960s Bruce

¹⁵ Deirdre Boyle, 'A Brief History of American Documentary Video', in *Illuminating Video: and Essential Guide to Video Art*, Doug Hall and Sally Jo Fifer (eds), Aperture Foundation, New York, 1990, p. 54.

¹⁶ Ibid. p. 54. According to Boyle, Top Value Television (TVTV), associated with Videofreex and Raindance artist's groups, produced alternative cover of political events, developing a subjective approach to news reportage, as a critique to the 'objective' neutrality of professional journalism. Boyle says that by the mid-1970s the collective groups were replaced by individuals, who moved on to work for the media industry or establish themselves as independent producers. According to her, in the 1980s, individual producers, such as Dan Reeves, Skip Sweeney, Edin Velez, Victor Masayeva Jr., combined the aesthetic explorations of video by artists with documentary techniques, producing poetic 'video essays,' as Edin Velez called it.

¹⁷ Michael Rush describes one of these installations by Nam June Paik called *Zen for Film* (1962-64), which consisted of a clear 16 mm film projected onto a screen, next to a piano and a double bass. It was presented at the

Nauman and Vito Acconci, produced single-channel, 'low-tech' videos (as a critical gesture against the use of sensuous imagery in commercial television), exploring video as a mediation between the viewer and the artist's private space in the studio by performing activities of extreme or obsessive behaviour.¹⁸ Multimedia performances of the 1960s by Robert Rauschenberg, John Cage, Merce Cunningham, Robert Morris also made use of video and other 'non-art' technologies. Minimalists or conceptual artists Robert Wilson and Dan Graham explored video in relation to the architecture of public and private spaces, interior design and the physical space in their performances. Joan Jonas since the 1970s has mixed film, video and sculptural elements in her performances. These early practices and uses of video developed into various ways in the 1990s and up to the present. With technological innovations in projection devices, digital cameras and editing equipment (such as AVID and Final Cut Pro, amongst others) video artworks changed dramatically from single-channel presentation to multiple projection video installations of various sizes, often combined with sculptural elements.

Rosler seems to side with the political tendency of documentary video and is critical of the aesthetic one, which she regards as too close to the art establishment. She argues that art institutions tend to take an incorporative approach, suppressing the transgressive element of video. Rosler calls this process the 'museumization of video art' which: 'contains and minimizes the *social negativity* that was the matrix for the early uses of video.'¹⁹ Rosler argues that the aesthetic root of video conforms with the formalism of modernism which video art sought to criticise. She sees video installation as a

Fluxhall (Maciuna's loft in New York), according to Michael Rush, in *New Media in Late 20th-Century Art*, Thames & Hudson, London, , 1999, p.25.

¹⁸ Bruce Nauman's *Video Corridor* (1968) has a performative aspect dealing with issues of surveillance and viewer participation, which are elements often explored in performance art. In the 8 mm film *Three Adaptation States* (1970), Vito Acconci records his movements in the studio, which marked his move from poetry to performance and video art, as Michael Rush argues in *New Media in Late 20th-Century Art*, op. cit., p 52.

successful domination of video by the establishment: 'Museumization has heightened the importance of installations that make video into sculpture, painting, or still life, because installations can live only in museums - which display a modern high-tech expansiveness in their acceptance of mountains of obedient and glamorous hardware.'²⁰ It is a pertinent point that expensive production costs and logistic arrangements required in some video installations could lead to artistic compromises determined by both funding and exhibition space, but there have been compromises in the 'political branch' of video art too, as Marita Sturken has argued.²¹ The fact that video installation requires the museum or gallery space, on the other hand, gives it a public and perhaps more democratic character, as it is relatively more resistant to commodification at the scale of the private art market. Even if private collectors (such as Charles Saatchi) buy installation art, they might ultimately display it publicly as this kind of work requires larger spaces and are not so easy to incorporate in a private home as are painting, photography and other object based works.²²

The critic and curator John G. Hanhardt²³ has contributed to the development of video history from the institutional perspective, of which Rosler is very critical. Hanhardt focuses on Nam June Paik and Wolf Vostell as examples of artists who appropriated the

¹⁹ Ibid. p. 44.

²⁰ Ibid. p. 49.

²¹ Marita Sturken, 'Paradox in the Evolution of an Art Form: Great Expectations and the Making of a History', in *Illuminating Video: and Essential Guide to Video Art*, Doug Hall and Sally Jo Fifer (eds), Aperture Foundation, New York, 1990. Sturken remarks that most video collectives were perceived as non-profit and egalitarian organizations, but in fact, were male-dominated and some of them, such as Rmandance, began as a profit-making corporation. She also argues that although the collectives were regarded as antiestablishment, they had close relations with the entertainment industry. They had an ambivalent attitude towards mainstream television, because they were in principle against it, while at the same time wanting their works to be broadcasted on it.

²² Ultimately all kinds of art are commodifiable, because we live in a commodified society, and the only way to avoid commodification would be to change the system (which is beyond the power of art). It can be argued that video art as a reproducible artform offers a little more resistance to commodification than any unique art object. The problem is that the economic value asserted to art is no longer related to its materials or physical properties, but to its ideas and the value it acquires institutionally.

²³ John Hanhardt was curator at New York's Guggenheim Museum, and head of the Film and Video Department at the Whitney Museum of American Art. Author of the books: *Nam June Paik, A History of the American Avant Garde Cinema* and *Video Culture: A Critical Investigation*. He points to the importance of the curatorial museum culture in validating and promoting new media works.

television as an icon in order to fuse the social with the aesthetic. Hanhardt traces their artistic genealogy as members of Fluxus, and their influence from the Marcel Duchamp and John Cage lineage. Their incorporation of non-art materials and media technology into artworks is regarded as part of the anti-art strategies of the 1960s. Hanhardt investigates Paik's concept of dé-collage, describing it as a technique of deconstructing images from mass-media television in order to show their hypocrisy,²⁴ while, for Wolf Vostell, dé-collage meant the 'tearing off' of images to reveal new combinations, and to critique the ideology associated with television.

Rosler is critical of such 'official' histories of video art, particularly questioning the mythification of Nam June Paik as the major figure in early video art because it disregards the great variety of practices in the field of video at that time. Rosler also critiques Paik's sexist use of the female body in his work (in his *Concerto for TV, Cello and Videotape*, 1971): 'The hero stands up for masculine mastery and bows to patriarchy, if only in representation. The thread of his work includes the fetishization of a female body as an instrument that plays itself, and the complementary thread of homage to other famous male artist-magicians or seers (quintessentially Cage).'²⁵

Rosler argues that although Paik was one of the pioneers in bringing the TV into the art world, he did not provide a counter discourse to TV messages, as other artists did, who, according to her, were much more politically engaged and used video to articulate socially empowering messages.²⁶

Marita Sturken argues that the relatively rapid historicization of video art by institutions is related to their funding strategies and institutional growth, through the creation of

²⁴ John G. Hanhardt, 'Dé-collage/ Collage: Notes Toward a Re-examination of the Origins of Video Art', in *Illuminating Video: and Essential Guide to Video Art*, Doug Hall and Sally Jo Fifer (eds), Aperture Foundation, New York, 1990, p. 75.

²⁵ Ibid. p. 45.

new departments in museums and agencies to accommodate the new 'genre.' She also identifies technological aspects of the medium as another reason for the compulsive necessity to historicize video art, as the rapid deterioration of video tapes, requires them to be historically retrieved through interpretative texts before they are lost for ever. At present, digital technology also advances very quickly, making relatively recent material (from the 1970s and 1980s) look too historical and poor in quality, when compared even to the 'domestic' videos of the late 1990s. Sturken recognizes the limits that technology has in the aesthetic possibilities of video art, but she is against a 'technological deterministic' approach to its historicization, which tends to ignore the contextual aspects of such practices in relation to other art movements of the 1960s. Sturken argues that the low-tech appearance of early video artworks was also intentional, in order to criticize the aestheticism of the art establishment, that was (as I stated earlier) formalist Greenbergian modernism. Artists in the 1960s were interested in bringing the social and political into the realm of art, and portable video cameras made it technically possible to capture reality in real time. She argues that aesthetics and technology are intrinsically connected in video art: 'The aesthetic changes in video, irrevocably tied to changes in its technology, consequently evolved at an equally accelerated pace. For instance, within a short period of time, digital imaging and frame-accurate rapid editing have replaced real time as the most prevalent aesthetic styles. Whereas in 1975 it was still standard fare to produce a tape in real time, by 1982 it had become (when rarely used) a formal statement.'²⁷

Thus, contemporary video artists have manipulated the diverse technological tools that are available, and inherited the legacy of the historical and neo avant-garde, to convey

²⁶ Ibid. p. 47.

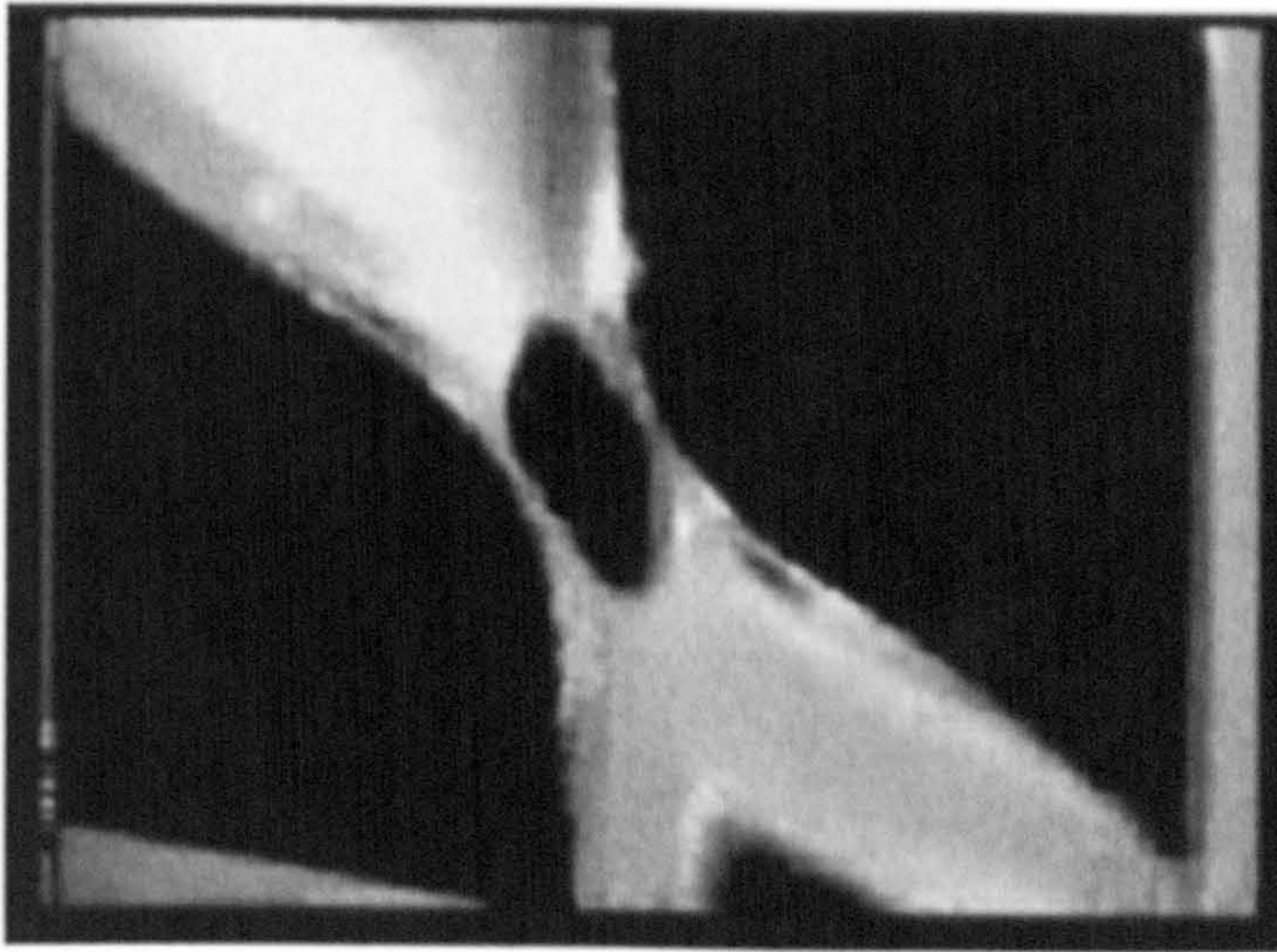
²⁷ Marita Sturken, 'Paradox in the Evolution of an Art Form: Great Expectations and the Making of a History', in *Illuminating Video: and Essential Guide to Video Art*, op. cit., p. 103.

aesthetic and political messages through their artworks, without having to undermine their visuality. In recent video art the poetic and sensuous aspect of images are intertwined with a variety of social, political and psychological issues. Bill Viola, Susan Hiller, Rodney Graham, Isaac Julian, Stan Douglas, Steve McQueen, Tony Oursler, Krzysztof Wodiczko, Laurie Anderson, Shirin Neshat, Doug Aitken, Mathew Barney, Robert Lepage, Graham Gussin, and Dalziel&Scullion, amongst others, have all produced poetic video installations, in which they explore issues related to memory, mysticism, aesthetics, sexuality, anthropology, colonialism, fantasy, desire, race, gender, immigration, social exclusion, identity, politics, architecture amongst other subjects. For this great variety of issues and ways to present them, it is difficult to clearly separate aesthetics from politics in recent art videos, as the two aspects have become inseparable. A subversive political role could be claimed for video as a technological medium, (in the Benjaminian sense), before it was incorporated institutionally, as it initially provided a level of disruption to the traditions of the establishment in the 1960s. But after it became a new genre of art, its character of 'non-art,' and its initial utopian revolutionary ideal vanished, in both 'documentary' and 'aesthetic' trends.

Since the 1960s, video art has explored multi-channel projections and combinations with installation art, but in the 1990s and currently, video installation is perhaps the dominant form of presentation of video art, which includes large outdoor projections as well as projections in specific sites, art and non-art museums. The dialectic of aesthetics and politics associated with video is maintained, addressing various social issues, without the illusion of being 'outside the system', aware of its social and commodity aspect. Our own video installations have developed in the context of this later stage of video art's history, thereby being more influenced by the 'aesthetic

tendency' of video art, which is closer to a cinematic experience rather than the discussions around the use of television from early video works. I am interested in the dialectics between the political and aesthetic aspects of art. In the following discussion of the video installation *oceans* I investigate the critical aspect of aesthetics in the interface of art and science.

oceans: the Dynamic of Art and Science



47. Still from *oceans*

What strange adventures *water* has known, and what a great number of things! ... But her ways of knowing are singular. Her substance becomes memory: she grabs and eats a trace of all she has skimmed, bathed, rolled: from the limestone she has dug out to the shelters she has washed, and the rich sands that served as her filters. Should she spout into the daylight, she is charged with primitive powers of the rocks through which she traveled. She carries away bits of atoms, elements of pure energy, bubbles of subterranean gases, and even at times the earth's intimate heat.²⁸

The video installation *oceans* shows images of water in a diversity of contexts. It starts with a sequence of micro experiments with water drops in non gravity space (taken from the NASA educational archives), which float and move very quickly in the space, giving the idea of dynamic tension at a microscopic level. Although it is not a literal

²⁸ Paul Valéry, 'In Praise of Water', translated by Christine Izzary, in *Deconstruction: a Reader*, edited by Martin McQuillan, Edinburgh University Press, Edinburgh, 2000, p. 89. Original source: Paul Valéry, *Oeuvres*, Paris, Gallimard, 1957-69, vol. 2, pp. 202-3.

image of the infinitely small, it is an allusion to it. Added to this sequence there is a brief reference to water as bodily fluids and emotions: a close-up of a tear drop which slowly rolls from the eye to fall into the next sequence of 'outer space' images,²⁹ which are clips of water drops that mimic planets or celestial bodies floating in outer space. This sequence also evokes the idea of the 'primeval soup.' Dissolving in and out of this sequence are two stills: 'water vapour near a dying star' and 'water in Orion,' followed by clips of Jupiter's moon, Europa, from a science documentary entitled 'Terra Firma,' part of a series entitled *The Planets*.³⁰

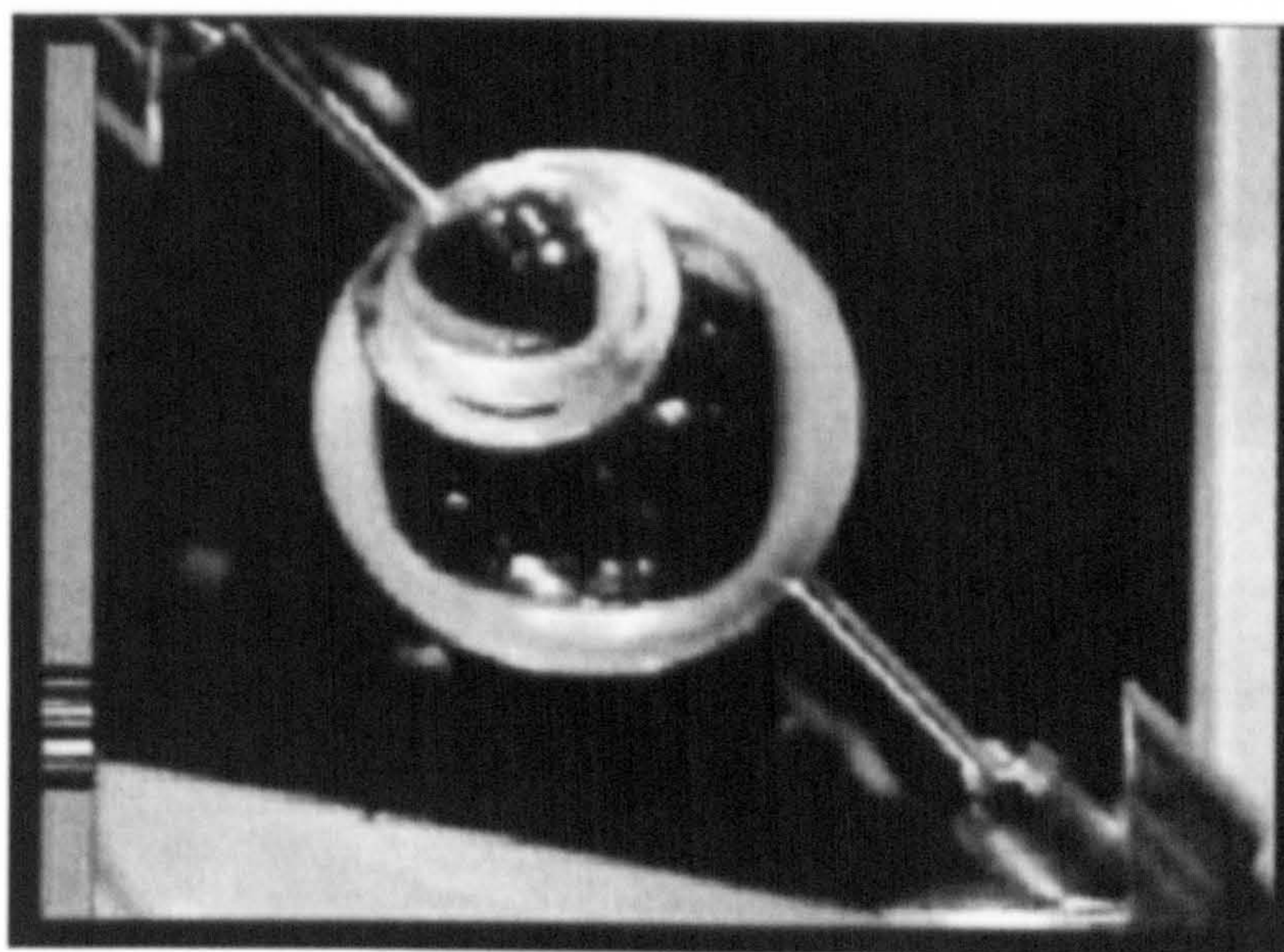
The fluidity of language and the tendency of things to become diluted with the passage of time make memory like water, a formless element that permeates everything, registering the energy of all that has come through its path. Water is also the point of origin of life in this planet, as primal cells emerged in the primitive seas around two billion years ago.³¹ The video installation *oceans* is a reflection on water, and the concept of origin is a crucial entry point for the engagement with its dynamic. Origin, for Benjamin, is 'a historical category involved in a dialectics of a movement of singularity and repetition,' a process in which 'the existent emerges from the process of becoming and disappearance.'³² Meaning in art is an elusive element, emerging and disappearing in different contexts. *oceans* has been built as a double structure, bringing extracts of scientific films to the realm of the artwork. In this structure the meaning associated with the original context of the scientific images is transformed. The notion of authenticity that is so important for verification in science, becomes diluted in the ambiguous construction of the artwork.

²⁹ Participation of London based actress Kerry Ann Smith, filmed in May-June 2000.

³⁰ *The Planets* was produced and transmitted by the BBC (29/04 - 17/06/1999), written and produced by David McNab, James Younger, Jacqueline Smith, Becky Jones and co-produced by the Arts and Entertainment Network, New York. It contained a mixture of archival imagery from NASA and computer generated graphics.

³¹ According to evolutionary theories from Western science, but water is also associated with creation of life in other cosmologies.

oceans engages in a reading of the scientific text, unfolding the process of scientific production associated with the imagery appropriated. With the incorporation of the scientific fragments into the fluid structure of *oceans*, the scientific imagery is allegorically devalued, loosing its 'aura' of truth, its value as factual evidence, to become only a sign in a collage of various elements. The meaning of *oceans* emerges from this dynamic between the history and origin of the appropriated fragments.



48. Still from *oceans*

A water drop floating in space is injected with a fluid in the opening clip of *oceans*.³² Another drop of water, the small fragment of a vast ocean, is sculpted by sound waves which make it rotate, oscillate its shape, move in various directions and split itself into two (fission). These events happen in a Microgravity space in a laboratory, created to mimic the conditions under which water drops float in distant places in outer space,

³² Walter Benjamin, in the 'Epistemo-Critical Prologue', *The Origin of the German Tragic Drama*, op. cit., p. 45.

³³ This experiment was part of a research project lead by Dr. Robert E. Apfel (Yale University, New Haven, Connecticut), which investigated the surface properties of liquid drops in the presence of surfactants (substances that migrate toward free surfaces or interface between two liquids) to study molecular forces acting in the surface layer of water drops. According to NASA reports on the first United States Microgravity Laboratory experiment, water drops were squeezed acoustically and then released, a procedure which created free oscillations in the shape of the drop, that were later measured. A second Drop Dynamics Experiment was conducted by Dr. Taylor Wang, (Vanderbilt University, Nashville, Tennessee), who researched the dynamics of liquid drops in low-gravity, in experiments on the Second United States Microgravity Laboratory mission, which included the study of the fission of rotating drops and

billions of light years away from the earth.³⁴ In such experiments scientists measure the flexibility of water, trying to quantify its fluidity. The experiment is quite emblematic of the scientific approach to nature and language, in its attempt to pin down their elusiveness into a mathematical system of representation. Trying to fix fluidity is a paradoxical task. In handling language, scientists try to secure their terrain, avoiding the slippery and ambiguous aspects of its linguistic structure, translating nature into a stable and reliable rational system, as Adorno and Horkheimer argue:

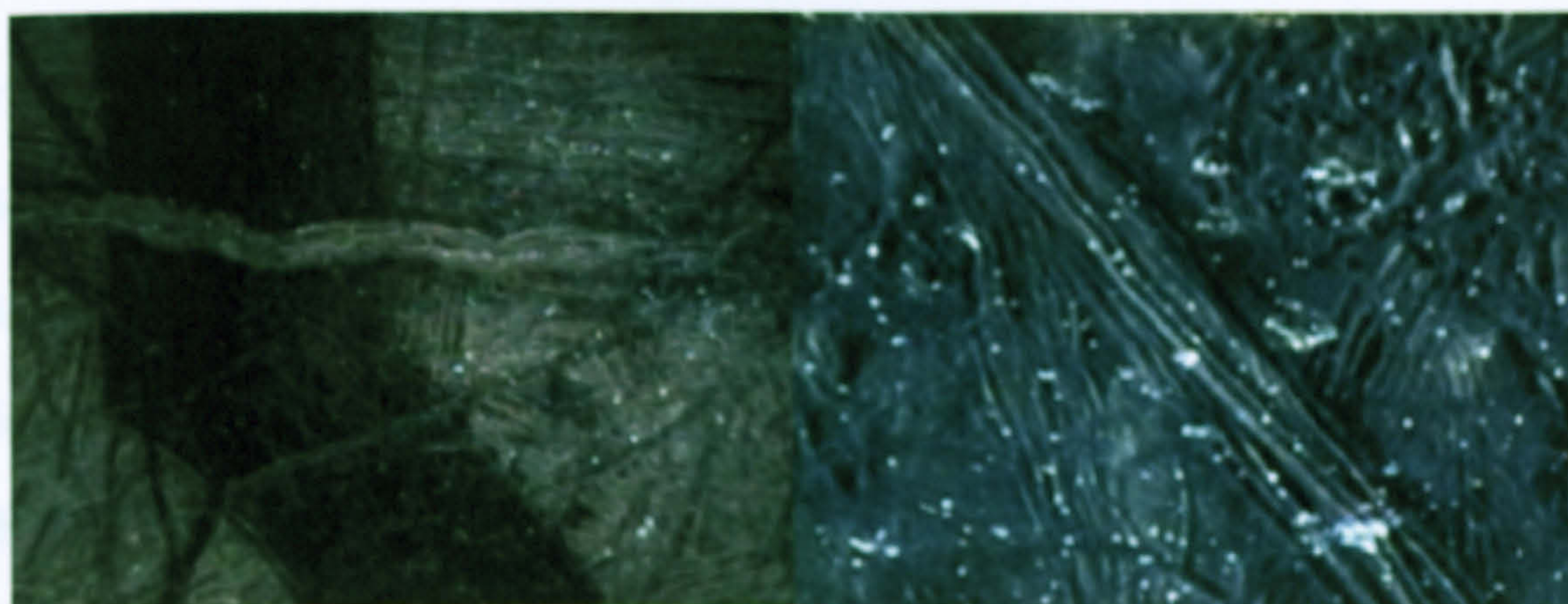
For enlightenment the process is always decided from the start. When in mathematical procedure the unknown becomes the unknown quantity of an equation, this marks it as the well-known even before any value is inserted. Nature, before and after the quantum theory, is that which is to be comprehended mathematically; even what cannot be made to agree, indissolubility and irrationality, is converted by means of mathematical theorems. In the anticipatory identification of the wholly conceived and mathematized world with truth, enlightenment intends to secure itself against the return of the mythic.³⁵

Thus, the use of mathematical language by scientists is a way to avoid the ambiguity of visual and textual language. Ambiguity is the opposite of clarity and the unity of meaning with signified. In the discourse of natural science there is a desire for the sign to coincide with the referent in nature, and language to identify with the object of experience as a proof or reification of theory. Perhaps a parallel could be made between the discourses of objectivity in science and of subjectivity in Romantic art: both wish to have an immediate relation to nature, ignoring the mediation of culture, inherited traditions and social aspects of the production of their works. We find in both the wish to repress the process of signification, a desire for the signifier to *be* the signified, not a reference to it. Gail Day explains this desire to coincide: ‘... the symbol-object was

study of the centring mechanism in oscillating compound drops (the centring of a drop of a liquid inside another liquid). More information can be found at <http://liftoff.msfc.nasa.gov/Shuttle/USML2/science/dde.html>

³⁴ Scientists designed a machine - the Drop Physics Module- to observe and register experiments in fluid physics phenomena. Film and video cameras record the behaviour of the water drops for subsequent analysis. These experiments were conducted inside a module called Spacelab, which is a working laboratory aboard the space shuttle Columbia, using the microgravity of low earth orbit for scientific and technological investigations. Fred Leslie (researcher at NASA's Marshall Space Flight Center) explains that the study the movement of fluids in microgravity, can lead to a better understanding of the fluid dynamics of stellar and planetary atmospheres. For more information visit their website at <http://liftoff.msfc.nasa.gov/Shuttle/USML2/science/dde.html>

directly entwined with meaning - meaning was immanent to it, and did not require the intervention, or mediation, of conceptual analysis, nor even a subject to activate its significance.³⁶ Allegory, on the other hand, points to the disjunction between sign and meaning. Access to meaning in allegory is not acquired by an immediate perception of form, but it emerges from the reading of a series of signs, not to be deciphered through a conventional code, but through endless possible interpretations.³⁷ Yet, allegory does not suspend the relation of the sign to the referent but works instead to problematize the activity of reference.³⁸



49. & 50. Stills from *oceans* showing images of the icy surface of the moon Europa

A stable relation between sign and referent is the basis for formulating theories in the field of planetary geology, as the relation of the scientist with his or her object of study is necessarily mediated by technology. While researching Jupiter's moon, Europa, scientists have produced a series of images, some of them quoted in *oceans*, which reveal Europa's geography to be mainly constituted of a smooth icy surface, without

³⁵ Theodor Adorno and Max Horkheimer, *Dialectic of Enlightenment*, op. cit., pp. 24- 25.

³⁶ Gail Day, *Political Transformations and the Practices of Cultural Negation in Contemporary Art Theory*, unpublished PhD thesis, Leeds University, 1996, p. 188. Day is here referring to Benjamin's opposition to the concept of the symbol as proposed by the neo-Kantians Stefan George and Ludwig Klages.

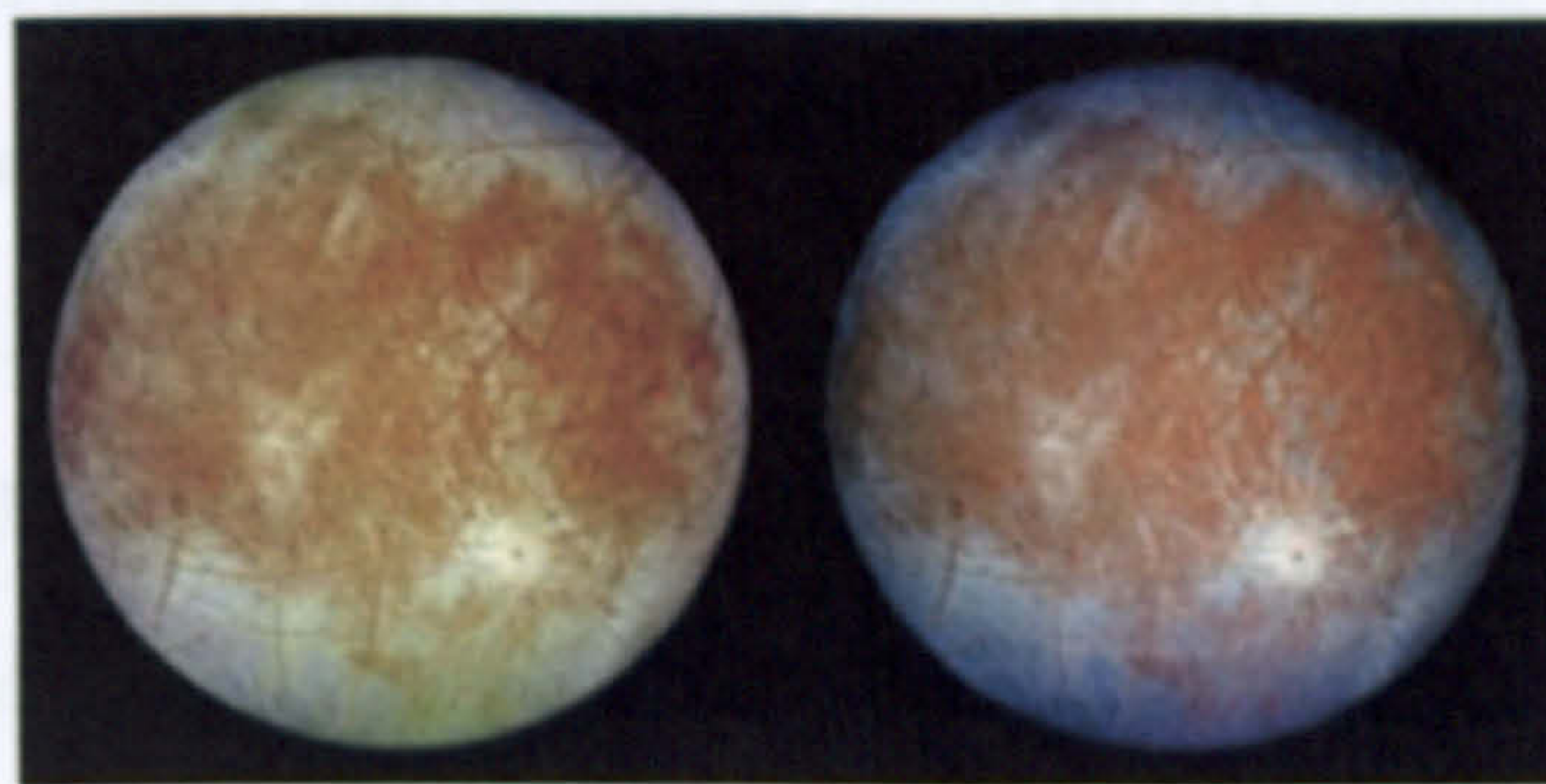
³⁷ Here I refer to Benjamin's concept of criticism, discussed in Chapter 1.

³⁸ See discussion by Owens and de Man in Chapter 1.

craters or mountains, but with long cracks and lines.³⁹ Scientists have taken these images, produced by the Galileo spacecraft, as evidence to support a hypothesis on the existence of liquid water oceans under Europa's icy surface. The process of technologically reproducing reality with a camera, gives an illusion of immediacy, that Benjamin describes as such:

[...] the mechanical equipment has penetrated so deeply into reality that its pure aspect freed from the foreign substance of equipment is the result of a special procedure, namely, the shooting by the specially adjusted camera and the mounting of the shot together with other similar ones. The equipment-free aspect of reality here has become the height of artifice; the sight of immediate reality has become an orchid in the land of technology.⁴⁰

Thus, for the scientists the relation of the image with a referent in the world is crucial in their use of video and photography, despite the complications involved in this process. Scientists are not concerned with the ambiguous aspects of image-making (which are of interest to artists), and try to recover a relation of immediacy between the camera and the parts of the world which it records. The scientist handling imagery of Europa is like Benjamin's beholder of a photograph, someone who 'feels an irresistible urge to search such a picture for the tiny spark of contingency, of the Here and Now.'⁴¹



51. Images of Europa showing the 'natural' (left) and manipulated (right) colours of the surface⁴²

³⁹ Images of Europa quoted in *oceans* were produced by NASA's spacecraft Galileo, which was launched in 1989, arriving at Jupiter in 1995, having extended its primary mission to observe Europa until December 1999.

⁴⁰ Walter Benjamin, in 'The Work of Art in the Age of Mechanical Reproduction', op. cit., p. 226.

⁴¹ Walter Benjamin, 'A Small History of Photography', op. cit., p. 243.

⁴² According to the Jet Propulsion Laboratory, the left image shows the approximate natural colour appearance of Europa, while the one on the right is a manipulated version combining violet, green and infrared images to enhance colour differences in the predominantly water-ice crust of Europa. The image was taken on September 7 1996, at a range of 677,000 kilometres by the Galileo spacecraft, and processed by Deutsche Forschungsanstalt fuer Luftund

The mediation of technology in the representation of the world brings us back to the discussion of video art at the beginning of this Chapter. In *oceans* we have been concerned, not with the art and non-art tension of the early history of video art (which was part of a broader project of institutional critique), but with the dynamic between representation and the natural world. The fragmentary nature of images technologically produced, and the tension between the 'original' and 'reproduced' world bring video close to allegory. Benjamin's reflections on film, suggest that he regarded film as an allegorical medium: 'Our taverns and our metropolitan streets, our offices and furnished rooms, our railroad stations and our factories appeared to have us locked up hopelessly. Then came the film and burst this prison-world asunder by the dynamite of the tenth of a second, so that now, in the midst of its far-flung ruins and debris, we calmly and adventurously go traveling.'⁴³ The fragmentation of reality into series of photographic moments, which give the illusion of movement in the film technique, is very close to the structure of allegory as formulated by Benjamin.

In Chapter 1, I discussed how allegory differs from symbol at a temporal level. The apprehension of the symbol is involved in an instant act of intuition; while allegory accumulates a series of fragments, which break the unity between 'essence and form' in the symbolic work. The paradoxical proposition of the fragment to present the unrepresentable, is also part of the dynamic between reality and film or video. Film, photography and video do not present the totality of reality, as the procedures of framing, selection and editing of images are closely connected to socially constructed and inherited traditions in the way of seeing and representing the world. Yet, there is a level of immediacy to the process, as something in front of the camera is reproduced (assuming manipulation has not occurred). The selection and appropriation of

fragments of reality from the world and the totality of the world stand in a dialectical position, as the fragment can lead to an endless reflection on the world.

Wim Wenders articulates this relation of photography and film with an 'original' aspect of the world:

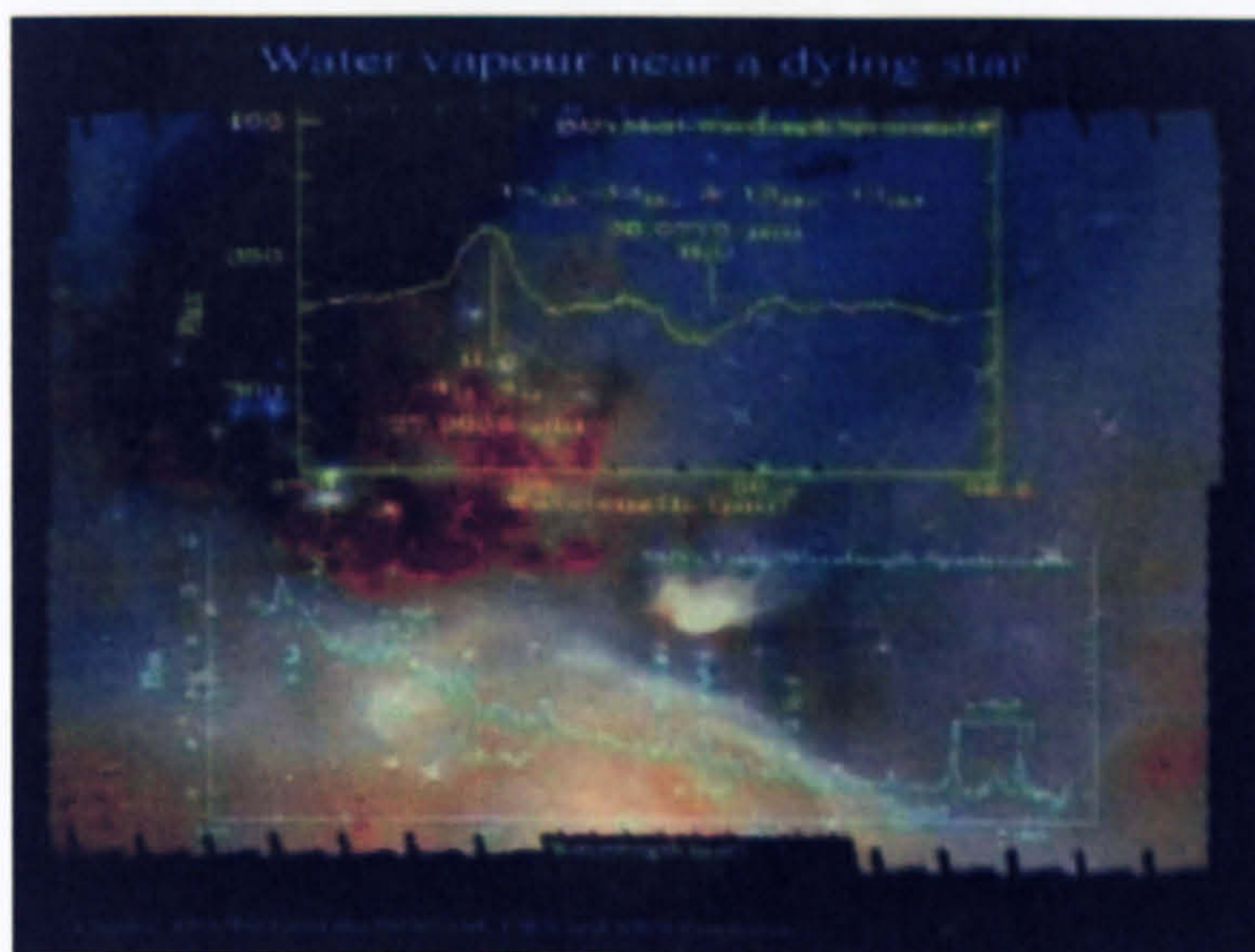
Photography is all about the relation between the eye - and the mind and heart behind it - and the object in front of it, no matter whether that is a landscape, a person or a thing. That relation is formed by an intention, by a desire, by care, by honesty, by spontaneity, by a certain willingness to expose yourself just as much as the object, by humility, and often also by pride or cynicism. But in any case, there is that relationship, and it is governed by a certain morality. That morality can only exist as long as you can verify it, as long as there is the notion of an original.⁴⁴

In this interview, Wenders was arguing against digital photography, which looses this relation to the 'real' object in front of the camera. The degree of manipulation of a photographic image or a piece of video can vary enormously, so it is difficult to generalize in terms of medium, the degree of 'reality' or fiction an image would present. We have sought to explore in *oceans* the dialectics between 'realism' and 'social construction' which is an important aspect of the use of video by scientists (even if unconsciously intended).

Technology is used by scientists for the purpose of cognition, and as a way to penetrate macro and micro spaces going beyond the limitations of human physical senses. In the discussion of the historical aspects of video art, I have argued that the aesthetic perspective also offers a critical way of engaging with the world. In *oceans* a tension is created between a poetical gaze and a scientific one. The latter is interested in discovering, classifying, quantifying what is in front of the subject, while the former relates to the images in a less defined way. In viewing the same imagery, such as 'water

⁴³ Walter Benjamin, 'The Work of Art in the Age of Mechanical Reproduction', op. cit., p. 229.

drops near a dying star' or 'water near Orion,' as artists, we consider the aesthetic, linguistic, formal and conceptual aspects of the image, and its relation to a variety of other signs, rather than focusing mainly on the relation between the signifier and referent, as planetary geologists do in their research. In the image of 'water near a dying star,' the dialectics of origin and history comes full circle, as water is present in the origin, a promise of life and also in the process of dying. Water and beauty, in this case, are associated with violence, disruption and ruin in the birth and death of stars.

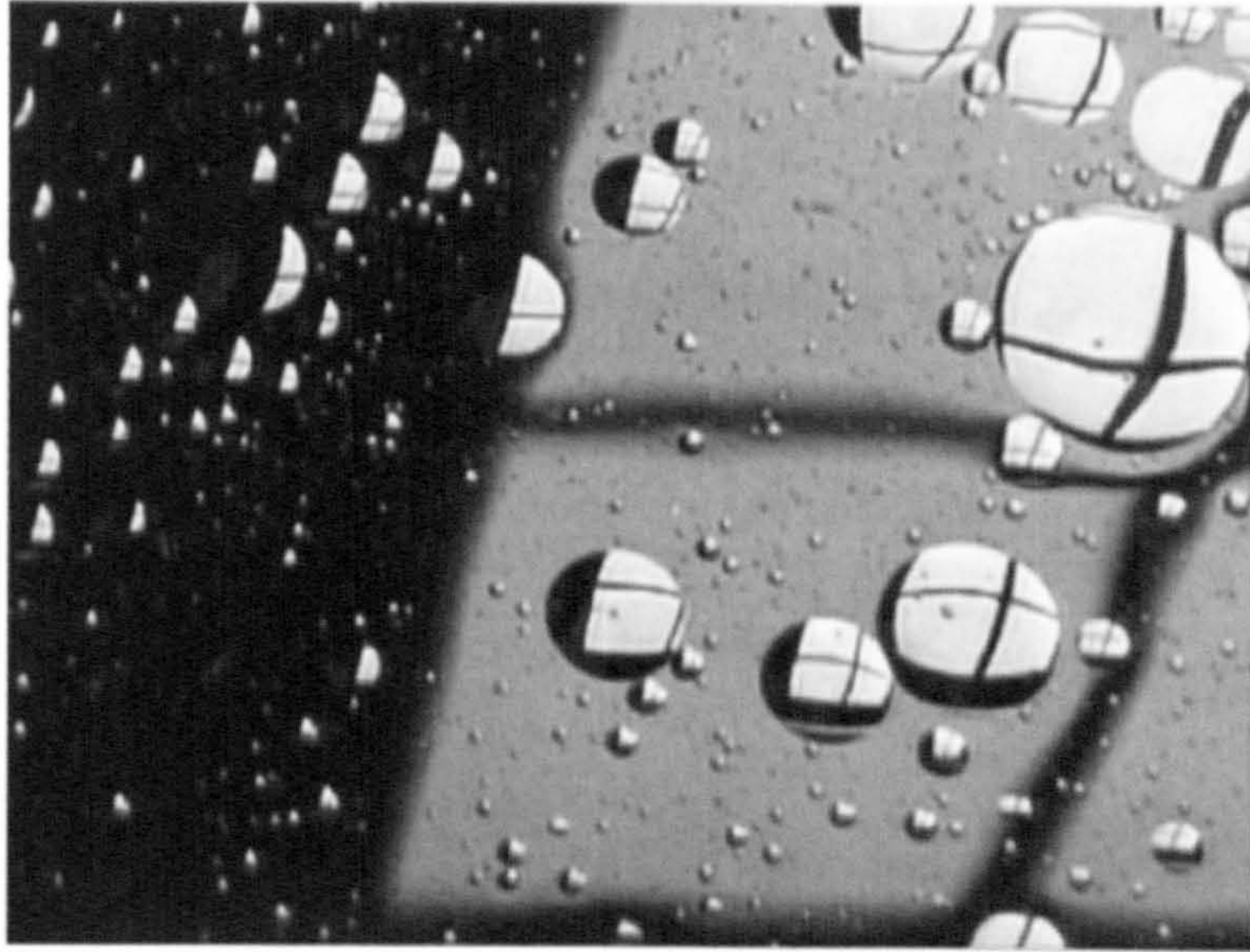


52. *Water vapour near a dying star*

Scientists speculate on the existence of a subsurface ocean in Europa, as a potential habitat for extraterrestrial life. Even if such assumptions are not yet verifiable, the idea is very poetic, and it is a beautiful metaphor: a hidden warm ocean inside an icy moon... Scientists search the images of Europa with the hope of finding some evidence to endorse their scientific theories, and the by-product of this search is poetry: 'Looking at the pictures from Galileo, we see evidence of geologic action on Europa. *Small*

⁴⁴ Wim Wenders, 'Beneath the Surface', in *Contemporary art magazine*, issue 50, May/ June 2003, p. 44.

*blocks of crust float like icebergs over an invisible sea.*⁴⁵ Here, scientists are producers of an ambiguous mixture of poetic and scientific language.



53. Still from *oceans*

In *oceans* these hybrid fragments, loaded with poetic and scientific significance, are put together in a sequence with other references to water in various contexts. There is no hierarchy in the structure, no emphasis on a particular approach, but all signifiers float freely like Europa's icebergs on invisible seas. By suspending the authority of the scientific discourse, through the creation of an arbitrary and chaotic system of associations, the implied aesthetic aspects come to the foreground and become critical of the scientific approach. Adorno and Horkheimer have argued that aesthetics, art and poetry are close to magic, providing a critique of the enlightenment by simply existing: 'The work of art still has something in common with enchantment: it posits its own, self-enclosed area, which is withdrawn from the context of profane existence, and in which special laws apply.'⁴⁶ The artwork offers a critique of science by having its own rules. In allegorical works meaning emerges from the accumulation or a new ordering

⁴⁵ Statement about research on Europa, by The Jet Propulsion Laboratory, Pasadena, CA that manages the mission for NASA's Office of Space Science, Washington, DC., in the Galileo mission home page at URL <http://galileo.jpl.nasa.gov>.

of fragments, which are rearranged following the logic of the work, creating tensions with their previous significance from their original contexts.



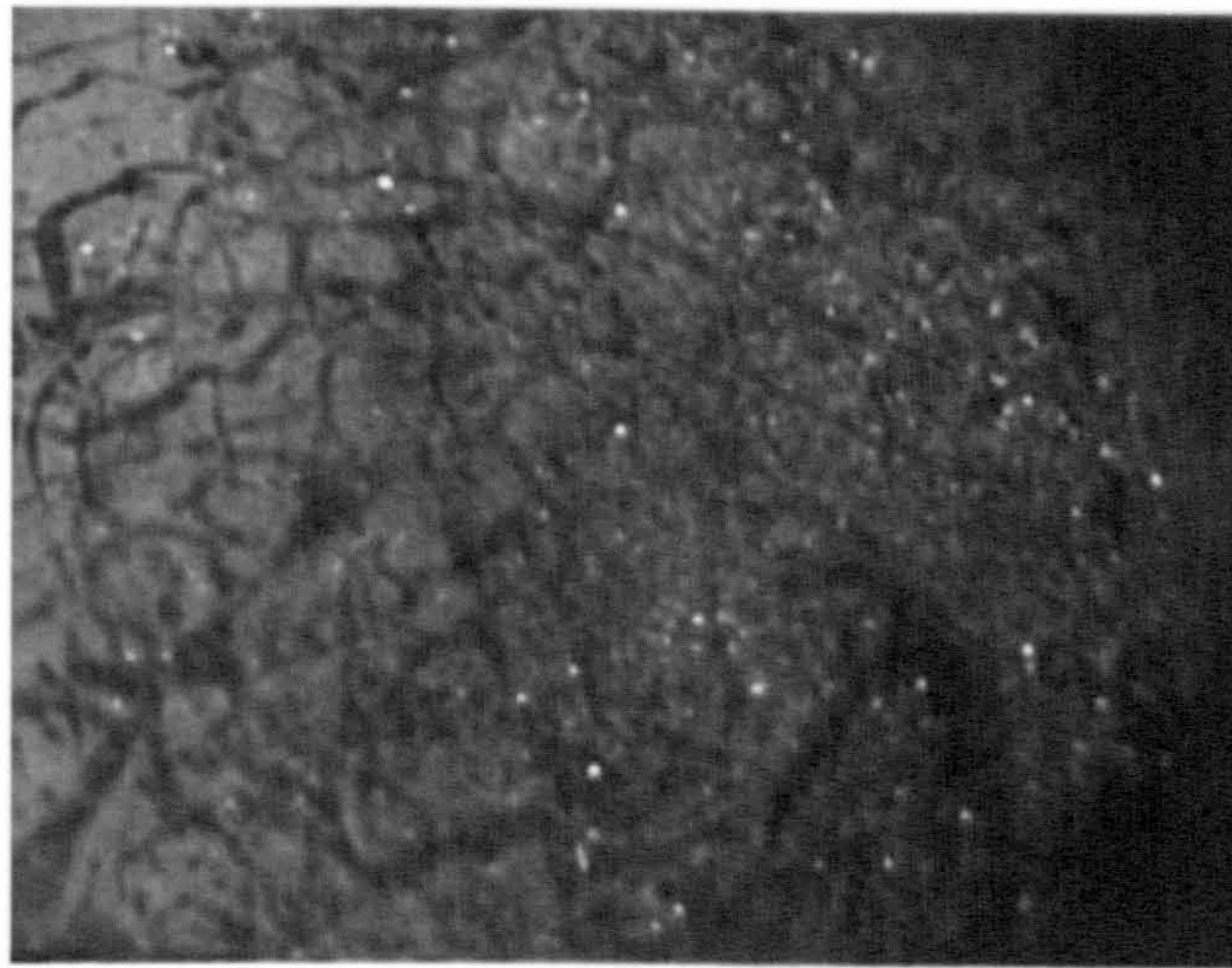
54. Still from *oceans*

The pulsing rhythms underpinning the sound of *oceans* add another dimension to the collage of moving images, drawing the viewer to an imaginative space. The hectic sound is devoid of obvious reference points, like the loose signifiers in the sequence of images, evoking the idea of dynamism and an unpredictability of movement. This echoes the idea of language and nature as a dynamic system instead of a static and stable structure of predictable laws. The sound was produced for this piece by :zoviet*france:⁴⁷ Their music has been described as ‘sound worlds that wanders between organic, non-linear, lo-fi explorations and fake ethnicity, creating a world where nothing is locatable and everything is suggestion, awaiting responsive imaginations.’⁴⁸ The restless mix of electronic instruments with sampled ambient noises, in the *oceans* soundtrack, enhance the poetic aspect of the sequence of visual quotations, and could be described as ‘acousmatic’ sounds: ‘the acousmatic are those

⁴⁶ Theodor Adorno and Max Horkheimer, *Dialectic of Enlightenment*, op. cit., p. 19.

⁴⁷ :zoviet*france: is an influential band in the field of experimental music. The current members of :zoviet*france: are co-founder Ben Ponten (1980-present) and Mark Warren (1995-present). Other musicians associated with the band in the past are Andy Eardley (1990-1995), Lisa Hale (1980-1981), Peter Jensen (1980-1984), Mark Spybey (1987-1989) and Robin Storey (1980-1992). Amongst their albums are *What Is Not True* (1993), *In.Version* (1996), *Digilogue* (1998), *The Decriminalization of Country Music* (Tramway, 2000). :zoviet*france: has produced soundtracks for art videos, performances and films, such as *Loud Visual Noises*, a film by Stan Brakhage (USA 1987); *Transients #1*, a video by Mark Mushet (Suture Productions, Canada 1991); amongst others. They have also produced the soundtrack to two other video installations of ours: *Memory Suspect* (1999-2000) and *The First Mild Day of March* (2001).

sounds which we hear without seeing their originating cause, either foreshadowing what is about to come or taking us away from what is immediately visible into other imagined spaces.’⁴⁹ In *oceans* there is a subtle disjunction between sound and image, as the sound starts a few seconds before the first image appears, and ends a few seconds earlier, leaving a brief gap of silence before the end. The silence creates a momentum for the last images, as the camera zooms out from a close-up to a panoramic view of the moon Europa.



55. Still from *oceans*

oceans reflects some issues raised by the Romantic German poet Novalis in his encyclopaedic project, *The Universal Brouillon*, which brings art, philosophy, religion, fairy tales and science together in a series of heterogeneous fragments. Novalis includes the aesthetic practice as part of knowledge, assigning a productive role to fantasy and fiction in the construction of science:

... Critically, I can only say - for me there is now no such entity - other than a *fictitious* one. All illusion is as essential to the truth as the body is to the soul (...) All synthesis - all progression - or transition begins with illusion (...) Belief is the operation of illuding - the basis of illusion - all knowledge, at a distance, is belief - any concept that is outside of me is a thing. All knowledge ends and begins with

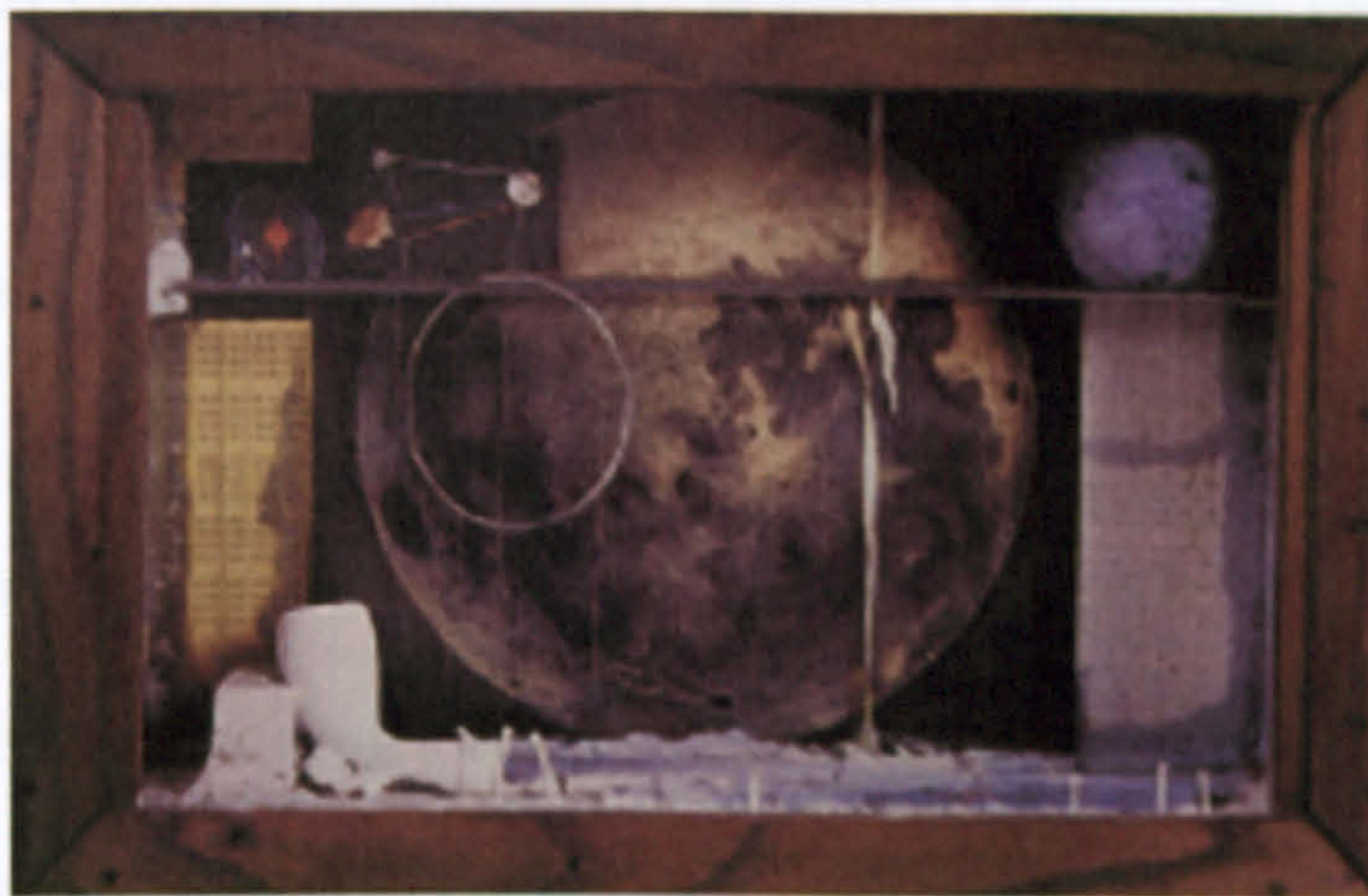
⁴⁸ Phil England, *The Wire*, September 1995.

⁴⁹ Brandon LaBelle, (artist, editor of Errant Bodies Press), in 'Distant Voices: Three Views on the Importance of Sound in Film', in *Contemporary art magazine*, issue 50, May/ June 2003, p. 75.

belief. Forward and backward expansion of knowledge is deferment - expansion of the realm of belief.⁵⁰

According to Novalis, aesthetic or poetic activity is conceived as an endless, necessary process in which meanings are constantly made and remade: 'the poet uses things and words like a keyboard and all of poesy is based on the active association of ideas - on self-activating, intentional, ideal production of chance - (chance- or free catenation).'⁵¹

The American Surrealist artist Joseph Cornell undertook a similar task of bringing together art and poetry with science.



56. Joseph Cornell, *Soap Bubble Set - (Lunar Rainbow) (Space Object)*, undated box construction from 1930s

Joseph Cornell interweaves the magical imaginary world of childhood with references to astronomy and natural sciences in his series of *Soap Bubble Sets*. In the box-construction *Lunar Rainbow* of this series, Cornell creates a poetical arrangement incorporating illustrations from science books with personal and mundane objects. This arbitrary combination is close to Novalis' sensitivity: 'Non-rule is the rule of fantasy - *the rule of arbitrariness* - the rule of chance - of marvels (...) Rule- *direct* law - Indirect, (twisted) law=non-rule. The rule of productive imagination - synthesis of direct and

⁵⁰ C. V. Starr, *Soap Bubbles and the Forces which Hold Them*, was first published in 1906 by the Society for the Promotion of Christian Education, after a series of lectures by children at the London Institute in the winter of 1889-90, according to Lawrence Squire, *Joseph Cornell's Forces of Spiritual Order*, London, Reaktion Books Ltd, 1998.

⁵⁰ Novalis, *The Universal Brouillon*, fragment 601, published in Jochen Schulte-Sasse et al (eds), *Theory as Practice: a Critical Anthology of Early German Romantic Writings*, University of Minnesota Press, Minneapolis, 1997, p. 233.

⁵¹ Ibid. Fragment 953, p. 240.

indirect law. [...]’⁵² Cornell’s *Lunar Rainbow* box is engaged in such dialectics, between the fantastic logic of poetry and the orderly representation of nature by science.

According to Lindsay Blair, the inspiration for this series of works came from the book *Soap Bubbles and the Forces which Mould Them*, by the Victorian scientist Sir Charles Vernon Boys, who aims to merge art and science in children’s education.⁵³ In this book, there are references to Plato’s experiments relating liquid bubbles and heavenly bodies, where the form of bubbles are metaphors for the Platonic ideal forms of nature.

Cornell writes about the *Soap Bubble Sets* series in 1948:

Shadow boxes become poetic theatres or settings wherein are metamorphosed the elements of a childhood pastime. The fragile, shimmering globules become the shimmering but more enduring planets- a connotation of moon and tides- the association of water less subtle, as when driftwood pieces make up a proscenium to set off the dazzling white of sea foam and billowy cloud crystallized in a pipe of fancy.⁵⁴

The blurring of boundaries between art and science in the *Universal Brouillon* and the *Soap Bubble Set* series was sought in *oceans*, in order to create a tension between the two categories, without regarding them as simplistically opposed to one another, as binary oppositions unproblematically related to subjectivity and objectivity respectively (as discussed in Chapter 2). There is no priority to any perspective, as Adorno has articulated: ‘... the aesthetic principle is not to be played out as sacrosanct - as would suit irrationalism - in opposition to the sciences. Art is not an arbitrary cultural complement to science but, rather, stands in critical tension to it.’⁵⁵ They are not essentially different, but, Adorno continues, they are ‘...identical forces [that] are active

⁵² Ibid. Fragment 730, p. 235.

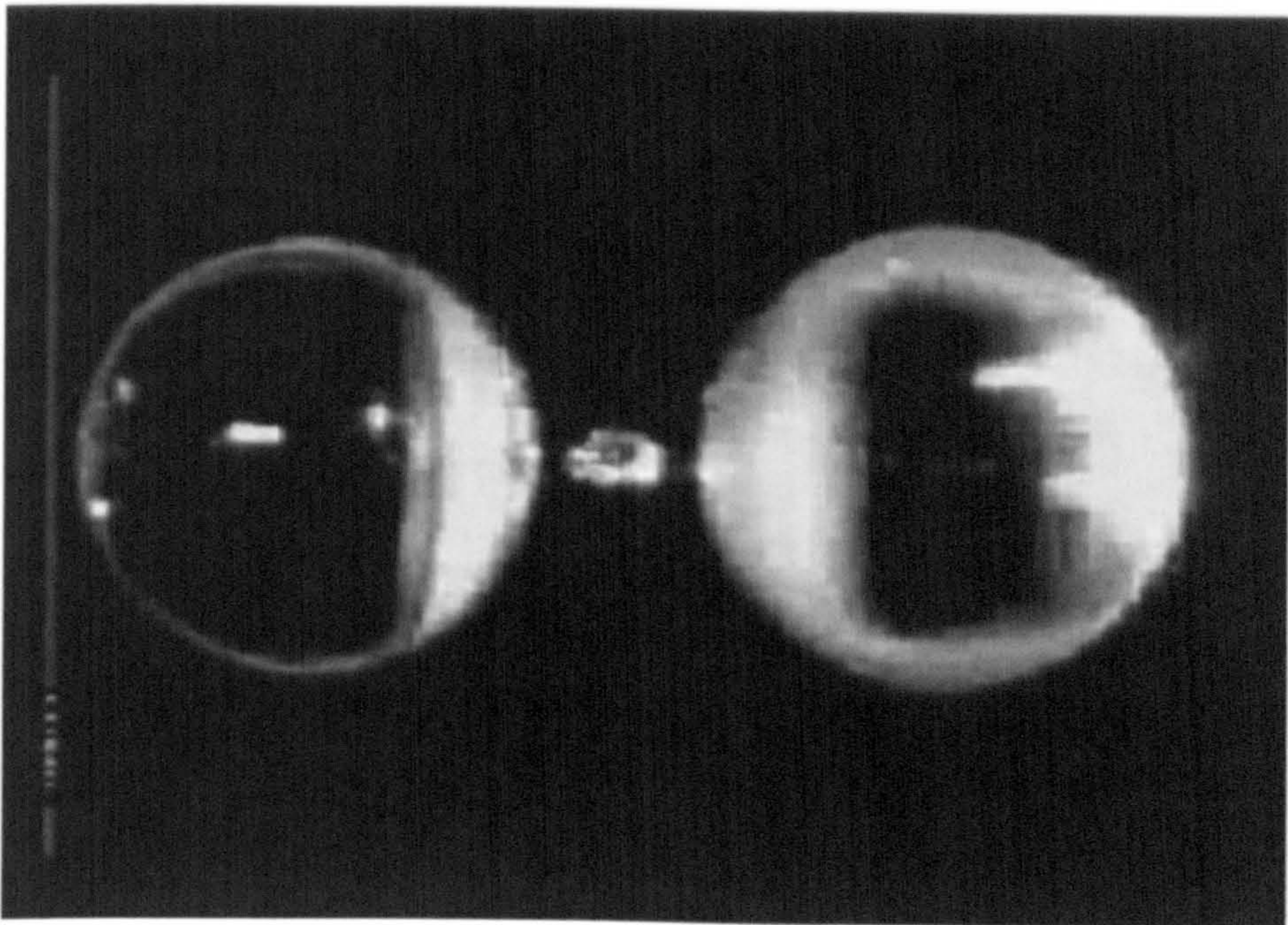
⁵³ C. V. Boys, *Soap Bubbles and the Forces which Mould Them*, was first published in 1896 by the Society for the Promotion of Christian Knowledge, after a series of lectures for children at the London Institute in the winter of 1889-90, according to Lindsay Blair, *Joseph Cornell’s Vision of Spiritual Order*, London, Reaktion Books Ltd, 1998, p. 179.

⁵⁴ Extract of Joseph Cornell’s text for the Copley Gallery catalogue in 1948, cited by Lindsay Blair, in *Joseph Cornell’s Vision of Spiritual Order*, op. cit., p. 196.

⁵⁵ Theodor Adorno, *Aesthetic Theory*, the Athlone Press, London, 1999, p. 231.

in non identical spheres.’⁵⁶ This notion of art and science as identical forces, is much closer to the reality of contemporary practice of art and science, than the 19th century sharp distinction between the two fields. I will now refer to the critiques of traditional notions of subjectivity and objectivity that emerged around the 1960s which are influential to the current debate of art and science, starting by focusing on the role of collaboration and appropriation in the debate of authorship in artistic practice.

Collaboration, Appropriation and the Deconstruction of Subjectivity in Art



57. Still form *oceans*

The displacement of authorship in collaborative art practice reflects a critical relation to traditional ideas of authorship, which is part of a long debate in philosophy, art theory and artistic practice. Here, I explore some aspects of this discussion in relation to the production of *oceans*, focusing on two points: the appropriation of scientific sources, and the collaborative practice itself.

⁵⁶ Ibid. p. 232.

In the production of this piece, as artists, we are simultaneously in the position of readers of the scientific text and co-producers of the artistic work. Roland Barthes in his famous essay 'The Death of the Author', argues that 'writing is the destruction of every voice, every point of origin.'⁵⁷ In this essay Barthes says that the emphasis on the person of the author is a product of history, a kind of 'positivism in literature', reflecting the individualism of capitalist ideology. Barthes' structuralist approach is in favour of shifting the attention from the autobiographical aspects of the author, to the structure of the work, with a focus on the performative aspect of language: 'it is language which speaks, not the author.'⁵⁸ Thus, Barthes inverts the notion that the author produces the text, instead it is the writer who is 'born simultaneously with the text.'⁵⁹ Without the references to the personal life of the author, the meaning of the work is left open to interpretation. This is precisely the position of the allegorical model of criticism proposed by Benjamin, in which the meaning emerges from the reading of the reflective process *in the structure* of the artwork.⁶⁰

Without the reference to an author there is no ultimate meaning (unique essence) to the work to be deciphered by the viewer, but a play of signs. Barthes regards this refusal to fix meaning as a truly revolutionary activity which challenges reason, science and law.⁶¹ In these transgressive activities there is no importance given to the authority of the origin: 'we know now that a text is not a line of words releasing a single "theological" meaning (the "message" of the Author-God) but a multidimensional space in which a

⁵⁷ Roland Barthes, 'The Death of the Author' (1969), in his *Image, Music and Text*, trans. by Stephen Heath, Fontana Press, St. Ives, 1977, p. 142.

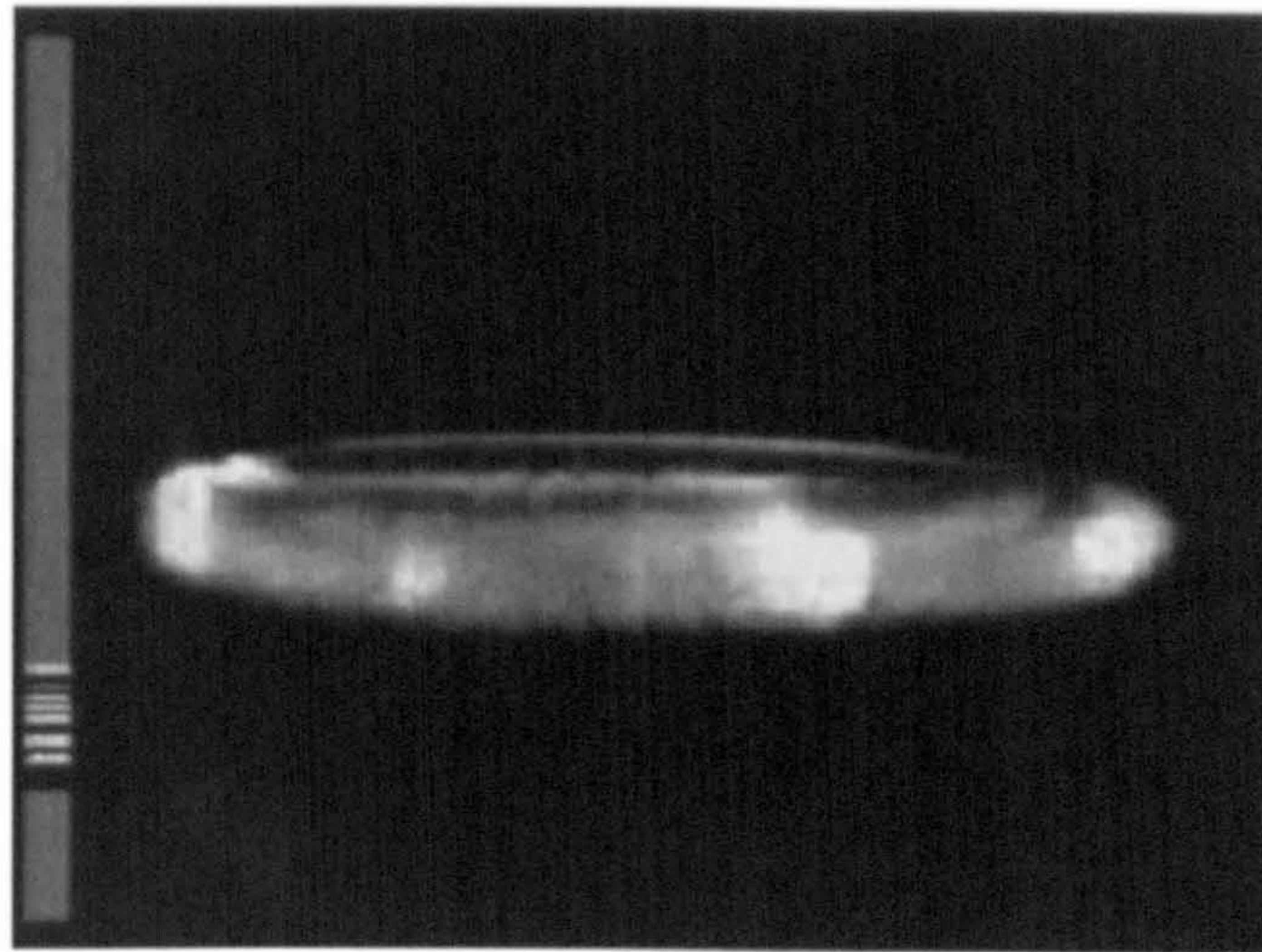
⁵⁸ *Ibid.* p. 143.

⁵⁹ *Ibid.* p. 145.

⁶⁰ Here I am referring back to the discussion on the Romantic fragment and Benjamin's concept of criticism, from Chapter 1.

⁶¹ *Ibid.* p. 147.

variety of writings, none of them original, blend and clash. The text is a tissue of quotations drawn from the innumerable centres of culture.⁶² Barthes' understanding of the activity of writing is close to the allegorical approach, which involves a rearrangement of fragments, a reinvention of an existing tradition, and takes into account an existing 'inherited typology.'⁶³ Barthes, Benjamin, and de Man argue that the meaning lies in the reception, not in the origin.



58. Still from *oceans*

In *oceans*, the authority of the scientists in assigning the 'correct' reading for the images (similarly to the power of religious authority in consecrating mundane objects), is suspended or becomes irrelevant in the new context, where another set of rules apply. The artwork opens the reading of the images to wider references, not only focusing on the gap between the sign and referent, but also between other signs. *oceans* uncovers the dense layers of meanings associated with the scientific text. Galileo, the spacecraft, is named after the Renaissance astronomer Galileo Galilei, who observed Jupiter and four of its other moons in 1610. The contemporary 'space exploration' program creates a link with a historical figure of great importance in the history of science, who was

⁶² Ibid. p. 146.

⁶³ See Paul de Man's deconstruction of Romantic expression in Chapter 1.

responsible for a revolutionary perspective on humanity's relation with nature, displacing the Earth from a central to a marginal position in the universe (with the heliocentric theory). Here, the ideological link between science and economics becomes explicit, as the US space exploration program (a symbol for the imperialist dominance of America) is associated with Europe's expansion in the Renaissance. Scientific texts are also intertwined with mythological stories and mystical interpretations, as Europa circles around her lover,⁶⁴ Jupiter, the Roman mythological god of Heaven and Earth, which also represents the principles of growth and expansion from an astrological perspective.⁶⁵

The practice of collaboration is a way to decentralize authorship and problematize autobiographical readings of the work. In the production of *oceans*, we manipulate different sources, bringing together various discourses attached to them. Here, it is the origin and history of appropriated images that are important, not the origin of the artwork in relation to the autobiography of the authors. The scientific source of the appropriated material is part of the double structure of *oceans*. This aspect of appropriation which puts an emphasis on the contextual origin of appropriated non-art objects relates to a version of conceptual art articulated by the artist Dan Graham. Jeff Wall traces Dan Graham's idea of conceptual art, arguing that his work and writings have contributed to the reintroduction of social subject-matter to the tradition of conceptual art: 'Graham's aim was to remain involved with the wider world as a subject and occasion for art, but to structure that involvement in the rigorously self-reflexive

⁶⁴ According to classical mythology, Europa was a Phoenician princess who was abducted to Crete by Zeus (Jupiter in Roman mythology) and became one of his lovers. In Crete she gave birth to King Minos.

⁶⁵ In the natal chart Jupiter is considered the planet of good luck, optimism, success, generosity, and is associated with philosophical wisdom, knowledge, higher learning, vision and honesty. Julia And Derek Parker, *Parker's Astrology*, and Ariel Guttman and Kenneth Johnson, *Mythic Astrology: Archetypal Powers In The Horoscope*, Edith Hamilton, *Mythology*.

terms made mandatory by the intellectual achievements of conceptual art.⁶⁶ In an article entitled 'My Works for Magazine Pages: "a History of Conceptual Art"' Dan Graham criticizes Duchamp's readymade for not being interested in the social and historical aspects of the object appropriated, but is, rather focused on the art and non-art tension.⁶⁷ Graham points to the fact that the readymade cannot be pushed further for this reason, once it has been absorbed by the art institutions as another type of art, then to repeat the gesture would be a pointless and uncritical exercise for other artists. In this text, Graham reads Dan Flavin's light works as historically and socially specific, opening up the idea of appropriation as having a focus on the historical specificity of the object.⁶⁸ In Graham's view, Flavin adds historical and social content to the readymade, making a tradition possible, and instead of pointless repetition, appropriation becomes a re-functioning of the object.⁶⁹

This approach follows the same logic of allegory as articulated by Benjamin, where the dialectics between origin and history is what generates meaning. The original meaning is supplemented by the new context, but doesn't annihilate it completely, just destabilizes its claims. The de-functionalization of the scientific imagery in *oceans*, creates a disjunction between the initial function of the images and the new context in which they are inserted. As part of a video artwork, the viewer may not recognize the imagery as constitutive of a scientific theory, but may engage with the reading of other

⁶⁶ Jeff Wall, in the 'Introduction' to Dan Graham's *Two-Way Mirror Power: Selected Writings by Dan Graham on his Art*, MIT Press, Cambridge, MA, 1999, p. xv.

⁶⁷ Dan Graham, 'My Works for Magazine Pages: "a History of Conceptual Art"' in A. Alberro and B. Stimpson, *Conceptual Art: A Critical Anthology*, op. cit., pp. 418-23.

⁶⁸ Graham argues that Flavin deconstructs the gallery and non-gallery distinction, showing that the gallery is made of non-gallery, and relates this to Smithson's site and non-site distinction. According to Benjamin Buchloh, Graham regards the art institution as a fluid system of social relations of recognition. Graham's view of the artworld is an expanded one, which includes not only the physical space of the art gallery and museum, but also art magazines and all sets of social relations and institutional conditions of possibilities involved in the production and reproduction of artworks. Happenings, land art, environments, minimalism, installation, all have expanded the notion of site and designation of art spaces.

⁶⁹ Benjamin Buchloh argues that the essential contribution of Graham's work to the debate and practice of conceptual art around 1965 was the transformation of an intellectual 'formalism' tendency into a more 'functionalist'

The re-functioning of the images as art destabilizes the scientific message, blurs the boundaries of the two categories, by bringing about their similarities: revealing the aesthetic side of science and objectivity in art (with the distancing of the artist to the production of the object). When handled by scientists the images still maintain their scientific validity, but may not be recognized as art. This shows that the images can serve simultaneously two different functions, a critique of its conventional function and an affirmation of it. According to Paul de Man, such ambiguity of a double meaning attached to one image leads to illegibility: 'The authority of meaning engendered by the grammatical structure is fully obscured by the duplicity of a figure that cries out for the differentiation that it conceals.'⁷⁰

Both art and science can be defined as a set of social relations, being not only related to the physical aspects of their institutions, but as a system of recognition. In *occans* we re-function the scientific material as art, while scientists recognize it as scientific data. The different approaches to the same material are a matter of interpretation, using other systems of reference to look at the same object. The object and subject relation is based on different systems of recognition, which are not different in absolute terms, but are distinct discursive practices. The following section, therefore engages in the criticism of objectivity and neutrality in science, in parallel to the intense scrutiny of subjectivity and authorship in the visual arts.

approach, in 'Moments of History in the Work of Dan Graham', in his *Neo-Avant-Garde and Culture Industry*, MIT Press, Cambridge, MA, 2000, p. 186.

Kuhn and the Deconstruction of Scientific Objectivity

The 1960s was also a revolutionary period for science marked by intense self-critique, in parallel to the institutional critique that was taking place in the field of art. The publication of Thomas Kuhn's *The Structure of Scientific Revolutions* in 1962 was influential in the criticism of the dominant philosophy of science of that period, the neo-positivism of the Vienna Circle and Karl Popper (1902-94).⁷¹ The main principle defended by the Vienna Circle was the empirical verifiability of propositions, while for Popper, what would separate scientific from unscientific knowledge was the principle of refutability. If a theory was not refuted, then it was temporarily confirmed as true. Although Popper and the Vienna Circle members disagreed on this point, they were engaged in the same project of demarcation of the boundaries of science, which left out of their conception metaphysics, theology, psychoanalysis, social sciences and philosophy (except analytical philosophy, which is based on formal logic) because they could not be verified or refuted.

Kuhn challenged the most cherished and foundational principles of the Vienna Circle and Popper in *The Structure of Scientific Revolutions*: realism, demarcation, empirical observation, precision, discovery and the unity of science.⁷² Kuhn argues that science advances under a traditional or dogmatic world-view of a dominant theory, the paradigm.⁷³ Kuhn says that during the phases of 'normal' science, scientists work under the principles of the dominant theory to resolve puzzles, ignoring anomalies that

⁷⁰ Paul de Man 'Allegories of Reading', op. cit., pp. 11-12.

⁷¹ The Vienna Circle was formed in 1928 by Carnap, Schilick, Hahn and Neurath, in Vienna.

⁷² Ian Hacking, ed., *Scientific Revolutions*, Oxford, Oxford University Press, 1981, pp. 1-2.

⁷³ Kuhn explains the concept of paradigm: '... a term that relates closely to "normal science." By choosing it, I mean to suggest that some accepted examples of actual scientific practice - examples of which include law, theory, application, and instrumentation together - provide models from which spring particular coherent traditions of scientific research.' He continues: 'Men whose research is based on shared paradigms are committed to the same rules and standards for scientific practice. That commitment and the apparent consensus it produces are prerequisites

contradict the theory. A revolution or paradigm shift occurs when too many anomalies are unresolved and competing theories emerge to challenge the dominant paradigm. In Kuhn's view, the dogmatic character of science is not that far from myth:

... historians confront growing difficulties in distinguishing the 'scientific' component of past observation and belief from what their predecessors had readily labeled 'error' and 'superstition.' (...) If these out-of-date beliefs are to be called myths, then myths can be produced by the same sorts of methods and held for the same sorts of reasons that now lead to scientific knowledge. If, on the other hand, they are to be called science, then science has included bodies of belief quite incompatible with the ones we hold today.⁷⁴

Thus, the boundaries between scientific theories and other kinds of belief systems is not such a clear-cut one. Kuhn also points out that scientific fact is intertwined with the scientific theory which precedes the observation, the theory 'manufactures' the fact: 'no natural history can be interpreted in the absence of at least some implicit body of intertwined theoretical and methodological belief that permits selection, evaluation, and criticism. If that body of belief is not already implicit in the collection of facts - in which case more than 'mere facts' are at hand - it must be externally supplied, perhaps by a current metaphysic, by another science, or by personal and historical accident.'⁷⁵ Here, the distinction culture and nature, realistic and socially constructed fact become indistinguishable.

Kuhn's ideas were met with strong resistance by Popper and his colleagues at the London School of Economics in the 1960s.⁷⁶ At that time Paul Feyerabend supported Popper in his criticism towards Kuhn, but later Feyerabend developed his own revolutionary concept of methodological transgression, in opposition to (what he

for normal science, i. e., for the genesis and continuation of a particular research tradition.' In *The Structure of Scientific Revolutions* (1962), The University of Chicago Press, Chicago and London, 1996, pp. 10-11.

⁷⁴ Ibid. p. 2.

⁷⁵ Ibid. pp. 16-17

⁷⁶ According to Ziauddin Sardar, in *Thomas Kuhn and the Science Wars*, Popper and his group (which included Imre Lakatos and Paul Feyerabend) organised an *International Colloquium in the Philosophy of Science* to undermine

considered) the reactionary hegemony of science. In *Against Method: Outline of an Anarchistic Theory of Knowledge* (1975) Feyerabend argues that science is not a rational activity, but an anarchic project in which all methodological rules are broken by great scientists, such as Galileo, for scientific knowledge to develop. He defends theoretical pluralism, and believes that the proliferation of competing theories to explain the same phenomena leads to the progress of science, defending a total relativism, calling himself a 'methodological anarchist.'⁷⁷

This idea of methodological transgression involves the same kind of strategies of allegorical appropriation and re-contextualization of fragments that artists have explored, and we used in the production of *Oceans* and other works discussed in this thesis. With the dismantling of positivist dogmas in science and the questioning of Romantic notions of genius and originality in art, the distinction between art and science becomes less related to absolute principles of subjective expression and objective observation, but is defined by the different social and institutional discourses which frame their operations.

Kuhn. Sardar says that Popper regarded the idea of 'normal science' an enemy to science and civilisation. Kuhn's answers to their criticism was later published in *Criticism and the Growth of Knowledge* (1970).

⁷⁷ According to Sardar, Feyerabend invited to his classes at the University of California, Berkeley, creationists, Darwinists, witches, amongst others to defend their arguments to the students, in *Thomas Kuhn and the Science Wars*, p. 37.

Conclusion

In the discussion of specific debates on the history of video art, I have argued that the tension between the political and aesthetic can be explored as part of a dialectic dynamic through the medium of video installation. In the video installation *oceans* I observed how aesthetics can be used as a critical tool to examine science. The visual and textual, which have been associated with the aesthetic and political, are intrinsically connected, as Bill Viola remarks:

It is a new idea that images don't represent fixed things. They are not static elements in a lexicon. They are living beings that are transforming and changing - in contemporary technological terms 'morphing' - into all sorts of things... What is going on is that the basis of image-making is shifting from the visual to the conceptual. The material basis of the image is no longer founded on the behaviour of light; it is based on the behaviour of thought.⁷⁸

The idea and image of water is often used as a metaphor for the fluidity of language and elusiveness of meaning, by post-structuralist authors. *oceans* builds on this idea of transformation and instability of meaning, in an endless dialectic between origin and history, image and text, as formulated by Benjamin in his concept of allegory. This constant transformation of meaning with the passage of time, and change of context, frustrates the desire of science (and the symbolic artwork) for meaning and sign to coincide. In breaking with the order and disrupting the stability of the neutral discourse of science, *oceans* removes what Barthes called the single 'theological' meaning attached to the appropriated material (given by the authority of scientific explanation), and restores a wider multidimensional space for their viewing. The fragmentation at the level of authorship is another allegorical aspect of the production of the work. In *oceans*, visual quotations from various sources and sound are brought together, assuming new functions. The outcome is not the expression of one individual unique

vision, but the result of series of mediations and experiments. Our role as artists is the same of the Baroque genius, a master of manipulation, whose task 'is one of arranging.'⁷⁹

In the discussion in Chapter 2, I remarked that Hesse-Honegger operated in the gap between art and science, but used different strategies to the ones we have used in *oceans*. While Hesse-Honegger keeps the discipline of scientific methodology, we used the ambiguity of the allegorical structure to create a tension between aesthetics and a scientific perspective, through a kind of anarchic methodological pluralism, close to the total relativism proposed by Feyerabend. With the deconstruction of the 19th century associations of art with subjectivity and science with objectivity, the dichotomy between such terms has been gradually dissolved. Kuhn's work has opened the scientific discourse to a self-criticism comparable to the institutional critique in the field of art. I will expand this discussion on the criticism of the dogmatic aspects of the scientific discourse in Chapter 5, with reference to the new multidisciplinary field of Science and Technology Studies.

Although not absolutely distinct terms art and science operate according to a different logic. Clearly the aim of the scientist is a question of knowledge, scientists treat nature as an object of study, from which they want to learn its laws and find out how the universe came into existence and how it works. The aim of the artist is less clearly defined. The question of our origin can lead us to a reflection, if there is a purpose to existence, leading us further than the initial intention of pure cognition of the 'mechanism' of the universe. While the imagery from distant planets and moons give

⁷⁸ Bill Viola, in *Art in Question*, ed. by Karen Rancy, The Arts Council of England and Continuum, London and New York, 2003, p. 69.

⁷⁹ Walter Benjamin, in *The Origin of the German Tragic Drama*, op. cit., p. 179.

scientists clues about their properties, the enlarged close-ups become open to a different kind of reading, creating a space for reception that Benjamin called the *optical unconscious*: 'Photography, with its devices of slow motion and enlargement, reveals the secret. It is through photography that we first discover the existence of this optical unconscious, just as we discover the instinctual unconscious through psychoanalysis.'⁸⁰ The enlargement of small drops of water give them a visibility that they lack in everyday experience, making the viewer to look at them in a different light, creating a reflective space to examine its significance.

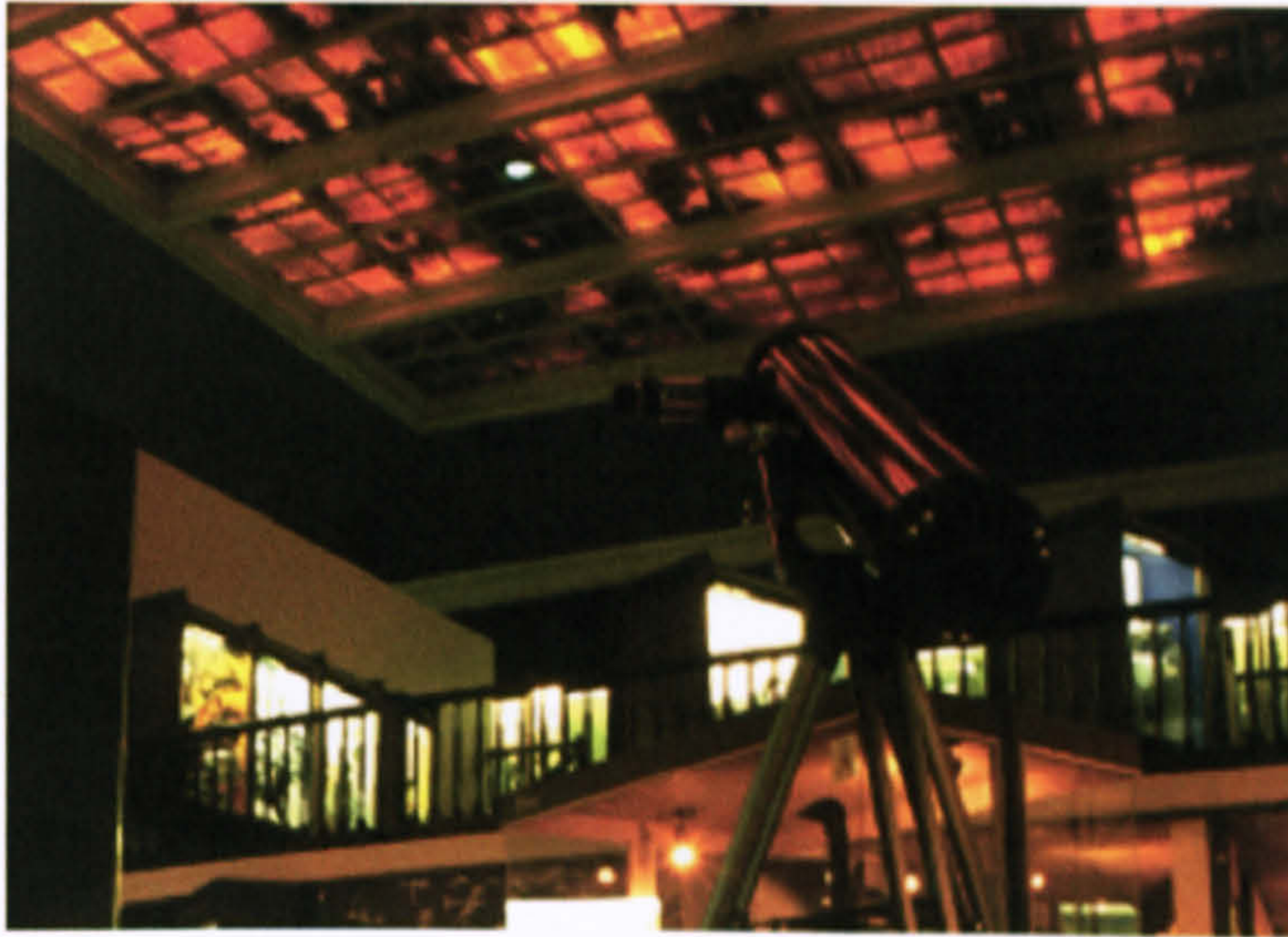
Throughout this research I have been interested in investigating what happens to art and science in their encounter. Do the poetic aspects of images enhance their cognitive dimension or render them irrelevant in *oceans*? The 'scientific' fragments used to illustrate a hypothesis, originally had a persuasive role in the rhetoric of the scientists (vital as proof to their theories, also useful in finding funding for future missions), but by contemplating their aesthetic potential we can perhaps reflect on what is behind that previous function. The images in *oceans* can make us wonder about the deep human necessity and desire to know ourselves, and speculate about the origin of life and the story of the universe we inhabit. In this quest to grasp the 'unknowable', scientists produce work rich in poetic quality, loaded with such metaphysical questioning.

⁸⁰ Walter Benjamin, 'A Small History of Photography', op. cit., p. 243.



Chapter 4

the first mild day of March, a Melancholic Note



60. Documentation of the video installation *the first mild day of March*
Showing telescope and video back-projection on the ceiling

I open this Chapter with a discussion on site-specificity which is part of a current debate on the practice and theory of installation art. Then, the dynamic of the installation *the first mild day of March* will be discussed, which was a temporary intervention (from March to April 2001) in the Bird Gallery of the Hancock Museum of Natural History, at Newcastle upon Tyne. I consider three different levels of engagement of the installation with its site: physical, institutional and discursive, which Miwon Kwon, calls the ‘three paradigms of site-specificity,’ in her discussion of installation art, presented in the first section of this Chapter.

The installation *the first mild day of March* engaged in a reading of the scientific discourse, creating new layers of signification on the already multi-layered structure of the museum collection. This text produces another commentary on the artwork and the museum collection, after the intervention has taken place. The installation was produced again in collaboration with Henna Asikainen, thus, it is perhaps important to

remind the reader, that this later commentary is part of the endless process of interpretation and criticism involved in the reception of artworks.¹ The text about the work is not the work itself, does not aim at giving the 'last word' on the work, nor to fix its meaning in any way, but can be considered as an independent, yet related, creative process. The ephemeral aspect of this installation, renders any reference to it to be allegorical, as it only exists now in the memory of those who saw it at the museum (as a memory, it tends to fade away and disappear into thin air). The photographic documentation, the texts, CD and the videos function allegorically, trying to rescue the work from oblivion, like the Romantic fragment, which (paradoxically) can present the unrepresentable totality of the, now gone, artwork.

the first mild day of March investigated the relation of animals to the context of natural history. In addressing this rich ground, I will draw from both Benjamin's work on allegory and Michel Foucault's 'archaeological' exploration of cultural codes in the formation of scientific discourse as means of disentangling the complex layers formed between the animals, the collection and our artwork. The two authors take similar positions in relation to the dialectical dynamic of nature and culture, but approach the subject differently. While Foucault focuses on the historicization of nature (in *The Order of Things*), revealing how culture 'produces' nature, Benjamin uses natural history as a metaphor for his analysis of culture, as he treats cultural products as mortal entities (in his *Arcades Project*). In Benjamin's thought, nature and history are indistinguishable. History is regarded as decaying nature: human structures of power, architecture and cultural products are regarded as ephemeral as organic life, they are born, deteriorate and die. In Benjamin's theory of allegory, it is because of this melancholic tendency of things decaying and their meaning vanishing, that they become

¹ See Benjamin's concept of criticism discussed in Chapter 1.

open to the allegorist to impose new meanings on them. *the first mild day of March* examines these existing tensions in the scientific discourse, in the overwhelmingly melancholic space of the Hancock museum.

From Medium-Specificity to Site-specificity

Here I return to the discussion in the previous Chapter, on postmodern practices which emerged in reaction to formalist modernism. Alongside installation art, site-specificity appeared in the 1960s as one of the many artistic strategies which challenged the principles of Greenbergian modernism, especially the notion of medium specificity. Rosalind Krauss, an author associated with the *October* circle, engaged with this critique of formalist modernism through the articulation and promotion of the discourse of postmodernism in the visual arts.

Krauss, in 'Sculpture in the Expanded Field' (1979), regards the development of sculpture from the 1960s onwards, as a break with the tendency of modernist sculpture to self-referentiality, 'sitelessness' or loss of place. She describes modernist sculpture as a 'kind of ontological absence,' defined by a combination of exclusions summarized as something that is *not-landscape* and *not-architecture*. She argues that artists in the 1960s and 1970s focused on the limits of these repressed terms, exploring the complex of *architecture* and *landscape*. Krauss was involved in the task of theorizing the work of Robert Morris, Robert Smithson, Richard Serra, Walter de Maria, Sol Le Witt, Bruce Nauman, linking them to the discourse of postmodernism, which was emerging in art criticism at that time. She remarks that such artists were working under a new set of possibilities in the production of their works which Krauss refers to as *site construction*. Krauss links various kinds of interventions into the combination of landscape and

architecture, with the new notion of site in postmodern sculpture: such as 'marked sites' (Smithson's *Spiral Jetty* and the 1970s work by other Minimalists), physical manipulation of sites and ephemeral or impermanent 'marks' combined with the documentary use of photography (in Land art pieces by Heizer, Oppenheim, Smithson, Richard Long, Hamish Fulton and Christo).

Krauss argues that, in the 'expanded field' of postmodern practices, the notion of medium-specificity becomes irrelevant: '[...] within the situation of postmodernism, practice is not defined in relation to a given medium - sculpture - but rather in relation to the *logical operations on a set of cultural terms*, for which any medium - photography, books, lines on walls, mirrors, or sculpture itself - might be used.'² Here she points to the important shift in postmodern practice, away from concerns centred on principles of medium and materials used, and towards a focus on cultural and social relations.

This view of art as 'social relations' (discussed in Chapter 3), has become widespread in contemporary discussions on installation art, and is the basis of James Meyer's concept of the 'functional site.' Meyer notes that the concern with site, rather than medium, is a legacy of earth or land art and institutional critique.³ Meyer makes a distinction between two notions of site: the literal site, a physical space of a particular location; and the functional site, which he defines as: '... a process, an operation occurring between sites, a mapping of institutional and textual filiations and the bodies that move between them (the artist's above all).'4 Here, Meyer refers to Craig Owens' reading of Robert Smithson's work as an allegorical one, providing a discursive notion of site, instead of

² Rosalind Krauss, 'Sculpture in the Expanded Field', in *The Anti-Aesthetic: Essays on Postmodern Culture*, edited by Hal Foster, first printed in 1983, First New Press, New York, 1998, p. 41. (my emphasis).

³ James Meyer, 'The Functional Site; or, The Transformation of Site Specificity', in Erika Suderburg (ed) *Space, Site, Intervention: Situating Installation Art*, University of Minnesota Press, Minneapolis, London, 2000, p. 23.

the phenomenological minimalist model. Meyer notes that the 'functional' work is characterized by its ephemerality, only temporarily installed in a particular time and space, as a strategy of resistance to its commodification.⁵

Another aspect of site specificity explored by Meyer is the phenomenological relation of the body with space, inherited from the aesthetics of minimal art. Meyer traces the historical origins of installation in minimalism, remarking that the 'displacement from work to frame, from the portable modernist sculpture to an environmental practice located in the literal space of the viewer'⁶ which was criticized in minimalism by Michael Fried, and became the most important aspects of installation, as Meyer notes: 'minimalism and the site-specific practices that followed in its wake took the literal site as the very locus, or precondition, of advanced work.'⁷ He argues that this focus on the perceptual conditions of presentation of art marked a move away from the Greenbergian principles of medium specificity, specially the purist notion of the 'opticality' of painting.⁸ After this shift from the strictly optical perception to a consideration of the whole physical context of the presentation of work, Meyer adds the expansion of the notion of site by institutional critique, from phenomenological space to ideological sets of relations.

Site specific works engage with the social, historical or political discourses associated with particular locations, in this way, they function as an allegorical reading of a place,

⁴ Ibid. p. 25.

⁵ Meyer is skeptical of site specific works' success in achieving such an aim, which was very important in the 1960s, but now artists are more focused on other aspects beyond the notion of commodity as a marketable object, as we are more aware that even 'dematerialized' conceptual art is commodifiable, that in fact all cultural and artistic production is commodifiable in a capitalist society.

⁶ Ibid. p. 26.

⁷ Ibid. p. 26.

⁸ Clement Greenberg in 'Modernist Painting' (1960), argues that the 'self-critical tendency' of the medium of painting is associated with its opticality, flatness and colour: 'Modernist painting asks that a literary theme be translated into strictly optical, two-dimensional terms before becoming the subject of pictorial art...' (p. 199) and that

building their structure over these existing meanings associated with a site. Meyer argues that this focus on a particular place turns the production of site-specific works into a kind of nomadic activity comparable to ethnographic fieldwork.⁹ He regards this 'mobile' state of practice as a result of globalization and the relative democratization of travel: 'thus the displacement from the literal site of the 1960s, grounded in the verities of phenomenological experience, to a mobile, mediated placement follows the global reach of capitalism itself, the triumph of the free market...'¹⁰ Meyer concludes that this displaced notion of site specificity reflects the mobility of the subject in contemporary society. In another article,¹¹ Meyer also points to the mobility of the audience in the current globalized reception of art in international exhibitions, biennials, fairs and events.

Meyer makes a distinction in the field of the contemporary practice of 'nomadism', which he divides into 'lyrical' and 'critical.'¹² According to him, 'lyrical' nomadism is concerned with the poetics and aesthetics of everyday life, a phenomenological approach, while the 'critical' one is concerned with history, politics and institutional critique. Meyer sides with the 'critical' kind: 'my own taste sides with the second nomadism; as I will argue, the aim of the first, lyrical nomadism is at odds with the latter's critical intention.'¹³ Here we encounter again the separation of aesthetics from the political sphere, as Meyer follows some of the anti-aesthetic tendencies of the

'The heightened sensitivity of the picture plane may no longer permit sculptural illusion, or *trompe-l'oeil*, but it does and must permit optical illusion.' (p. 198), in *Art & Literature*, n. 4, 1965, Spring, pp. 193-201.

⁹ Hal Foster has explored this analogy in 'The Artist as Ethnographer', in *The Return of the Real: the Avant-Garde at the End of the Century*, the MIT Press, Cambridge, MA, 1996. Foster compares the role of the socially and politically engaged contemporary artist with Benjamin's considerations of the problematic of reconciling politics and aesthetics in art, in the 'Author as a Producer.'

¹⁰ Meyer *ibid.* p. 32.

¹¹ James Meyer, in 'Nomads: Figures of Travel in Contemporary Art', published in Alex Colos (ed.) *Site-Specificity: The Ethnographic Turn*, de-, dis-, ex-, vol 4, Black Dog Publishing Ltd., London, 2000.

¹² Here we return to the 'dialectics of politics and aesthetics' which I discussed in Chapter 3 in relation to video art.

¹³ *Ibid.* pp. 12.

October critics.¹⁴ As a viewer, I don't see this well-defined separation in the artworks themselves, that are described in such a discourse of art criticism. This problematic becomes very evident when Meyer presents his examples of 'critical' nomadism. Meyer places the work by Rirkrit Tiravanija in the category of 'critical' nomadism, but the artist's approach could, easily fall in the 'lyrical' one. Meyer cites Tiravanija: 'I'm interested in roaming the world... I think it's interesting to go physically to places, to put yourself in this little metal thing and shoot yourself through space and time, and then physically be some place with different smells, different...'¹⁵ The artist statement reveals clear 'phenomenological' tendencies, which are confirmed in Meyer's discussion of the piece *Free* (installation at the 303 Gallery, New York, 1992), in which the artist cooked and distributed a (Pad Thai) meal for the audience as part of his performance. Meyer describes the experience: 'the smell of peanut oil penetrated one's nostrils.'¹⁶ It is surprising that Meyer has used such a sensuous work to illustrate the 'critical' trend of nomadic practice! Meyer himself has referred to the phenomenological aspects of the piece, such as smell, taste, even the literal consumption of the work.

This suppression of aesthetics in order to focus only on the discursive points of the work is a tendency in art criticism which narrowly associates aesthetics with the 'opticality' of painting and principles of medium-specificity advocated by Greenberg. In a similar way that criticism in (late) Romantic and high Modernist art suppressed the discursive aspects of the work in the allegory and symbol debate, we see today some critics who have embraced the discursivity of allegory, to prioritize it over the symbol,

¹⁴ Meyer says: '... the anti-aesthetic impulse resurfaced in the "dematerializing" Conceptual practices of the late 1960s, the structuralist film criticism of the 1970s, and in the postmodern writings of Craig Owens, Douglas Crimp, Benjamin Buchloh, providing the title of a seminal 1983 anthology edited by Hal Foster.' ... 'One of the concerns of this essays is to valorise this anti-aesthetic impulse of the 1980s and early 1990s...' Meyer in 'Nomads: Figures of Travel in Contemporary Art', op. cit. pp. 12-13.

¹⁵ Rirkrit Tiravanija cited by Meyer in 'Nomads: Figures of Travel in Contemporary Art', op. cit., p. 13.

instead of engaging with both aspects of the works. Allegory is a dialectical movement between antithetical ideas, but in the context of post-Greenbergian art criticism, it has been turned into anti-aestheticism. Benjamin's theory of allegory is the source of such post-modern discourse, yet in his theory there is not an undermining of aesthetics as we have seen in Chapter 1. In allegory, there is an open-ended dialectical movement between expression and convention, aesthetics and discursivity which are both kept 'alive' and antithetically functioning in an allegorical structure. Visuality is not suppressed by Benjamin, on the contrary, he even gives it special emphasis: 'The primary interest of allegory is not linguistic but optical. "Images - my great, my primitive passion."' ¹⁷

Miwon Kwon has also investigated notions of site-specificity, finding its roots in minimalist concerns with the relationship of artworks and their environmental context. She lists aspects of the shift from object to context, saying that the neo-avant-garde has an aspiration:

[...] to exceed the limitations of traditional media, like painting and sculpture, as well as their institutional setting; the epistemological challenge to relocate meaning from within the art object to the contingencies of its context; the radical restructuring of the subject from an old Cartesian model to a phenomenological one of lived bodily experience; and the self-conscious desire to resist the forces of the capitalist market economy, which circulates artworks as transportable and exchangeable commodity goods - all these imperatives came together in art's new attachment to the actuality of the site. ¹⁸

Kwon argues, like Meyer, that institutional critique and conceptual art contributed to the dismantling of the phenomenological model of minimalist art. She notes that works by Michael Arsher, Marcel Broodthaers, Daniel Buren, Hans Haacke, Robert Smithson,

¹⁶ Ibid. p. 14.

¹⁷ Walter Benjamin, *The Arcades Project*, Fragment [J59, 4].

¹⁸ Miwon Kwon, 'One Place After Another: Notes on Site Specificity', in Erika Suderburg (ed) *Space, Site, Intervention: Situating Installation Art*, University of Minnesota Press, Minneapolis, London, 2000, p. 39.

Mark Dion, and Mierle Laderman Ukeles, deal not only with the physical but also cultural aspects of the site and social issues.

Kwon remarks that the focus by artists on institutional critique in the 1960s and 1970s, to 'expose the cultural confinement within which artists function', has shifted to a wider engagement with the world outside art institutions, concentrating on a critique of culture and moving to non-art spaces and other disciplines (which she calls 'sites' of artistic interest). With this move, the notion of site has become a more fluid one. Referring to Meyer's concept of 'functional' site, Kwon schematizes what she calls 'the three paradigms of site specificity': phenomenological, social/institutional, and discursive. It is important to note her remarks about these different tendencies: '... they are competing definitions, overlapping with one another and operating simultaneously in various cultural practices today (or even within a single artist's single project).'¹⁹ This remark very important, as artworks can be constructed in a complex way, to simultaneously explore phenomenological, institutional and discursive levels of specific sites or fields of enquiry. In the discussion of *the first mild day of March*, I consider these aspects in relation to the Bird Gallery of the Hancock Museum. The installation engaged with the site simultaneously at these distinct levels, which cannot be neatly separated from one another: the physical arrangement of the specimens is related to the natural history discourse; and the institutional is entwined with political and ideological aspects.

Kwon investigates the critical claims attributed to site specificity, which become problematic when it is institutionalized and commercialized. She notes that works which were once site-specific have become mobile and transferable from one museum to another:

¹⁹ Ibid., p. 46.

The consequences of this conversion [from site specificity to mobility], effected by object-oriented *decontextualizations* in the guise of historical *recontextualizations*, are a series of normalizing reversals in which the specificity of the site is rendered irrelevant, making it all the easier for autonomy to be smuggled back into the artwork, with the artist allowed to regain his or her authority as the primary source of the work's meaning.²⁰

Here, Kwon touches on two points that need to be further discussed: the relation to site and authorship. In revising her 'site typology', I see that this contradiction relates only to the category of the phenomenological site, which is engaged with a specific physical location, and in this case, it is right to argue that the work is actually not transferable, often impermanent and that it is not possible to present it in another place. This argument is not valid for all site-specific or site-related works, which are not directly bound to a place, but make reference to it. In Smithson's *earthworks*, for instance, the work is not only centred in the interventions in the landscape, but on the dialectical relationship between the work in the site (landscape) and its representation at the non-site (art gallery).²¹ Thus, this critique cannot be extended to the categories of institutional and functional sites, which she had previously described.

The second point, in relation to authorship, also needs clarification. Later on in this same text, Kwon refers to a conflict between conceptual artists Carl Andre and Donald Judd and the Ace Gallery in Los Angeles, which had recreated their works *without their authorization*, for an exhibition in 1989. Kwon regards the artists' reaction as 'a crisis concerning the status of authorship and authenticity' and continues, arguing that this case reveals that 'authorship and authenticity remain in site-specific art as a function of

²⁰ Ibid. p. 49.

²¹ Craig Owens describes the relation of the *Spiral Jetty* with the presentation of its documentation in the non-site as dialectical. By structuring the work in this way, Owens argues that Smithson 'accomplishes a radical dislocation of the notion of point-of-view, which is no longer a function of physical position, but of the *mode* (photographic, cinematic, textual) of confrontation with the work of art. *The work is henceforth defined by the position it occupies in a potentially infinite chain extending from the site itself and the associations it provokes [...]*' in Craig Owens 'Earthwords', in *Beyond Recognition: Representation, Power and Culture*, Berkeley, University of California Press, 1992, p. 47 (my emphasis).

the artist's "presence" at the point of (re) production'²² and that this contradicts the critique to authorship which they had claimed to undertake through industrial means of production. This criticism seems unfair because Kwon, here, does not take into account some important contributions made by conceptual art practice in relation to the wide field of authorship critique. One aspect of the argument against traditional authorship relates to the rejection of interpretation that is based on autobiographical events in the artist's life.²³ This does not mean that the discursive aspects generated by an authorial voice are not important. The gallery in question was exhibiting not a bundle of industrial materials, but was taking advantage of a whole discourse and set of ideas articulated by an 'author function' as Foucault calls it. Another aspect of the critique leveled at artistic authorship, and initiated by Duchamp's readymades, was the shift of emphasis from the manual and unique expressive gesture (of the genius), to the authority of the artist to designate and appropriate non-art objects into art. The industrial process of production of the works by Andre and Judd relates to this discourse. The emphasis of their works is on the ideas, not on the *personal* involvement with production or reproduction. Here, Kwon confuses authorial rights with 'a personal involvement' in authorizing the reproduction of the pieces. In a commodified world, conceptual artworks are bound to the artists in a similar way that copyright law grants ownership rights to writers; they are not related to specific materials or processes of production but acknowledge the intellectual rights of the artist.²⁴ It is true that their art failed in resisting commodification, but this does not mean that the value attributed to their works is based on the personality of the authors, it relies, rather, on the discourses they generated.

²² Miwon Kwon, 'One Place After Another: Notes on Site Specificity', op. cit., pp. 49-50.

²³ See Roland Barthes 'The Death of the Author', and Michel Foucault 'What is an Author?' Here I refer back to the discussion on authorship and appropriation in Chapter 3.

²⁴ See the model of a contract made by Seth Siegelaub for the commercialization of conceptual art, 'The Artist's Reserved Rights Transfer and Sale Agreement, 1971, published in Peter Osborne's *Conceptual Art*, Phaidon, London, 2002, p.274.

In her considerations of commissioned pieces, Kwon raises some important concerns on the practice of site-specificity. She points to the danger of artistic agency becoming a kind of 'critical-artistic service' to commissioning institutions. Kwon refers to what Benjamin Buchloh called the 'aesthetics of administration' to explain this commodification of artistic labour, she remarks that:

[...] generally speaking, the artist used to be a maker of aesthetic objects; now he or she is a facilitator, educator, co-ordinator, and bureaucrat. Additionally, as artists have adopted managerial functions of art institutions (curatorial, educational, archival) as an integral part of their creative process, managers of art within institutions (curators, educators, public program directors), who often take their cues from these artists, now function as authorial figures on their own right.²⁵

Kwon argues that because of these changes, there is a re-emergence of the voice of the artist as the originator of meaning, in order to validate a variety of (otherwise) unrelated sets of practices, sites and projects. Here, again, it is useful to think of authorship as a discursive practice, which is quite different from traditional values articulated in expression theory, where the artist is originator of meaning in a psychological sense. The relation of the conceptual artist to artistic production is not the same as the one of the Romantic genius, nor is there a return to the mythification of the artist's personality, but a recognition that the value of the artistic activity is associated with a consistent discursive practice. Another aspect of this argument, which Buchloh and Kwon are addressing, is the fact that commodification is no longer of the object, but of the practice. The shift of emphasis from the art object to a functional set of relations and site-specificity has led to a kind of 'proletarianization' of the artist.²⁶ The ability of the

²⁵ Miwon Kwon, 'One Place After Another: Notes on Site Specificity', op. cit. p. 53.

²⁶ A similar process happened in the field of science with its industrialization, which led to the proletarianization of the scientist and stratification of the scientific community, as Boaventura de Sousa Santos discusses in *Um Discurso sobre as Ciências - (A discourse on Sciences)*, ed. Afrontamento, Porto, 7th edition, 1995, p. 35. I refer to this discussion in Chapter 5.

artist to retain a critical position while being involved in various social roles, is the most important challenge for artists once they become part of the establishment.

This transformation of practice into a 'service' in the process of the institutionalization of neo-avant-garde art practices, reflects the dialectics of commodity production in advanced capitalism, which Benjamin associated with allegory. Benjamin argues that the fetish character of the commodity led to the 'proletarianization of the producers,'²⁷ which also includes artists (and critics). Benjamin remarks that the arbitrary valuation of objects through commodification (market laws) is comparable to the arbitrary designation of new meanings to appropriated objects by the allegorist.²⁸ According to Benjamin, advertising functions allegorically, investing empty objects with 'dream images', in an attempt to humanize the commodity. Benjamin argues that the depersonalized commodity becomes human in the dialectical figure of the prostitute, as she is 'commodity and seller in one.'²⁹ The artwork is comparable to the dialectical figure of the prostitute, because it is simultaneously a commodity, but also 'behaves' like a subject, as it is an object that cannot be reduced to what can be conceptualized about it.³⁰ If we consider art not as object, but as a set of discursive practices, this model is still useful, as practice is also involved in the dialectics of commodity and (an autonomous) critical claim.

²⁷ Walter Benjamin, *The Arcades Project*, op. cit., Fragment [J67, 2].

²⁸ Walter Benjamin remarks: 'The "metaphysical subtleties" in which the commodity delights, according to Marx, are, above all, the subtleties of price formation. How the price of goods in each case is arrived at can never quite be foreseen, neither in the course of their production nor later when they enter the market. It is exactly the same with the object in its allegorical existence. At no point is it written in the stars that the allegorist's profundity will lead it to one meaning rather than another. And though it might have acquired such a meaning, this can always be withdrawn in favour of a different meaning. In fact, the meaning of the commodity *is* its price; it has, as commodity, no other meaning.' *The Arcades Project*, op. cit., fragment [J80,2; J80a, 1].

²⁹ Walter Benjamin, 'Exposé of 1935', published in the *Arcades Project*, op. cit., p. 10.

³⁰ This is the model of the Romantic fragment, discussed in Chapter 1, which is the basis of Benjamin's theory of allegory. Theodor Adorno, in his *Aesthetic Theory*, also refers to the artwork as an object that behaves like a subject, in his discussion of the dialectics between the autonomy of the aesthetic experience and the commodity aspect of the work of art, pp. 17-24.

Kwon regards the emphasis on site as a revival of traditional values such as originality, authenticity, and singularity which have become 'evacuated from the artwork and attributed to the site', and sees this shift as the re-emergence of a notion of authentic experience associated with a specific place.³¹ Kwon points to the danger of site specificity to be used to 'manufacture distinctions', or become involved in the mythification of a place (with economic consequences).³² This is a risk involved with permanent site-specific projects, which are more vulnerable to economic exploitation and can be turned into a profitable venture in the service of local marketing and touristic interests, as happened to some land art pieces.³³ Although commodification is inevitable, artists can negotiate their own critical concerns with the agenda of funding institutions. If art is to claim any degree of critical engagement with society, a level of autonomy or agency has to be allowed to artists.

Here are useful Benjamin's considerations of the critical aspect of artistic production. In his text 'Author as a Producer', Benjamin notes that the politically motivated artist has to be concerned with the question of 'who will benefit?' from the outcomes of the work. The position of the artist is a difficult one, because of the inevitable commodity character of art and the social conditions in which artistic production takes place, through the system of patronage and institutionalization. But within such constraints, there is still some 'room' for artists to position their critical concerns. This position of

³¹ Miwon Kwon, 'One Place After Another: Notes on Site Specificity', op. cit., p. 54.

³² Kwon argues that mythification should be avoided: 'It seems that we should leave behind the nostalgic notions of a site as being essentially bound to the physical and empirical realities of a place. Such a conception, if not ideologically suspect, often seems out of sync with the prevalent description of contemporary life as a network of unanchored flows.' p. 56. This seems an extreme position, which she recognizes and mediates with the notion of 'relational specificity', which can address the differences of place and be sensitive to cultural fluidity.

³³ Walter de Maria's *Lightning Field*, in the New Mexico desert, is an example of this. John Baxter points out that, in order to see the artwork (lightning interacting with 400 stainless steel poles), the viewer has to undertake a long journey, that he compares to a religious pilgrimage. According to him, viewing is controlled by appointment and limited to a number of six people per visit, who have to book a cabin for one or two nights at the cost of \$300, between May and October, when storms are more likely to happen. See John Baxter in 'Pilgrim's Progress', *Tate Arts and Culture*, May/June 2003, p. 14.

'relative autonomy' has been articulated by Theodor Adorno in his *Aesthetic Theory*.³⁴

Adorno regards artworks as a double structure of contradictory aspects: a social (commodified) and an aesthetic (critical/autonomous) aspect. According to him, the critical power of an artwork relies on the ability of the artist to maintain the process of production 'autonomous' from the social pressures of the art market, or in the case of commissioned work, from interference of funding institutions. In commissioned works this task becomes more difficult, because even if the artwork is not determined by a strict brief, it will contribute to the promotion of supporting institutions. In this case artists have to consider if such institutions are compatible with their own ethical, critical, aesthetic, and political concerns.

The following discussion of the installation *the first mild day of March* investigates some of the points presented in the above discussion on site-specificity, observing the complex relations between the physical, institutional and discursive aspects of the site and the artwork. I will also examine our position, as artists, in relation to the institutional constraints (and liberties) under which we worked.

³⁴ See Peter Osborne, in 'Aesthetic Autonomy and the Crisis of Theory: Greenberg, Adorno, and the Problem of Postmodernism in the Visual Arts', *New Formations* 9, (Winter 1989), pp. 31-50. Osborne makes an important distinction in relation to Greenberg's and Adorno's conceptions of autonomy. Osborne explains that while Greenberg talks about the autonomy of the artwork as self-referentiality and independence from the social, autonomy for Adorno, on the other hand, is at the level of art as a social phenomenon. Osborne argues that it is the institutionalization of autonomy that makes possible autonomy at the level of meaning. According to Osborne, Adorno sees art as a double structure of contradictory elements: a social and an (autonomous) aesthetic phenomenon. Thus, art is regarded as a social product and its autonomy is produced and sustained by a set of social relations (its commodification) instead of being immanent to the artwork. At the same time the artwork provides an autonomous form of experience, that is the aesthetic experience. The artist is the mediator of these two aspects. According to Adorno, the autonomy of the work depends on the artist managing to keep the *logic of the production* of the artwork independent from extra-aesthetic values, such as market forces. For Adorno the social role of the artist is the articulation of these two conflicting aspects (commodity and aesthetic) formally in the production of art. Osborne remarks that while Greenberg conceives autonomy as the exclusion of the social, Adorno recognizes the social as the basis of aesthetic autonomy.

*the first mild day of March***The Site: Physical Space**

The site-specific video installation *the first mild day of March* was an intervention in the Bird Gallery of the Hancock Museum of Natural History. The installation made use of three elements to intervene in the overall order of the space: sound, two video projections, and the manipulation of light in specific display cases. The installation was built through a careful consideration of the disposition of objects and the architectural aspects of the space. The Bird Gallery was already a saturated environment, overcrowded with objects, a variety of birds and 'props', arranged in a peculiar and eclectic order, furnished with multiple styles of cabinets and lights. Such a highly heterogeneous space indicated to us that our intervention should be a subtle one. So the artwork did not have an imposing presence, but functioned to create or expose existing tensions in the display of the collection, comparable to the experience of the aphasiac (someone who cannot articulate speech as result of brain damage) described by

Foucault:

... [in a given] space in which things are normally arranged and given names, the aphasiac will create a multiplicity of tiny, fragmented regions in which nameless resemblance agglutinate things into unconnected islets; [...] all these groupings dissolve again, for the field of identity that sustains them, however limited it may be, is still too wide not to be unstable; and so the sick mind continues to infinity, creating groups then dispersing them again, heaping up diverse similarities, destroying those that seem clearest, splitting up things that are identical, superimposing different criteria, frenziedly beginning all over again...³⁵

The constant making and remaking of new meanings from a given structure is the methodology of the allegorist too, who is engaged in an (potentially) infinite interpretative play of a given structure. In the installation *the first mild day of March*, we sought to create signifying 'islets' or point to certain moments of ambiguity in some

³⁵ Michel Foucault, *The Order of Things*, (1966), Routledge, London, 2000, p. xviii.

areas of the collection, where the didactic text that framed the birds competed with 'extra-scientific' arrangements.

The sound in *the first mild day of March* contributed to the activation of the whole space, having a subtle but disruptive effect on the viewing of the collection. Since the artwork was so quietly intrusive, the sound helped to 'alert' the viewer that there was something unusual taking place in the gallery of birds. The sound had an elusive, abstracted quality. The sequence was composed with sampled sounds, that evoked ideas associated with flying, movement and a feeling of unrest.³⁶ The sound was composed specifically for the installation by :zoviet*france:. Four speakers placed in each corner of the gallery broadcast the stereo sound in the space, creating distinct hearing experiences in different areas of the room. The speakers were placed far from the video projections and the volume was relatively low, so the sound operated independently from the projections, creating tensions within specific areas in the gallery, acting in localized ways, instead of affecting the whole of the space at once. This multidimensional aspect of the sound produced for this installation, is characteristic of :zoviet*france:'s approach to music:

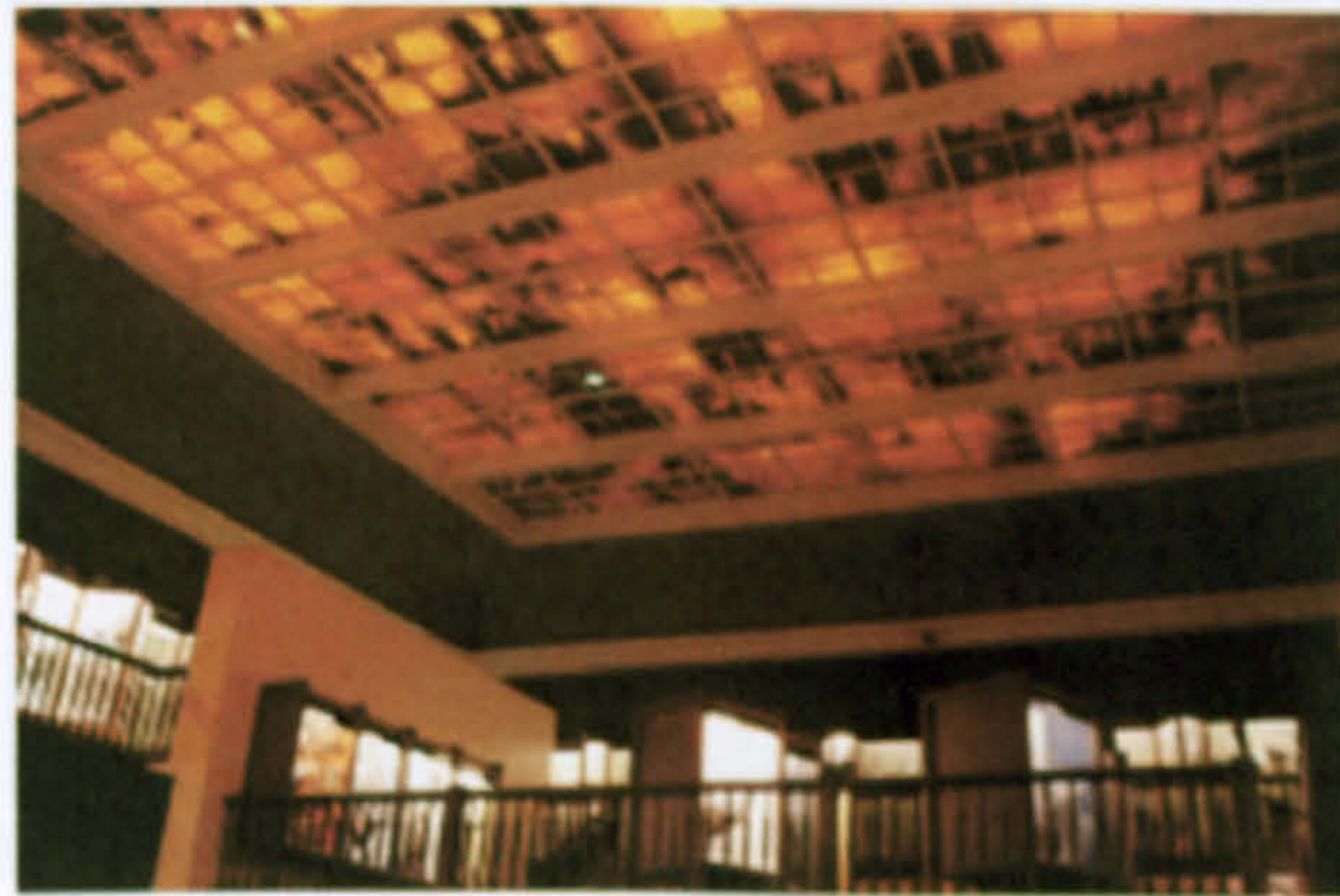
One of the important conceptual processes we apply to our music is the sense of geography, the sense of location within a landscape. Such a landscape can be internal, or relate directly to the physical world, inner space or outer space. In making our music, particularly at the mixing stage, we give much attention to the spatial relationships between the various sound components as they will be perceived by the listener. The practical outcome of this is a psychoacoustic topography where the listener is able to orientate herself or himself to sounds in the distance, sounds that appear to be close and in varying positions on X and Y stereophonic axes.³⁷

Combined to the tensions created by such 'psychoacoustic topography', there was a video showing a seagull flying in slow motion against a blue sky, which was presented

³⁶ Please refer to the accompanying CD.

³⁷ Extract from our correspondence (June 2003) with Ben Ponten and Mark Warren, musicians of :zoviet*france:

as a back projection onto the glass ceiling of the *Bird Gallery*.³⁸ Seagulls are common birds in the streets of Newcastle, and the image of the flying bird creates another tension in contrast to the rare taxidermic birds of the collection, inside the museum.³⁹ A tension is created between the living and the dead, the indoor and outdoor spaces. The projection was placed within one of the glass squares of the ceiling, and could be observed from downstairs, with the aid of a telescope provided, but could also be clearly seen with the naked eye from the ground floor.



61. View of the ceiling with video projection (which appears as a white spot in the ceiling)



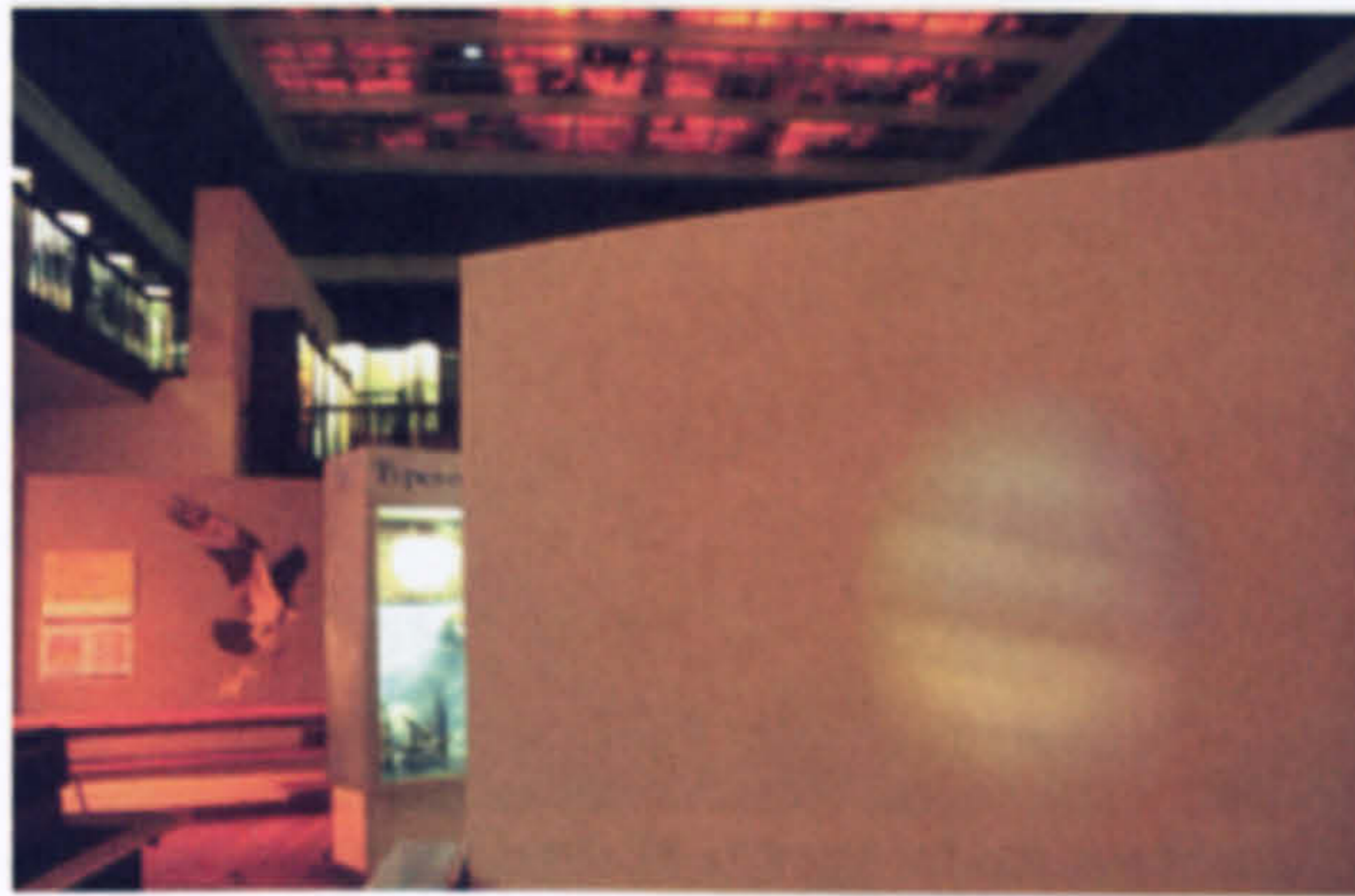
62. Seagull video back projected onto the Bird Gallery's glass ceiling

A second video presented a sequence of close-up images of labelled specimens inside plastic bags, which were part of the museum's collection in storage. The images were

³⁸ The sequence was taken with permission from the *Partridge Film's* archive.

³⁹ The seagull is also associated with the idea of transcendence in Richard Bach's allegorical story of *Jonathan Livingston Seagull*.

not so clear, rather what was seen were abstracted patterns and colours of feathers covered with shiny plastic bags.⁴⁰ The sequence was like a close look at the ‘hidden secrets’ of the museum collection. The ‘secret’ was an ambiguous means of referring to the violence underneath the entertaining and didactic project of the museum. The dead birds in the bags, still ‘unprepared’ for display, with their eye sockets filled with yellowish cotton wool, reveal the powerful melancholic feeling which overwhelms the whole place.



63. Video of birds in storage, projected in the ground floor

The museum curator interpreted the idea of a ‘hidden secret’ as the large collection in storage which cannot be displayed for logistical reasons. In these circumstances, allegory proves to be a resourceful strategy, because its use of language, rich in ambiguity, is helpful in exposing other meanings without directly stating only one possible (controversial) view. Here, we had not been ‘hired’ by the museum to provide a critical service, but we did find ways to articulated our concerns within the museum structure. Our intention was not only to make a simple point, to criticise natural history museums, in this case the Hancock Museum, for its participation in the colonial violence against other cultures and the animals killed (this has been the task of post-colonial studies of science). Although this questioning is necessary, it would be too

⁴⁰ This video was projected onto a wall on the ground floor of the gallery, but was technically problematic because of the interference of surrounding light, which could not be altered because of strict health and safety regulations. Later on, we considered this problem as the weakest point of the work, and thought that it would have been better not to have included it in the end.

easy for us now, just to point to the excesses involved in the development of science that took place centuries ago.⁴¹ What also needs to be taken into consideration is the practical problem of what to do with the animals that have already been killed. Perhaps we can also view the museum in a similar way to that taken by Benjamin when he considered the melancholy of cultural artefacts, as they become obsolete, emptied of their significance and open to allegorical appropriation.



64. Photograph of birds in storage which are featured in the video of 'hidden secrets'

The third intervention in the collection consisted in creating a 'new light' under which the specimens could be perceived. Instead of keeping the museum's bright fluorescent lights, the birds on display in some cabinets were lit by a series of dim yellowish spotlights. With this strategy we sought to highlight the 'extra-didactic' aspects of the collection, pointing to the 'magical', dramatic, sexual, comical, and tragic scenes present in some old displays produced by Mr. John Hancock himself, and recent ones by the current taxidermist Eric Morton. By focusing on some significant arrangements, we intended to 'read' the collection in a particular way, underlining their theatrical aspects.

⁴¹ We are aware of the current involvement of science with other forms of violence in the present 'world order' against developing nations, to which I will make reference in Chapter 5, when discussing the 'science wars'.



65. Seagulls from the *Reproduction* display

The installation can be considered a supplement, a *parergon*, which is a Derridean term to designate the activity of deconstruction. Derrida defines *Parergon* as: 'a supplement to the operation, neither work nor outside the work.'⁴² The intervention in the Bird Gallery, engages with peripheral or limiting aspects of the architectural space: the lighting of the birds and the ceiling of the room. The lights are part of the display, but, like the frame of a painting, it is neither part of it, nor outside it, but frames it in a special way. Similarly, the ceiling is the limit between the space inside the museum and the sky above, the domain of flying creatures.

⁴² Jacques Derrida, 'Parergon', in *The Truth in Painting*, trans. by Geoff Bennington and Ian McLeod, The University of Chicago Press, Chicago and London, 1987, p. 121. Derrida takes the idea for the concept of parergon from a marginal remark made by Kant, (a supplementary footnote in the 'Analytic of the Beautiful,' section 14), to deconstruct the philosophical argument of Kant's *Third Critique* (the *Critique of Judgement*). Kant says: 'Even what is called ornamentation (parerga), i. e. what is only an adjunct, and not an intrinsic constituent in the complete representation of the object, in augmenting the delight of taste does so only by means of its form. Thus it is with the frames of pictures of the drapery on statues, or the colonnades of palaces. But if the ornamentation does not itself enter into the composition of the beautiful form - if it is introduced like a gold frame merely to win approval for the picture by means of its charm - it is then called finery and takes away from the genuine beauty.' p. 68. Kant gives this example to show that a pure judgement of taste should not be based on charm nor emotion, but the sublime feeling should be based on a different kind of pleasure, one that is the reflective power of reason (the play of imagination and understanding, not mere sensation).

Institutional Perspective



66. The *Bird Room* at the Hancock Museum in the early 20th century

The Hancock Museum emerged in the 19th century,⁴³ (opened on its present site in 1884), in a period of industrialization, when a pre-modern, organic, mythical concept of nature started to compete with a post-industrial one. As a reaction to the instrumental relation with nature in the industrial revolution, nature is turned into an icon in the Romantic movement. Celeste Olalquiaga has examined the popularity of nature in relation to this process in Victorian society, remarking that ‘the downfall of the natural order triggered an immediate longing for and glorification of what was lost.’ According to her, this nostalgic longing for a lost (mythical) origin led to various ‘natural’ fads, a proliferation of aquariums, terrariums and collections of natural history, in which nature was artificially recreated to satisfy human whims: ‘either fossilized in the emerging field of natural history or abstracted in the Romantic sensibility’s quest for an immanent spirituality. In both cases, nature’s modern role as the mirror of a human-centred

⁴³ According to Hancock archive sources, the origins of the collection can be traced back to 1780, when the Marmaduke Tunstall began an ethnographic and natural history collection, which was later brought to his private ‘museum’ in North Yorkshire, and was subsequently purchased, in 1791 by George Allan of Darlington. The collection was then, sold, in 1823, to the *Literary and Philosophical Society of Newcastle* (founded in 1793). In 1829 the ‘Lit and Phil’ originated another institution: the *Natural History Society of Northumberland and Durham* which built the museum to display and house the natural sciences collections. At present the Hancock museum is managed, curated and maintained by the Natural History Society, the University of Newcastle and the Tyne & Wear Museums.

cosmos is reproduced in its objects' status, with science and industry constantly perfecting ways to retain this evanescent realm.⁴⁴

Given the colonial context of its origin and establishment, the Hancock Museum was also inevitably associated with an imperialist ideology, which contributed to the naturalization of colonized cultures, favouring the British empire's power relations with its colonies. The capturing and exhibition of animals was a symbolic representation of the conquest of all distant 'exotic' lands. Thus, the Hancock Museum was structured within this historical context. It was named after the North Eastern naturalist, artist and taxidermist John Hancock. Perhaps it was because of the ambiguous figure of Mr. Hancock, half-artist and half-scientist, that the Hancock museum still keeps a reminiscent atmosphere of cabinets of curiosity from earlier centuries, which were a mixture of fictional and scientific 'wonders' rich in poetic and scientific content.

Renaissance *Wunderkammern*, or cabinets of curiosity originated from Medieval religious ritualistic displays of relics and *mirabilia* which were 'natural and artificial marvels', kept in aureatic chambers, according to Olalquiaga.⁴⁵ She argues that Medieval collections were more inclined to a sensorial experience of the world, while the Renaissance *Wunderkammern* was concerned with an intellectual apprehension of it, interested in the compilation of encyclopaedic knowledge.⁴⁶ Olalquiaga remarks:

As marvels or curiosities, then, *naturalia* are read allegorically as the fragments of an extraordinary narrative which is in fact constituted in the continuous repetition of its anecdotes. Each repetition, like every new owner, adds a new layer of glamour to something that was already very lightly attached to reality, with marvels' value increasing according to the varying degrees of bizarreness of their stories, the difficulty of their acquisition, the prestige of their owners, the importance of the other items in the collections, and so on. All these elements

⁴⁴ Celeste Olalquiaga, *The Artificial Kingdom: a Treasury of the Kitsch Experience*, Bloomsbury Publishing, London, 1999, p. 45.

⁴⁵ *Ibid.* p. 211.

⁴⁶ *Ibid.* p. 221.

contributed to the formation of the marvels' aura in a universe where worth was measured mainly by the objects' ability to stimulate the imagination.⁴⁷

Thus, culture and nature were intrinsically connected, their value being slowly artificially manufactured, by the prolific imagination of successive collectors, recreating a microcosm made-up of fantastic fictions and wonderful 'bits' of the natural world. Olalquiaga argues that in the early 16th century collections with only *naturalia* began to appear, which led to the formation of 19th century museums of natural history: 'what establishes the relevance of the *naturalia* collections from this early stage is that they introduce the element of classification, the notion of a systematic organisation radically altering the character of all collections, which until then had been composed following emotional or aesthetic criteria.'⁴⁸

The Bird Gallery of the Hancock Museum can be situated in this transition from cabinets of curiosity to natural history collections because of the peculiar arrangement of its specimens. The aesthetic criteria and power of the animals to stimulate the imagination seems to have been as important to Mr. Hancock, as their scientific or didactic value. This can be observed in the intriguing displays of the Bird Gallery. The specimens were not subsequently reordered under a 'metanarrative,' or under a unifying concept such as an evolutionary order, but the display remained organized according to its previous arbitrary logic. Each cabinet is an autonomous fragment, which relates to the general theme 'bird', but is independent from the others. The cabinets are like a sculptural version of a piece of fragmentary writing: each display is like an autonomous installation within the architectural limits of the space.

⁴⁷ Ibid. p. 222.

⁴⁸ Ibid. p. 224.

The artwork treats the whole Bird Gallery as a text, and operates in small areas of its order, creating localized disorder, tensions or new orders within its textual fabric. There is a blurring of boundaries between fable, fictional tales and scientific information in the presentation of the collection. The display of various bird species is organized thematically, there are didactic cabinets representing migration, flight, reproduction, habits and behaviour, predation, folklore, myths and legends, camouflage, bird watching, habitats, extinction (which includes a replica of the extinct bird Dodo, and a 19th century painting of a great auk by an unknown artist), conservation, fashion (there is even a Victorian hat decorated with stuffed birds on display), 'birds and man' (with ethnographical artefacts), and finally a three-dimensional 'dictionary of British and European birds.' This level of heterogeneity brings the collection close to the organizing principles of the 16th and 17th century encyclopaedists, which mark the beginning of the natural history discourse, according to Foucault.

Foucault argues that for natural history to appear, it was necessary 'for History to become Natural,'⁴⁹ which means, the creation of a conventional system of representation for nature, this emerged in the work of 17th century naturalists. Foucault remarks that in the 16th century, in the work of Pierre Belon (1517-1564) and Ulisse Aldrovandi (1522-1605), there was a variety of histories, related to a specific plant or animal, that included its physical characteristics as well as the whole semantic network that connected it to the world: its virtues, legends, stories and its various uses.⁵⁰

Foucault argues that in the 17th century, the whole of animal semantics disappears from scientific discourse: 'the words that had been interwoven in the very being of the beast have been unraveled and removed: and the living being, in its anatomy, its form, its

⁴⁹ Michel Foucault, *The Order of Things*, (1966), op. cit., p. 128.

⁵⁰ Ibid. p. 129.

habits, its birth and death, appears as though stripped naked.⁵¹ Thus, it is from this separation between things and words that natural history emerges. In later ordering systems, such as the one proposed by Carolus Linnaeus (1707-1778), the description of a specimen follows a systematic plan, in which the name and objective characteristics are listed separately from the category *Litteraria*, under which are grouped the traditions, beliefs and poetics related to the animal or plant.

The Hancock's Bird Gallery dwells in a transitional space relating to a 16th century mixture of rational knowledge with magic and literature, as well as to the alphabetic encyclopaedic order of the 17th century. Although the myths and legends are clearly separate in different cabinets of the Bird Gallery, there is a strong aesthetic and poetic tendency which is present in all of its displays. The scientific desire to know, classify and name the birds is mixed with projections of human fantasies and desires, resulting in an anthropomorphic representation of the animals.



67. Love birds in the *Reproduction* display

Each display is a kind of stage where the dead animals are made to act specific roles in given narratives. There are many scenes of lovers, mother and child, happy and sad

⁵¹ Ibid. p. 129.

characters, family life and dramatic tragic scenes of predation. In the *Reproduction* display, there is a gradation of erotic encounters, from romantic love to scenes of 'crude' sex. Such melancholic displays are close to the Baroque mourning play, in which there is a tension and release of feelings of sorrow, as Benjamin notes: 'In it [mourning play] sorrow is nothing more than a single tone on the scale of feelings, and so we may say that there is no mourning play pure and simple, since the diverse feelings of the comic, the terrible, the horrifying, and many others each take their turn on the floor.'⁵²

The installation engages with this theatrical character of the display in order to examine the hollowing out of life and meaning of the animals in display. The natural history museum viewer is confronted with dead carcasses, which are like small pieces in the puzzle of a scientific discourse, constitutive of it but completely empty of their own significance as a being. The loss of life is accompanied by a loss of meaning, a pre-linguistic meaning, before the animal was named and entered the order and classificatory system constructed by natural history. The undefined, unfixed value of the animal's existence vanishes to give way to a defined value in a system of differences and similarities in the taxonomic scientific order, an imposed order in the complex network of relations that living beings have in their original habitats. It is because of the loss of meaning that the scientific value can be allegorically added to. When the named bird is made to act or represent human values in the museum of natural history, then, another (ideological) meaning is attached to it.

The artwork examines the various strategies in which such layers are gradually built upon fragments of nature. The birds are selected from their habitat, bracketed out from

⁵² Walter Benjamin, 'The Role of Language in Trauerspiel and Tragedy', in *Walter Benjamin Selected Writings*,

the changing world, to be placed inside a 'timeless' space under a protective glass case, in an attempt to rescue their ephemeral lives from the natural process of decay. In this process the animals become hollowed ruins, as in Benjamin's allegorical theory, nature becomes a petrified landscape of death.

Benjamin remarks that the emblem of the stone is one of the symbols used in the Renaissance to represent *melancholia*.⁵³ The ruin is like the stone, and becomes a symbol for history as part of a decaying nature: 'In the ruin history has physically merged into the setting. And in this guise history does not assume the form of the process of an eternal life so much as that of irresistible decay.'⁵⁴ In Benjamin's theory of allegory, history appears as nature in decay or ruins, associated with death, violence and transitoriness.⁵⁵

In the Bird Gallery displays, the Romantic desire of nature to coincide with human emotions is mixed with the modern-industrial loss of a mythic original nature. The metaphorical death of nature becomes literal in the natural history collection and the embalmed animals are artificially turned into fossils, as Olalquiaga remarks: 'Ruins and organic fossils meet therefore in *melancholia*, in the interiors and dioramas whose very enclosedness and obsession with trapping lived moments make them into veritable tombs of experience, tombs where corpses slowly accumulate the signs of both frozen and passing time.'⁵⁶

vol. 1, 1913-1926, ed. by Marcus Bullock and Michael W. Jennings, The Belknap Press of Harvard University Press, Cambridge and London, 2000, p. 61.

⁵³ Walter Benjamin *Origin of the German Tragic Drama*, op. cit., p. 155.

⁵⁴ *Ibid.* p. 178.

⁵⁵ Susan Buck-Morss, in *The Dialectics of Seeing*, notes that Benjamin developed his theory of allegory, in the context of ruins of the two world wars, where history appeared as a desolate 'place of skulls.' p. 170.

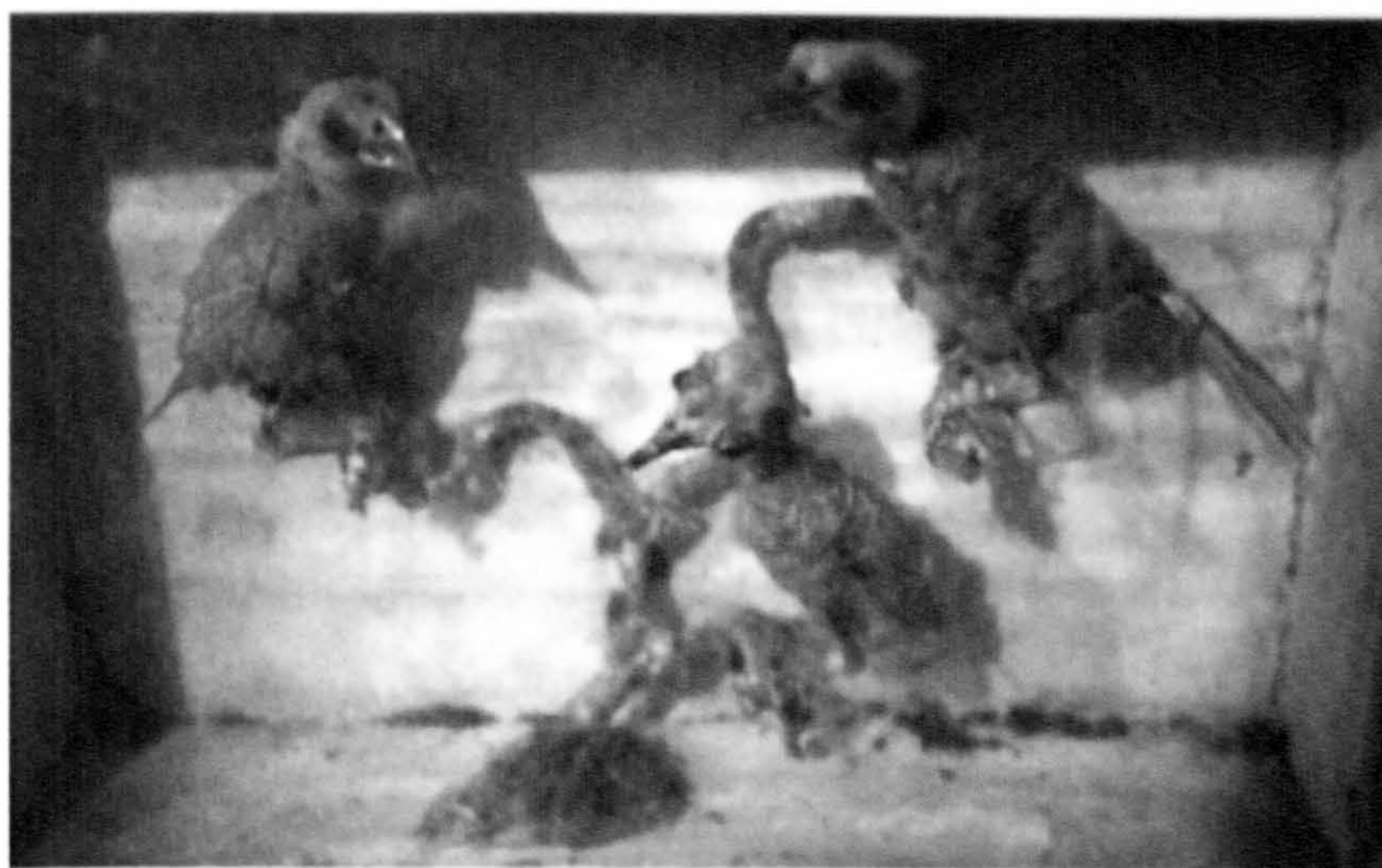
⁵⁶ Celeste Olalquiaga, in *The Artificial Kingdom: a Treasury of the Kitsch Experience*, op. cit., p. 297.



68. Nest of eagles

Melancholy is at the core of allegorical thinking. In the analysis of the Baroque, the concealment of death and decay, in the attempt to hold time, could be regarded as a nostalgic desire to hold on to a Romantic utopian original nature, which was becoming lost with the industrial revolution. But the (late) Romantic nostalgia is distinct from the Baroque feeling of melancholy. Where the nostalgic watches the spectacle of the artificially recreated life, the melancholic mourns the death of the corpses. The view of a nest full of baby birds is, at the same time, a Romantic symbol for family values and parental love, but also an uncomfortable sight of cruelty. In the *Origin of the German Tragic Drama*, Benjamin explains that melancholic allegory is concerned with the horror of death. While the Romantics deal with the symbol's transcendence, the Baroque allegorists deal with the problematic of the world of things, and the politics of the historical context. But, ultimately, the Baroque poets fail to articulate a political solution for the problems of the 'world of things', and turn to death and redemption as the only way out of the 'hell' of the world.⁵⁷

⁵⁷ Susan Buck-Morss, in *The Dialectics of Seeing*, argues that Benjamin was critical of Baroque allegory's melancholic contemplation of politics without intervention. Benjamin notes that: 'allegory deserts both history and nature and (like the whole tradition of idealist philosophy that comes after it), takes refuge in the spirit. All hope is reserved for a hereafter...' (Here the Baroque poet gets closer to the Romantic quest for transcendence). Thus, when the Baroque allegorist turns towards redemption, he turns his back to the 'world of things', then 'allegory goes away empty-handed.' Benjamin says that Baroque allegory falls into an absolute 'subjective pensiveness', denying the existence of the world it presents, in the *Origin of the German Tragic Drama*, op. cit., p. 233.



69. Box found in the taxidermist's workshop

Melancholy is at the core of allegorical thinking. In the analysis of the Baroque, Benjamin remarks that there is a positive, philosophical aspect to melancholy, contrasting it to a negative counterpart in which melancholy is regarded as a mental disorder. In pathological melancholy, the insane gives meaning to inanimate objects, interpreting them as secret messages or messengers. This capacity of the melancholic to read meanings in objects, or to interpret the world as a text doubled with enigmatic messages is the dynamic of allegory. Benjamin explains that allegorical meaning is related to the melancholic loss of life, the hollowing out of the object's meaning:

If the object becomes allegorical under the gaze of melancholy, if melancholy causes life to flow out of it and it remains behind dead, but eternally secure, then it is exposed to the allegorist, it is unconditionally in his power. That is to say it is now quite incapable of emanating any meaning or significance of its own; such significance as it has, it acquires from the allegorist.⁵⁸

The dead birds in the Bird Gallery have lost their original 'aura', the energy of a presence as living beings. Instead, what we encounter is their empty petrified bodies, open for the scientist allegorist to manipulate, 'make them up' and give them new meaning. The dead animals are turned into relics, gaining new, aureatic value as scientific evidence, carefully preserved and protected behind glass walls, like sacred

⁵⁸ Walter Benjamin *Origin of the German Tragic Drama*, op. cit., pp. 183- 184.

remains in medieval aureatic chambers. As artists, we re-appropriate them, as well as the entire space of the Bird Gallery, turning them into parts of a large artwork. The installation is made of various small independent installations inside each display cabinet, which allegorically point to their original habitat. The entire space stands like a ruin, composed of empty fragments with alternating meanings around the bird's ungraspable 'original' existential value. The illusion of suspension of time and death is undone by the gradual deterioration of the museum.

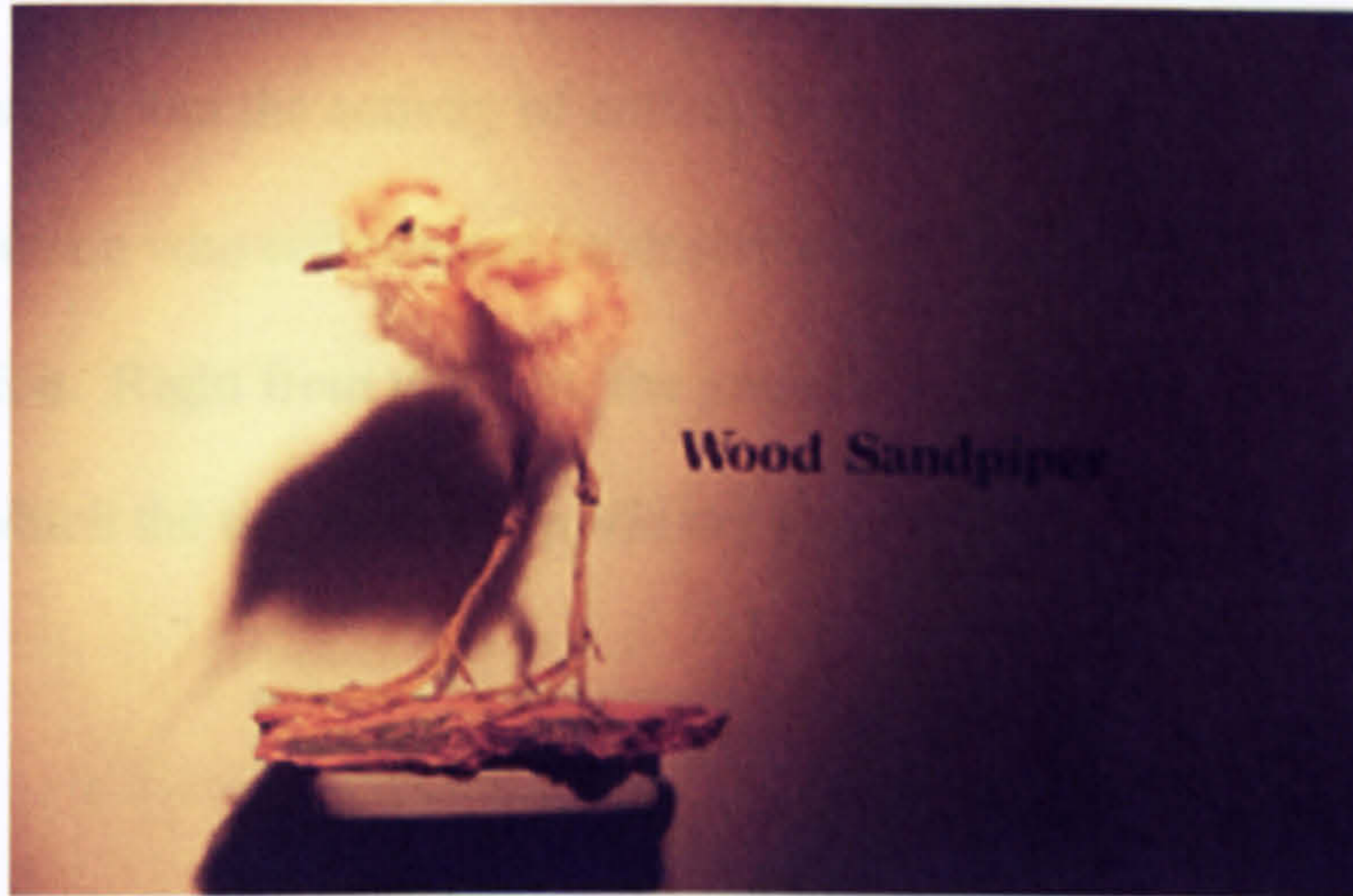
The Hancock Museum can be regarded as a living document of a long history of love and violence towards nature. At present, the Bird Gallery is like a decaying body, which saw in its youth busy periods of intensive activity and growth, when it accumulated most of its collection of 'exotic' specimens collected mainly from Africa, Australia and South America. At that time, the museum preserved this rich collection, under its glamorous glass sky light ceiling, which is currently covered with a thick layer of a mouldy insulating material (that also has a strange beauty). The impressive Victorian wooden and glass cabinets are now mixed with outdated recent (1960s or 1970s) furniture and typography.⁵⁹ Thus, time has left its marks in the flesh and bones of the museum, affecting its physiology. From its initial splendour during Britain's imperial age to the economic pressures of post-Thatcher funding policies, the institution has struggled for its survival, avoiding death at high prices. In order to survive the museum has gone through a process of intense commodification,⁶⁰ which has transformed it into a 'postmodern' chaotic mixture of mass-culture commodities and 19th century natural historical objects. It was in this context that our intervention took

⁵⁹ A new design and educational interactive displays for children are found in the other rooms: *Earthworks*, *The Living Planet* and the *Land of the Pharaohs*.

⁶⁰ During and after Margaret Thatcher's government, most museums in Britain started having to introduce admission fees, in parallel to this, the commodification of the museum accelerated, with projects of modernization and the incorporation of shops and cafes, to attract more visitors. The Hancock Museum has an educational program of temporary 'blockbuster' exhibitions (to use their own marketing language) such as *Walking with Dinosaurs*, *Bats*,

place.⁶¹ The installation produced at the end of the residency, engaged in a subtle way with the melancholy of the appropriated dead animals - exhibited as lively actors in an anthropomorphic theatre - which echoes the gradual institutional deterioration and its allegorical appropriation by the commodity.

The Dynamic Circle of Order and Disorder



70. *Wood Sandpiper* in the Bird Gallery

The presentation of the birds accompanied with their names and a didactic text work like an emblem, creating a dialectical movement between their linguistic designation and their material presence. The installation *the first mild day of March* intervened in this gap, between the imposed order of scientific classification and the empty, petrified animal.

The birds in the Hancock Museum's collection are simultaneously connected to a taxonomic order by their scientific name, and to a thematic ordering of the collection

Myths and Monsters, Venom and even *Star Trek: Federation Science*, and *007*, which can guarantee large numbers of the paying public aged under 12 years old.

⁶¹ We approached the museum with our project at a moment when the curators were interested in initiating projects with artists, with the objective of attracting new audiences to the museum. We undertook a residency at the museum for one year, during which time we had free access to the collections on storage and established a dialogue with the museum staff. The curator was reasonably open to our ideas and did not interfere with the content of the work. The

which is closer to the disorderly way in which birds interact with the world. This peculiar order is also related to the poetic, chaotic and sometimes comic disorderly arrangement of animals cluttered in the museum's storage rooms and the taxidermist's workshop. The room for taxidermic operations can be considered the 'unconscious' of the museum, where the dead animals are literally hollowed out, and prepared to enter into a new linguistic order. The taxidermist and the scientist are engaged in the ordering of the chaotic complexity of the world, in their construction of the collection. Benjamin remarks about the activity of collecting that 'Perhaps the most deeply hidden motive of the person who collects can be described this way: he takes up the struggle against dispersion. Right from the start, the great collector is struck by confusion, by the scatter, in which the things of the world are found.'⁶²



71. Taxidermist's workshop

The inventive and illogic chaos of the taxidermist's room tends to be repressed in the didactic and objective language used in the presentation of the specimens in the

main restrictions we had to deal with were related to health and safety regulations and a limited budget. These two factors limited our intervention in that we ended up lighting fewer display cabinets than we had originally planned.

⁶² Walter Benjamin, in *The Arcades Project*, op. cit., Fragment [H4a, 1].

museum's front doors. But the repressed returns in the dramatic scenes in each display, as I have remarked previously.

In the thematic order of the Bird Gallery, recent scientific information about birds is presented alongside their long established cultural and mythic values. In this heterogeneous space, stuffed birds, paintings, fashion items and 'fake' copies of extinct birds (Dodo) are brought together, under the same roof, under one unifying theme, which is similar to Marcel Broodthaers' *Musée d'Art Moderne, Département des Aigles*.⁶³ In the Bird Gallery, the conscious order of the scientific language overlaps with the unconscious poetic disorder of the storage rooms. In the Bird Gallery the viewer is confronted with these two antithetical perspectives, one constantly dissolving into the other. The allegorical construction of the installation over this unstable structure, increases the tensions between these two distinct perspectives.

The installation title, *the first mild day of March*, is a verse taken from a poem by Wordsworth.⁶⁴ The title brings a Romantic and poetic component to the dialogue between the artwork and the scientific collection. The poem is a reference to the arrival of spring, juxtaposing the historical, linear time of the museum with the cyclical

⁶³ The *Musée d'Art Moderne, Département des Aigles, Section XLIX^{eme} Siècle* was first installed in Broodthaers' flat in 1968, and was subsequently recreated in various museums. Broodthaers' fictional museum was constructed around the historical aspects of the symbol of the eagle. The artwork, arbitrarily consists of diverse images of eagles including paintings, mass produced objects, and artefacts from historical museums, all arranged non-hierarchically, and accompanied by a label which said: 'This is not a work of Art,' referring to the works of Magritte and Duchamp.

⁶⁴ The poem is entitled 'Lines', in Wordsworth and Coleridge, *Lyrical Ballads*, (1798), edited by H. Littledale, Oxford University Press, London, Geoffrey Cumberlege, impression of 1946, pp. 95-97. Here are the first two parts of the poem:

It is the first mild day of March:
Each minute sweeter than before,
The red-breast sings from the tall larch
That stands beside our door.

There is a blessing in the air,
Which seems a sense of joy to yield
To the bare trees, and mountains bare,
And grass in the green field.

seasonal time of the world outside. The romantic feeling of a love for nature is brought into the (melancholic) scientific space of the museum.

A parallel between the overlapping of these two perspectives can be made with the superimposition of metaphor over metonymy articulated by Roman Jakobson in his linguistic model of allegory. Joel Fineman notes that in Jakobson's theory 'allegory would be the poetical projection of the metaphoric axis onto the metonymic, where metaphor is understood as the synchronic system of differences that constitutes the order of language (*langue*), and metonymy the diachronic principle of combination and connection by means of which structure is actualized in time in speech (*parole*).'⁶⁵ In this theory, metaphor is associated with verse and romanticism, while metonymy is linked with realism and prose.

If we transpose this model to the analysis of the installation *the first mild day of March*, the poetic way of relating to nature in Romanticism is aligned with the synchronic, metaphorical axis; while the scientific language of natural history can be understood as the diachronic and metonymic one. The allegorical artwork plays with these two polarities, not identifying itself with any of the two positions, but allowing them to dissolve into one another in the little defined borders which separate the two discourses in the Bird Gallery. This is possible because of the structural characteristics of allegory, as Fineman explains, 'allegory would cut across and subtend all such stylistic categorizations, being equally possible in either verse or prose, and quite capable of

⁶⁵ Roman Jakobson's semiotic theory is influenced by the seminal work of the Swiss linguist Ferdinand de Saussure (1857-1913), who explored the synchronic perspective of linguistics, which is concerned with something as it exists at one point in time, the contextual aspects of language (vertical axis). This perspective is opposed to that of philologists, who are engaged with a diachronic study, which investigates how language has developed through time, the historicity of language (horizontal axis). Joel Fineman, 'The Structure of the Allegorical Desire', *Arctos*, no. 12, Spring 1980, p. 50.

transforming the most objective naturalism into the most subjective expressionism, or the most determined realism into the most surrealistically ornamental Baroque.⁶⁶



72. View from the taxidermist's room

Fineman criticizes allegory as being a-historical, therefore uncritical, because of its priority to the metaphorical or synchronic axis. He argues that it is always the metaphor which is projected onto the metonymic sequence, a movement that he regards as 'a hierarchicizing mode, indicative of timeless order, however subversively intended its contents might be.'⁶⁷ Fineman continues arguing that, in the allegorical structure, signifiers become vehicles of a larger structure, losing their content as they 'point to themselves as signifiers rather than to what they signify: poetic sense is exchanged for poetic sensuousness...'⁶⁸ Fineman recognizes that allegory can maintain its grip on meaning, if it succeeds in establishing a meaningful connection between metaphor and metonymy.⁶⁹ Here, he touches on an important point, which is the necessity of the allegorist to maintain open the dialectical character of allegory, avoiding the closure into a synthesis, as Gail Day has argued.⁷⁰ If allegory remains an open dialectic, as the

⁶⁶ Joel Fineman, 'The Structure of the Allegorical Desire', *October*, no.12, Spring 1980, p. 51.

⁶⁷ *Ibid.* p. 51.

⁶⁸ *Ibid.* p. 52.

⁶⁹ *Ibid.* p. 52.

⁷⁰ See discussion of allegory in Chapter 1.

infinite movement of antithetical ideas in Schelegel's fragment, then, it cannot be conceived as a hierarchical structure.

Fineman remarks that in allegory all parts function structurally in relation to one another and to themselves as a kind of mirror image, commenting on each other but keeping a relation to a common frame.⁷¹ In the installation *the first mild day of March*, the intervention functions as the frame, which brackets the Bird Gallery, designating it art. In this structure, all the elements in the existing structure of the collection interact with one another, gaining an extra level of self-reflectivity within the new frame. The scientific discourse remains there, as it was previously, immersed in the heterogeneous space of the collection, in its entanglement with language and dead animals. The temporary artistic intervention was not an a-historical aestheticization of the museum, but a critical examination of a complex site where the infinite dialectics of aesthetics and science takes place.

Fineman recognizes the dialectical character of allegory: '[...] allegory initiates and continually revivifies its own desire, a desire born of its own structuring. Every metaphor is always a little metonymic because in order to have a metaphor there must be a structure, and where there is a structure there is already piety and nostalgia for the lost origin through which the structure is thought. Every metaphor is a metonymy of its own origin, its structure thrust into time by its very structurality.'⁷² Thus, the proliferation of structures are born of the desire of allegory to grasp the perpetually deferred meaning of a preceding structure, the pretext. This is the model of the fragment, each successive frustrated attempt to signify, leads to an endless process of production. In the case of the museum of natural history, its quest is to interpret the

⁷¹ Ibid. p. 55.

ungraspable meaning of the 'Book of Nature.' This task has led to endless interpretations, generating a proliferation of structures, amongst others, the language of natural history and vast collections of preserved plants and animals in museums throughout the world. The order created by the discourse of natural history does not coincide with the chaotic order of the original, and it is in this gap between the two that unexpected orders are formed. At the Bird Gallery of the Hancock museum, the disorder of the museum's unconscious comes through the poetry of its magic encyclopaedia, by mistake, like a lapse of the tongue.



73. View from the taxidermist's room

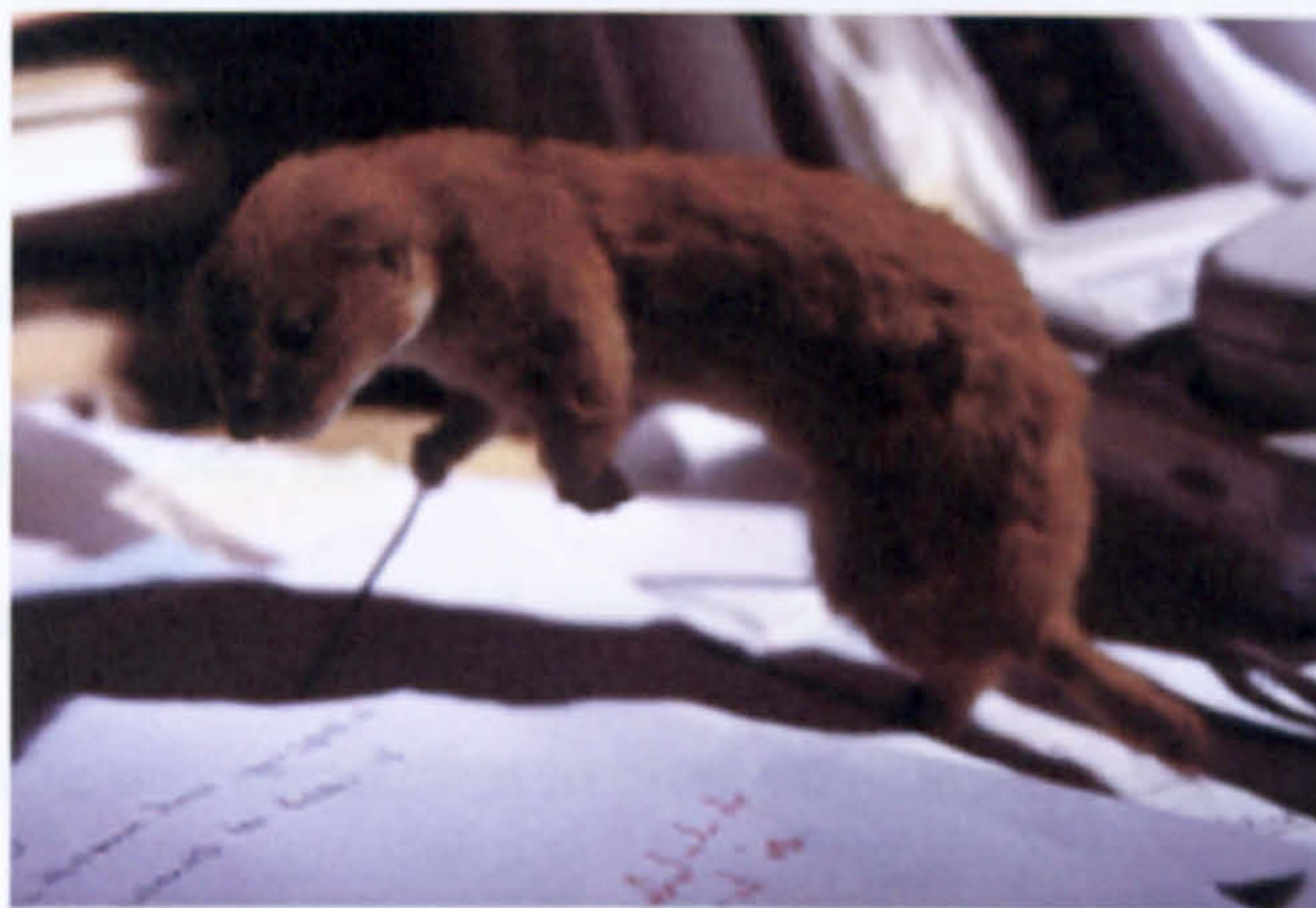
The Discourse of Natural History

Foucault remarks that the theory of natural history cannot be dissociated from that of language, because natural history is concerned with the representation of the knowledge of plants and animals, through a system of names.⁷² Foucault says that in natural history: 'things and words are very strictly interwoven: nature is posited only through the grid of denominations, and - though without such names it would remain mute and

⁷²Ibid. p. 59.

⁷³ Michel Foucault, *The Order of Things*, (1966), op. cit., p. 157.

invisible - it glimmers far off beyond them, continuously present on the far side of this grid, which nevertheless presents it to our knowledge and renders it visible only when wholly spanned by language.⁷⁴ Thus, it is through the mediation of language that nature acquires visibility and is organized in the natural history discourse. The way nature is configured in such organization is influenced by distinct approaches to language in various historical periods.



74. View from the taxidermist's room

Foucault remarks that in the episteme of the 16th century, nature was regarded as a vast text requiring interpretation: nature and word were intertwined with one another to infinity.⁷⁵ Foucault argues that in this period, language was conceived as a concrete thing in the world, like plants, stones and animals. He notes that in 16th century encyclopaedias, the description of an animal was inseparable from its linguistic interpretations, and the naturalist researched the entirety of knowledge around a particular specimen, from various sources: 'To know an animal or a plant, or any terrestrial thing whatever, is to gather together the whole dense layer of signs with which it or they may have been covered; it is to rediscover also all the constellations of

⁷⁴ Ibid. p. 160.

⁷⁵ Ibid. p. 34. Foucault explains that the construction of the scientific discourse on nature, in the 16th century *episteme*, was based on the model of scriptural commentary. It was identified as interpretation, and as such, it was based on an infinite accumulation of successive commentaries upon preceding texts.

forms from which they derive their value as heraldic signs.⁷⁶ There was no separation between things and the words about them, all of the fictitious and factual commentaries stood in equal terms in the long semantic lineage attached to a thing. The installation *the first mild day of March* explores the rich semantic chain related to the birds in the collection. The Bird Gallery is already structured in a way to encourage such an imaginative reading of the animals, and the artwork emphasizes this tendency, making the link between words, animals and associated thoughts even more open.

According to Foucault the naturalist from the 17th century onwards becomes involved in describing what he can see, rather than compiling the signs and stories associated with his object of study, as did the 16th century natural historian. In this new way of relating to nature, there was an attempt to create a neutral, objective and faithful language:

The documents of this new history are not other words, texts or records, but unencumbered spaces in which things are juxtaposed: herbariums, collections, gardens; the locus of this history is a non-temporal rectangle in which, stripped of all commentary, of all enveloping language, creatures present themselves one beside another, their surfaces visible, grouped according to their common features, and thus already virtually analysed, and bearers of nothing but their own individual names.⁷⁷

As Foucault explains, the task of natural history is involved in reducing the distance between things and language, once they have been separated: language should be used in such a way so as to coincide as much as possible with the scientifically observed, so that things can be transparently represented by language.

Foucault argues that the construction of a new language is based on comparisons between empirically formed groups. A classification is, then, established based on the

⁷⁶ Ibid. p. 40.

⁷⁷ Ibid. p. 131.

differences and similarities of different specimens, creating a grid which 'can be laid over the entire vegetable or animal kingdom. Each group can be given a name. With the result that any species, without having to be described, can be designated with the greatest accuracy by means of the names of the different groups in which it is included.'⁷⁸ In this way, knowledge can be acquired from a continuous order of possible differences. While in the 16th century,

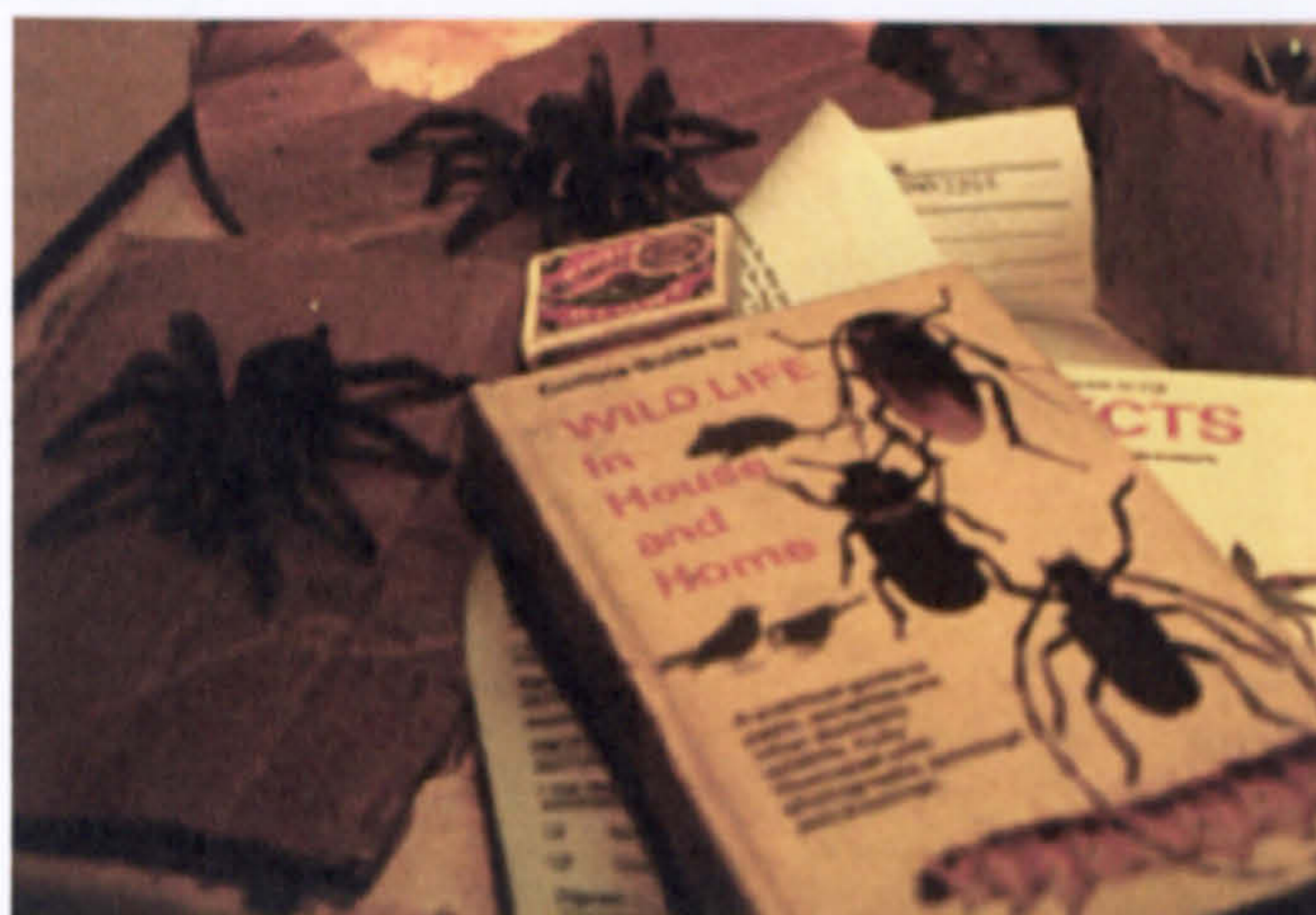
[...] the identity of plants or animals was assured by the positive mark (sometimes hidden, often visible) which they all bore: what distinguished the various species of birds, for instance, was not the differences that existed between them but the fact that this one hunted its food at night, that another lived on the water, that yet another fed on living flesh. Every being bore a mark, and the species was measured by the extent of a common emblem.⁷⁹

Thus, each animal had a certain independence from the overall frame, which disappears in the 17th century system of classification, where the identity of a living being is defined by a general system of differences. It is because of this loss of individual meaning that the animals suffer a process of homogenization in the modern system of classification. The process of naming and classification involves a kind of metaphorical death, as the animal is taken from a complex 'disorder' of the living world and inserted into the universalizing order of the scientific discourse. The artwork adds another frame to the unstable relation between the specimen and the scientific value imposed on it. As a supplementary fragment built into the margins of the collection, the artwork mirrors the structure of the scientific language, revealing it to be a supplement in the animal's long signifying chain. The scientific explanation that 'frames' the specimens and reduces their complex relations with the world, to a simple name in the homogenizing grid of the taxonomic order is disrupted. The extra frame provided by the artwork disturbs the stability of such correspondence by expanding the gap between the signifier

⁷⁸ Ibid. p. 141.

⁷⁹ Ibid. p. 144.

and signified, intensifying the disjunction between the linguistic sign and its referent, between things and words.



75. View from the taxidermist room

Sight becomes the privileged sense in scientific observation during the 17th century, defining natural history's conditions of possibility, and later being extended further by the use of optical instruments. As Foucault argues: '[...] to attempt to improve one's power of observation by looking through a lens, one must renounce the attempt to achieve knowledge by means of the other senses or from hearsay. A change of scale in the visual sphere must have more value than the correlation between the various kinds of evidence that may be provided by one's impressions, one's reading, or learned compilations.'⁸⁰ Thus, to observe was to see and describe the object in a systematic and internationally recognizable way. Linnaeus proposes a system of classification (still used today), in which four basic variables of a species should be described: number, form, proportion and situation.⁸¹ According to Foucault, these values determine the structure of organs and anatomical parts of animals and plants observed, creating a conventional system which makes possible their passage from visual representation to textual language. Foucault explains that the structure reduces the totality of living beings to a system of designated variables, which make it possible to

⁸⁰ Ibid. p. 133.

⁸¹ Ibid. p. 134.

link natural history to mathematical science.⁸² In this process the organism loses its unity to become a pattern of morphological parts, in the order of a grid: the new language of natural history.



76. *the first mild day of March*, view of telescope

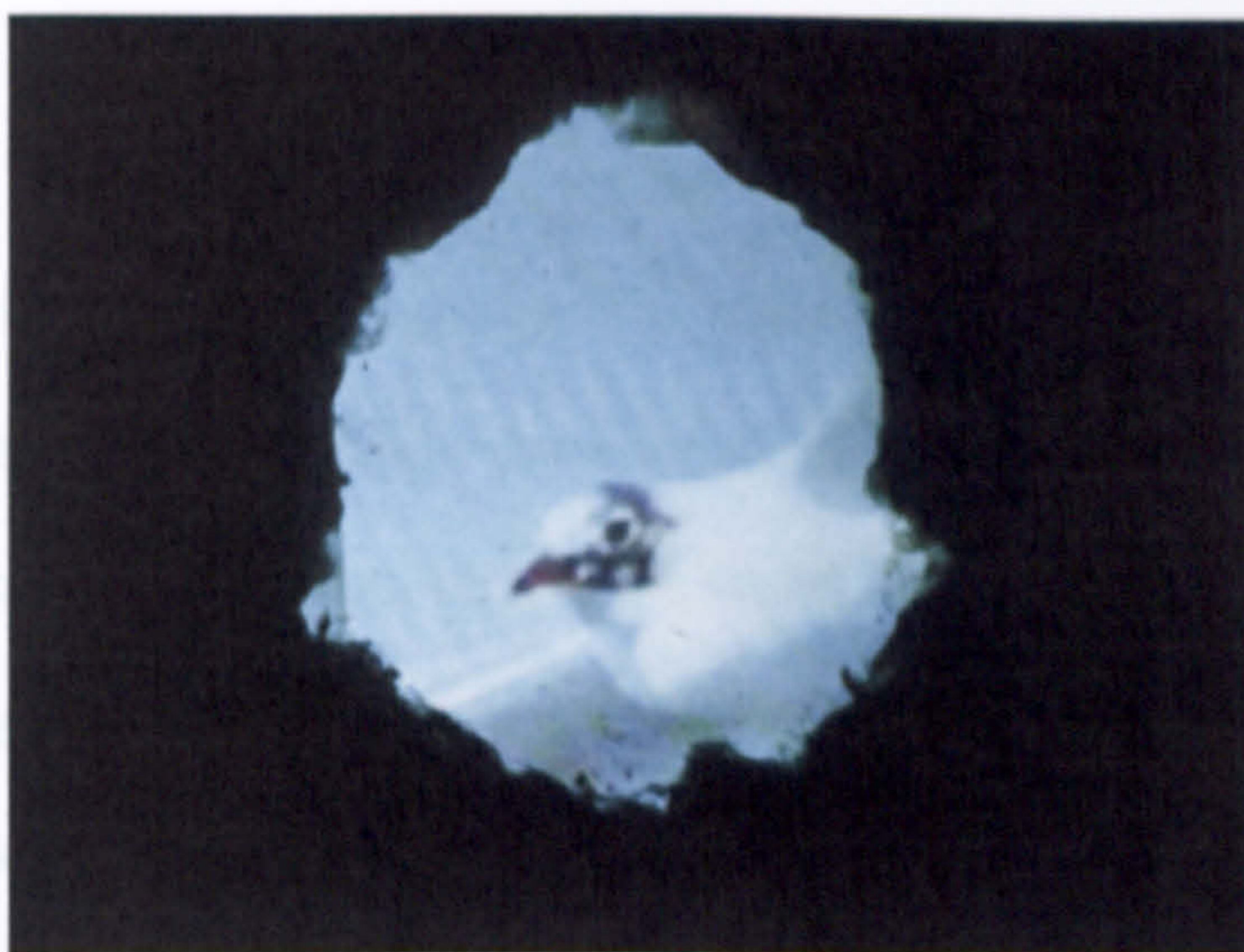
In this way, viewing through lenses becomes associated with scientific observation and the formulation of a language of objectivity to describe and coincide with nature. The magnification through lenses is also associated with an artistic gaze, voyeurism and becomes an escape route to a 'magical' dimension. In *the first mild day of March*, the viewing of our video through the lenses of a telescope explores this tension between a poetic and a scientific gaze. The aesthetic gaze is a means of relating to the world in which the subject is not interested in knowing its object by classifying it or describing its parts. From a poetic (phenomenological) perspective, the viewer seeks pleasure in

⁸² Ibid. p. 136.

the experience, is interested in knowing the object by allowing it to be what it is, to unfold its existence or presence in front of the subject. This apparently direct engagement with nature, (and the pleasure of seeing a bird in its habitat), that is experienced by ornithologists or bird watchers, is inevitably mediated by culture.

In the installation, the desire for immediacy is frustrated even more, as the viewer is not presented with the presence of a real living bird, but with a copy, the reproduced image of an ephemeral moment in a bird's flight. The loss of 'aura' through video reproduction is comparable to the loss of life of the stuffed birds, as both are only shadows of a lost existence. Yet, through the fragment, this existence can be indirectly presented and can generate endless reflection.

Opticality in art has been associated with the aesthetics of painting and the discourse of subjectivity and expression theory. Installation art emerges as a reaction to the 'pure opticality' of painting, in which the viewer experiences the artwork as a 'disembodied eye'. Thus, as discussed in the first section of this Chapter, opposing this narrow perspective, installation brings a phenomenological perspective to the work of art as was articulated by minimalist artists, as the bodily exploration of space. In viewing the video through the telescope *the first mild day of March* points to the visual aspect of the aesthetic experience. As I have discussed previously, aesthetics is often regarded with suspicion because of the a-historical aspect of the aesthetic experience as it absorbs the viewer in an uncritical pleasure. On the other hand, visibility is also related with to politics of representation in the photographic discourse, even in its most semiotic understanding, the image remains important and its quality has a special way of signifying.



77. View of the video back-projection through the glass ceiling

The use of the telescope in the installation, brings together all of these artistic references to visual perception with the objective scientific approach, to create a space for reflection on the various ways of relating to nature and the multiplicity of mediating filters which separate it from us. As a site-specific installation, *the first mild day of March* explores other phenomenological aspects of the complex space of the Bird Gallery, such as: the smells, sound and atmosphere of the place. These physical aspects are entwined with the institutional and discursive frames around the exhibits, which the installation investigates, by treating the collection as a text, and by highlighting its poetic aspects through a close reading of it.

Conclusion

The installation *the first mild day of March*, as an ephemeral intervention, is indirectly presented here, through photographic documentation, text, and by the isolated parts which constituted the intervention, such as the sound and the videos. However, when viewed separately, the videos do not translate the experience of the installation, in the same way that listening to the CD does not reflect the perception of sound in the space of the museum. The melancholic death of the work is characteristic of the allegorical mode of production. In allegory, the new comes from old, pre-existing structures, in acts of creative revival in order to retrieve a disappearing past to the present. This text is such an attempt to retrieve some aspects of the vanished work, and explore the ways in which the installation related to the site in which it intervened.

The work engaged with the physical space of the museum, at the same time, it can be regarded as a discursive frame, added to the institutional discourse of the natural history museum. The expansion of the notion of site, which Krauss, Meyer and Miwon describe, from phenomenological space to ideological sets of relations can be conceived of as different levels in the interpretation of works which are temporarily constructed in non-art spaces. In the case of *the first mild day of March*, the installation transformed, for few weeks, a scientific context into an art space. As I have discussed, it is possible to observe how the phenomenological experience of the space of the Bird Gallery is closely linked with the discursive aspects which emerge through the ordering and presentation of the specimens. The installation pursued this linking thread in the physical and textual fabric of the Bird Gallery by moving from the phenomenology of the space to its discursive construction.

The use of ambiguous allegorical language in the construction of the artwork explored the various layers of meaning related to the institution, without directly criticising its violent past, and its present commodified status. This made it possible for our intervention to remain critical of the museum's operations, without having to compromise the content of the artwork in our negotiations with a museum curator. The site-specific installation as such cannot be commodified, but the photographic material which relates to it can. Thus, the artwork, and our artistic activities are as implicated in the capitalist system as the museum is, because everything in the system (to varying degrees) is under the allegorical power of the commodity. There is no way to escape the contradictory (critical and commodity) aspects of the artwork, but it is possible for artists, in some circumstances, to mediate these aspects in the process of production, and create a space for critical reflection.

the first mild day of March played with Meyer's 'lyrical' and 'critical' distinction, or the tension between a poetic and a scientific gaze, which was here associated with the tension between metaphor and metonymy in Jakobson's theory of allegory, as discussed by Fineman. By bringing two extremes together: the Romantic view of nature with its objective language of scientific classification, we intended to confront the pre-modern, mythical concept of nature with a post-industrial one. *the first mild day of March*, was built on this tension between the scientific impulse to discover, conceptualize and classify, and a poetic desire to undo such imposed classificatory order. In the construction of the work, we were concerned with keeping both positions simultaneously functioning, so as to maintain an open dialectic which avoids closure in prioritizing one of the polarities.

The piece invited the viewer to look at the process of looking, to relate to the collection from multiple points of view. The use of the telescope and video projections, pointed to the role of technology in attempting to reduce the distance between nature and the viewer, and to give the illusion of proximity and immediate contact with it. This desire is frustrated by the series of mediations involved in the process of reproduction, in the case of video, which destroy the 'aura' of the image, of a real encounter between the viewer and a living animal in its natural environment. This attempt to copy an original scene from the natural environment, far and beyond the museum's walls, is also reflected in the display cabinets' artificial recreation of scenes of living birds in idyllic landscapes, the wild jungle or urban environments, by using paintings and curious props. The melancholic death of the animals and their meaning left them open to allegorical manipulation by the taxidermist, scientist and subsequently, us, the artists.

The manipulation of the lighting in the cabinets, during the exhibition, encouraged the viewer to read the stories which were built in each display, and to observe their contradictory dramatic and pedagogical character. With such strategy we aimed to emphasize what was already present but perhaps unnoticed, the 'romantic' gesture in the 'objective' scientific work. There, the boundaries between art and science, fact and fiction, culture and nature, dissolved into a blurred area, reminiscent of the times in which these notions were mixed in Renaissance encyclopaedias and cabinets of curiosity.

The artwork did not follow the scientific method nor did it create new systems of classification. It increased the existing sense of disorder, where one was not primarily engaged with the identification of the bird's species, but on the act of viewing and observation. The suspension of the didactic function worked to stimulate the

questioning about what other ways those animals could mean something. In the space which separated the animals from the distinct discourses, a new configuration of order could emerge.

Foucault, in his theory of discourses, explores the cultural, empirical order within which scientists operate. He concentrates on the aspects of the social construction of the discourse of science, in opposition to scientific and philosophical theories which defend the existence of universal laws of order in nature and which view science as capable of objectively presenting through its realist discourse. Foucault argues that, between these two positions, there is an intermediary space in which an 'unspoken' or pre linguistic order can manifest itself:

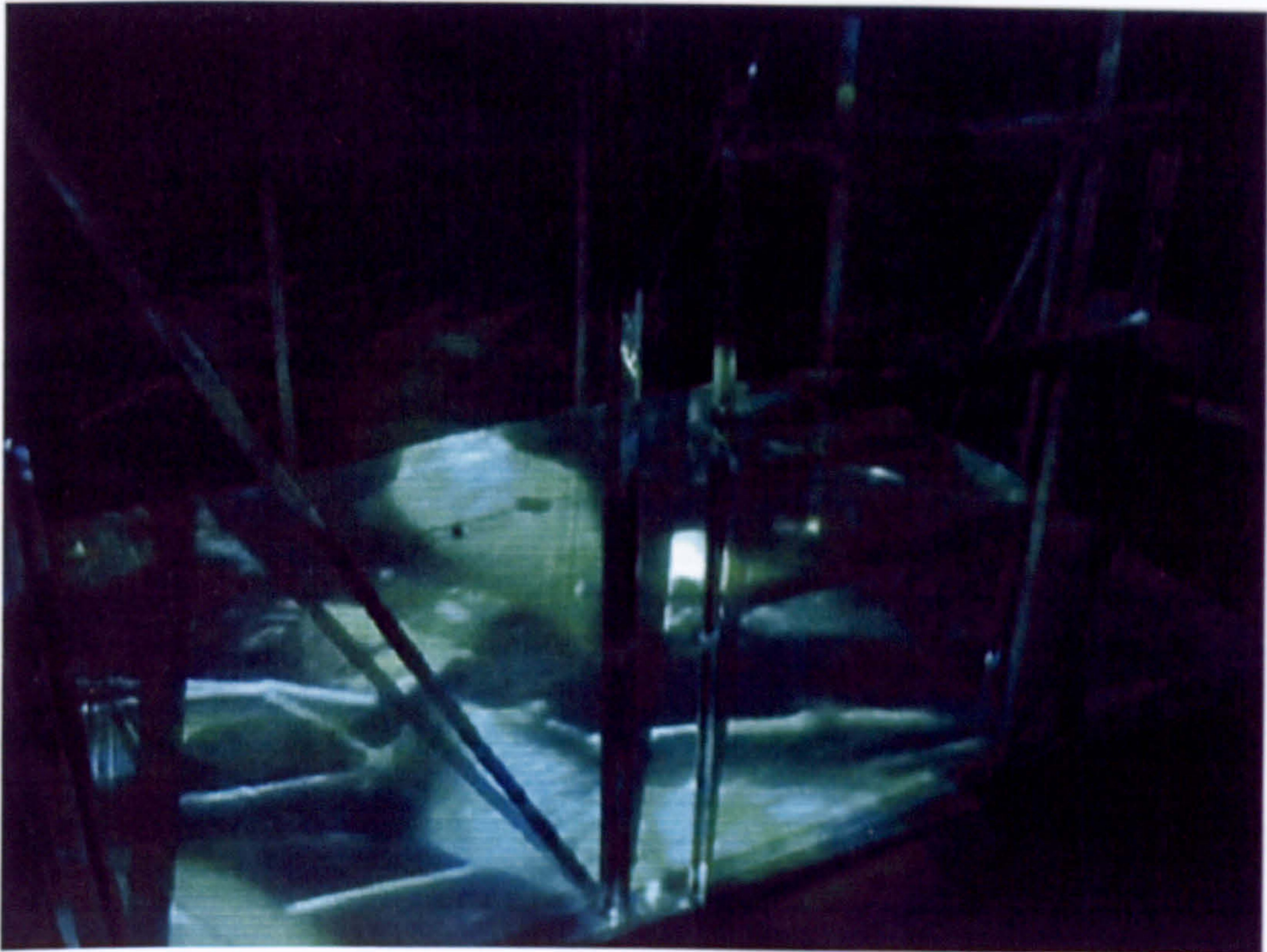
Order is, at one and the same time, that which is given in things as their inner law, the hidden network that determines the way they confront one another, and also that which has no existence except in the grid created by a glance, an examination, a language; and it is only in the blank spaces of this grid that order manifests itself in depth as though already there, waiting in silence for the moment of its expression.⁸³

the first mild day of March explored this intermediary space which separates an, perhaps ungraspable, inner order and the culturally superimposed orders of art and science onto the animals. By superimposing an artistic discursive order over another, the scientific one, the installation expanded the gap which separates the signified from the signifier, creating a reflective space in which it may be possible for new experiences of order to re-emerge.

⁸³ Michel Foucault, *The Order of Things*, op. cit., p. xx.

Chapter 5

A Breath of Fresh Air



The first part of this text is devoted to some encounters between natural science and the humanities, to reveal some problematic aspects of the interdisciplinary field. These preliminary considerations give a broader view of the social, historical and political context in which the air project developed. The opening discussion is an attempt to bridge the humanities' criticism of natural science with the ecological and genetic aspects of our project. As part of the humanities' dialogue with natural science, I refer to the work of the Paraguayan sociologist Norberto de Souza Santos on science. Santos argues that science is going through a period of transition from an old, dominant

Chapter 5

A Breath of Fresh Air ...



79. Koli forest, Finland, 2001

I now present the last case study of this thesis: an interdisciplinary project entitled *air*. The *air* project within its modest proportions, aims to contribute with new scientific and artistic works on climate change to the ongoing debate on global warming. Our society needs very urgently to develop new ideas, technologies, scientific and artistic approaches to deal with the environmental problems of the nature-culture hybrid world in which we dwell. The following discussion therefore engages with the wide ecological debate on climate change, which will hopefully bring to the world a ‘breath of fresh air’.

The first part of this text is focused on some encounters between natural science and the humanities, to reveal some problematic aspects of the multidisciplinary field. These preliminary considerations give a broader view of the social, historical and political context in which the *air* project developed. The opening discussion is an attempt to bridge the humanities’ criticism of natural science with the ecological and artistic concerns of our project. As part of the humanities’ dialogue with natural science, I refer to the work of the Portuguese sociologist Boaventura de Sousa Santos on science. Santos argues that science is going through a period of transition from an old, dominant

paradigm to an emergent one and discusses the social and intrinsic factors which are generating this transformation. The methodological and epistemological changes that Santos supports would result in a science mainly characterized by multidisciplinary exchange, which would avoid the problems of hyper-specialization and compartmentalization of knowledge within the old dominant paradigm. This movement towards multidisciplinary can be observed in new areas of research, such as the Cultural Studies of Science, as well as Science and Technology Studies (STS), which bring together social scientists, historians, philosophers, natural scientists, anthropologists, cultural studies scholars, postcolonial and feminist researchers to examine the relation of science and technology to society by focusing on questions of culture and power, with special attention to historically excluded groups.

The dissolution of disciplinary boundaries in STS has developed through a conflicting relationship with natural scientists. Far from a harmonic transition from one perspective to another, this dialogue has taken the form of heated battles, the 'science wars' as they became known in academic as well as mass media contexts. At the core of this debate there is a tension between two polarities: the 'realist' and 'social-construction' conceptions of nature as I have discussed in the previous Chapters. Here I consider the arguments of each side of the 'science wars', and investigate some of these issues in relation to the 'Lomborg case', another controversy in the scientific world, which is more specifically related to the ecological debate on climate change and forests.

Finally, I approach the *air* project, exploring some of the above issues through our collaborations with natural scientists researching climate during two residencies in the hot and cold forests of Brazil and Finland. In this project the perspective of natural science is an important constitutive aspect of the work. We examine the tensions

between realist and socially constructed aspects of the forests through its representation in scientific and artistic work.¹

A new paradigm in science

The gradual crumbling of the dogmatic principles of neutrality, rationality and objectivity, which are at the heart of scientific discourse has been provoked by theoretical and social factors, according to Boaventura de Sousa Santos. He argues that, at a theoretical level, it is the work of scientists, such as Albert Einstein, Werner Heisenberg, Niels Bohr, Kurt Gödel and Ilya Prigogine, which leads to the questioning of many foundational presuppositions of modern Newtonian science. At a social level, Santos explains that it is the global industrialization of science since the 1930s and 1940s that has led to the collapse of dominant ideas of scientific autonomy and neutrality. He remarks that in both capitalist and socialist societies, economic and political centres of power started having a decisive role in the definition of scientific priorities and power over scientific research outcomes. He also adds to this equation military aims: 'Science and technology have revealed the two sides of a historic process in which military and economic interests are converging until they become almost indistinguishable.'² The industrialization of science also has an important impact on the organization of the scientific work, as Santos explains:

[...] on the one hand, the scientific community became stratified, power relations amongst scientists became more authoritarian and unequal, and the majority of scientists were submitted to a process of proletarianization in laboratories and research centres. On the other hand, capital-intensive research (dependent on expensive and rare instruments) made the free access to equipment impossible, contributing to the deepening of the gap, in terms of technological and scientific development, between central and marginal countries.³

¹ The video installation *air* is one of the main outcomes of this project, and is exhibited in the PhD final show.

² Boaventura de Sousa Santos, *Um Discurso sobre as Ciências - A discourse on Sciences*, ed. Afrontamento, Porto, 7th edition, 1995, p. 35.

³ *ibid.* p. 35 (my translation).

With these dramatic transformations of the social relations between scientists and the state, in the post-war period, claims to neutrality by scientists have become more and more debatable inside and outside the scientific world. Perhaps we could use Benjamin's (Marxist) theory of allegory to examine this process of the commodification of science. In such an industrial and military context, scientific knowledge is allegorized, as the outcomes of research are no longer under the power of the scientist, but acquire their value from other agents. This devaluation of scientific work by the military power or through its commodification is subsequent to a previous devaluation, that is, the devaluation of nature by instrumental reason. The critique of the objectification of nature in Enlightenment discourse is a central aspect of the Frankfurt School project. As discussed in Chapter 2, in the *Dialectic of Enlightenment* Adorno and Horkheimer analyse how the ideology of the domination of nature is extended to the domination of other humans.⁴ They remark that rationality turns into irrationality, when science becomes an instrument in the hands of barbaric totalitarian regimes. According to David J. Hess, the work of the Frankfurt School authors and their heirs Jürgen Habermas and Antonio Gramsci, as well as Georg Lukács are vital to Western Marxist traditions of social theory that provide the framework for contemporary STS-Science and Technology Studies.⁵

STS is part of the multidisciplinary aspect of the new paradigm discussed by Santos, in which he proposes that natural phenomena are studied as social ones. In this new paradigm, the humanities perspective becomes more important, as do the textual and linguistic aspects of knowledge. In this humanistic conception of science, the

⁴ Theodor Adorno and Max Horkheimer, *Dialectic of Enlightenment*, Verso Classics, London, New York, 1944, 1997, p. 4.

⁵ David J. Hess, *Science Studies: An Advanced Introduction*, New York University Press, NY and London, 1997.

distinction between human and nature is deconstructed: 'all nature is human', which means that our perception of nature is a product of culture. Santos argues that, in this way, the scientific text is merged with the autobiography of its author, and that all scientific knowledge is self-knowledge, because the scientific process is not one of discovery, but one of creation: 'metaphysical presuppositions, belief systems, judgements of value do not come before or after scientific explanation of nature or society. They are an integral part of this same explanation.'⁶ Santos argues that the choice between one form of knowledge and another (metaphysics, art, religion or poetry) are judgements of value and are not based on scientific criteria, but reflect the values of certain societies in specific historical periods. This strong awareness of the social and historical contexts in which scientific knowledge develops is another allegorical characteristic of the new paradigm, as context and intertextuality are structural aspects of allegory.

In the new paradigm, the fragmentation of knowledge is not disciplinary, but thematic. Here, we find even further allegorical elements, for Santos sees the science of the new paradigm as engaged with translation, in which concepts and theories that are developed in one discipline migrate to other contexts. This level of 'methodological transgression'⁷ is the main strategy of allegorists, and is an important aspect of art and science projects. The thematic aspect of artistic 'project-based' practice also reflects this approach in the field of contemporary visual art. Many contemporary artists are not concerned with questions of medium-specificity, instead, they are developing projects in specific sites, subjects or contexts, exploring ideas from other disciplines but using them in other ways or for different purposes, as previously discussed. But

⁶ Boaventura de Sousa Santos, *Um Discurso sobre as Ciências - (A discourse on Sciences)*, op. cit., p. 52. (my translation).

⁷ See the discussion on Paul Feyerabend's anarchistic methodology, in Chapter 3.

interdisciplinary excursions into the territory of science are not always welcome as we can see in the following discussion on the 'science wars'.

'science wars'

The 'science wars' is a debate between natural and social scientists, which has been polarized into two extreme positions: the 'social construction' perspective, associated with sociologists, STS and the cultural studies of science; and the 'realist' position of natural scientists, who believe that science proceeds logically and rationally, despite social and cultural influences.

Steve Fuller dates the beginning of the 'science wars' to 1992 with the publication of two books: one by the American physicist Steven Weinberg, *Dreams of a Final Theory*, and the other by the British biologist Lewis Wolpert, *The Unnatural Nature of Science*.⁸ These authors criticize the work of a group of historians, philosophers, and sociologists of science who researched and challenged some aspects of contemporary scientific discourse. The debate became intensified with the publication of the book *Higher Superstition: The Academic Left and its Quarrels with Science*, by the biologist Paul R. Gross and the mathematician Norman Levitt,⁹ in which the authors question the criticism of science by humanists and social scientists on the 'academic left', whom they regard as promoters of postmodernism. Gross and Levitt accuse cultural studies and STS scholars of scientific-illiteracy, and regard their attitudes as antiscientific and irrational.

⁸ Steve Fuller, 'The Science Wars: Who Exactly is the Enemy?', article published in the Japanese periodical, *Seisak*, 1998.

⁹ Paul R. Gross and Norman Levitt, *Higher Superstition: The Academic Left and its Quarrels with Science*, The Johns Hopkins University Press, Baltimore and London, 1994.

Following the publication of *Higher Superstition*, the physicist Alan Sokal, wrote a parody of a 'post-modern science-critical text', entitled 'Transgressing the Boundaries: Towards a Transformative Hermeneutics of Quantum Gravity', which was published in a cultural studies journal, *Social Text*, in an issue devoted to the 'science wars' (Spring/Summer 1996).¹⁰ Shortly after, Sokal published another article in *Lingua Franca* (May/June 1996), revealing that his article for *Social Text* was a hoax and accused the editors of negligence for publishing a scientific text in quantum physics without peer review. In a later evaluation of the hoax, Sokal attacks well known authors in STS, sociology of science and prominent scholars, such as Bruno Latour, Steve Woolgar, Barry Barnes and David Bloor, Harry Collins, Gilles Deleuze and Félix Guatarri, Jacques Lacan, Luce Irigaray, Jean-François Lyotard, Paul Virilio, Michel Serres and Jacques Derrida. According to Sokal, they have all got it wrong when it comes to science:

[...] the article is structured around the silliest quotations I could find about mathematics and physics (and the philosophy of mathematics and physics) from some of the most prominent French and American intellectuals; my only contribution was to invent a nonsensical argument linking these quotations together and praising them. This involved, of course, advocating an incoherent mishmash of trendy ideas - deconstructive literary theory, New Age ecology, so-called 'feminist epistemology', extreme social-constructivist philosophy of science, even Lacanian psychoanalysis - but that just made the parody all the more fun.¹¹

¹⁰ Alan Sokal, 'Transgressing the Boundaries: Toward a Transformative Hermeneutics of Quantum Gravity,' *Social Text* #46/47, pp. 217-252 (Spring/Summer 1996). In the special issue on the topic of science studies, science critics responded to the attacks of Paul Gross and Norman Levitt. Contributions were solicited from humanists, social scientists and natural scientists: Sandra Harding, Steve Fuller, Emily Martin, Hilary Rose, Langdon Winner, Dorothy Nelkin, Richard Levins, George Levine, Sharon Traweck, Sarah Franklin, Ruth Hubbard, Joel Kovel, Stanley Aronowitz, and Les Levidow. Later Andrew Ross published a book with additional articles by Katherine Hayles, Michael Lynch, Roger Hart, and Richard Lewontin, *Science Wars*. Duke University Press, Durham, NC, 1997.

¹¹ Alan D. Sokal, 'What the *Social Text* affair does and does not prove: a critical look at "science studies,"' in *After the 'science wars'*, Routledge, London, 2001, p. 17. Sokal is a Professor of Physics at New York University.

Sokal argues that they misunderstood the content of science because of their lack of scientific competence, but he apparently did not consider that it could be him who might not have understood what those authors were actually saying.¹²

Sokal's position is clearly the opposite of the one of science studies, when he argues that it is up to experts alone to talk about science: 'sociologists of science ought not to study scientific controversies on which they lack the competence to make an independent assessment of the facts, if there is no other (for example, historically later) scientific community on which they could justifiably rely for such an independent assessment.'¹³ This discourse of authority is precisely the point where natural scientists and STS authors will disagree mostly, because STS scholars argue that it is not necessary for them to be experts in the fields they study. Bruce Robbins and Andrew Ross argue:

What's important to us is not so much the gulf of comprehension between 'the two cultures', but rather the gulf of power between experts and lay voices, and the currently shifting relationship between science and the corporate-military state. Nor are these concerns extrinsic to the practice of science itself. Prior to deciding whether science intrinsically tells the truth, we must ask, again and again, whether it is possible, or prudent, to isolate facts from values. This is a crucial question to ask, because it bears upon the kind of progressive society we want to promote.¹⁴

The question of expertise is a fundamental point in this debate, and I agree with Robbins and Ross that non-experts must participate in the decision-making processes that define the work of the scientific community because of the disproportionate power

¹² Jacques Derrida remarks, in an article published in *Le Monde*: 'Ces débats ont une histoire complexe : des bibliothèques de travaux épistémologiques / Avant d'opposer les " savants " et les autres, ils divisent le champ scientifique lui-même. Et celui de la pensée philosophique. Tout en m'en amusant parfois, je prends aussi au sérieux les symptômes d'une campagne, d'une chasse même où des cavaliers mal entraînés ont parfois du mal à identifier la bête. Et d'abord le terrain.' (Such debates have a complex history: libraries of epistemological works! Before opposing the 'savants' and the others, they divide the scientific field itself. And the one of the philosophical thought. Although this amuses me sometimes, I take seriously the symptoms of a campaign, or even a chase, in which the badly trained hunters have difficulties in identifying the prey. And, above all, the terrain.) - my translation. Jacques Derrida, 'Sokal et Bricmont ne sont pas sérieux', *Le Monde*, 20 novembre 1997, page 17.

¹³ Alan D. Sokal, 'What the *Social Text* affair does and does not prove: a critical look at "science studies,"' op. cit., p. 20.

¹⁴ Bruce Robbins and Andrew Ross, co-Editors for *Social Text* in response to Sokal's hoax, *Social Text* #46/47, Spring/Summer 1996.

of science in relation to other disciplines in contemporary society, thereby having a direct effect on our lives and the environment. On the other hand, Sokal raises the issue of expertise and a deeper understanding of a field of knowledge which is important to consider, because in any discipline there is a considerable gap between the specialized knowledge of a professional, be them a sociologist, artist or biologist, and the ideas that the general public have about their field. Sociologists also complain that natural scientists do not have a deep understanding of sociological problems.¹⁵ Thus, there is an impasse between the two perspectives. Having said that, natural science does raise more concern because of its privileged social position and its appropriation by industry and military power. All other disciplines are also equally under the 'universalizing' power of the commodity, but other disciplines have not become arguably as 'dangerous' as science has.¹⁶

Sokal does lend some validity to the work of the critics of science, as long as they deal with the social aspects of scientific practice, such as individual and social ethics, and the study of political, social, economic, cultural and ideological factors in shaping scientific 'truth'. What Sokal objects to, is the questioning of the foundations on which scientific method is based: the reality of the physical world and science's capacity to know it objectively. Sokal questions the idea of the 'social construction of facts' articulated by Latour and Woolgar; he is also against Barnes and Bloor's concept of knowledge as 'any collectively accepted system of belief'¹⁷ and the tendency towards 'epistemological relativism' in science studies. Sokal argues that what STS scholars are advocating, is a kind of methodological relativism that takes into account only social

¹⁵ Sal Restivo, a professor of sociology and science studies at Rensselaer Polytechnic Institute (RPI) in Troy, N.Y., argues that the problem is that natural scientists 'don't understand the sociology', and they don't understand the social nature of the world in a profound way.' *The Scientist* 11[3]:1, Feb. 03, 1997.

¹⁶ Please refer back to Chapter 2, to the discussion of the work of Hesse-Honegger and Dion, who address the dangers of radioactive pollution and genetic engineering respectively.

factors, but renders the physical world irrelevant. Sokal does not see how these methods from other disciplines can be applied to the natural sciences. STS authors would argue that these points can be useful to scientists, as Emily Martin clarifies: 'Part of the world view of an anthropologist is that the real world exists, but I can only know about it through my own language, my own culture, so I can never get at it except through these veils, these lenses, these gauzy filters.'¹⁸ Thus, the social construction perspective points to the mediating factors which necessarily get in the way of representation, in a similar way that allegory points to the disjunction of the essence and symbol, or signified and signifier as I have discussed in Chapter 3.¹⁹ Sokal radicalises the concept of social construction as one which excludes the physical world.²⁰

Steve Fuller argues that the 'science wars' debate led natural scientists to take on a defensive attitude, wherein they seek to protect the integrity of their claims to knowledge, which, they feel, have acquired only a metaphorical relevance in the hands of humanists and social scientists. In Fuller's words, 'The response of professional natural scientists to the combined STS challenge - especially those who feel their own

¹⁷ Barry Barnes and David Bloor, 'Relativism, rationalism and the sociology of knowledge', in Martin Hollis and Steven Lukes (eds) *Rationality and Relativism*, Blackwell, Oxford, 1981, p. 22.

¹⁸ Emily Martin, *The Scientist*, July 10, 1995, p. 1. Emily Martin is a professor of anthropology at Princeton University.

¹⁹ In Chapter 3, I argued that scientific language, similar to the late Romantic symbol has a desire for the signified and signifier to coincide, to *be* the same thing.

²⁰ Steve Fuller in 'Who's Afraid of Science Studies?', published in the *Independent on Sunday* magazine, 28 June 1998, presented the following 'Map of Misreading: How Scientists "Socially Construct" Science Studies' arguing that:

When science studies says...

1. Science is socially constructed.
2. The validity of scientific claims must be understood in relation to the claimant's perspective.
3. Science Studies has its own aims and methods.
4. Science is only one possible way of interpreting experience.
5. Gravity is a concept scientists use to explain why we fall down not up. There are other explanations.
6. Scientists' accounts of their activities are not necessarily the best explanation for those activities.

Scientists read...

- Science is whatever enough people think it is.
There is no distinction between reality and how people represent it.
- Science Studies willfully ignores the aims and methods of science.
Science is merely an interpretation that distorts experience.
Gravity exists only in our minds and, if we wanted, we could fall up not down.
- Scientists' accounts of their activities can be disregarded when explaining those activities.

authority under attack - can be summed up as a kind of neo-puritanism that reasserts the value of technical proficiency and the need for self-restraint in its application.²¹ Fuller argues that this neo-puritan attitude is a negative aspect, which has led scientists to repress any self-critical reflections on science as they emerged within their own field. As an example, Fuller refers to Steven Weinberg's disapproval of Werner Heisenberg's pronouncements on the subjectivist epistemological implications of the uncertainty principle in quantum mechanics.²² Fuller also points out that the sociologists most attacked by Sokal for lack of expertise were originally trained not in the humanities, but in various fields of science: Barry Barnes (chemistry), David Bloor (experimental psychology), Andrew Pickering (physics), Steven Shapin (genetics), Steve Woolgar (engineering). These authors had a good grasp of the day-to-day practice of science before they set out to analyse it from another perspective.

Fuller links this neo-puritanism with the positivist project of demarcating science in order to distinguish it from pseudo-science. He argues that the image of the 'value-neutral scientist' promoted by the sociologist Max Weber, was in accordance with a Romantic humanistic ideal of the autonomous researcher advocated by positivists, and that became dominant in the twentieth century scientific academy. However, Fuller explains that this puritanism became unsustainable as contemporary science is now inseparable from the state, industry and is incapable of controlling its outcomes beyond the environment of the laboratory. Fuller here touches on the same point that Santos has argued, as has Edgar Morin (as discussed in the conclusion of Chapter 2). This sensitive point is very revealing, as we can observe how the ideal of scientific neutrality and its 'noble' social aims have been compromised by economic and political forces in

²¹ Steve Fuller, 'The Reenchantment of Science: a fit end to the "science wars"?' In *After the 'science wars'*, Routledge, London, 2001, pp. 183-4. Steve Fuller is Professor of Sociology at the University of Durham.

two ongoing cases. In the case of research promoted by the pharmaceutical industry, the commercial interests of the companies are clearly the top priority when it comes to dealings with lifesaving drugs. Science in this case is not generous or democratic, and these industries are prosecuting developing countries for the production of generic drugs which are saving the lives of millions infected with HIV in Brazil, India and Africa. Another case is the current battle between the powerful sugar industry in the US and the World Health Organization, over the issue of healthy eating.²³ Thus it is important to observe the conditions in which the scientists have worked and how their findings will benefit certain groups in society, when examining their claims to knowledge.

Fuller sees the 'science wars' as an opportunity for contemporary scientists to evaluate their commitment to this 'cultural puritanism'. He believes that a productive way forward from the 'science wars' would be a 'reenchantment' of science, which is generally suspicious of progressive ideologies:

[...] postmodernists reverse this asymmetry by demystifying the idea of human progress, while reenchanting the natural realm. Here the efficacy of human effort is local, fragmentary, and transient, when compared with the chaotic and complex workings of the non-human, which always just manages to elude scientific strictures.²⁴

Fuller says that for this reenchantment to take place, it is necessary that a 'secularization' of science occurs. This does not mean the end of a belief in science, but 'the decline in the view that only one such belief is legitimate'. This point corresponds to the arguments articulated by Santos, who says that the problem of the dominant

²² Ibid. p. 184.

²³ The sugar industry is challenging the WHO recommendations that sugar should account for no more than 10% of a healthy diet, which is a consensual percentage among experts. According to Sarah Boseley, in a letter to Gro Harlem Brundtland, the WHO's director general, the Sugar Association says it will challenge its \$406m funding from the US: 'If necessary we will promote and encourage new laws which require future WHO funding to be provided only if the organization accepts that all reports must be supported by the preponderance of science.' The sugar lobby is also promoting its own scientific research, the 'International Life Sciences Institute', (founded by Coca-Cola, Pepsi-Cola, General Foods, Kraft and Procter and Gamble), which has gained accreditation to the WHO and the UN's Food and Agriculture Organization through political means, according to Boseley. Sarah Boseley, 'Sugar Industry Threatens to Scupper WHO', *The Guardian*, Monday 21 April, 2003.

model of rationality is its totalitarian character, because it denies rationality to all other forms of knowledge which fall outside of the epistemological principles and methodological rules of the natural sciences.²⁵ What Fuller, Santos, Morin and other STS authors argue for is the end of the hegemony of the natural sciences as the only model for all science and ultimately to all knowledge.

The important aspect of the 'science wars' is that it shows how much misunderstanding from each side can happen when different perspectives confront one another. Yet, the dialogue between these opposites is vital, because it is through their dialectical dynamic that we can achieve a better grasp of the world in which we live. In this dialectical movement, there is no suppression of any one side: it is important to take account of the physical aspect of reality, which is part of the work of natural scientists, at the same time as we are aware of the social, economic, ideological and political contexts in which their activities are conducted. The 'realist' and 'social construction' views cannot be separated, as the social and cultural conditions are part of 'scientific truth', as are the residual aspects of the physical world. Allegory is a model where there is no hierarchical priority to any view. The dispute between the STS scholars and natural scientists is over the authority of natural science, as it claims a superior position over all other areas of knowledge. The solution to such an impasse might be to keep the dialogue alive, as in allegory, in which a 'truth' emerges from the dynamic between conflicting distinct authorities. It is also important avoid in this dissolution of the hierarchical relation of natural over social sciences, the establishment of new hierarchies thereby turning the social sciences into the superior term.

²⁴ Steve Fuller, 'The Reenchantment of Science: a fit end to the "science wars"?' op. cit., p. 189.

²⁵ Boaventura de Sousa Santos, *Um Discurso sobre as Ciências - A discourse on Science*, op. cit., p. 11.

Referring back to the discussion of Cornelia Hesse-Honegger's work, we saw how on the one hand, scientific research in the field of nuclear energy has been affected by social, political and economic factors. On the other hand, Hesse-Honegger's work only acquired scientific value because of her systematic methodological approach. She managed to prove her claims about radioactive pollution through a careful monitoring of its 'real' effects on plants and insects. Thus, within the context of science, it is important to observe methodological procedures, in order to preserve the quality of the research against external pressures. By developing independent research, Hesse-Honegger distanced herself from scientific institutions and the demands of their funding agents. Although she assumed a marginal position in relation to the scientific establishment, all of her theories and ideas were based on this tradition. Her ecological concerns are also part of a cultural and historical heritage, so there is no way to escape the dilemma between the 'real' and the 'socially constructed' aspects of her portraits of nature. Such dichotomies emerge in the discussion of the 'Lomborg case', which is part of the debate on environmental issues that are the thematic nucleus of the *air* project.

The 'Lomborg Case'

Here I look at a controversial case, in which the scientific authority of natural scientists is challenged by another scientist, an 'expert' from another field. In 2001 the Danish political scientist Bjørn Lomborg²⁶ created a polemic with his book *The Skeptical Environmentalist*,²⁷ in which he accused environmental scientists and organizations of

²⁶ Bjørn Lomborg is a political scientist and professor of statistics at the University of Aarhus in Denmark, and director of Denmark's Environmental Assessment Institute.

²⁷ *The Skeptical Environmentalist: Measuring the Real State of the World*, Cambridge University Press, Cambridge, 2001.

making false and exaggerated claims about the world's ecological problems and challenged the mainstream scientific opinion on issues like global warming and the overuse of natural resources. A generous space in the international media was given to his views, as if they revealed new information that the majority of scientists had missed in their long term study in various fields: '[...] probably the most important book on the environment ever written.'²⁸ 'This is one of the most valuable books on public policy - not merely on environmental policy - to have been written for the intelligent general reader in the past ten years. ... *The Skeptical Environmentalist* is a triumph.'²⁹ and '*The Skeptical Environmentalist* is the most significant work on the environment since the appearance of its polar opposite, Rachel Carson's *Silent Spring*, in 1962.'³⁰ It's a magnificent achievement.'³¹ These are just a few examples of the enthusiastic reception Lomborg received to his 'balanced assessment' of the state of the world by international newspapers, not to mention the various interviews on television and radio programs.

In *The Skeptical Environmentalist* Lomborg presents an extremely optimistic view of the world, in contrast to the 'distorted' views of environmentalists: 'Throughout this book I have tried to present all the facts, to give us a rounded feel of the real state of the world, and I have tried to compare and contrast it to our current understanding, stemming from the recurrent incantations of the Litany'. The 'litany' is a reference to the warnings by scientists and ecologists about the degradation of the natural environment. At the end of the book Lomborg concludes: 'Thus, this is the very message of the book: Children born today - in both the industrialized world and developing countries - will live longer and be healthier. They will get more food, a

²⁸ Review in *The Daily Telegraph*, UK, 27/08/2001.

²⁹ Review in *The Economist*, 06/09/2001.

³⁰ Rachel Carson, was a major figure in the history of the ecological movement. She was a biologist who combined her scientific knowledge with a committed eco-philosophical activism. Her book *Silent Spring* (1962) is considered the founding stone of the 'Age of Ecology'.

better education, a higher standard of living, more leisure time and far more possibilities - without the global environment being destroyed. And that is a beautiful world.'

It is not surprising that Lomborg became a favourite amongst right wing groups. According to UCS - the Union of Concerned Scientists, groups such as the 'Cooler Heads Coalition', which was formed by the *Competitive Enterprise Institute* amongst others, to 'dispel the myths of global warming', featured Lomborg in a Capitol Hill briefing on global warming, and started taking his book as scientific evidence to justify their non-conservationist agendas and private interests. The right wing government in Denmark made him director of its Environmental Assessment Institute in 2002.

Lomborg made many controversial claims, perhaps one of the most irresponsible was that investments to prevent global warming would be 'money ill spent'. A heated debate and fierce criticism followed the publication of Lomborg's book in scientific journals such as *Scientific American*, *Science*³² and *Nature*. The UCS invited several of the world's leading experts to carefully review *The Skeptical Environmentalist*: Dr. Peter Gleick, an internationally recognized expert on the state of freshwater resources; Dr. Jerry Mahlman, one of the most highly regarded atmospheric scientists and climate modelers; and top biologists and biodiversity experts Edward O. Wilson, Thomas Lovejoy, Norman Myers, Jeffrey Harvey and Stuart Pimm.

³¹ Review in *Washington Post Book World*, 21/10/2001. For more 'celebratory' reviews on Lomborg, visit his web site www.lomborg.com

³² See the review by Michael Grubb, 'Relying on Manna from Heaven?', *Science*, vol. 294, 9 November 2001, pp. 1285- 1287. Michael Grubb is in the Environmental Policy and Management Group, Imperial College and the Department of Applied Economics, Cambridge University.

The World Resources Institute (WRI) and the World Wildlife Fund (WWF) also reviewed Lomborg's book, listing ten controversial topics in the book.³³ On the subject of forests, the reviewers noted that Lomborg challenged a statement by WWF's Director General Claude Martin that 'the area and quality of the world's forests have continued to decline at a rapid rate'³⁴ and argued that Lomborg failed to observe that the most recent and authoritative global forest assessment by the UN Food and Agriculture Organization (FAO), which he has used, supports the WWF statements. Emily Matthews reveals how Lomborg manipulated numbers to reduce the percentage of loss of natural forest areas: 'Lomborg is quoting the FAO's figure for tropical deforestation as a percentage of global forest cover, not as a percentage of tropical forest cover. The vast majority of forest clearance is occurring in the tropics - forest area is actually expanding in most of the temperate zone - so this error grossly distorts the rate of tropical deforestation.'³⁵ The numbers she presented are actually alarming: 'According to the 2000 report, about 161 million hectares of natural forest were lost during the 1990s, of which 152 million hectares (about 94 percent) were in the tropical world.'³⁶

The WRI also clarified many of Lomborg's misleading suggestions concerning climate, challenging his assertions that potential changes in the climate system are not large and that 'it is far more expensive to cut CO₂ emissions radically than to pay the costs of adaptations to the increased temperatures.'³⁷ The WRI argues that Lomborg relies largely on one controversial economic model, and uses the IPCC - Intergovernmental Panel on Climate Change, calculation of the *thirty-year* cost of stabilizing greenhouse

³³ 'Ten things environmental educators should know about *The Skeptical Environmentalist*', World Resources Institute, www.wri.org/press/mk_lomborg_10_things.html

³⁴ Bjorn Lomborg, *The Skeptical Environmentalist: Measuring the Real State of the World*, op. cit., p. 110.

³⁵ Emily Matthews, 'Not Seeing the Forest for the Trees: On Bjorn Lomborg and Deforestation', 12 Dec 2001, *Grist Magazine*, www.gristmagazine.com

³⁶ Ibid. www.gristmagazine.com

³⁷ Ibid. pp. 317-318.

gas concentrations as a *single year's* cost. The WRI points to the consensus view of thousands of reputable scientists around the world, that 'human activities have changed the composition of the atmosphere, resulting in detectable changes in climate and biological resources, and are likely to result in much more rapid changes in climate than have been seen in the last ten thousand years.'³⁸ They point to Lomborg's dismissal of this entire body of research, and question the reliability of the basis on which people should take his work seriously. Stephen H. Schneider considered Lomborg's calculations and argues that:

The IPCC Working Group 2 did not put much credence in the aggregate climate damage numbers - a move Lomborg decries as politically motivated - is because the benefits of avoiding climate damage must be measured in more than commodities traded in markets (that is, money per ton of carbon abated). There are also human lives lost, species lost, distributional effects, and so forth. That makes putting a price on climate change very difficult...'³⁹

Following this debate amongst scientists in many countries, early in 2002, the Danish Committees on Scientific Dishonesty- *Udvalgene Vedrørende Videnskabelig Uredelighed* (DCSD or UVVU) received three complaints about Bjørn Lomborg (BL): 'In the three complaints, BL is accused of fabricating data, selectively and surreptitiously discarding unwanted results, of the deliberately misleading use of statistical methods, consciously distorted interpretation of the conclusions, plagiarization of others results or publications, and deliberate misrepresentation of others' results.'⁴⁰

³⁸ http://www.wri.org/wri/press/mk_lomborg.html

³⁹ Stephen H. Schneider, 'Hostile Climate: On Bjorn Lomborg and Climate Change', 12 Dec 2001, *Grist Magazine*, www.gristmagazine.com. Stephen H. Schneider is a professor in the Department of Biological Sciences, a senior fellow at the Institute for International Studies, and professor by courtesy in the Department of Civil Engineering at Stanford University. He served as a consultant to federal agencies and White House staff in the Nixon, Carter, Reagan, Bush, and Clinton administrations, and was honoured in 1992 with a MacArthur Fellowship.

⁴⁰ Danish Committees on Scientific Dishonesty UVVU or DCSD report, p. 9. Full report is available on the internet on www.forsk.dk/uvvu/nyt/udtaldebat/bl_decision.htm

After almost one year examining the case, on January 8 2003, the DCSD found

Lomborg guilty of scientific dishonesty, ruling:

Objectively speaking, the publication of the work under consideration is deemed to fall within the concept of scientific dishonesty. In view of the subjective requirements made in terms of intent or gross negligence, however, Bjorn Lomborg's publication cannot fall within the bounds of this characterization. Conversely, the publication is deemed clearly contrary to the standards of good scientific practice.⁴¹

When considering Lomborg's case, the DCSD debated if his work could be considered scientific, and it was exactly because of his presentation and circulation of the *Skeptical Environmentalist* as a scientific work, that it was judged dishonest. Lomborg used his academic title, and attempted to associate the authority and status of science to a work with deep methodological flaws. The 'realist' monitoring of changes in the environment by natural scientists was important in debunking Lomborg's false claims.

This case reveals that it is important to keep the dialectics between the 'realist' and 'socially constructed' views of nature open if we are to have any grasp at all of our impact on the ecosystem of this planet. Allegory provides expedient means with which to disentangle the conflicting relations between the view of social construction argued by STS authors and the 'realist' perspective, defended by Sokal. The two antithetical positions can be conceived of as a dialectical dynamic, where nature and culture are constitutive of one another, and science is indissociable from society, yet, science reveals that its methodology, criteria and social institutions offer important means of providing an approximate but reliable account of the physical world. The scientific community has developed mechanisms to maintain the quality of scientific research and protect it from external pressures, as the 'Lomborg case' illustrates, through

⁴¹ Ibid., p.14.

international agreements and institutions such as the Union of Concerned Scientists (UCS), the World Resources Institute (WRI) and the World Wildlife Fund (WWF).

The discussion on climate change is a political and economic battleground, where reliable scientific work needs to be carried out, despite the great pressures from powerful groups and their attempts to manipulate public opinion. Environmental scientists have become increasingly aware of the political nature of their research problems and how these are tied to social issues which fall outside of their disciplines. Concerned scientists continue to follow the rigour of a scientific methodology of research, at the same time, they are becoming more conscious of the necessity to take part in the wider social and political debates which surround their practices, and reflective implications of complex networks and strings that are attached to their research. This necessity of self-reflection and engagement with debates in natural science extends beyond its parameters and is here that art and science can collaborate. It is in this intermediary space where distinct areas meet, that the *air* project emerges.

The *air* project developed in the context of the global warming debate, and is intimately linked to the political, historical, natural, cultural, economic, scientific, social and aesthetic complex web of relationships surrounding the issue of global warming. The *air* project explores the 'social construction' and the 'realist' aspects of the debate, in a collaborative project with scientists doing research on climate change in the forests of Brazil and Finland. Through such a collaboration our intention is to bring together the artistic and scientific perspectives in the handling of a common theme. In previous works, we have appropriated material from scientific contexts, but in this project we intended to allow more room for the scientists to participate in the conceptual development of the artwork.



80. Koli forest, January 2001

air

air is an interdisciplinary project which engages with various discussions and levels of interpretation of the elusive, invisible and essential element for life, the air. At a religious, mystical and deep-ecological level, the air is perhaps the most powerful sign for the principle of interconnectedness in nature. Distant places are also materially linked in the air. Large mineral-rich dust clouds travel from the Saharan desert across the Atlantic ocean through the air, to fertilize the soil of distant forests such as the Amazon, as recent research shows.⁴²

⁴² P. Formenti, M.O. Andreae, L. Lange, G. Roberts, J. Cafmeyer, I. Rajta, W. Maenhaut, B. N. Holben, P. Artaxo, and J. Lelieveld, 'Saharan Dust in Brazil and Suriname During the Large-Scale Biosphere- Atmosphere Experiment in Amazonia (LBA) - Cooperative LBA Regional Experiment (CLAIRE) in March 1998', *Journal of Geophysical Research*, Vol. 106, No. D14, pp. 14, 919- 14, 934, July 27 2001.



81. Amazon forest, June 2001

Through breathing, the intimate space of the body is in constant exchange with plants, animals and microscopic life forms in vast and distant oceans, forests and deserts. The Brazilian environmentalist and scientist José Lutzenberger explains that the chemical composition of the air is the result of dynamic and symbiotic processes between animals and plants:

To live, plants use a process called photosynthesis, through which they absorb carbon dioxide and deliver oxygen, in the presence of solar radiation. Animals when they breath, do the opposite: they use this oxygen and release to the air the carbon dioxide which will feed the plants. It is a perfect integration and the energy which moves this 'carousel' is the light of the sun. A significant detail, very interesting, is that the catalyst of the photosynthesis is chlorophyl, a green pigment; and the catalyst of respiration is haemoglobin, also a pigment, but it is red. As it is known, green and red are complimentary colours.⁴³

The complimentary physiological and aesthetic processes in which animals and plants feed each other take place through the medium of the air. In the present historical period, the air is also a site of intense political, social and economic tensions. Culture and nature here are indistinguishable, as human and non-human nature, 'first' and 'third' world countries, local and global ecosystems, industrial and indigenous cultures all affect each other through their exchanges in the air. As the 'Lomborg case' reveals, the international debate on climate involves a broad range of complex issues, such as

⁴³ José Lutzenberger, in *Gaia, The Living Planet (For a Gentle Way)*, L&PM Editores, Porto Alegre, São Paulo, 1990, pp. 89-90, (my translation).

international laws, policies, institutions and intense disputes between environmental scientists and powerful lobbying groups.⁴⁴

Our initial intention in the *air* project was to bring together references to the polar and equatorial regions, which are two ecologically important sites in the balance of global climate.⁴⁵ The juxtaposition of the hot and cold forests of Brazil and Finland bring to the foreground issues relating to our contrasting cultural origins, as well as to the relations between North and South, nature and culture, science and art, politics and aesthetics. The project involved two residencies of one month each in the forest of the Koli National Park, Finland, in the Winter of 2001, and at the Ducke Research Station, in the Brazilian Amazon forest, in June 2001.⁴⁶

In Finland, Dr. Kellomäki and his collaborators are monitoring the long-term effects of global warming (elevated atmospheric CO₂ concentration and elevated temperature) on the photosynthesis, respiration, growth and biomass of trees in the boreal forest of Scots pine (*Pinus sylvestris*). At the Mekrijärvi Research Station, where they built 16 chambers with controlled levels of CO₂ concentration and temperature, all of which are equipped with various sensors and connected to a network of computers, which monitor a broad range of physiological activity of the trees, which are then analysed and compared to the development of the controlled growing of the trees outside the chambers.

⁴⁴ Recently, the scientific consensus on the destructive effect of human activities on the natural environment has been challenged by authors such as Lomborg, Dixie Lee Ray and Gregg Easterbrook, amongst others, who are involved with ideologies which work to maintain an unequal world order, and secure the private interests of large corporations.

⁴⁵ Mark Dion, amongst other artists, has also explored this theme and dealt with similar issues, which were influential to our practice.

⁴⁶ For details on the residencies, please see appendix II.



82. Experimental chamber at Mekrijärvi

83. *Pinus sylvestris*, inside view of chamber

The trees inside the experimental chambers look like patients in intensive care, with their branches and leaves attached to many machines which constantly scrutinize their physiology. This was a powerful image, as nature is actually in need of treatment. The chambers create artificially what might happen at a large scale, in a few years, if measures to prevent global warming are not implemented. This is an ongoing project, with many further studies still to be done, but an evaluation of results gathered so far, reveals that with a greater concentration of CO₂ levels and higher temperature, trees grow at a much faster rate and need double the amount of water than the control trees. The consequence of this can be serious draughts, even in a country like Finland with its current wealth of water resources. This is a brief explanation of their research, but the enormous quantity of data they are collecting through a systematic methodology, and their subsequent analysis are of vital importance to the debate I referred to previously, as material evidence on the possible impact of climate change on the planet at large.

In the Amazon we joined INPA scientists in their fieldwork trips to various research stations. In one of these trips we met the Brazilian scientist Dr. Jean Pierre Ometto, who is doing research on the carbon cycle of the Amazon, a project under the umbrella

of the LBA – Large Scale Biosphere-Atmosphere Experiment in Amazônia.⁴⁷ The LBA is an international multidisciplinary research project which investigates climatological, ecological, biogeochemical and hydrological aspects of the Amazon forest and its interaction with the global ecosystem.⁴⁸



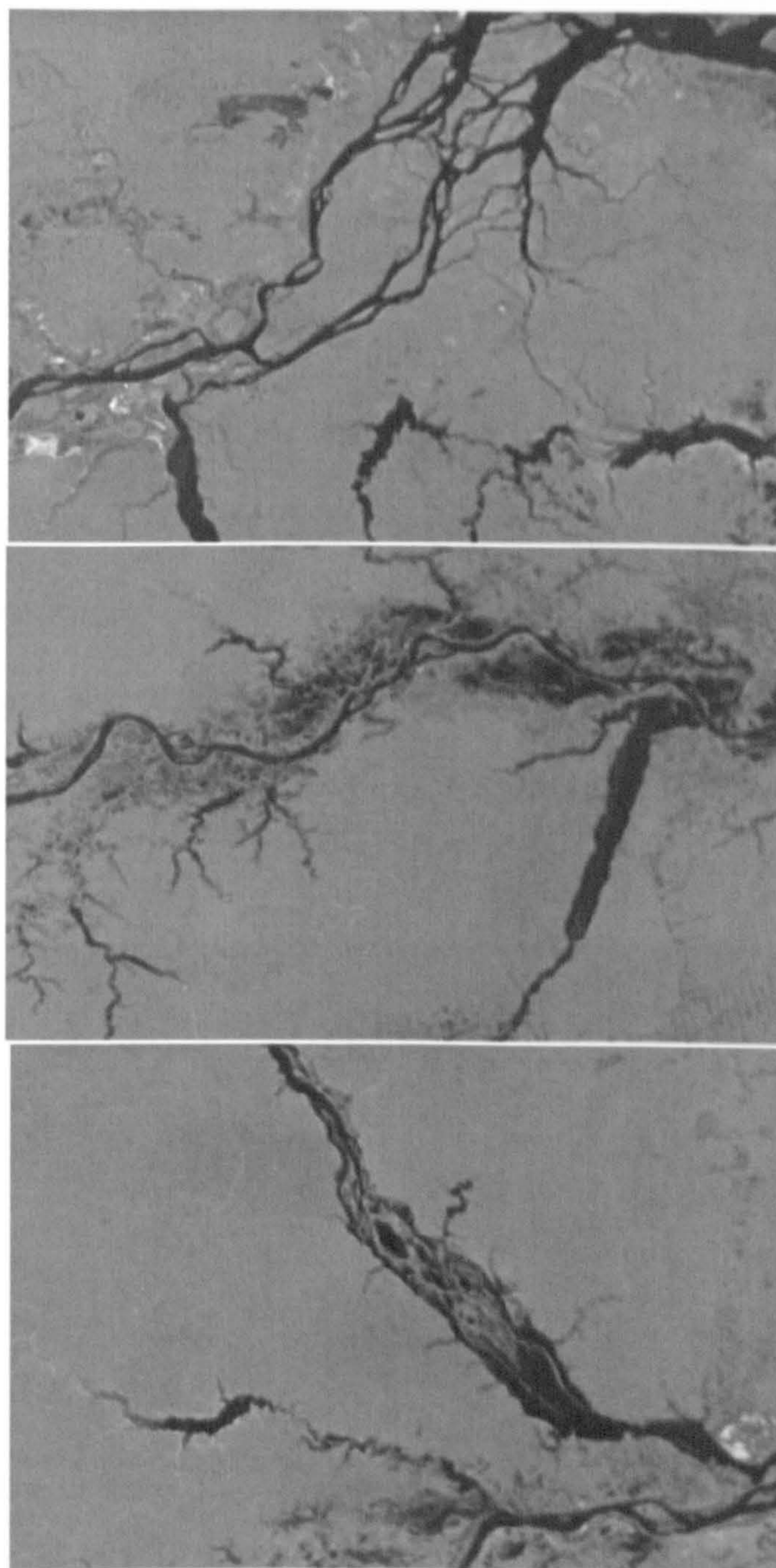
84. Amazon jungle, June 2001

Dr. Antonio Nobre, one of the main coordinators of LBA, showed interest in collaborating with our project, as he regarded interdisciplinary exchange as a way of contributing their specialist knowledge on ecology and environmental issues to the discussion of such issues in other fields. Dr. Antonio Nobre, has a passionate way of talking about biology, which was very inspiring for us. With reference to the LBA project, Dr. Nobre was concerned with the social dimension of the scientific research for the sustainable development of the region and needs of the local communities, as well as with its ecological importance to the global climate. He provided us with some

⁴⁷ According to LBA, the project is endorsed by the World Climate Research Program (WCRP) as part of the Global Energy and Water Cycle Experiment (GEWEX) and the International Satellite Land Surface Climatology Project (ISLSCP), and by the International Geosphere-Biosphere Programme (IGBP) through its core project Biospheric Aspects of the Hydrological Cycle (BAHC). LBA has been supported by IGBP core projects International Global Atmospheric Chemistry Programme (IGAC) and Global Change and Terrestrial Ecosystems (GCTE), by UNESCO's International Hydrological Programme (IHP), by IGBP core project Land Use and Cover Change (LUCC) and the Human Dimension Programme (HDP). The Inter-American Institute for Global Change Research (IAI) supports the inter-Americas dimension of LBA, and has been building its long term research program around the issues which are of utmost relevance to the LBA objectives. LBA is on its way to becoming the first project to be supported by all three major research programmes concerned with global, climate and environmental change, notably IGBP, WCRP and HDP, as one of their main activities. For further information visit the LBA website <http://lba.cptec.inpe.br>

⁴⁸ LBA website <http://lba.cptec.inpe.br>

radar and satellite images of the Amazon which became incorporated in a photo essay⁴⁹ and as a part of an installation.



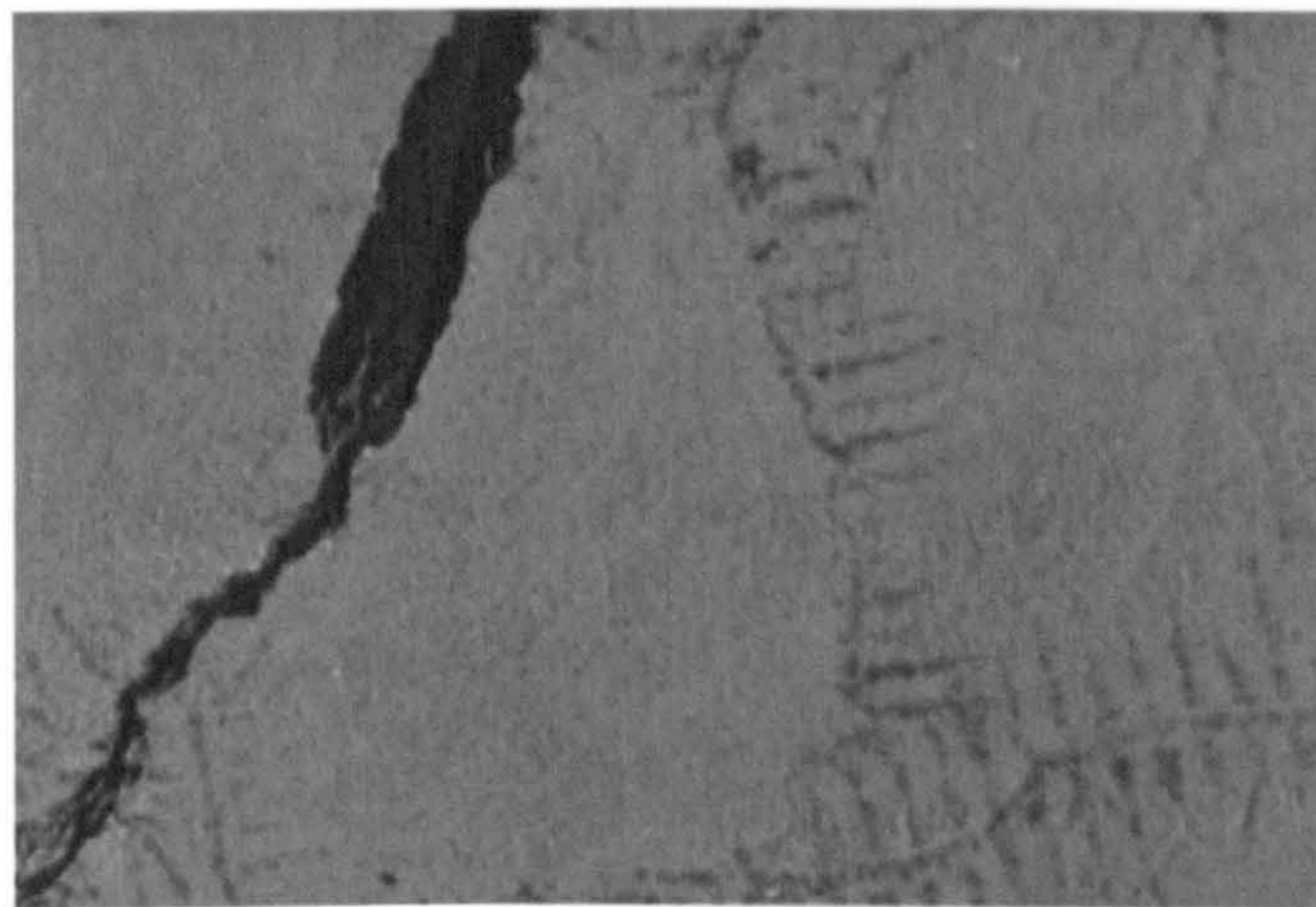
85., 86. & 87. Radar images of the Amazon
Courtesy of NASDA/METI

The radar images of the Amazon region are like 'ready-made' artworks, not in the sense of aesthetic indifference, but as unaltered found-objects, turned into art by the authority

⁴⁹ asikainen&macêdo, 'air', *Journal of Visual Culture*, volume 2, number 1, April, 2003, Sage Publications, pp. 73-82.

of the artist to designate them as art, in a Duchampian gesture. When allegorically appropriated and refunctioned as part of artworks, their formal and conceptual beauty becomes highlighted. In the new artistic context a tension is created between the aesthetic quality of the images and their previous function as a means of surveying and documenting activities taking place on the ground. The ambiguity created, opens the imagery to poetic and metaphorical interpretations.

The aerial views of the vast forest and rivers look like samples of body tissue viewed under a microscope lens. Rivers evoke the idea of veins and arteries, feeding the flesh of the forest with nutritious water. Roads also appear as scars in the silver surface of the image. A research assistant from Dr. Nobre's team, told us that he felt very sad when looking at these images of roads, which create massive areas of deforestation.⁵⁰



88. Radar image showing areas of deforestation alongside a road

Here the old metaphor of the earth as the female body, a benevolent nurturing mother of the pastoral literary tradition, becomes a fragile body in need of medical care. The 'virgin' forest is violated, to become later, an obsessively scanned, monitored and analysed body by concerned scientists who try to quantify and prevent the rapid

⁵⁰ Projects for road construction in the Amazon started in the late 1950s and expanded through the 1970s opening up large areas of the forest to agricultural development and colonisation projects. By the 1980s large cattle ranches were

deterioration of its health. Paradoxically, the sophisticated technology used to examine the level of damage inflicted on the earth's complex physiology advances at a similar rate to the earth's rapid destruction. The ecofeminist scholar Carolyn Merchant⁵¹ researching the history of science, has investigated how organismic conceptions of the universe changed to more mechanistic ones as science and technology developed in the West. Her approach is not an essentialist one, which identifies nature with 'feminine' qualities, but she has set the task of deconstructing the woman-nature and man-culture dichotomies, revealing that they are socially constructed and part of a patriarchal world view. She argues that the logic of men's domination over women and nature is part of the same ideology.

Donna Haraway is another important scholar researching natural science, who has contributed extensively to the field of STS by bringing a feminist perspective to issues of gender, the body and technology in science. Haraway remarks that scientific discourse and practice are full of metaphors and richly troped material referring to non literal aspects of nature and language. She argues that when scientific material is taken as the 'real,' that is, a representation free of tropes, then science becomes fetishized:

Fetishes make things seem clear and under control. Technique and science appear to be about accuracy, freedom from bias, good faith, and time and money to get on with the job, not about material-semiotic troping and so building particular worlds rather than others. Fetishized maps appear to be about things-in-themselves [...]⁵²

The mechanically reproduced radar images of the Amazon region can perhaps become more easily fetishized than geographical maps, which are mediated by other (more

established in the region, causing a sharp increase in deforestation rates, which stabilized in the early 1990s, but could start to raise again if plans for road networks across the region are realised, according to LBA.

⁵¹ Carolyn Merchant, *The Death of Nature*, Harper & Row Publishers, New York, 1989.

⁵² Donna Haraway, in *Modest_Witness@Second_Millennium.FemaleMarr_MeetsOncoMouse™ Feminism and Technoscience*, Routledge, New York, 1996, p. 136.

crafted) means of production. Yet, both radar photography and cartographic techniques are produced for specific purposes (conservation in this case), despite their appearance of being metaphor-free representations of the physical world. Haraway argues that people who work with maps as fetishes do not realize they are troping in a specific way: '[...] the map-making itself, and the maps themselves, would inhabit a semiotic domain like the high-energy physicists' culture of no culture, the world of the non tropic, the space of clarity and uncontaminated referentiality, the kingdom of rationality.'⁵³

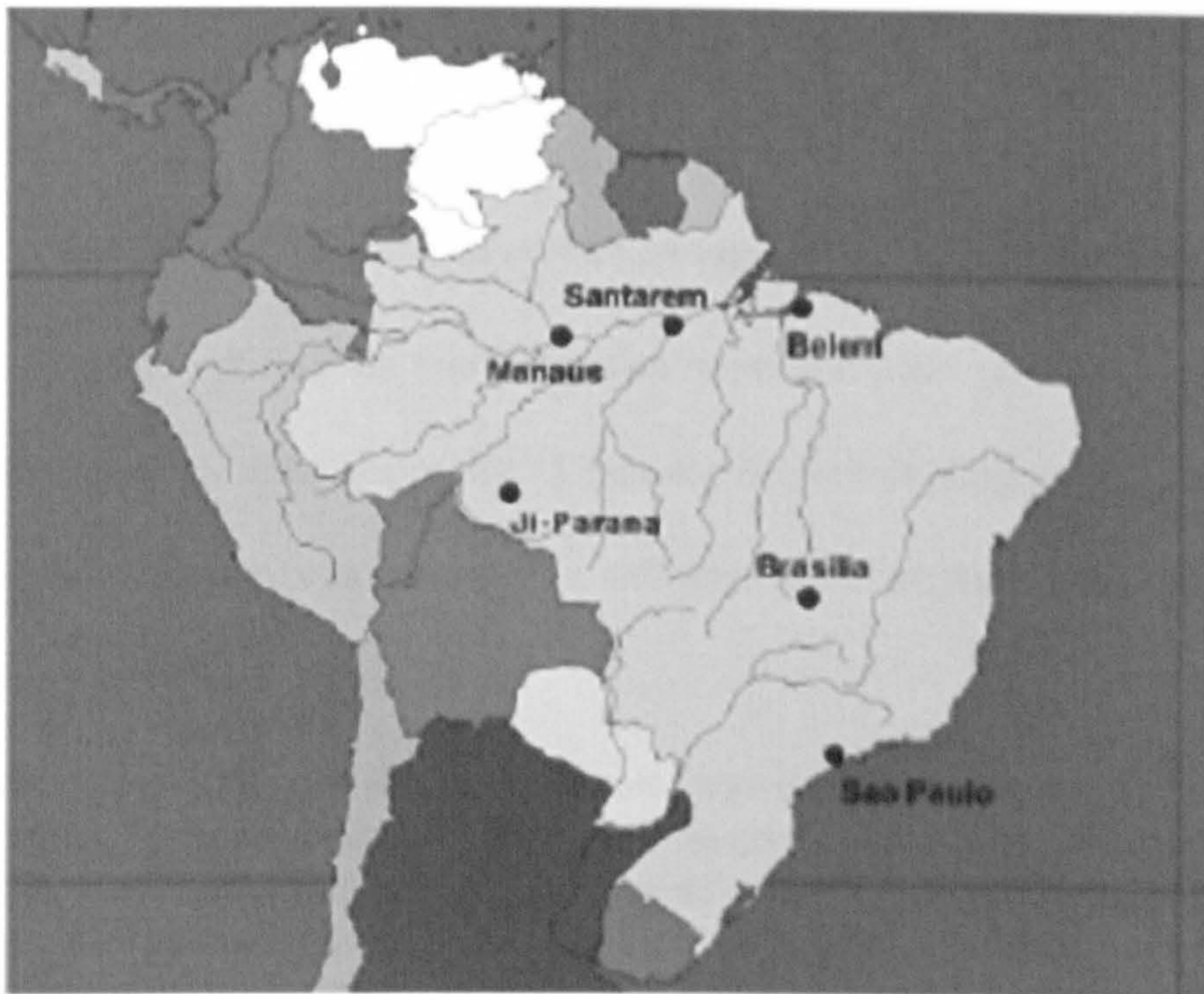
Haraway points to the mistake of 'scientific fetishists' in not recognizing the troped and culturally mediated aspect of scientific work.

This discussion by Haraway on the troped character of scientific practice can be aligned with the analogy I make (in chapter 3) between the symbol and natural science, as both aspire to directly signify, disregarding the interference of culture in the process of signification. In the following paragraphs I examine how the tensions between culture and nature are negotiated in a specific research project on climate change.

Dialogue with Dr. Ometto

As part of the *air* project we established a dialogue with Dr. Jean Pierre Henry Balbaud Ometto, who is currently developing a post-doctorate research project within the umbrella of LBA, entitled: *Carbon and Oxygen Isotope Ratio CO₂ Flux Analyses at the soil, Canopy and Landscape Scales*, at the University of Utah, Salt Lake City, UT, USA in partnership with the Centro de Energia Nuclear na Agricultura, Universidade de São Paulo, Piracicaba, SP, Brazil (CENA/USP).

⁵³ Ibid. p. 136.



89. Map of Brazil and other South American countries, with the location of the cities near Dr. Ometto's sampling sites⁵⁴

Dr. Ometto's research investigates the causes of a year-to-year variation in the annual increase of concentration of carbon dioxide in the air. The hypothesis of his team is based on previous studies which show that 'inter annual variation in the rise of CO₂ levels occurs despite relatively constant anthropogenic emissions of carbon dioxide from fossil fuel burning.'⁵⁵ The group is researching the causes of these variations, investigating the influence of temperature and precipitation changes on the processes of the carbon cycle. According to them and other scientists, the carbon rates in the ecosystem are controlled by the balance between carbon uptake during photosynthesis and carbon loss during nocturnal respiration.⁵⁶ Thus, they are measuring the CO₂ released by respiration and the carbon isotope composition of leaf tissue as indicators of

⁵⁴ Jean P. H. B. Ometto, et. al., 'Carbon Isotope Discrimination in Forest and Pasture Ecosystems of the Amazon Basin, Brazil', in *Global Biogeochemical Cycles*, Vol. 16, no. 4, 1109, doi: 10.1029/2001 GB001 462, 2002, p. 56-3.

⁵⁵ Ibid., p. 56-1.

seasonal variation, inter-annual changes in environmental conditions and the impact of logging and conversion of primary forest into cattle pastures.

They explain that the measurement of carbon isotope of leaf and atmospheric CO₂ samples can provide information that integrates important plant physiological characteristics spatially and temporally. These are important 'fragments', because through their analysis they can extend their reflection and calculations to the totality of the ecosystem:

[...] because of high species diversity and large stature of tropical forests, it is not possible to combine measurements of all the component processes and species into analyses of ecosystem function because of the consequent complexity. Rather, it is necessary to focus on important synthetic properties or processes that are understood in a precise manner at one scale, but which can also be extended to larger spacial and temporal scales without loss of information.⁵⁷

Because it is impossible to grasp the totality of these complex processes, they carried out a systematic analysis of selected fragments, which, similarly to the concept of the Romantic fragment, the fragments are a part, that paradoxically presents, the unrepresentable totality. In this way their scientific work can be regarded as an allegory of the forest ecosystem, it is an interpretation or representation of a large and complex totality which cannot be directly presented.

Benjamin's theory of allegory points to the history of fragments, and the dialectical relation of history and origin. The history of the processes: social, political and economic conditions involved in the framing of nature in the hands of scientists and artists is in intimate relation to a remote original 'ungraspable' pre-linguistic meaning. As soon as a natural element, or an aspect of it is named and described, it acquires a

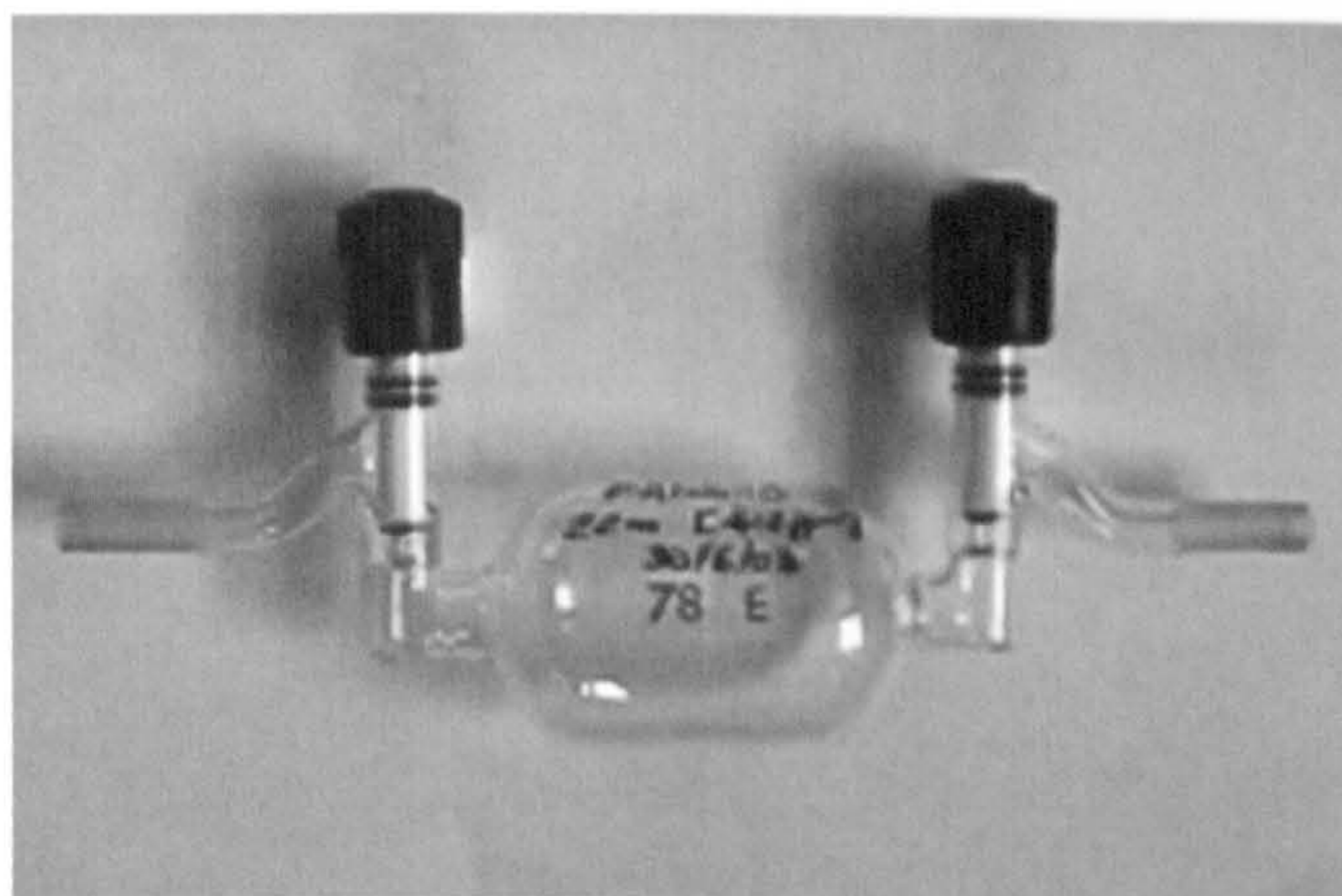
⁵⁶ Ibid., p. 56-2.

⁵⁷ Ibid. p. 56-2.

value and enters in a complex chain of signification, and becomes transformed in the fluid structure of language.

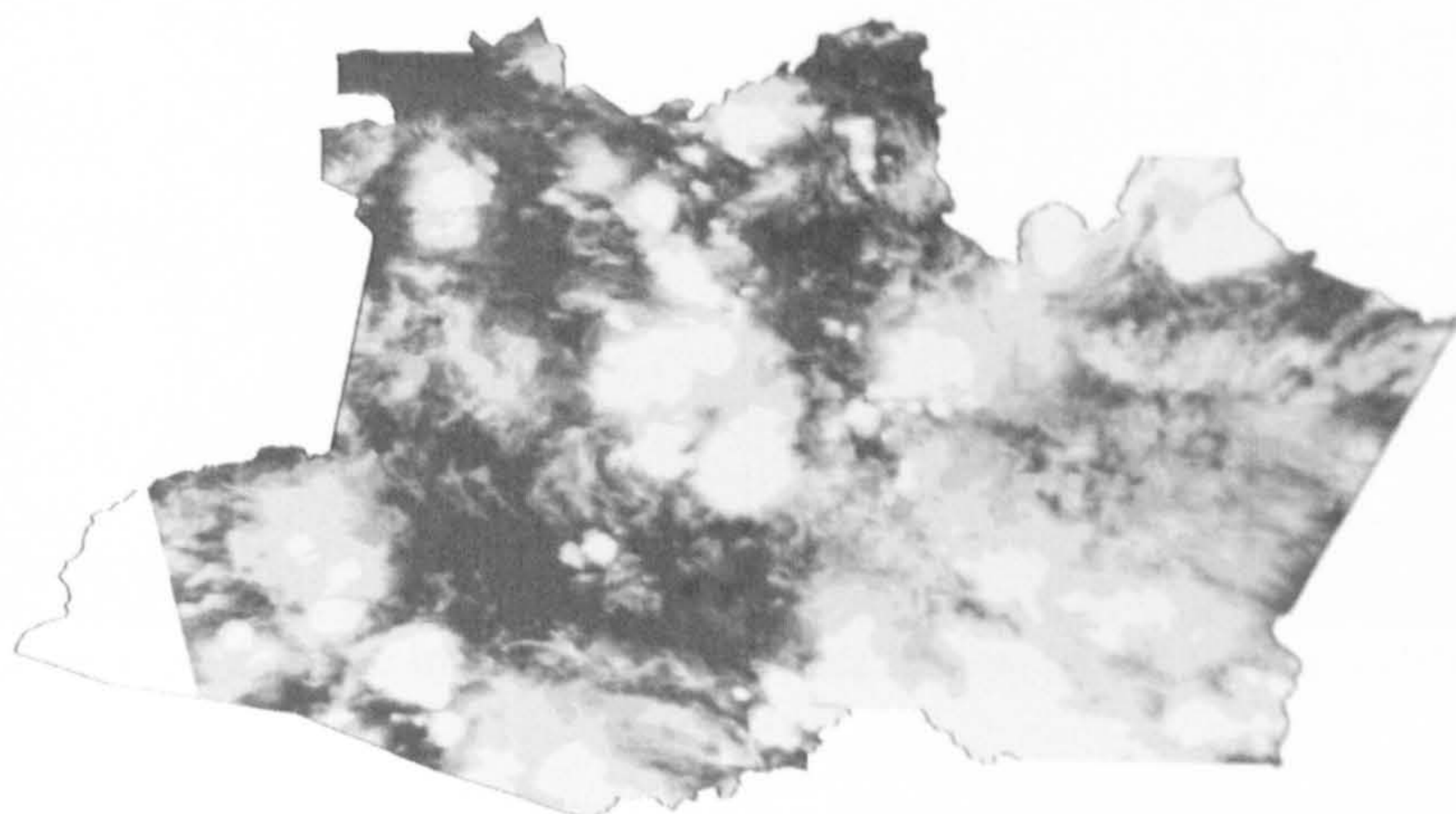
The allegorical concept of fragment is applicable to both artwork and scientific practice. In Ometto's study, it is clearly impossible to present the whole ecosystem, measuring the total amount of carbon dioxide which is released in respiration and absorbed through photosynthesis from all plants in the forest. So, the scientists selected a fragment which could represent the whole, through various calculations, in order to build an allegorical model of the system. The series of theories which supported their hypothesis corresponded to the social, historical and collaborative nature of their work, a layering of new ideas over existing ones, a palimpsest. The new findings interact with previous ones, either confirming them or eroding their statements and leading to new directions and the formulation of new theories. It is an endless process of the interpretation of fragments, as nature cannot be directly presented in its complex totality.

The idea of appropriating Dr. Ometto's research material to be part of an installation work emerged in our first encounter with him in one of his field trips, at the ZF 2 (one of INPA's research areas). He was carrying his suitcase full of air samples from various sites in the jungle, collected in different altitudes, times and seasons. We found his ideas and collection of air so poetic, and regarded his research material as a fascinating work of art. Dr. Ometto had an open attitude to our project and after our initial contact in this trip, we established a stimulating dialogue.

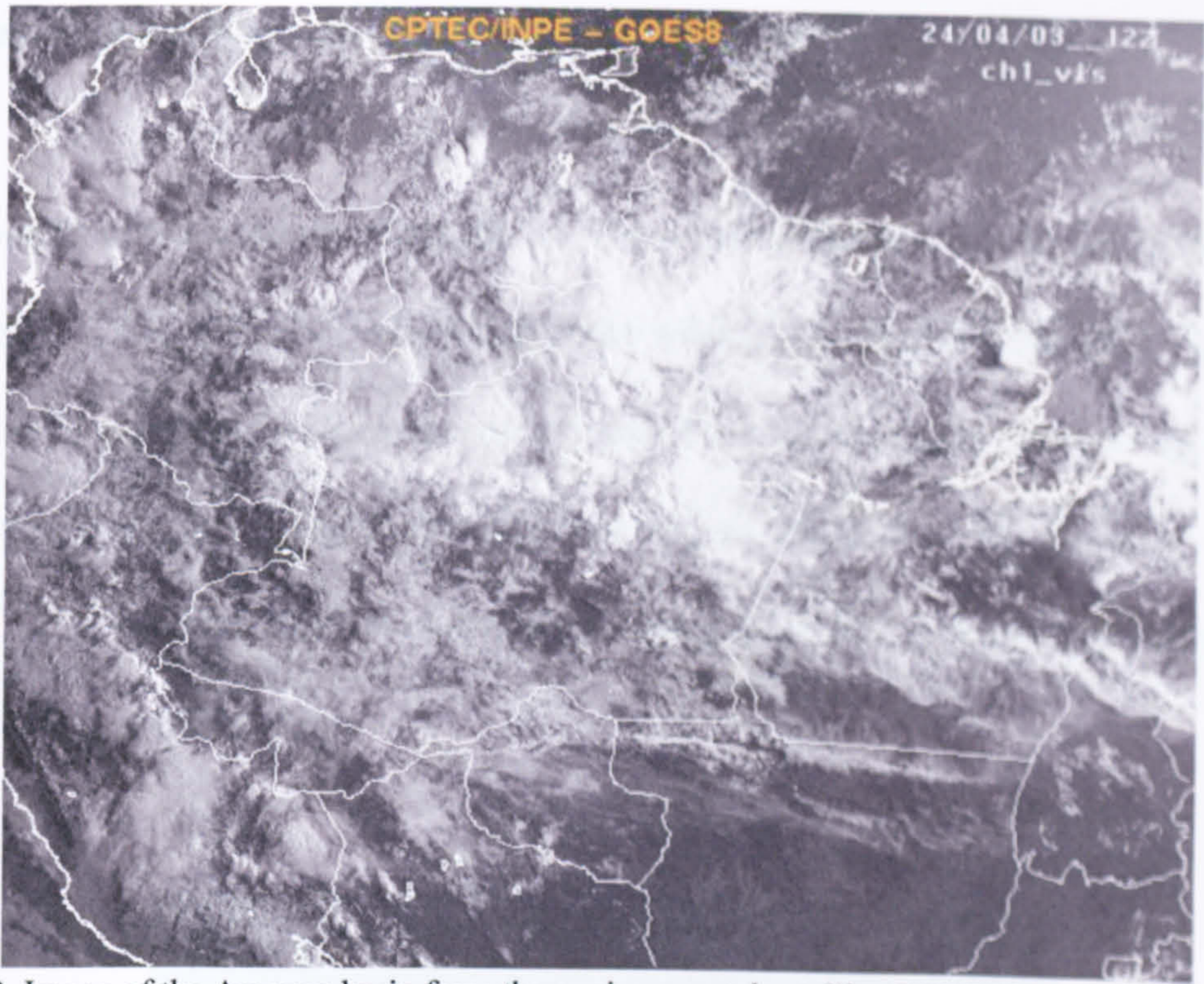


90. Air sample from the Amazon forest, from Dr. Ometto's research

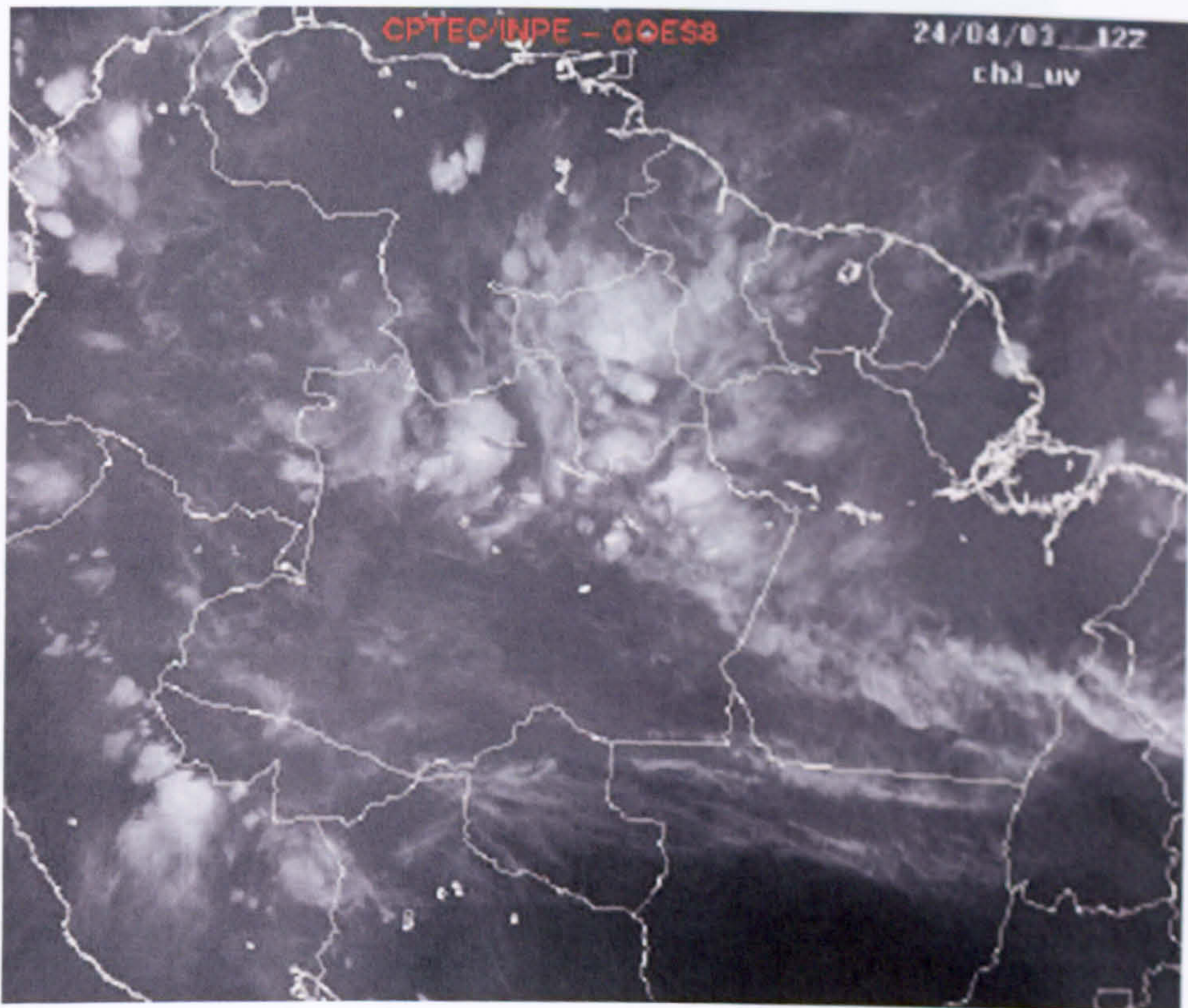
The sample of air from the Amazon when presented in the context of an artwork can assume the character of a relic, and the scientist's gesture can be interpreted as an allegorical attempt to capture an elusive and complex element that is constantly changing. Dr. Ometto's sampled material and notes can add an important layer to our artwork, by bringing 'real' scientific evidence to it. This scientific fragment is then reframed and refunctioned as art. The doubling of the 'realistic' and 'socially constructed' nature of the fragment is made more evident, and their dynamic is at the core of the piece. The air samples of Dr. Ometto's project will be presented accompanied with satellite imagery of the collection sites.



91. Queimadas (deforestation by fire)- image of clouds and fire smoke
MCT/INPE/CPTEC, Satellite Noaa-12, Date: 23/04/2003, State of Amazonas
Total Imaged : 97 % of the area, of the Imaged Area : 85 % possible Clouds



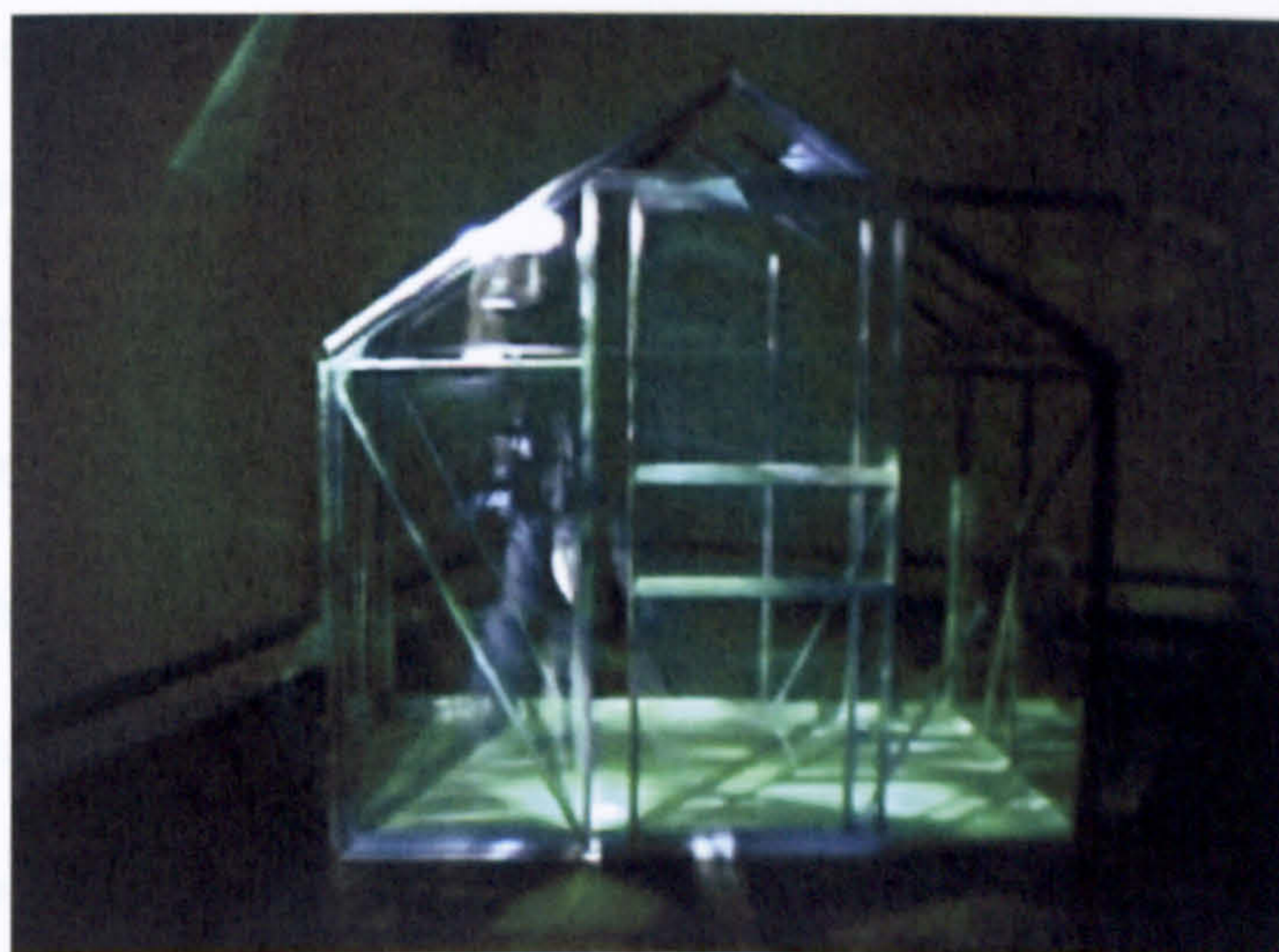
92. Image of the Amazon basin from the environmental satellite GOES NOAA MODIS



93. Water vapour, image from the environmental satellite GOES NOAA MODIS

Video installations, Notes on Production

The following considerations about the *air* video installations relate to the process of production and conceptual development of the works.⁵⁸ In January 2003 the two videos of the Finnish and Amazon forests were projected for the first time in a gallery space, as work in progress for the *Experimental Spaces* project, at the Hastings Museum and Art Gallery.⁵⁹ The Amazon video was projected onto a 4 x 6 feet greenhouse, while the Koli video onto a flat surface.



94. Greenhouse with Amazon video projection, 2003

The Amazon video was dark and created an interesting visual impact when projected onto the greenhouse. The floor inside the greenhouse was covered with a projection screen, above which there was a thin layer of water. The glass and the water reflected the light of the projection onto the surrounding walls generating a proliferation of moving shadows. The moving images and reflections created a luminous 'aura' around

⁵⁸ It is perhaps important to note that the *air* installations are new works which have not yet been finalized.

⁵⁹ ES2003 *Experimental Spaces* is a project by the curator Judith Stewart, at the Hastings Museum and Art Gallery, Hastings, Sussex. In the *Experimental Spaces* project, artists are invited to develop work in the gallery, without any commitment to present a finished piece at the end of the allocated period. So this scheme was useful, because it provided space and resources for us to develop further the installations from the *air* project.

the greenhouse and projected images. In this formal arrangement, the fragility and beauty of glass became associated with the idea of the vulnerability of the rainforest.



95. 96. & 97. Stills from Amazon video and projection onto the greenhouse

In the first rough edit of the Amazon video, we structured the sequence to begin with bright clips gradually changing to darker and more mysterious imagery, and ending with an enigmatic abandoned building in the forest (filmed at the Ducke research station, INPA). In the computer screen, the darker sequences were intriguing and aesthetically more appealing than the images of a sunny forest. When projected onto the greenhouse, the dark clips became very bland and the bright images worked a lot better, particularly the close-ups of plants. Considering these effects, we re-edited the videos, mixing the brightly lit sequences with the darker ones, including more close-ups, and keeping the camera movement in all of the clips to the same direction. This continuity of movement towards one direction was important in maintaining the impression of a flow of circular movement.

The experience of time was also dramatically altered by the spatial presentation of the video. When viewed on the flat and small computer screen, the video seemed too long, and not very engaging. It was a monotonous sequence of panoramic views of the tropical forest, without any sound or narrative. When projected onto the greenhouse, the three dimensional space transformed this viewing experience completely. The

sequence of images unfolding on the screen (on the greenhouse floor), exploded into many reflections on the surrounding walls, thereby involving the viewer in a much more engaging way. The audience at the Hastings Art Gallery spent a much longer period with the piece than we had expected, and returned to the space a few times to walk around the greenhouse, exploring various viewing perspectives in the room. The formal aspects of the presentation of this work, thus, relies on its reception as a video installation, because if the same sequence is seen as a projection on a flat surface or monitor, it does not convey the same kind of experience and the content of the work is also altered.

The sculptural structure of the greenhouse not only transforms the visual perception of the sequence, but also adds more layers of signification to its content. The framing of the images with glass brings back to them their aura, which had been lost through the process of mechanical reproduction.⁶⁰ As Benjamin argues, the reproduction of imagery through photography and film destroys the aura of the image as a presence, which is the space in time that someone experiences an encounter with it. The new aura is not identical to the original one, our experience in the Amazon jungle, but is a newly acquired aura, an allegorical presence. In the structure of this piece, then, there are these competing contradictory aspects of the loss and recovery of aura through an artificial process of reference. The fragmentary sequence of images points to a far away site, presenting it, but only incompletely, through mediations and fake strategies. The Koli video can also be regarded as an allegory of the vast frozen forest. This video creates a contemplative mood, in which the viewer is presented with the slow movement of the trees loaded with snow.

After the Hastings Gallery, the Koli video was also restructured and re-edited. In the new sequence, homogeneity of colour was kept through the use of clips with images of misty days, and the editing out of all footage of colourful sunsets and blue skies.

Another important editing decision was the exclusive use of still camera footage, so that all of the clips with camera movements were cut, such as 'in' and 'out' zooms, close-ups and panoramic views. The only movement left in the whole video was the movement of the wind on the trees.



98. & 99. Koli video stills

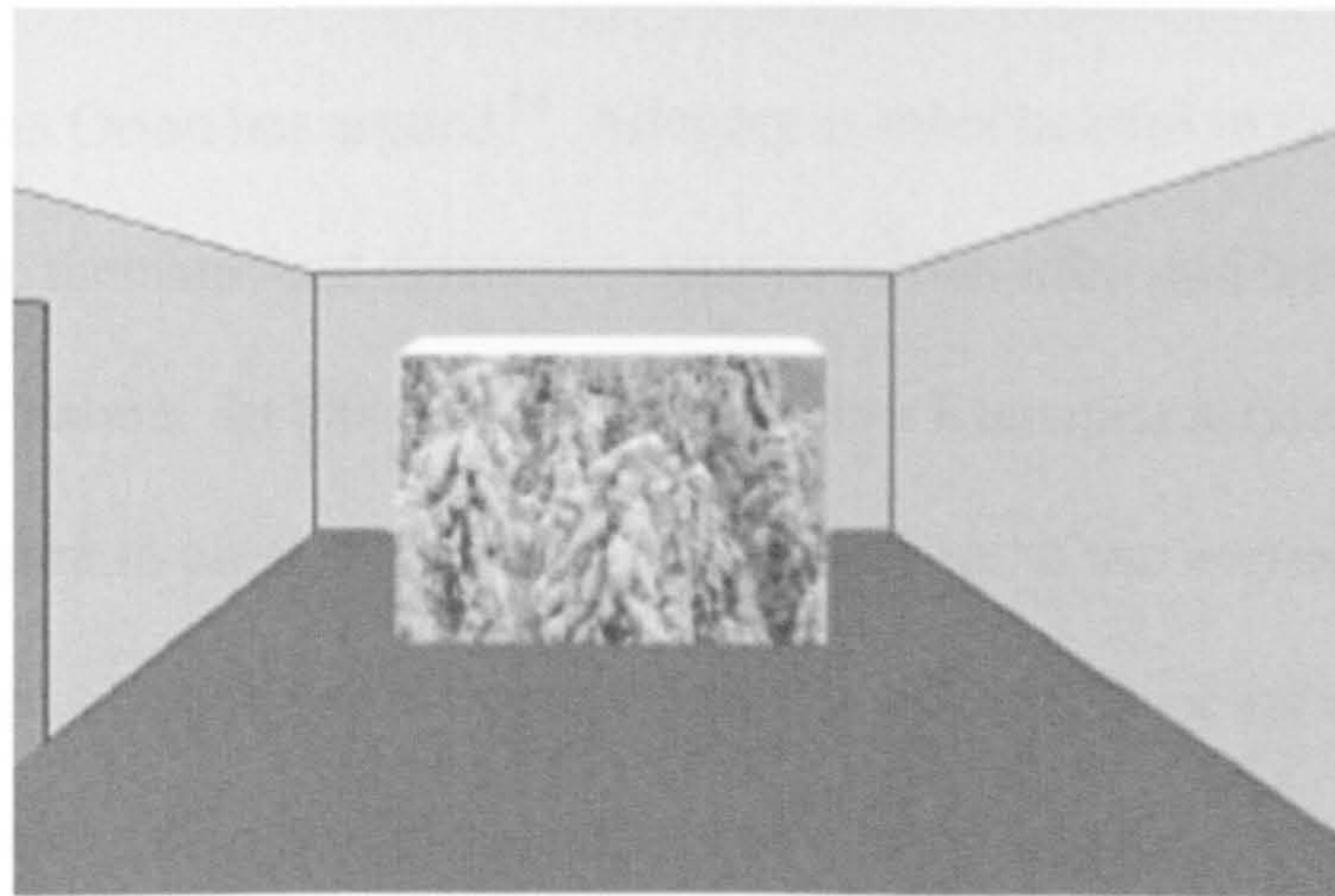
In a text written in collaboration with Henna, for an exhibition proposal, we articulate our reflection on the Koli video: 'The Koli forest video shows the dramatic transformation of the landscape by the accumulation of snow, which evokes a feeling of unreality to the footage that we have explored. The magical, fairy tale landscape with slowly moving trees overloaded with heavy snow creates an uncanny atmosphere. The sequence consists of series of still camera footage, emphasizing the movement of the trees and subtle changes of light in the landscape.'⁶¹

The Koli video is to be projected onto a free-standing white wall, in order to give it a stronger sculptural presence. Through various pieces, we have sought to explore the

⁶⁰ Please refer back to the discussions on Benjamin's concept of 'aura' and his writings on film and photography in Chapter 3.

⁶¹ Extract from exhibition proposal for PhD final show, by Asikainen & Macêdo, March 2003.

relation of the physical space of the exhibition and the space of the video, and in the case of the Koli forest video, a projection at a cinematic scale is the most appropriate. This is because a large projection adds to the sense of monumentality and vastness of the space within the video sequence. The size of the projection also affects the perception of another aspect of the work, which is the movement of the trees. The larger the scale of the projection is in relation to the body of the viewer, the more perceptible the subtle movement of the trees becomes. If the person stands in front of such a large projection of a moving landscape for a long period of time, it may disturb the sense of balance of the body. These phenomenological aspects of the projection with its surrounding space are crucial in installation art, (as discussed in Chapter 4), and were articulated by minimalist artists. In this piece, the free standing white 'wall' is like a piece of minimal sculpture, which is turned into the support for video art.



100. Installation plan for Koli video

The perception of time in this sequence is in stark contrast with the dynamic aspect of the Amazon video. The slow pace of the cold forest movements has an effect of 'slowing down' the viewer, encouraging introspection and a mood of quiet contemplation. We have sought to translate the sense of immensity that we felt when looking at the vast landscape of frozen moving trees, while standing at the top of Koli

Hill.⁶² Gaston Bachelard beautifully describes this feeling of immensity and stillness: 'Immensity is within ourselves. It is attached to a sort of expression of being that life curbs and caution arrests, but which starts again when we are alone. As soon as we become motionless, we are elsewhere; we are dreaming in a world that is immense. Indeed, immensity is the movement of motionless man. It is one of the dynamic characteristics of quiet daydreaming.'⁶³

Here the inside and outside spaces become connected through an aesthetic engagement with the landscape. This subject-object relation is an area extensively explored by Romantic painters and poets, and brings us back to the allegory and symbol discussion. Allegory and symbol are two sides of the same experience, as there is an 'inherited typology' from the tradition of artistic representation of nature, but there is also a level of immediacy in the lived experience, and an element of both is present in this work, and in all works as Orton has argued.⁶⁴ Allegory is most helpful in the research and articulation of the thematic and discursive aspects of this inherited history of the representation of nature. In this installation there is a Romantic influence, which comes through in the desire to present the unrepresentable totality of our experiences in the freezing landscape. This desire is frustrated by the artificiality of the mediating strategies, involved in the framing, selection and editing decisions in the construction of the work. But when it comes to the aesthetic experience of the work, the desire and emotions involved in the process also play an important role in the reception of the work. A phenomenological approach seems most fruitful in the engagement with the images, their scale and delicate movement, their formal and aesthetic aspects. Allegory,

⁶² Koli Hill is a place of geological and cultural importance in Finland as it became a symbol for Finnish national identity through the work of Romantic 19th century Finnish artists, writers and composers. The site is also very important for tourism, which is the main economic activity developed at the Koli National Park.

⁶³ Gaston Bachelard, *The Poetics of Space*, trans. Maria Jolas, Beacon Press, Boston, 1994, p. 184.

⁶⁴ See section 'Allegory and the Avant-Garde' in Chapter 1.

as a double structure of antithetical ideas, allows room for these two aspects – convention and expression – to exist, independently, and at the same time to be intrinsically connected.

The slow movement of the trees, the scale of the projection, the stillness of the camera and the lack of narrative all contribute to the creation of such a contemplative mood, pushing the boundaries between video and painting. Walter Benjamin observes the difference between the reception of still and moving images: 'Let us compare the screen on which a film unfolds with the canvas of a painting. The painting invites the spectator to contemplation; before it the spectator can abandon himself to his associations. Before the movie frame he cannot do so. No sooner has his eye grasped a scene than it is already changed. It cannot be arrested.'⁶⁵ The constant change of images in film usually interrupt the viewer's thought processes, but in this video the movement is so slow that it behaves like a painting, without having the permanence of painting. Thus, contrary to the fast rhythm of consumption of moving images to which contemporary viewers are accustomed, the Koli video is close to a large painting, inviting the viewer to an aesthetic experience and allowing room for the projection of his or her thoughts through the unfolding of the sequence.

The ambiguous status of the installation with reference to the reception of painting, minimalist sculpture and video art, destabilizes the boundaries of traditional artistic categories, shifting the focus from-medium specificity to the idea of site-specificity. Rosalind Krauss has written about this move, associating the practice of installation with the emergence of a 'post-medium condition' in art:

⁶⁵ Walter Benjamin, 'The Work of Art in the Age of Mechanical Reproduction', in *Illuminations*, op. cit., p. 231.

Whether it calls itself installation art or institutional critique, the international spread of the mixed-media installation has become ubiquitous. Triumphantly declaring that we now inhabit a post-medium age [...]⁶⁶

Although the artwork is to be presented in an art gallery context, it engages with two sites of crucial conceptual and aesthetic importance for the work, through the medium of video, and can be regarded as a site-specific work in relation to James Meyer's concept of the functional site (referred to in Chapter 4). It is in the 'neutral' gallery space that the two sites are juxtaposed in order to highlight their intrinsic connection through the air and global climate, despite their differences. The two geographical sites stand in allegorical opposition to one another in the dynamic balance of the earth's ecosystem.

The contrasts between hot and cold forests, dynamic and contemplative moods, formal and discursive qualities, symbolic and allegorical, aesthetics and politics, are all contradictory perspectives which constitute the dialectical dynamic of the work. The two videos are like fragments in an early Romantic text, independent yet related to one another. Each fragment has in its structure its own conflicting dynamic of antithetical ideas, and when taken in relation to one another, they also function antithetically.

'The Inherited Typology'

The greenhouse effect is the most obvious association with the greenhouses, and is one important layer of meaning associated with the work. But greenhouses have also a rich semantic chain associated with its glass structure, one of them is related to the great

⁶⁶ Rosalind Krauss, in *A Voyage on The North Sea: Art In the Age of the Post-medium Condition*, Thames & Hudson, London, 2000, p. 20.

impact they had on architectural developments of the 19th century. Benjamin explored the influence that glass had in this architecture and its association with consumption and collecting in modern industrial society. In *The Arcades Project*, he notes that the monumental iron and glass structure of the Crystal Palace built in London for the 'Great Exhibition of the Works of Industry of All Nations', in 1851, was designed by a gardener, Joseph Paxton. In this book, Benjamin shows how glass is used to transform mass produced commodities into fetish objects in international industrial exhibitions, as well as in Paris arcades shop windows. Thus, the greenhouse becomes associated here with consumption and the advertising of commodities.

Celeste Olalquiaga was greatly influenced by Benjamin's allegorical theory in her research on Victorian society's obsessive interest in collecting nature. She explores the use of glass by Victorians, noting that it was a material largely used to artificially recreate nature in aquariums (according to her, a national fashion during the 1850s and 1860s), terrariums, cabinets of curiosity and artificial grottoes. Nature became a relic under protective glass cases, as she argues:

The Victorian penchant for collecting live or "natural" matter such as flowers, insects and shells made relics out of things whose value emanated from their intrinsic relationship to life, instead of being derived from a transcendental symbolism like the one ascribed to saint's remains. Nevertheless, there were certain elements of symbolic signification that were retained, however transformed. Their preservation in glass cases, for example, was meant originally to guard relics from any external intrusion. Capable of being seen, but not touched, sacred relics gained the added prestige of physical distance which, together with the translucency and brittleness of glass, created such a strong ethereal aura that glass casing became an essential part of their presentations.⁶⁷

With the rapid industrialization and development of science and technology, objects of nature became part of a nostalgic past, which were preserved as sacred relics in natural history museums and private collections, as argued in the previous Chapter.

⁶⁷ Celeste Olalquiaga, *The Artificial Kingdom: a Treasury of the Kitsch Experience*, op. cit., pp. 52- 53.

The large Victorian greenhouses at Kew Gardens are another example of this desire to recreate and display the 'wonders of nature' in beautifully constructed glasshouses. The building of botanical collections was carried out in the midst of colonial expansion and exploitation of 'foreign exotic' lands. The development of science in this context, played various roles, with important economic gains for the British Empire, through questionable and hardly neutral means such as 'biopiratical' practices.⁶⁸ This relation between politics and Western scientific developments has been recently explored by postcolonial science and technology studies scholars. Ziauddin Sardar argues that the conventional Western history of science has systematically denied the achievements of non-Western cultures, dismissing them as superstition, myth and folklore, while portraying European civilization as a self-generated culture. Sardar points to the fact that many scientific traditions were integrated into Western sciences without acknowledgement: 'through conquest and colonization, Europe appropriated the sciences of other civilizations, suppressed the knowledge of their origins, and recycled them as Western.'⁶⁹ This allegorical appropriation of other culture's knowledge is the focus of much recent debate amongst postcolonial critics of science. They explore the relation between colonialism and neo-colonialism within the 'progress' of Western science, and some authors have, according to Sardar, sought to re-establish the value of non-Western knowledge, such as traditional Islamic, Indian and Chinese sciences.

⁶⁸ One famous example that Brazilians never forget is the smuggling of the Brazilian rubber tree, by the British naturalist Richard Spruce (1817-1893). Spruce collected seeds which were cultivated at the Kew Gardens Herbarium, and later formed large plantations in the British colonies in the Far East. Still today these hold monopoly over the world's rubber supply as they have done since the end of Brazil's rubber boom from 1870 to 1910. This led to the economic decline of Manaus and Brazilian export of this natural resource. The problem of 'biopiracy' is still a threat to the sustainable development of the region, which has led the Brazilian government to pass strict regulations on research in the area of botany. Another example of cultural and economic conflict related to scientific research is the case in which some North American scientists tried to register a patent of a sacred plant known and used by shamans in the Amazon tribes for hundreds of years.

⁶⁹ Ziauddin Sardar, *Thomas Kuhn and the Science Wars*, Icon Books, Cambridge, 2000, p. 54.

The culture and nature polarity is also associated with greenhouses and was explored in *The Greenhouse Effect*⁷⁰ exhibition at the Serpentine Gallery, which brought together the work of sixteen contemporary artists⁷¹ who deal with the representation of nature. In the catalogue text, the curator Ralph Rugoff makes reference to the projects of the 19th century architect and naturalist Frank Stainbridge (1776-1860) who built monumental greenhouses to shelter a collection of natural specimens mixed with artificial plants. Rugoff uses Bruno Latour's concept of the hybridity of nature-culture to examine the contemporary art and natural science encounters, making parallels with Stainbridge's endeavour. Rugoff also cites interpretations of Stainbridge's work by a contemporary scholar, Dr. Gassblau:

[...] by commingling products of human labour and cultivated specimens, [Stainbridge] went beyond the truism that 'nature' is a cultural intervention. His two greenhouses demonstrate a more profound insight: that our whole idea of 'culture' is itself a fiction that depends on our first bracketing off a transcendent entity we call Nature, an inviolate order separate from all human industry... In sharp contrast, Stainbridge's oeuvre offers us the model of hybrid 'nature-cultures' that fluidly trespass all such rigidly defined territories.⁷²

Gassblau locates Stainbridge's collection of artefacts and plants within the historical transition from cabinets of curiosity to modern natural history collections, in which the natural becomes separated from the cultural.

Thus, the use of greenhouses in the *air* video installation, engages the work with all these related meanings. Under the glasshouse, the world's largest tropical evergreen forest becomes a delicate and fragile relic, a nature-culture hybrid fragment, surrounded by a complex web of political, economic, ecological, artistic and aesthetic issues.

⁷⁰ *The Greenhouse Effect*, Serpentine Gallery, London, 4 April - 21 May 2000, curated by Ralph Rugoff and Lisa G. Corrin.

⁷¹ Included in the show were: Rachel Berwick, Michael Blazy, Mat Collishaw, Mark Dion, Olafur Eliasson, Cerith Wyn Evans, Tom Friedman, Anya Gallaccio, Rodney Graham, Henrik Hakansson, Tim Hawkinson, Nina Katchadourian, Tony Matelli, Roxy Paine, Yutaka Sone and Yoshihiro Suda.

Conclusion

In this Chapter on *air* I have been interested in finding out how art and science collaborations are established, how they develop and what kind of results are generated from this encounter. This is a very open question that becomes manageable through the consideration of individual works, as I have done when addressing the art & science dialogue in the projects by Mark Dion and Cornelia Hesse-Honegger. In the *air* project we extend our collaborative practice to work with INPA and Mekrijärvi researchers. In relation to this specific experience, there are some remaining questions: how did the collaboration start? What did artists and scientists expect from it? What was the impact of art on science and vice versa?

The idea of a collaboration emerged out of our initiative. Before we even met the scientists, we had already spent a great deal of time, working and developing the outline of the project and finding funding for the trips. The residencies were really like 'exploratory surgery', we knew there was something there that we wanted to find, but before 'opening the body of the patient' we did not clearly know what it was. Through the journey we met the scientists, explored the places and had ideas for the work. Although we had contacted many researchers in advance, it was only when we set foot in the forests that fortunate encounters and coincidences shaped the outcomes of the project. When we met Dr. Ometto, he did not seem to have any expectations concerning how our project could benefit himself. Rather, his attitude was a very open and curious one, as he had not thought about engaging in this kind of exchange before. On our side, we had two general areas of interest: we wanted to have access to the sophisticated technology and imagery developed by scientists, and were very interested

⁷² *The Greenhouse Effect* exhibition catalogue, 2000, p.30.

in the content of their work on climate change. When we learned about Dr. Ometto's research and the LBA project, we started having clearer ideas about how it could be linked to the Mekrijärvi project and appropriated in the production of the installations.

Thus, in this case, the collaboration started, was structured and developed because of our interests. We have benefited from the contributions of the scientist's work in terms of imagery, materials and ideas, which we were free to manipulate and use for our purposes. In this sense I do not know if this dialogue can be considered a genuine collaboration. Collaboration is a two-way relationship, and perhaps if we had been in different circumstances, it could have matured into a real exchange. Through our work, the scientific research quoted will circulate in different contexts from those in which they would normally relate, so this is our contribution to them. When the scientific material entered an art environment, it still carried its previous history, but also gained other meanings. Thus, art was not a mere carrier of a scientific message, but transformed its content in the process, opening it to greater social and political scrutiny.

Here the understanding of the logic of the fragmentary presentation of the unrepresentable becomes illuminating. Ometto and collaborators sought meaningful fragments which carry the potential for a wider knowledge of the whole system. Through seeking these incomplete parts that can present the whole, they built their theories. There is a fragment of the 'real' world, which enters into a complex relation to a variety of texts, theories and hypotheses (socially and historically constructed), acquiring new meanings, which transform its original (undefined) value. As we saw in the 'science wars' discussion, STS scholars are concerned with deciphering these layers of meaning accumulated in the 'fragments of nature', examining to what extent the new contexts change their value and in whose interest. Natural scientists, such as Sokal, still are very

attached to the reminiscent reality of the fragment and its claim to present the whole, and this is similar to the attempts made by the late Romantics to suppress the allegorical aspects of the process of representation of nature, which frame the 'essence' of immediate experience.

The appropriated fragment of nature by Dr. Ometto, the air samples, traveled once again to another context, to that of the artwork. The empty looking glass appears to contain nothing, yet the invisible element is as elusive and volatile as is its meaning. When recontextualized into the artwork, it acquires new signification, adding another layer to the already multi-layered text it generates in a scientific context. Framed as art, the air sample becomes a precious relic, acquiring an 'aura', as if it were a treasure, a sample of purity. The residue of the tropical rain forest becomes fetishized. Ironically it contains the air respired by the forest, the abundant and problematic CO₂. The satellite imagery which accompanies the air sample indicates the site where it came from and makes a comment on the surveillance role of technology, as well as acting as a link between the sample, its collection site in the landscape and the gallery space. The 'non-site' of the art gallery is in a dialectical relation to the Amazon jungle, through the mediation of artistic and scientific works. Here, I refer back to Robert Smithson's dialectical notion of non-site and site mentioned in Chapters 1, and Meyer's idea of functional site and nomadic practice, discussed in Chapter 4.

The video of the Amazon framed by the greenhouse, also brings various historical associations with it, as I have discussed. Through formal and structural procedures in the presentation of the Amazon video in the installation, the scientific theory of the greenhouse effect is mixed with references to colonialism, mass-consumption, cultural values, the desire to reproduce and control nature, in a rich intertextual fabric of

accumulated meanings which is characteristic of allegory. The video of the Koli landscape also presents a fragment of the vast frozen forest, which was selected out of a wider context artificially reproducing the original natural site to create a contemplative context for its reception. This may be criticized as a Romantic desire to be in solitude, in an a-cultural and a-historical communion with nature. This aesthetic 'intoxication' reflects the desire to reproduce our 'first hand' experience of the site (which is inevitably informed by culture), is in sharp contrast with the political and economic issues around this framing of the natural, and is part of the antithetical movement of allegory. The cultural filters which mediated our perception and the technological medium used, together with other various frames of reference, are all part of the experience. The point the work makes is that there is no need to have a 'dictatorship' of the political over the aesthetic, the cultural over the natural, for a work to be of critical importance. The contradictory aspects are sometimes indistinguishable and can coexist in a work. These installations bring Romantic sentimentality in contrast with the harsh aspects of our dealings with nature. The appreciation of natural beauty in art is often associated with conservative ideology, as if the aesthetic were necessarily always alienated from political and social concerns. In this work they are both linked to one another, in a vibrant dynamic.

The blurring of boundaries between aesthetics and politics, art and science, culture and nature are part of José Lutzenberger's approach to science. The rigour of his scientific work is not compromised by his political activism or metaphysical beliefs, in fact, they are all merged into a pantheistic and contemplative approach, which confirms some predictions by Santos about the emergence of a new paradigm in science, where the culture and nature divide is dissolved. This brings my reflections in this Chapter to an end, and I will do so with Lutzenberger's inspiring words:

Life will never be understood in terms formulated by Descartes, who saw in living beings, except humans, simply machines, automatons. There are too many biologists but a lack of naturalists. The difference between a conventional biologist (only scientific) and the naturalist, is in worship. To the naturalist, nature is not the simple object of study and manipulation, it is much more. It is something divine - we are not afraid of this word - , it is sacred, and us humans are only part of it. Thus, the attitude of the naturalist can never be one of aggression, domination, spoliation. The naturalist seeks integration, harmony, preservation, care, aesthetic contemplation.⁷³

⁷³ José Lutzenberger, in *Gaia, The Living Planet (For a Gentle Way)*, op. cit., pp. 93-94 (my translation).



Conclusion

Throughout this research I have been concerned with disentangling the complex relation between contemporary art and natural science with society, in relation to the representation of nature. Allegory has proved a useful tool for artists to deal with the antithetical aspects of this interdisciplinary field, such as social construction and realism, subjectivity and objectivity, aesthetic appreciation and scientific observation. In applying Benjamin's theory of allegory to the art, science and nature debate, I have demonstrated that such polarities must be understood as part of a dialectic dynamic, or as de Man has shown in literary criticism, their differences need to be deconstructed, but, in both approaches each term tends to dissolve into its opposite, and they cannot be taken apart.

In relation to the dichotomy of art and science, I have made reference to the gradual dissolution of their boundaries, showing how each category is now defined more by their social institutions and discourses than by foundational or intrinsic differences. Yet their result is different as are their aims and sometimes methodologies of work. The work by the artist (or scientist?) Cornelia Hesse-Honegger, for example, stands in this blurred area, as it is difficult to dissociate its artistic value from its scientific content. Her work could be considered as a dialectical dynamic between painting and conceptual art, as it can be regarded as a rigorous piece of conceptual art, despite its blatant visual appeal and aesthetic quality. The realistic depictions of mutated plants and insects function as harmonic paintings, with a 'clinical' and sophisticated formal presentation of the animals portrayed. The texts added to the images, with scientific information about the species, with maps and place of collection, point to a web of ecological, political, social and historical issues which frame the images. Considering Meyer's

concept of functional site, her paintings function as site-specific works, as each image is related to a particular site, and their meaning is associated with its nuclear pollution.

Thus, Hesse-Honegger's work presents these ambiguous qualities as simultaneously art and science, painting and conceptual or installation art.

Conceptual art is perhaps the most iconoclast of all postmodern practices which emerged in the 1960s. It can be argued that conceptual art is the moment in post-war art history in which art becomes closest to natural science,¹ as a representative of positivism in contemporary art, as Buchloh argues:

Paradoxically, then, it would appear that Conceptual Art truly became the most significant paradigmatic change of post-war artistic production at the very moment that it mimed the operating logic of late capitalism and its positivist instrumentality in an effort to place its autocritical investigations at the service of liquidating even the last remnants of traditional aesthetic experience. In that process it succeeded in purging itself entirely of imaginary and bodily experience, of physical substance and the space of memory, to the same extent that it effaced all residues of representation and style, of individuality and skill.²

Thus, the shift of focus from object based art, subjectivity and expression to linguistic statements and institutional critique, as a consequence of Marcel Duchamp's work, was taken to its limits by conceptual artists such as Joseph Kosuth, British artists associated with Art&Language, amongst others, through their extremist anti-visual rhetoric. Their lasting impact in contemporary practice is still felt in the anti-aesthetic discourse of the articulators of postmodernism such as Benjamin Buchloh, Craig Owens (Chapter 1), and their influence on the arguments of Martha Rosler on the aesthetics and politics dispute in video art (Chapter 3), and James Meyer's 'lyrical' and 'critical' distinction in the discussion of site specificity and 'nomadic' practice (Chapter 4). The emergence of

¹ Benjamin Buchloh remarks that Joseph Kosuth follows Wittgenstein's logical positivism and analytical philosophy in his formulation of conceptual art, in which art is defined as an 'analytical proposition.' Benjamin Buchloh, in 'Conceptual Art 1962 - 1969: from the Aesthetic of Administration to the Critique of Institutions', in *Conceptual Art: a Critical Anthology*, ed. Alexander Alberro and Blake Stimpson, op. cit., p. 521.

² Ibid. pp. 532-533.

ambiguous practices which explore both visual and conceptual aspects of art is felt as retrogressive and is lamented by Buchloh:

[...] the Enlightenment triumph of Conceptual Art – its transformation of audiences and distribution, its abolition of object status and commodity form – would most of all only be short-lived, almost immediately giving way to the return of the ghostlike reappearitions of (prematurely?) displaced painterly and sculptural paradigms of the past. So that the specular regime, which Conceptual Art claimed to have upset, would soon be reinstated with renewed vigour. Which is of course what happened.³

Such negative attitudes towards visuality are the result of the reinstatement of the binary of allegory and symbol, as argued in Chapter 1. The lineage traced from Gail Day, Fred Orton, and de Man, back to Benjamin and the German Romantics, addresses the necessity of keeping the dialectics between the symbol and allegory open and functioning, instead of closing it down by privileging one of the sides.

This understanding of the dialectics between the symbol and allegory, expression and convention, commodity and autonomy becomes crucial for the production and reception of art which engages in collaborative projects with other disciplines, in the case of this research, those in the field of natural science. In order to avoid a mere instrumental role for art, as disseminator of scientific ideas, art needs to be considered in broader terms. According to Adorno, it is the aesthetic aspect of the experience of art and the impossibility of fixing its meaning, that makes it relatively autonomous, and resistant to the instrumental logic of capitalism, because the artwork has no use value, and is paradoxically described by Adorno as the absolute commodity discussed in Chapter 5. If art is to remain critical, it needs to allow some degree of autonomy for the production and reception of art, as part of its dialectical relation to the art market and institutions.

³ Ibid. p. 533.

Miwon Kwon and Buchloh have identified the problem of the 'proletarianization' of the artist and commodification of art practices, when they refer to the 'aesthetics of administration.' They note that artistic interventions are turned into a kind of 'critical service' to be offered as a package to enhance the 'self-critical project' of commissioning institutions. In doing this, initially subversive practices are absorbed and institutionalized losing their critical power. This is a considerable problem for installation artists and 'project-based' practices, and artists have to be aware of such pressures and negotiate their ethical and artistic concerns in each situation, in order to keep the process of production independent from such constraints. This is part of the Adornian dialectics of the contradictory aspects of artworks as both a commodity (dependent of social institutions) and a critical medium of reflection (provider of an autonomous experience).

The institutional critique which was part of the project of conceptual art and continues to inform contemporary practice, specially in installation art, marks a shift from a discourse of taste to one of power and politics, as Buchloh remarks:

Just as the readymade had negated not only figurative representation, authenticity, and authorship while introducing repetition and the series (i.e., the law of industrial production) to replace the studio aesthetic of the handcrafted original, Conceptual Art came to displace even that image of the mass-produced object and its aestheticized forms in Pop Art, replacing an aesthetic of industrial production and consumption with an aesthetic of administrative and legal organization and institutional validation.⁴

Installation art and project-based practice engage with such institutional critique as Kwon, Krauss and Meyer have investigated, as I argued in Chapter 5. With reference to their theoretical articulation of installation and site-specificity, I stressed the point made by Kwon, that the discursive and institutional aspects of installation art are intrinsically connected with its phenomenological aspects and subject to architectural contingencies.

The dynamic between such aspects are intertwined in the artwork and site where it intervenes. Both the aesthetic apprehension of the formal presentation of the work and its discursive aspects are part of its message, as I demonstrated in the discussion of the video installation *the first mild day of March*. If art criticism insists on prioritizing one level of interpretation in order to fulfill its own agenda (priority of allegory over symbol, of postmodernism over modernism, of textual over the visual), then, the suppression of aesthetics is clearly not in the artworks but in the criticism. Allegory points to the ambiguity, indefiniteness, ungraspability, illegibility of the antithetical dynamic between these polarities, and if postmodernist discourse is based on the inversion of the binary, then it is incoherent and contrary to allegory and deconstruction, as Fred Orton has argued (Chapter 1).

In video installations of the 1990s to the present, aesthetics re-emerges with an emphasis on both the aesthetic and political aspects of art. This mixture can be regarded as an expansion of the limits of art in conceptual art, suspending the 'ban' on the visual experience. In combining the visual with conceptual elements of practice, installation artists have explored the textual aspects of images and explored the power of the aesthetic also as a critical tool. This approach breaks with the totalitarianism of instrumental rationality in conceptual art, and creates more room in art for poetics.

The installations produced in the *air* project developed within a specific historical, political, and socio-economic context, and are a response to it. By bringing references to two geographically and culturally contrasting sites together, the work creates a space for reflection on the impact of such cultural relations to these natural environments.

The contemplation of the beauty of these forests can lead the viewer to reflect on the

⁴ Ibid. p. 520.

greed and unprecedented power of large corporations, private interests and an unequal world order which threatens the existence of such wonderful places and the variety of life forms which they harbour. The quiet atmosphere created by the work provokes a quality of engagement with the imagery presented, which allows room for such reflection. Aesthetic contemplation here becomes critical, and a much needed experience for the modern or postmodern citizen of large industrialized societies to rethink the impact of the current system on the natural world.

Fineman's critique of allegory points to the necessity of the allegorical structure to be kept as a dialectic or endless deconstructive dynamic, otherwise it can be turned into an empty signifier disconnected from a social and historical context, making it close to the a-historicity of the 'essence' of the symbol. In the art, science and nature debate, this dialectical dynamic also becomes of crucial social and ecological importance, because the realist and social construction polarity, needs to be conceived as a double, without bias to any side if we are to grasp the complex reality of the natural and cultural world in which we live. It is true that we can only have access to nature through culture, but without the physical materiality of nature, culture cannot exist. Foucault demonstrates that it is only through the 'imposed grid' of language that nature can become visible. Yet, in Foucault's understanding of 'social construction,' he also recognizes the existence of a 'realist' or 'inner' order of things, which can be manifested in the intermediary spaces between language and nature. The installation *the first mild day of March* explores the intermediary space between the animals and their name, in which such 'unspoken' or pre linguistic order can manifest itself, as Foucault has argued. The work also makes reference to the historical aspects associated with the Hancock Museum as a 19th century institution: the Romantic view of nature contrasts with the objective language of scientific classification, confronting the pre-modern, mythical

concept of nature with the post-industrial one which marked that historical period and still has an influence on the current concept of nature.

The criticism leveled at the dogmatism of science by Adorno and Horkheimer, followed by Kuhn, Morin, Santos, and STS scholars with regards to its epistemological, political, military and commercial aspects offers an important balance to the disproportionate social power (as a beholder of a superior 'truth') that science has in contemporary industrial societies. Their work contributed to the perspective of the 'social construction' of nature and challenged the 'realism' and claims to neutrality and objectivity of science. In their counter-arguments to such realist claims, they promote a paradigm shift from the hegemonic model of natural science to one of the humanities. It is important to break the hierarchy between the distinct disciplines and 'secularize' knowledge as Fuller proposes. Yet it is also vital to acknowledge the importance of maintaining a 'realistic' grasp on the physical aspects of the world, which are inevitably interconnected with the cultural one (political, economic, social, ecological), as illustrated in the discussion of the 'Lomborg case.' The reception and denunciation of Lomborg's work by the scientific community, reveals that while some scientists are working for the military, industry and the State, others are also developing their work in association with socially and ecologically concerned organizations. Such institutions emerged to address the problem of the proletarianization and subsequent powerlessness of scientists in relation to the power generated by their scientific work, which became a danger to humanity and the whole planet, in some areas of research.

Mark Dion is concerned with these antagonistic aspects of science and this comes through in his series of humorous, ironic and allegorical installations. He questions the progressive discourse of science and points to its controversial engagement with

industry. His work is both celebratory of scientific achievements and critical of its dangerous side for humanity and the environment. Yet, Dion is equally critical of the nostalgic and ideologically suspect tones of the ecological discourse, while at the same time tackling ecological problems caused by industrialism and globalization. Within the institutional constraints of the system of patronage and funding, Dion has managed to contribute to the contemporary debate around the representation of nature with the production of critically relevant and aesthetically engaging artworks.

The challenge to negotiate ethical and artistic concerns with the commodification of art is comparable to the sense of powerlessness that scientists have with regards to their scientific practice. Both areas depend on finding financial support for the development of projects, yet, there is a level of agency or relative autonomy for both categories of professionals, within the constraints under which their practices are developed. This room for agency needs to be acknowledged if artists and scientists are to take any responsibility for the outcomes of their work and interventions in society.

The impact of allegory in the production of art and science offers a rich ground to examine both methodologies of work. It is the dialectical dynamic between the 'realist' and the 'socially constructed' positions, that points to the 'truth' of both the scientific and artistic works which are involved in the representation of nature. In considering the work by Dr. Ometto, the 'meaning' or scientific value which emerges from the collected fragment of air, only makes sense as evidence in relation to all previous scientific theories and when considered in relation to a particular theoretical framework. The contradictory aspects of the 'social construction' of theories and the 'realist' fragment reminiscent of a particular set of contingencies in the collection site, play a crucial role in the monitoring of the 'state of the environment.' The two aspects are intimately

related to one another, and no knowledge is gained if they are taken separately. In the Benjaminian concept of allegory, there is no solution to this dialectics in a synthesis, but an infinite dynamic open to endless interpretations. Thus, the fragment is open to further interpretation, and the scientific text continues piling up series of more fragments.

In *oceans* the received material from a scientific context is intertwined with other references, mixing the aesthetics and scientific perspectives, pushing the capacity of the signifiers to signify in a context of pervasive relativism. There is also a play on the distinct use of photography by artists and scientists, whereas the technologically produced imagery has a strictly documentary value for scientists, for artists the realist and constructed aspects become the most important areas of interest. Despite such differences, the two approaches are not clearly defined opposites, as the artwork explores the poetic sides which are already present in the scientific work, but are not considered important in that context. Through allegorical strategies of appropriation, intertextuality, accumulation of associated meanings, and thematic reading, the reception of the scientific work is inseparable from the artistic production of *oceans*. Such procedures are close to the anarchic methodological pluralism proposed by Feyerabend, and the idea of translation and transposition of concepts from one discipline to another, proposed by Boaventura de Sousa Santos. There is a blurring of boundaries between art and science, fact and fiction in this video installation.

The dichotomy between culture and nature is a central one in the art, science and nature debate, as it is present in all artworks discussed in this thesis. It is a dynamic of utmost importance also for current attitudes to nature, as I pointed out in many Chapters of this thesis. Ángel Mollá in an article entitled 'La Tardia Invencion de la Naturaleza' [The

Late Invention of Nature] argues that 'reality' doesn't exist beyond its histories, and its value is asserted by humans, having changed their theoretical model, in changing images and metaphors with which they re-present or re-invent nature.

Although nature is a changing concept, and its linguistic meaning is undeniably a changeable one and is intertwined with the history of natural science, philosophy and art in Western culture, it is equally important to look at its present relation to a disappearing referent, once this unreachable 'real' is being pervasively reached by pollution and its destructive relation to it. There is a long history of 'nature loving' and 'nature skepticism' in this debate, as I argued in this thesis, but at present it is hard to deny, with the evidence we have, that the present world order is unsustainable, and there is a pressing need for structural changes and political action.

Mollá identifies the ecological discourse with a mythical notion of nature and a pre-capitalist nostalgia:

The idea of 'naturalizing' ecological ethics is the last of the naturalist fallacies, and a new simulacra of a onto (crypto) theological principle – the return of mother nature, which gave us our being and [...] links us to an evolutionary chain (an evolutionary *telos* for an irrational pathos). All this perpetuates the old metaphysics that considers the artificial as a degradation of the natural, and culture as the corruption of a supposed original unity with nature.⁵

Mollá links ecological ethics with the history of the term nature, to metaphysical dualism, and Romanticism, in which nature acquires moral value as good and culture as corruption. He concludes with the dissolution of the nature and culture polarity, arguing that everything can be regarded as nature, which has humans only managing it with no distinction between artificial or natural things.

Although this argument has its roots in a healthy skepticism towards past ideologically suspect uses of nature, such as the naturalization of culture in patriarchal, racist and homophobic discourses, at present this argument could also take another meaning in the service of reactionary ideology in the capitalist agenda of progress at any cost (promoted by neo conservatives and other right-wing powerful groups). If we consider the nature-culture hybrid in such a way that the levels of human manipulation and the kind of human intervention are disregarded, then, the monumental difference between an area of 100 square meters in the Amazon jungle and the same area in any hyper populated metropolis in the world, perhaps somewhere in Mexico city or São Paulo, becomes flattened by this argument.⁶

There is also a big difference between managed, planted forests and natural forests, in terms of biodiversity and other complex physiological and chemical phenomena which we have not yet learned or conceptualized, and incorporated into our culture. There is an enormous part of nature which falls outside of human culture, the 'bits' which we have already conceptualized. This is what scientists (who are doing field work in the still wild rainforests of the Amazon with their boots covered with mud and their skin full of mosquito bites) claim, arguing that there is so much yet to find out about plant physiology, the interaction of the Amazon with the larger ecosystem of the planet, that it would be extremely poor to think that culture corresponds to nature, and that we have already learned everything about it. Our interest in it is not only didactic, by the way. It

⁵ Ángel Mollá, in 'La Tardia Invención de la Naturaleza' published in *Laguna. Revista de Filosofía*, nº 6, 1999, Santa Cruz de Tenerife, Servicio de Publicaciones de la Universidad de la Laguna, pp. 225-240.

⁶ Such dissolution of the polarity nature-culture provides little help for us in tackling the serious ecological problems we face today. Even though we know that the forests, the oceans and deserts are monitored from satellites, the whole planet is a managed environment, with radioactive and chemical pollution reaching unthinkable areas, this does not mean that the degrees of human manipulation at different levels do not differ or that the difference does not matter. If nature is culture anyway, does it matter if the transgenic industry dominates the agricultural world? What is the problem with genetic mutation induced by the nuclear industry if mutations occur anyway, if the nature-culture hybrid cannot be separated? The same goes for the emergence a genetically enhanced humanity, with the creation of designer babies and the revival of eugenics in embryo selection and genetic engineering. Why should we object to that, if medicine has developed artificial techniques to restore health, then there would be no problem with the creation of a new race.

is a question of survival too. The epistemological position in which the object only exists if presented to the consciousness, informs this argument of the culture-nature hybrid. But there is an ontological difference between what we talk about and what exists in excess to human consciousness, or that which has not yet been presented to us.

It seems important, here, to bring the Benjaminian question of 'who is it that benefits from our discourse?'⁷ To flatten significant differences between nature and culture so drastically does a great disservice to humanity and non-human nature. In order not to fall into the mourning and melancholic attitude of the Baroque artist, in contemplating a world of death, decay and profound grief, but with a hopeless attitude, it is important to recognize the political nature of the problem and tackle it as such. If the difference is dissolved into a subjectivist view of nature, where there is no distinction between culture and nature, this argument could lead to a paralysis, a hopelessness to address the present ecological crisis. As Benjamin has pointed out, the Baroque poets failed to articulate any political action to address the problematic of the world that they regarded as historical and not caused by metaphysical fate. Instead of being paralyzed while waiting for death to end the suffering of the world, political action must be articulated, and that is what the ecological movement is addressing. Lutzenberger was a pioneer eco-activist who campaigned for land reform in Brazil and developed projects of organic farming (low mechanized techniques) to be implemented in conjunction with new rural settlements. His holistic approach, pantheistic view of nature (as supporter of the Gaia Theory)⁸ might feel uncomfortable to skeptical intellectuals, but the outcomes of his lifetime work show that in practice he was much closer to the ideals of the left, than a critic of mythical nature might have conceived. It is important to note that

⁷ This is the underlying question of Benjamin's argument in his essay 'The Author as Producer,' in *Understanding Brecht*, op. cit., pp. 85-103.

meaning changes throughout history. What was once linked with suspicious reactionary ideologies, might transform into its opposite, showing the way towards an emancipatory path for small, local and marginalized groups in the distant developing world. (Yes, and it also includes fair trade in its agenda).

The dissolution of the dichotomy between culture and nature is also found in the Marxist category articulated by Lukács as 'second nature,' in which nature is regarded as an 'alienated and reified subjectivity, a world created by humans who did not recognise it as their own,' as Susan Buck-Morss argues.⁹ In contrast to this notion, Buck-Morss notes that for Benjamin 'nature was "other" than the subject, and this remained true no matter how much human labour had been invested in it.'¹⁰ Benjamin's view of the ontological distinction between culture and nature is of importance for the political and ecological aspects of the art, science and nature debate.

The Frankfurt School presents a compelling argument, which informs my investigation, as I have argued throughout this thesis. The instrumental approach to nature, the logic of domination of nature comes from a social model of domination of humans by other humans, of man over woman, of North over South. The Frankfurtean critique of the Enlightenment is primarily a social critique addressing inequality and for this reason it is still such a relevant argument for the historical period we are living in the world.

Allegory emerges in times of war, suffering and conflicts, also in the affluent commodified society. The two come together, inseparable in our century.

Environmentalists had long predicted that the wars and conflicts in the 21st century would be related to the depletion of valuable natural resources, (and unfortunately such

⁸ This theory was proposed by the English biochemist James E. Lovelock in his *Gaia*, 1979, and *The Ages of Gaia*, 1988. In this theory the whole planet Earth including the biosphere, animals, plants, and the interaction of organic and inorganic life are part of a living organism in dynamic balance.

⁹ Susan Buck-Morss, in *The Dialectics of Seeing*, op. cit., p. 70.

predictions are being confirmed), and the more basic they are and start to become scarce, the bleaker the future looks for the poorer nations, and the more cynical and dangerous the powerful ones become. Benjamin explains that the discourse against the exploitation of humans and nature is different from the false ideology of naturalistic fallacies:

The description of the labour process in its relation to nature will necessarily bear the imprint of its social structure as well. If the human being were not *authentically* exploited, we would be spared the *inauthentic* talk of an exploitation of nature. This talk reinforces the semblance of 'value,' which accrues to raw materials only by virtue of an order of production founded on the exploitation of human labour. Were *this* exploitation to come to a halt, work, in turn, could no longer be characterized as the exploitation of nature by man.¹¹

Thus, their critique of the exploitation of nature was part of a larger critique of industrial society and social inequality. That is an important point which needs to be revived in the ecological discourse, not to fall into a nostalgic feeling, which is reduced to saving 'beautiful spots' or charming animals, but to a deeper critique of current methods of production and consumption, social justice at local, national and international levels.

The work of artists such as Dion and Hesse-Honegger are a source of inspiration for me, as they engage with the complexity of the hybrid culture and nature without falling into cynicism or sentimentalism, revealing a commitment to the preservation of the health of the environment as well as being aware of the cultural filters which separates us from nature.

Allegory provides an appropriate structure to investigate this debate, in bringing a dialectical view to the handling of the contradictory aspects of the 'realist' and 'socially

¹⁰ Ibid. p. 70

¹¹ Walter Benjamin, in *The Arcades Project*, op. cit., Fragment [J75, 2].

constructed' approaches, which must be kept in a constant dynamic, through a vital interdisciplinary dialogue. In the field of contemporary art, allegory also points to the necessity of keeping the dynamic of the symbol and allegory in place as an endless play of antithetical ideas. In our collaborative practice Henna and I have been interested in bridging the political with poetics, art with natural science, as a contribution to the current debate around nature.

It is true that art may not be able to transform the world, but as a consequence of this, I do not want turn my back on human suffering and the atrocities which are taking place at present against humanity and non-human nature. As an artist and lone individual I cannot change the world, but at least I want to remain an attentive witness to what is unfolding in front of my eyes.

Appendices

Appendix I

nest



102. asikainen&macêdo, view of video installation *nest*, 1999- 2000



103. asikainen&macêdo, *nest*, still from video II, 1999- 2000

nest

In the installation *nest* we have used imagery appropriated from a nature film called *The Ten Deadliest Snakes in the World*, produced by Partridge Films Ltd. The sequence was re-edited, the didactic narrative was removed and the videos were presented as part of an installation in a gallery space. The discarded footage from Partridge Films archives consisted of two main camera angles, one showed a general view of the nest and another a close-up of the eggs hatching. Thus, the work was built around these two perspectives, and the sequences were edited into two separate videos.

The video showing a nest with eggs was projected near the ground, onto a corner of the room. The small size of the projection contributed to the enigmatic and quiet character of the image, drawing the viewer's attention to what was happening in the margins of the room. Placed downwards, the projection referred to the position of the nest below the ground, as well as the symbolism of the snake as beholder of ruling powers of underground world and wisdom of earthly processes. The sequence is quiet for a long time showing the unchanged pile of eggs for almost 4 minutes, when the image of

recently hatched snakes crawling over the soft eggs appear briefly, and dissolve back to the sequence of the eggs.



104. asikainen&macêdo, *nest*
view of video II through glass, 1999- 2000

The other video was back-projected through a (hand-blown) glass semi-sphere of approximately 40 cm, showing the close-up images of the hatching eggs. In the sequence of this video, a short clip of an eye emerges briefly, soon dissolving into the series of hatching eggs. The glass mimics a large lens or eye, being a reference to the magnifying effect of the camera lens, and the specular aspect of scientific observation. The glass also separates the space of the images from the one of the viewer, similarly to the genre of nature documentary, which shows wilderness through a safe distance provided by culture, technology and science. The viewer can contemplate the dangerous aspects of wild life, through a package of an edited nature for aesthetic pleasure, sense of adventure and discovery, without experiencing it first hand.

The reframing of the images in an art space opened the images to wider associations. The presentation and re-editing of the material worked to enhance its symbolic impact, but also keeping the reference to the original scientific context that the imagery was appropriated from. The imagery came to the artwork with its history, and its meaning changed throughout its journey into new territories. In the original context of a nature

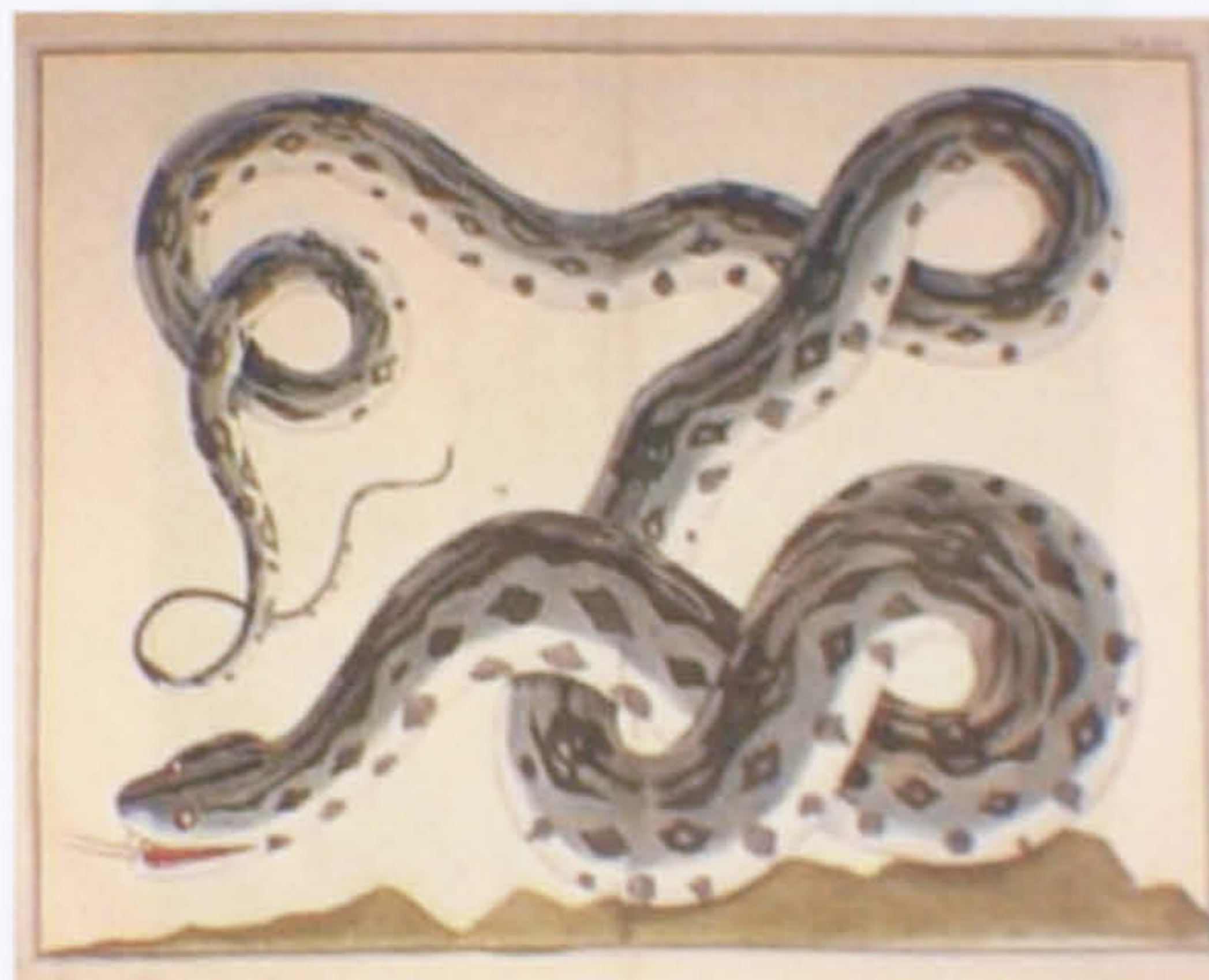
film, the images of snakes were presented in a way that their biological existence, beauty and importance for the environment were stressed, with a specific aim of educating the viewer and taking away old prejudices against the species. In the art gallery, symbolic aspects of the images came back, and the 'animal in the mind' was confronted with the animal as an object of science.

steps into the gap that separates us from nature, exploring the rich ground between human and animal, subject and object, art and science. The work also questions the authority of scientific claims over nature as its object of study, bringing back all the repressed voices of religion, sexuality, superstition, magic, poetics that had been suppressed in the discourse of scientific rationality. The images are turned into hybrid elements, becoming associated with a great variety of texts and images from the context of art and early science, such as representations of snakes in medieval Bestiaries and later cabinet of curiosities of the 16th and 17th centuries, where real and imaginary animals were organized in the manner of an illustrated dictionary and were accompanied by allegorical normalizing texts, describing the animal's symbolism.



105. Detail of a page from a medieval Bestiary book
 the text is translated as: Only weasels can kill a basilisk.
 Vipers young gnaw their way through their mother's side.
 The male spits its seed into the female's mouth.

nest unveils the multiple layers of meaning beyond the positivist language of the scientific discourse, referring back to early natural history discourses of the 16th century, where descriptions of animals was accompanied of their rich semantics. Michel Foucault in *The Order of Things*, remarks that in the 16th century encyclopaedias appear, creating a heterogeneous space in which magic, fables and objective descriptions of the universe overlapped. Foucault gives an example of the intimate intertwinement of things with language in this period, citing Buffon's remarks on the criteria of classification used by the 16th century naturalist Aldrovandi, whose chapter on serpents in his *Historia serpentum et draconum* is arranged under the following headings: 'equivocation (which means the various meanings of the word *serpent*), synonyms and etymologies, differences, form and description, anatomy, nature and habits, temperament, coitus and generation, voice, movements, places, diet, physiognomy, antipathy, sympathy, modes of capture, death and wounds caused by the serpent, modes and signs of poisoning, remedies, epithets, denominations, prodigies and presages, monsters, mythology, gods to which it is dedicated, fables, allegories and mysteries, hieroglyphics, emblems and symbols, proverbs, coinage, miracles, riddles, devices, heraldic signs, historical facts, dreams, simulacra and statues, use in human diet, use in medicine, miscellaneous uses.'¹



106. Albertus Seba, cabinet of curiosity
Locupletissimi Rerum Naturalium Thesauri Accurata Descriptio
 Amsterdam, 1734-1765

¹ Michel Foucault in *The Order of Things*, op. cit., pp. 39.

When images of snakes are presented in an art space, such as in the installation *nest*, they enter in dialogue with a whole new chain of signifiers and associated meanings, similarly to the intertextual space of the 16th century encyclopaedias. The relation of the scientific images to other cultural meanings becomes more evident, and references to paintings and stories which represent serpents in art history come to mind, such as the representations of the head of the mythological goddess, Medusa by Rubens and Caravaggio, paintings of Biblical story of creation, showing Eve and the snake, amongst others. Linguistic meanings of treachery, slimness are very strongly associated with the image of a nest of vipers. While representing evil in the West, the sensuousness of snakes in the East is celebrated as wisdom, and the sexual energy is regarded as one of the paths to illumination in the tantric yoga tradition. Snakes are also a symbol for medicine, healing, and eternity, being associated with the endless cycle of life and death.



107. *Eve, the Serpent, and Death*, Hans Baldung Grien, 1520-25
National Gallery of Canada, Ottawa

nest is open to the readings associated with the long and rich discursive chain around the myth of Medusa, which include Freudian psychoanalysis, and many Feminist texts, amongst which is 'The Laugh of the Medusa' by Hélène Cixous,² as well as poems on Medusa by Louise Bogan, 1923, and Karen Lindsey, 1975, and artworks by feminist artists such as the performance *This is my body... this is my software...* by Orlan.³



108. Michelangelo Caravaggio, *The Head of Medusa*
oil on canvas mounted on wood, 1598-99, 60 x 55 cm
Galleria degli Uffizi, Florence

The myth of the Medusa is, thus, associated with the feminist discourse's questioning of patriarchy in Western society. In the Greek mythological story the male hero Perseus dominates and subjugates the female and natural forces symbolized by Medusa, who represented female power and wisdom. Medusa's powerful petrifying gaze is also associated with photography by Craig Owens in his 'The Medusa Effect, or The Specular Ruse,' – a text written for a Barbara Kruger's exhibition catalogue. Owens remarks that the decapitation of Medusa by Perseus is made possible through Medusa's

² Sigmund Freud, 'Medusa's Head' [Das Medusenhaupt], in his *Sexuality and the Psychology of Love*, Collier, New York, 1963; Hélène Cixous, 'The Laugh of the Medusa,' trans. K. and P. Cohen, in *New French Feminisms*, ed. E. Marks and I. de Courtivon, Schocken Books, New York, 1981.

³ Orlan describes the work *This is my body... this is my software...*: 'I did a piece at the Musée S. Ludwig, Aix-la-Chapelle entitled Documentary Study: The Head of Medusa. This involved showing my sex (of which half my pubic hair was painted blue) through a large magnifying glass - and this, during my period. Video monitors showed the heads of those arriving, those viewing, and those leaving. Freud's text on the Head of Medusa was handed out at the exit, stating: 'At the sight of the vulva even the devil runs away.''

contemplation of her own gaze reflected in his shield, which instantly petrifies her: 'The [Medusa's] myth's central episode is almost proto-photographic; it seems to describe that split-second in which vision bends back upon itself to produce its own imprint.'⁴ Owens links the myth of Medusa with photography and the Lacanian Imaginary order, arguing as to the power of the social gaze in creating and reinforcing stereotypical roles for women, which are issues explored by Kruger in her photographic work.



109. & 110. Rubens and Frans Snyders, *The Head of Medusa*, oil on canvas
27 x 46 1/2 in, 1610-1617, Vienna Kunsthistorisches Museum

In *nest*, the images of snakes are thrown into this rich web of associations, becoming intimately connected with a variety of texts and images, having no stable meaning, but relating simultaneously to all of these surrounding areas of signification.

⁴ Craig Owens, in his *Beyond Recognition*, op. cit., pp. 196.

Appendix II - Residencies



111. asikainen&macêdo, Koli Hill, 2001

Residency at Koli

The residency at Koli was in January 2001, when the temperature varied from minus 7 to minus 22° Celsius. The winter landscape at Koli is quite spectacular, specially the view from the Koli Hill, the site from which most of our footage was produced. During the residency we filmed and photographed the monumental and sculptural frozen trees, avoiding the touristic areas in the park, in order to keep the focus on the theme of climate and forests. We produced many hours of footage of panoramic forest views, in various kinds of weather. There were very few sunny days and most of the time the sky was cloudy or misty. The almost monochrome imagery of cloudy weather was more interesting, as it looked colder, and closer to our experience of the place. A very freezing wind was constantly blowing at the top of the hill, which produced amazing movements on the trees in large forest areas (but also limited our working hours). We focused on these movements of the trees and produced many hours of footage with still camera shots.



112. Art and Culture Centre Kolin Ryynänen, at the village of Koli

The Art and Culture Centre Kolin Ryynänen, at the village of Koli provided logistic support for the project. During a period of one month we had a flat and studio space at the Kolin Ryynänen, which runs a programme of residency for artists, administered by the North Karelia Arts Council.

Contact with scientists



113. Experimental chamber at the Mekrijärvi Research Station

Koli park is administered by the Finnish Forest Research Institute (Metla), which aims to protect the natural environment of the park and is also a centre for scientific research.¹ During the residency we met the director of Metla, Mr. Lasse Lovén, who told us that there was no specific research on climate change being developed at Metla at that time, but mentioned a project on climate being developed by Prof. Seppo Kellomäki at the University of Joensuu. In this research, Dr. Kellomäki and collaborators are monitoring the impact of global warming on the boreal forest of Scots

¹ Metla has also collaborated with other research institutions, such as Northern-Karelia Environmental Agency, Geological Survey of Finland, various departments of the University of Joensuu: Karelia Research Institute, Faculty of Mathematics and Natural Sciences, Departments of Biology and Geography and Faculty of Forestry.

pine. We contacted Prof. Kellomäki, and arranged a visit to the Mekrijärvi Research Station, where we learned more about the research, and the technical and logistic aspects of the project. The chambers at Mekrijärvi create artificially a warmer and CO₂ richer environment in order to compare the development of the trees growing inside them with the one of the control trees outdoors.

Residency in the Amazon Jungle



114. Ducke Research Station, INPA, June 2001

In the Amazon forest, the *air* project received logistic support from the National Institute for Amazon Research, INPA, which is a governmental institution linked to the Ministry of Science and Technology. INPA was officially created in 1952, becoming installed in 1954. According to INPA, the idea of creating an institute to study the Amazon was very old, but it became realised in the post-war period, as a reaction against a proposal by UNESCO to create an ‘International Institute for the Amazon Hilea.’ The idea of an international island within the Brazilian territory, threatened the sovereignty of the country. Thus INPA emerged as a Brazilian alternative, having its scientific objectives, since the very beginning, intertwined with national and international politics. This can be clearly observed in its aims and objectives of 1952: ‘promoting the scientific study of the environment and conditions of life in the region, having in mind human well being, as well as the preservation of culture, economy and

national security.’² In 1993, INPA extended its aims to: ‘generate, promote and distribute scientific knowledge and technology about the Amazon, to preserve the environment and promote sustainable development of natural resources, to benefit specially the community in the region.’ Thus, the focus of the institution today is on sustainable development, in conformity with a broader view ecology which is sensitive to the socio-economic necessities of the local community.

We stayed at the Ducke³ Research Station (2 57'S, 59 57'W), which is an area of protected primary forest, 25 km north-east of Manaus. It belongs to INPA since 1963, but since the 1950s it has been a site for botanical studies. In 1972 the research station was declared ‘Biological Area’ (of 100 km²) to be protected because of its proximity to the growing suburbs of Manaus.



115. Satellite image of Reserva Ducke and Manaus

The Ducke research station has four types of ‘terra firme’ forest, which is a kind of forest that does not get flooded each season, with a variety of floristic structures according to the type of soil in different altitudes. We visited also other research stations, the ‘ZF 2’ further north and some research areas along Rio Negro (one of the main tributaries of the Amazon river).

² This fear of losing part of the national territory, also led the subsequent military government to promote (ecologically disastrous) projects of colonization and development for the region.

³ Named after the entomologist and botanist Adolpho Ducke (1876- 1959). Ducke worked mainly in the Amazon all his life, published 180 articles and monographs, described 900 species and 50 genera.



116, 117, & 118. Trip to the Rio Negro research areas

2001, residency at Koli National Park, Finland.

2000-2001, residency at the Amazon Museum.

2001, participation in the design of the 'Cultural Environment in European design and research collaborative project, to be built near Colton, Germany.

1999-2000, residency and commission of video work, Sue Gallery, Sheffield.

Financial and Institutional Support

2003 - Making Pop, sound and video installation at the Faber-Castell Germany House.

The *air* project received a grant - 'Small Grants in the Creative and Performing Arts,' from the Arts and Humanities Research Board (AHRB), through an application made by Mr. Chris Dorsett, University of Northumbria at Newcastle. The North Karelia Arts Council contributed towards the travel expenses and accommodation for the Koli residency. We also received financial support from the Northern Arts (now Arts Council of England) to the Amazon trip, under the 'Travel and Training Award' program. INPA provided accommodation and other logistic support in the Amazon.

2000-2001, Cruz de Tenerife, Canary Islands, Spain.

2001 - Take Away, group show, 2001, Sue Gallery, Sheffield, UK.

2001 - The First Mid Day of March, and Years of the Finnish National Library Museum, Newcastle, UK.

2001 - Sue, Northern Gallery for Contemporary Art, Newcastle, UK.

2000 - Memory Suspect, part of VAINEL, Finnish Centre, Newcastle, UK.

2000-2001 - Travel, one-day digital media film festival, British 2000-2001, Newcastle, UK.

2000 - Image Art Video Festival, Sheffield, UK.

2001 - Spacecraft, part of Video Festival 2001, Finnish Centre, Newcastle, UK.

1999 - Immediate, Sue Gallery, Sheffield, UK.

2000

Appendix III

The three and a half years of research was a period of intense engagement with artistic practice, which developed in parallel to the theoretical research. In this period we produced new video and installation pieces, projects and participated in various exhibitions in the UK and abroad. Listed below are the main events which we took part.

COMMISSIONS & RESIDENCIES

June 2001, residency at *INPA*, Amazon forest, Brazil.

Jan 2001, residency at *Koli National Park*, Finland.

2000-2001, residency at the *Hancock Museum*.

2001, participation in the design of the *Citizens' Monument to European Unity*, a multicultural collaborative project, to be built near Erfurt, Germany.

1999-2000, residency and commission of video work, *Site Gallery*, Sheffield.

EXHIBITIONS

2003 **Melting Pop**, Sound and video exhibition at the Palazzo delle Papesse, Siena, Italy.

2003 **Experimental Spaces 03**, Hastings Museum & Art Gallery, Hastings, UK.

2003 **The Big M**, touring video exhibition throughout England and Europe for a period of approximately 18 months, Isis Arts, UK.

2002 **Esto no es una Fotografia**, group show, Centro Atlantico de Arte Moderno San Antonio ABAD, Las Palmas de Gran Canaria, Canary Islands, Spain.

2002 **Capital**, project by *VANE*, Charlton Bonds Building, Newcastle, UK.

2001 **Esto no es una Fotografia**, group show, Centro de Fotografia Isla de Tenerife, Sta. Cruz de Tenerife, Canary Islands, Spain.

2001 **Take Away**, group show, Middlesborough Art Gallery, Middlesborough, UK.

2001 **The First Mild Day of March**, installation at the Hancock Natural History Museum, Newcastle, UK.

2001 **Stay**, Northern Gallery for Contemporary Art, Sunderland, UK.

2000 **Memory Suspect**, part of *VANE*, Tyneside Cinema, Newcastle, UK.

2000- **Unreel**, one day digital media/film festival, Buddle Arts Centre, Newcastle, UK.

2000 **Imagia Art Video Festival**, Gdansk, Poland.

2000 **Spacecraft**, part of Video Positive 2000, Bluecoat Gallery, Liverpool, UK.

1999- **Immediate**, Site Gallery, Sheffield, UK.
2000

PUBLISHED WORK & CATALOGUES

Melting Pop, exhibition catalogue, Palazzo delle Papesse, Siena, Italy, March 2003.

JVC Journal of Visual Culture, *air* - photo essay, April 2003.

Capital, exhibition catalogue, Newcastle, March 2002.

Esto no es una Fotografia, exhibition catalogue, Sta. Cruz de Tenerife (2001) and Centro Atlantico de Arte Moderno, Las Palmas de Gran Canaria (2002), Spain.

Contemporary magazine, issue 32, p 28, Jan 2001.

an magazine, May 2000, p 23, UK.

Unreel, digital media and film festival, Newcastle, UK.

Spacecraft catalogue, Bluecoat Gallery, Liverpool, UK, 2000.

The Other Side of Zero, Video Positive 2000 catalogue, Liverpool, UK, 2000.

North Guide, October, 2000

Immediate catalogue, Site Gallery, Sheffield, UK, 1999.

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