

FORM, MATERIAL AND TIME

**An enquiry into our visual perception of temporal phenomena and their
representation and expression in static figurative sculpture**

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Abstract

This research thesis is concerned with the relationship of time, form and material in static sculpture as an expression or manifestation of temporal phenomena in life. It explores how far our concepts and sensory perception of time and temporality can be expressed or are contained in the medium of static sculpture, and, vice versa, how far such sculpture itself can reflect our contemporary understanding and perception of time. The inquiry applies a paradigm that relates the observation of time in life and nature to its embodiment in art, using Gestalt theory and philosophical theories on time as analytical tools. The research provides a philosophical underpinning of contemporary realist practice and is expected to contribute to the wider discussion of time in art.

The inquiry begins with an overview of the cultural understanding of time in contemporary society and its historical background, establishing the wider framework within which it is set. This leads on to the observation of temporal phenomena in nature and an analysis of the way they are perceived. The findings are then applied to examples of figurative sculpture. The thesis applies a combined practical and theoretical approach: Gestalt psychology, a phenomenological theory of sensory perception, is applied to temporal phenomena as one method in the theoretical part of the thesis. In parallel, studio practice serves as an independent method of inquiry with the intention that each complement and support one other in the conclusions reached. The thesis is focused on the European realist tradition of sculpture, particularly the Berlin School and on the medium of bronze.

The outcomes are

1. A written element exploring temporality and time in sculpture on the basis of phenomenological and Gestalt theoretical investigation, using examples from art history and my own practice.

2. A body of sculpture investigating the issues through studio practice.

Both need to be considered as a unity.

Access to contents

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INTRODUCTION

“One cannot talk about creativity – it is the great mystery. But what is tradition? I understand tradition as a rigid pair of boots that one needs if he wants to walk. But where does one go, what is the destination? I have to disappoint you: There is no destination for the artist, except that the way itself is the destination.”¹

Gerhard Marcks

“Somehow, art has to lead out of time into a nowhere, into eternity.”²

Gerhard Marcks



Figure 1: Waldemar Otto, *Drehtür*

¹ “□Über das Schöpferische kann man nicht sprechen – es ist das große Geheimnis. Was aber ist Tradition? Ich meine Tradition ist ein solides Paar Stiefel, das einer braucht, wenn er gehen will. Wohin aber geht er, was ist sein Ziel? Herrschaften, da muß ich Euch enttäuschen: für den Künstler gibts kein Ziel, es sei denn: der Weg ist sein Ziel.”, Frenzel (1988); own translation.

² “Irgendwie muß Kunst aus der Zeit f□ühren, in ein Nirgendwo, ein Ewiges.”, *ibid.*

This thesis explores the subject of time in art. Although time has often been neglected in the study of sculpture throughout art history, a greater awareness of the issue became evident during the second half of the 20th century, particularly in the last decade. One reason may have been a greater preoccupation with time in the run up to the millennium, as well as an increasing popularity of 'spiritual' and ephemeral matters during the 1990s, often called the 'New Age' decade. The study of time has also become a focus in the humanities, including the arts, as evidenced by a growing number of publications, conferences and exhibitions that deal specifically with the subject across various disciplines.

Only some literature, however, embraces the subject with sufficient depth and methodology that is of importance to cultural and artistic issues. Götz Pochat (1996, 1999) is one of the more relevant writers in the field. He applies phenomenological methods in combination with art history and theory and directs his work towards art historians rather than practising artists. Some other writers take angles that are of little value to the art practitioner as they are dealing only peripherally with the subject matter, bearing no links between art and time or temporality. Such texts often explore a subjective understanding of time, based on personal experience (e.g. Dunne, 1934).

This research thesis is concerned with traditional static media of sculpture and any work that relies on 'real time' in its nature and to unfold its inherent meaning is therefore not included in the discussion. As a consequence, this excludes sculptural forms such as mobiles, motion sculpture, automatons, video and performance. Even though such 'time-based' art may appear to be of importance at first sight, it is of little relevance to the discussion. The term 'time-based art' describes an area of contemporary visual art practice whose analysis of temporal aspects and structure (i.e. reliance on succession as well as simultaneity) is closer related to drama or music studies. Linking performing and visual arts as a comparative method can, of course, give valuable insight into the nature of time in art by exploring the intrinsic differences of these media, as has been demonstrated by Richard Wollheim (1968). This thesis, however, focuses on creative practice that produces physical objects in permanent media as one of its outcomes. The difference between time-based art and traditional sculpture on the basis of time will be investigated briefly in chapter two.

The thesis is entitled *Form, Material and Time* and the research is focused on the static sculpture media. *Form* - and its counterpart space - are regarded as the very nature of these media and have therefore been central issues of research. While form is the manifestation of the sculptor's idea, it depends on using a material that is sufficiently capable of carrying it. Hence the second area of focus, *material*. Similarly, material has

been covered in a vast number of technical publications that aim to offer the sculptor support in realising an idea. Where does *time* come into this equation? The answer is not simple, but I suggest that:

- sculpture ages and decays by changing its appearance gradually over *time*, even though it may appear durable and lasting.
- sculpture is able to express human understanding of *temporal* condition and certain philosophical concepts of *time*.
- sculpture can depict a narrative of events that unfold over a period of *time*, set in a certain *time*.
- the beholder needs *time* to contemplate a work by surrounding it or returning for another visit.
- the sculptor needs *time* to create the work and art historians will analyse and interpret the circumstances of the *time* of its creation.

What has been described here are obvious manifestations of time, most of which are only be touched on peripherally in this thesis. The focus is on the more obscure aspects of time: those that are related directly to our sensory perception of form and material. To identify such aspects, I establish links to temporal phenomena in nature that share similar qualities concerning form and material. The question arises, however, of whether temporal phenomena in nature have an equivalent in sculpture at all and whether sculpture embodies temporal concepts differently to the way they are embodied in life.

The research will concentrate on the essential and intricate relationship of three inseparable factors that, I will argue, are fundamental and intrinsic elements of sculpture: form, material and time. Two initial examples may emphasize the relevance of sensory perception in the context of this relationship.

The first example is the transitional moment (also the fruitful moment; *der fruchtbare Moment*). By choosing exactly the right moment in a movement of a figure, the artist creates an image that not only depicts what is happening, but also is able to suggest what has happened before and what will happen in the future. Such a concept raises problems, which authors like Lessing (1964), Bammes (1997), Leber (1980) and Pochat (1996) have not been able to answer fully. For example:

As moments form continuous sequences in life, how can their isolated existence in sculpture be explained?

What enables the beholder to relate a singular moment to a sequence?

Is this visual reading conditioned, learned or inherent in our perception, is it conscious or unconscious?

How can the depiction of a single, frozen moment actually carry elements of past and future?

By relating this concept to the observation of temporality in natural phenomena it will become evident that the general understanding of this concept may need to be reconsidered and I will therefore analyse this sculptural concept in greater depth at a later stage of this thesis.

The second example is not concerned with a real or depicted event, but with the actual manifestation of a time-material relationship through form. A wrinkly apple is immediately identified as an old apple by most of us and almost instantly we are aware of its temporality. We understand that the form - the appearance of the apple - has changed with time and has done so in direct relation to its material substance. Time, form and material in nature are inseparably linked to each other by causality: the apple cannot be imagined to exist without any of these essential elements. They are intrinsic in any object whether natural or artificial. In the field of sculpture, however, the relationship of *form-material-time*, has not been addressed sufficiently and is consequently not yet fully understood. As it develops, this thesis will therefore address the different issues of this relationship.

The aim of this research is to raise awareness of the relationship of form, material and time in figurative sculpture traditions by:

- Identifying temporal phenomena in our environment
- Analysing the role of sensory perception in their cognition
- Comparing these findings to temporal phenomena in figurative sculpture in static media

The following questions need to be addressed in this context:

- What temporal phenomena are there in our natural environment that have specific relevance to sculpture?
- How do we perceive these and what senses are involved in the process?
- Can Gestalt theory³ offer a method of explaining their sensory perception?
- How are such phenomena paralleled in the media of traditional sculpture?
- Do aspects of temporality differ in nature and sculpture?
- Can sculpture enhance, express or present specific aspects of time differently?

³ See glossary

Complementary questions need to be answered first in order to resolve the above:

- What is the relationship of concept and percept in the subject of time?
- What are the contemporary concepts of time and how do they affect the artist?
- Of what importance is time in a static medium like sculpture?

Nota bene: A fold-out flow diagram is included at the end of the text to assist the reader in locating specific discussions within the wider context of the thesis.

PROLOGUE

1. Contribution of the thesis to knowledge in art theory

The thesis takes a multi-disciplinary approach and includes the application of Gestalt theory, art history, professional practice and various philosophies that are relevant to the subject. The combination of theories and philosophies with practice-based research provides new insights into the discussion on time and its relevance to sculpture. The thesis intends to bridge some of the gaps that have been left by the approaches described in the introduction and the literature review.

The focus of the thesis is on static figurative sculpture and it is hoped that the outcome of this research project will assist practising sculptors and makers to better understand the temporal nature of their work. It will help practitioners and theorists alike to evaluate the role of figurative sculpture within contemporary art practice, by addressing temporal issues specific to this art form. The research shows that figurative sculpture has indeed unique means and advantages over other contemporary visual arts practices in expressing temporality. It sheds new light on the understanding of established concepts in sculptural theory, such as the transitional moment. It will become clear that misunderstanding, or rather misobservation, has contributed to creating confusion over this.

New links to philosophical and psychological theories will be established in the discussion on simultaneity and succession that will contribute to the interpretation of these in the plastic arts. The connection between the theories of Bergson and the *formal* language of sculpture is of particular relevance to the thesis.

My thesis therefore contributes to new knowledge and understanding in the field of realist art in the following areas:

1. It places figurative sculpture in the phenomenological context of time and temporality. As such it provides a philosophical underpinning and defence of realism in contemporary art practice.
2. It extends the application of Gestalt theory to the sensory perception of temporality in nature and in art.
3. It evaluates temporal phenomena in nature in the context of their relevance for figurative realism.
4. It explores the importance and diversity of issues of temporality in figurative sculpture.
5. By applying an integrated method of theory and practice, it sheds new light on art historical/theoretical understanding of the human figure in art and its relationship to time.

6. It establishes the link between primary the elements of time, form and material in sculpture.

2. Context of the thesis

The research is concerned with European figurative traditions in sculpture and on temporal issues that are of specific importance to the plastic arts. This investigation is set within the framework of contemporary cultural understanding of time. To begin with, chapter one will briefly analyse the historic development of present concepts of time, in order to clarify the implications for the sculptor working in the present 'temporal environment'. This initial discussion will help to identify how concepts of time that are represented in sculpture and subsequently to re-evaluate the position of traditional figurative sculpture in contemporary art practice.

Time is an important and widely studied parameter across various disciplines. Many have developed definitions and theories that serve a specific purpose within their field, theories that can only be transferred to other disciplines to a certain degree, if at all. The subject of time may appear obscure and confused, as its understanding is selective and fragmented. No one general or widely accepted single theory can explain time. Classical physicists assume time to be a constant while Einstein in his theory of relativity demonstrated that it is indeed subject to variation under certain conditions. While being considered an ephemeral, non-corporeal quality in many disciplines, quantum theory attributes time to specific elements. Mathematical time is considered linear and homogenous, but in the psychology field it is seen as heterogeneous and subjective. The former regards the present as a knife-edged moment, while the later attributes duration to it. Consequently I had to decide on approaches and methods that are relevant to the argument presented here.

Both the object of study and my own background determined the criteria for this selection and led me in the direction of phenomenology and Gestalt theory. The basis of this choice was the involvement of the subject as well as the involvement of sensory perception. In the course of the research, issues related to the perception of time, the psychological state of the observer and the ability to be easily observed in the natural environment proved more relevant to the subject of sculpture than specific mathematical and physical theories. The theories and approaches to time that I have chosen must be seen in the context of sculpture practice and will be explained further in the following section on methodology. Gestalt psychology, wabi-sabi, examples from the history of art and areas of philosophy support and strengthen the argument where necessary, due to their particular relevance for sculpture. I would like to stress,

however, that I do not intend this thesis to be a specific exercise in any of these disciplines; I have approached the subject as a practising sculptor and consequently the focus of the investigation has never moved away from sculpture.

3. Choice of examples and focus on media

The choice of examples used to illustrate the text was largely determined by relevant representation of temporal issues in the work and consequently a variety of works are used in different sections of the thesis. These are largely drawn from realist traditions such as the Berlin School and Italian realists, including Giacomo Manzú, Marino Marini, Emilio Greco and Alberto Giacometti. Although the majority of examples is taken from these twentieth century European artists, earlier examples from the history of art were selected where they deemed particularly illustrating and supportive.

Many of the German sculptors referred to in the thesis follow a particular style of work and choice of subject matter. Having attended the Hochschule der Künste (THK) in Berlin and its predecessors, they are known as the *Berliner Schule* (referred here to as Berlin School). Sculptors belonging to this tradition of realism include amongst many others Bernhard Heiliger, Gustav Seitz, Georg Kolbe, Gerhard Marcks, Renée Sintenis and Axel Seyler. With a few exceptions, their work is concerned with the human figure, the school and tradition being traceable back to the nineteenth century painters Rauch and Schadow. A more comprehensive review of the tradition will be given at a later stage of the thesis. At that point I will also analyse issues of temporality in the work of the Italian realist sculptor Marino Marini, who has often been a source of reference within my own practice.

The reader will notice a focus on medium bronze throughout the thesis. This choice was necessary in order to narrow down the focus of study and was influenced by my own experience in working with this material. Although my practice has included temporary larger scale work in a variety of media, including stone, wood and other natural and artificial materials, it was understood from the outset of this project that sculpture in metal is the medium with which I am most familiar and confident with and therefore the most appropriate for this level of investigation.

Traditional methods of carving and casting now share the sculpture sector with a widening range of other contemporary sculptural practice, from installation to photography and performance. Degree shows of sculpture programmes in institutions of higher education as well as the focus of sculpture periodicals (e.g. Sculptor's Society of Ireland newsletter) are examples of this development. However, there is still a

considerable number of contemporary sculptors modelling/casting or carving. Commissioning bodies of contemporary public sculpture often require work to be permanent and of low maintenance for which few other media are regarded as suitable. Consequently metal or stone will be favoured. My own practice has had at its heart this intimate dialogue between form and process: direct modelling and metal casting. It has been influenced by the work of the afore mentioned contemporary German and Italian realists who at large work in the medium of bronze, given their primary interest in modelling. The inherent temporal qualities in the modelling process further support this choice and are explored in detail in chapter 2, section 2.4.

Media that involve ‘real time’, notably motion sculpture such as mobiles and automatons, and performance art have not been included in order to keep the thesis confined to its objectives. Preference of static over dynamic media is a significant selection criterion that has been applied to all contemporary as well as historical examples within this thesis.

The reader will be aware that a discussion on the relationship of time in art from an angle of modernist and post modernist art criticism has been omitted. Subsequently the rather dogmatic art critical theories of Clement Greenberg, which were widely rejected by followers of the European tradition, have not been referenced in the thesis. Indeed, from the outset, the primary concern of the thesis has been time perceived in the object rather than issues of art criticism or artistic concepts of time represented or reflected in the work. Furthermore, the examples chosen to illustrate the issues discussed largely reflect a west-European approach to figuration while others are linked to social realism or eastern culture. The limited space of a DPhil thesis, particularly as it is practice based, made it necessary to exclude discussion of all these areas of art theory.

4. Research methods: theory and practice

Art is not only the result of observation and reflection, but is also a *process* of reflecting in its own right. The creative process allows the artist deeper insight into and understanding of concepts, ideas and observations. As such, it is indeed a valid method in itself to resolve problems and intellectual challenges. The focus of this thesis is the observation of time in nature and its translation into works of art as a result of the creative process. Therefore it is not only concerned with the theoretical analysis of expression of time in art but also with the application of the artistic process as a method of inquiry into temporal concepts and perception. Kant stated that *'the hand is man's*

*external brain*⁴, a remark that holds particularly true for the making process in art. It is the practical handling of material and the immersion of the artist in the making that often contributes more to the work than initial rational processes. Through the process of making, I was able to resolve various questions and as a consequence passages of new inquiry opened up that have influenced the argument in a substantial way. The combination of theoretical and practical methods -Gestalt theory and modelling/carving in my case- mark the two poles of human cognition: what Bergson calls intellect and intuition. In simplified terms, intellectual inquiry approaches a posed question in a rational, evolutionary, linear way while intuition can offer sudden, revolutionary insight and understanding. Visual understanding has been a key factor in approaching my thesis, not for my method of investigation alone, but also as a key factor in the subject of temporal perception. Two research methods have been employed: theoretical enquiry and studio practice.

4.1. Theoretical methods: Gestalt theory and philosophical concepts

a) Gestalt theory

I have chosen Gestalt psychology for the theoretical part of the inquiry. This theory is an area of modern psychology that is concerned with our sensory experience of the environment. Since its foundation in the 19th century, its main field of application has been visual perception and it has been successfully adapted to visual art theory by writers like Rudolf Arnheim, Jürgen Weber or Axel Seyler. Although the extension of its application to the perception of temporal phenomena has been suggested by several researchers in the field, like Koffka (1935) and Mach (1865), only little research has been undertaken in this area. This thesis does not attempt to fill this gap. I intend rather to apply Gestalt theory to the sensory perception of temporal phenomena that are of particular relevance to sculpture, its beholder and the sculptor him/herself: that is to say, to tactile and visual sensation in relation to time. Texture and form are universal characteristics of any material that are perceived as sensory stimuli and both are affected by time. We receive temporal information through our senses when we touch or see the old apple from the example given earlier: its surface texture and form reveal its age to us. Its roughness is the main visual and tactile quality that distinguishes it from a fresh apple. Many aspects of temporality are perceived with the senses and hence, I argue, can be interpreted with the application of Gestalt theory. The second chapter of the thesis will contain a brief introduction to the principles of Gestalt theory for the information of the reader with a more thorough overview of its methods, main principles and history enclosed as an appendix to the main text.

⁴ Kückelhaus (1991), p. 21

b) Bergson's philosophy

Bergson's concept of time, based on his understanding of intuition and intellect has been of great relevance not only for my overall approach to the subject, but also in terms of its specific application to the phenomena analysed in chapter two. The use of his philosophy will be introduced in detail in chapter one.

c) Wabi-sabi

The Japanese 'philosophy' of *wabi-sabi* is the only aesthetic theory that I know of that deals specifically with the central issue of the thesis, the crossover of time, form and material. Although it has its roots in Japanese Zen Buddhism, I will demonstrate that several aspects of this approach have equivalents in Western philosophy and understanding of art.

Wabi-sabi is an aesthetic 'philosophy' derived from the Zen way of tea, *chadô*. Its roots are rather obscure, although its early practice is connected with the name Murata Shuko (1432-1502), a Japanese tea master who rebelled against elitism and prestige in the tea ceremony by striving towards greater simplicity in the process. It is Sen no Rikyu (1522-1591), however, whose name is closest connected with wabi-sabi. He introduced rustic, even primitive elements and architecture to the *chadô*, a move that unfortunately was not appreciated by his employer. Yet, after his death - forced to commit ritual suicide - his ideas influenced nearly all areas of the tea ceremony, including various tea schools, right into the 20th century. The aesthetic system had its peak in the 17th century, but has declined over the last 50 years due to influences of American/European culture on Japan.⁵

The term wabi-sabi is a combination of the Japanese words *wabi*, describing an isolated lifestyle away from society, and *sabi*, standing for coldish, hungry. These somewhat negative attributes later changed to a more positive interpretation, according to Koren. Wabi now refers to a spiritual lifestyle, a philosophical structure and spatial events, while *sabi* relates to physical objects, art and literature.

That it is neither a philosophy nor a specific aesthetic theory in the strict sense, contributes to the difficulty of defining wabi-sabi. As a general aesthetic system, it is self-reflecting, relating to metaphysical, spiritual, mental and moral aspects of life and nature. Its principles and values are vague, with no concrete teachings or rules underpinning it. The concept has been passed on verbally/visually from master to master, and has been noted down first in Okakura's *Book of Tea* (1905) and later in Koren's *Wabi-Sabi*. Koren summarises the following principles of wabi-sabi:

⁵ Koren (1994)

1. Metaphysical basis: everything evolves out of nothing and/or transfers into nothing.
2. Spiritual basis: beauty is inherent in ugliness; greatness is inherent in easily neglected details, and truth evolves from observation of nature.
3. Mental-spiritual basis: acceptance of the inevitable and a cosmic order.
4. Moral basis: rejection of anything unnecessary and concentration on the essential; rejection of any material hierarchy.
5. Material aspects: reference to natural processes, irregularity, modesty, and familiarity, earthy, simple and vague.
6. Observation of nature leads to the conclusion that everything in nature is transitory, incomplete and imperfect.

4.2. Practical method: sculpture practice

Two fundamental elements of sculptural practice have found their way into this thesis, forming the integrated practical approach: observation and making. Although inseparable, particularly in the context of realist art, observation has been applied selectively throughout chapter two.

Observation of nature and one's environment is an essential part of the practice of a realist artist in order to understand functional contexts, spatial organisation, formal and temporal relations of objects, and in many cases the human figure. This understanding, which allows the sculptor to develop work, derives directly from visual thinking processes in most cases (Arnheim, various; Weber 1984; Seyler 2003, 1995). The observation of temporal-visual phenomena in our environment is an integral part of the approach to my argument and forms as such part of the practical aspect of the thesis. This observation process has also manifested itself in drawings, studies and notes over the last five years, but only a small amount has proved relevant for the course of the argument and has found its way into the discussion on natural phenomena. Although being an ongoing process, I focused on observational studies and anatomy during the first year of the doctoral studies. The understanding I gained through this process, not only of the human figure itself, but also of its temporal connotations, has contributed to the development and outcome of the research in many areas. As such it forms an integral part of the thesis, hand in hand with the making process.

Sculpture, as far as its creation and perception is concerned, is largely a combination of tactile and visual stimuli, a 'collaborate' effort of the hands and the eyes of the sculptor or the beholder. For both it offers a unique and intuitive form of human inquiry through material, an alternative medium to written language: a tacit theory.

Over recent years, conceptual approaches to art have increasingly dominated over traditional object making. Experimental processes, rather than their outcomes, have become more and more the focus of attention in art education in both areas, and, indeed, in art practice in general. Particularly in the context of research practice in art, making has become equivalent to experiments in scientific research. In science, as well as in visual practice, experimentation serves the purpose of verifying or falsifying a hypothesis of intellectual, rational or intuitive nature. The experiment can also be a form of demonstration, an extension of the investigation that it serves; artwork in this understanding functions as a form of test piece or experiment.

Making in the context of this thesis is understood differently, however. It is regarded as an inquisitive and intuitive dialogue between maker and medium. The focus lies on the observation of this process and its expression in a resulting object, on intuition rather than systematic approach. This means that *product-ive* contributions to the thesis as a result of my studio practice are incidental, standing alongside a large number of unsuccessful pieces, which have, nevertheless, contributed to the research. I regard this as a valid approach that creates awareness rather than selective concentration on an intended outcome. The focus on intended results can be limiting as it obscures the view of unexpected paths that open up along the way. While the theoretical enquiry followed a clear structure, my practice may appear random and experimental, its outcome leading at times to sudden route changes. In this context, *Suleika I* and the process of its making was significant, as it offered new insights into the nature of sculpture for me and the resulting understanding contributed to a new direction within the proposed research.

While I have adapted the creative process, the making, as part of the methodology, the actual outcome of this process, the sculptural object itself, is also of interest for this inquiry. The sculptural object is the direct link between the sculptor and the beholder. It is a medium that communicates ideas, messages, and visual and tactile information through its form, material and temporal aspects. The sculptures and maquettes that I have made in relation to this thesis offer insights and solutions to the investigation.

5. Structure

The integrated nature of the methodology necessarily determines the structure of the thesis and consequently there is a theoretical and a practical element to the research. Results of practical work feed into the text leading it to certain conclusions and the sculpture in turn is informed by theoretical findings. Both outcomes stand on their own as independent bodies of work, but in the particular context of the submission for the DPhil, they must be seen as one thesis. This is particularly important for the sculptural work: the documentation and photos included in the text can only be a substitute for the

experience of the sculpture in full. I have ordered the outcome of the studio practice in *work cycles* and *work groups*, each forming an inquiry on its own in relation to issues dealt with in the text. The *cycles* appear to be concerned with a specific finding and its further ongoing exploration, while *work groups* are rather open and loose investigations. Work that falls in the latter category has often inspired other work. A specific quality or certain appeal of form often initiated further exploration, subsequently leading to a larger cycle of sculpture. I have created this artificial division in order to make it easier for the reader to relate the sculpture to the theory. However, not all the work falls within these categories and some stand independently.

5.1. Work cycles and groups

The work cycles and groups are briefly introduced here and a more comprehensive description of the different stages and all sculpture pieces, together with images, is given in the epilogue to the thesis.

a) Preparatory anatomical studies.

Very early in my research, I became aware of the need for careful observation and thorough understanding of the human figure for my studio work. Consequently, I concentrated only on anatomical studies and intensive life drawing during the first year. This understanding has changed my work radically as the sculptural form became less random and ambiguous. It contributed largely to my ability to develop a formal language that enabled me to create the interlocking forms within the Suleika cycle.

b) Work cycle: portraits.

A series of traditional as well as multiple, interlocking portraits. This cycle is relevant to the development of the discussion on successive stages of an image and further because of the treatment of the surface texture.

c) Daidalos cycle.

Five pieces developed at the beginning of the research project, which showed the concept of interlocking forms for the first time. The idea was centred around the archaic act of building.

d) Suleika cycle.

This body of work has initiated and supported inquiries into the problem of simultaneity and succession in time and form and the particular theories of Henri Bergson. There are four pieces belonging to this cycle (one of which was destroyed) as well as a series of drawings.

e) Work group: architecture.

A series of architectural composition studies that use interlocking geometrical forms as a stylistic means. Work in this series has been developed as comparative examples within the discussion.

A collaborative project with the architects Federico Curletto and Paolo Lucattini reflected on the role of materials in architecture to represent history of places. The subsequent design for a community centre draws on this material concept as well as on the interlocking of forms.

f) Work cycle: boats; Imram Bran cycle.

Works within this group reflect on time perception in relation to density of stimuli, but also on temporality as part of the human condition. A series of four figures and a presentation submitted for a sculpture commission of the Arvon Foundation at The Hurst, Shropshire.

5.2. Influence of Bergson's theories on the structure

The structure is not only determined by the integrated methodology that I have applied but also by philosophic preference. Henri Bergson is of crucial importance here and the choice of his concept of time has subsequently determined the inner structure around which I have built my thesis. His theories have great value for phenomenological inquiries into the subject of time in the humanities and I regard his approach as particularly relevant for the creative arts. One reason is his understanding and definition of intellect and intuition. The combination of the two is significant for the arts: while most artists are inspired intuitively, their practice is fuelled by intellectual challenge and often informed by systematic research. Intellect is widely related to our ability to abstract and conclude, being a 'mediator' between perception and cognition. These terms are of obvious relevance for the artist. Intuition on the other hand also leads to cognitive conclusions from our perception, while the role of perception differs slightly as do process and conclusion. Perception is an immediate and sudden form of cognition, largely related to visual thinking and sensory perception of phenomena; it links phenomenological theories of Bergson and Husserl to Gestalt psychological enquiries of researchers like Arnheim. Again the relevance to the artist is

obvious. The visual artist relies heavily on the observation of his/her environment, their own practice and the dialectic between the two. Approach and conclusion can be random and sudden as can inspiration and the initial interest in a subject matter: new ideas often appear suddenly.

The combination of Bergson's dualism, intellect and intuition, as well as his concepts of time and duration have a strong influence on the approach to time in art that I have taken in my research. These elements form a paradigm that I will discuss more extensively at a later stage. The implication is that intuition is very closely linked to perception, and that both are concerned with and take place in the present. Intellect on the other hand is linked to concept(ion) and relies both on recollecting past memory and a vision of the future. One is immediate, concurrent and simultaneous with its inspiring events, the other is a linear train and is, as such, of a successive nature, involving duration.

Any event in life or any phenomenon occurring in nature that is observed by an artist, can immediately trigger off an idea for new work. This is followed by the process of working on this idea, a linear process incorporating memories, knowledge, acquired skills and vision to develop a finished work of art. But even this process can include immediate changes as a result of intuitive cognition that can again alter the direction of an artistic project.

This approach is inevitably reflected in the overall structure of the thesis with its two main directions. The first is the intellectual understanding of time in our society to which the artist is exposed, the temporal concept we apply in our lives. It forms a framework within which large parts of the discussion are set. The second direction addresses the intuitive understanding of time in relation to sensory perception and forms the main part of the thesis: the investigation of temporal phenomena and their equivalent in sculpture. The thesis as a whole embodies Bergson's dualism.

6. Definitions

After outlining the aims, methods and structure of my thesis, it is necessary at this point to give definitions of the most relevant terms in the inquiry: time, temporality, phenomenon and sculpture.

a) Time and temporality

These are often used synonymously, although bearing subtle differentiations. The Encyclopaedia Britannica defines time as:

“a facet of human consciousness felt both in psychic and physical experience, and an aspect of the observed environment metaphorically describable as a one-way flow, providing, together with space, the matrix of events.”⁶

Temporal and *temporality* give reference to something closely relating to time, be as it may phenomena, expressions, objects, etc. A temporal phenomenon is something sensorily perceptible that bears a dominant aspect of time carried through a 'vehicle', e.g. a visual stimulus. Temporality is subsequently understood as the perceptible manifestation of the abstract concept of time. The diurnal cycle of day and night is experienced through the change of light in a visual manner, yet we regard it as having a temporal nature. There is a deeper philosophical debate around these terms (Heidegger), but this initial differentiation between the terms has to suffice here, since my investigation is concerned with its practical application in art, rather than the philosophical concept of time as such, i.e. it deals with the perception of visual information that relates to or gives us insight into the idea of time. If the term *time* is used in the context of the thesis it refers to time as a philosophical or psychological notion, if not made clear in any other way. As such it is different from the more common use as relating to measurable time or clocktime in everyday life and should not be confused with this. This distinction will be explained in chapter one.

The term 'real time' is used in context of the temporal structure of art forms such as performance art or dynamic objects. This indicates that succession as well as simultaneity is part of their temporal nature.

b) Phenomenon

This thesis examines visual and temporal phenomena. The term *phenomenon* is used here concerning the appearance rather than the physicality of the source of of such appearance (i.e. the object)⁷. A phenomenon is the cognitive expression of an abstract notion or an object that appears and I will use the term in the understanding of an appearance that is sensorily perceivable. The term is at no point used in a spiritual or parapsychological sense.

c) Sculpture

It refers here to the process of making three-dimensional objects of more or less durable nature by someone who is concerned with the expression of ideas through form, applying additive or subtractive work processes. The focus will subsequently be on a traditional understanding of sculpture, including bas- and haute-relief.

⁶ Encyclopaedia Britannica (1974), 18:410

⁷ Schmidt (1991)

It became clear during the examination of existing research and literature that many writers in the field approached the subject from a comparative angle, relating visual arts to performing arts and literature (Lessing, (1987), Wollheim (1968), Wolf). Time is an important and obvious aspect of these art forms and its role is widely recognised and understood. This recognition has contributed to a broad vocabulary in relation to temporal issues. Visual art is lacking such a defined terminology and hence relies on comparison and ‘borrowed’ terms, which will not work sufficiently in a different context. The glossary at the end of the text will help the reader by explaining some of the terms and will provide etymological references that offer insight into historical connotations of the subject. The glossary is particularly important given that many of the key writers in this field have published their research in their native Austria or Germany and as such a particular choice of words or terms can not always be without difficulties translated into English. Furthermore, some of these terms carry a wider spectrum of meaning that needs to be interpreted to the reader.

Quotes from publications in the German language are translated by the present author and the original version is then provided in the footnotes.

7. Personal reasons for the research

Time and temporality attracted my attention at an early stage of my architecture studies. Their interaction with architectural space and form as well as the materials of our built environment interested me in particular, not only as an observer and user, but also as a maker of objects. Issues such as ageing, decay, movement in space, growth and change all carry a temporal aspect and were -and still are- of great importance to my practice. During these studies I was introduced to the concept of *wabi-sabi* through Professor Breuer, lecturer on the basic design course at the Fachhochschule Lippe in Detmold. *Wabi-sabi*, a specific area of Japanese Zen Buddhism, has often been described as the Zen way of materials, dealing with the temporal and transitional nature of materials and their applied form in relation to universal principles of nature. Its importance for me has subsequently been carried over to my studies in fine and applied art, where I initially worked in the medium of printmaking and later sculpture. At this stage it became more and more obvious to me that time was a central, unifying issue in my practice and work. This awareness of time related issues has influenced the way I have approached architectural projects and sculptural ideas ever since.

During my studies in Detmold I was not only introduced to *wabi-sabi* as a theoretical concept in art and architecture. I owe great debts to my tutor and mentor, the sculptor

and lecturer Professor Axel Seyler⁸, who introduced me to Gestalt theory during my early years of studying and at a later stage initiated my interest in figurative sculpture. Gestalt theory has remained an important critical tool in my practice and teaching ever since and plays a central role in the methodology of this research project. Working as Seyler's assistant for two years, his enthusiasm and encouragement influenced my decision to study printmaking and sculpture.

This doctoral thesis brings together all these interests: sculpture, Gestalt theory and wabi-sabi. I have identified time, form and material as the common denominators, the 'raw materials', in sculptural work and my key concern is to extend the application of Gestalt theory to the sensory perception of time and temporality.

8. Review of literature

Before turning to the central issues of the thesis, I will review some selected literature that deal with the topic of time in art. This will offer insight into different approaches and angles that have been used to explore the subject and to analyse the phenomena in chapter two. I have selected writers that deal specifically with time in their work and have divided them into two different groups.

Writers who deal with the subject of time in art:

- a) Ephraim Lessing, *Laokoon*, 1766
- b. Johann Gottfried Herder, *Plastik*, 1778
- c) Étienne Souriau. An essay, dating from 1949
- d) Micheline Sauvage. Essay from 1953. Both these were reprinted in a comprehensive publication on writings on art by various artists and philosophers, edited by Suzanne Langer in 1958.
- e) The script of a lecture, given by Philip Rawson in 1976⁹, refers to the above but examines the field in a wider context.
- f) Götz Pochat, an art historian who has published extensively in the field of time in art.

Writers and texts on philosophical and phenomenological concepts of time:

⁸ Seyler, born 1939 in Bielefeld, Germany, studied sculpture under Seitz and Heiliger at the Technische Hochschule der Künste in Berlin. Focussing on the human figure, he developed a style that is influenced by the sculpture of classical Greece. After his studies he became assistant to Jürgen Weber at the TH Braunschweig in the subject of Gestalt theory. He worked on research in the field of perception of form and movement. In 1975 he accepted a post as lecturer for *Gestaltung* (design) and Gestalt theory at the Fachhochschule Lippe. His work includes several public commissions. He lives and works in Dalborn, Lemgo, Germany.

⁹ Rawson (1976). Godfrey-Cronheim Memorial Lecture given at the Exeter College of Art and Design

- g) Rudolf Arnheim, Jürgen Weber, Axel Seyler. Mentioned but not reviewed.
- h) Gerhard Achenbach
- i) Henri Bergson's key text *Time and Free Will*
- j) Edmund Husserl, *Lectures on the Phenomenology of inner Time Consciousness*
- k) Leonard Koren, *Wabi-Sabi*

a) Ephraim Lessing, *Laokoon*, 1766

Lessing's *Laokoon*, which dates back to 1766, appears to be the first text that deals with the subject of time and art, comparing visual art forms with poetry in view of their treatment of succession and simultaneity. The problem of painting is, according to Lessing, that temporally successive or progressive parts of an action have to stand spatially side by side on the canvas. He maintains that coexistent objects, bodies or forms and their qualities are the true subjects of painting, while action is the true subject of poetry and literature. But Lessing admits that a minor element of the other can exist in both:

*"Not only do all bodies exist in space alone, but also in time. They continue to exist and can appear differently and in different constellations during their existence. Any of these momentary appearances and constellations is the effect of a previous one, the cause of a following one and as such the centre of an activity. Subsequently, painting is able to imitate such activity, but only by using bodies as hints."*¹⁰

Further on he expands this thought, arriving at a conclusion that is of significance for my argument. It relates to the particular ability of painting - and sculpture - to express succession through choice of a particular moment. Lessing states:

*"Painting can only use one single moment of an activity with its coexisting compositions and therefore has to choose the most pregnant one, the one which is able to explain the previous and the following."*¹¹

Lessing concludes that sculpture is foremost concerned with beauty and that subsequently a moment has to be chosen that is essentially transitory. He has identified

¹⁰ Lessing (1964), p. 114: *"Doch alle Körper existieren nicht allein in dem Raume, sondern auch in der Zeit. Sie dauern fort, und können in jedem Augenblicke ihrer Dauer anders erscheinen, und in anderer Verbindung stehen. Jede dieser augenblicklichen Erscheinungen und Verbindungen ist die Wirkung einer vorhergehenden, und kann die Ursache eier folgenden, und sonach gleichsam das Zentrum einer Handlung sein. Folglich kann die Malerei auch Handlungen nachahmen, aber nur andeutungsweise durch Körper."*

¹¹ *Ibid*, p. 115: *"Die Malerei kann in ihren koexistierenden Kompositionen nur einen einzigen Augenblick der Handlung nutzen, und muß daher den Prägnantesten wählen, aus welchem das Vorhergehende und Folgende am befehllichsten wird."*

the importance of the transitional moment (see glossary) in *Laokoon*, which I have given as an example in the introduction above and which is dealt with in depth in chapter two. Despite its age, Lessing's work is a key text in the field and still has relevance for any research in the area. *Laokoon* was written at a time when the expressive and 'rich' genre paintings of artists like Watteau and Boucher attracted the attention of the art world. At the same time it hinted towards things that were to come, a more rational and stern approach to art. Although he was influenced by his times and cultural environment, Lessing identified significant issues concerning time in art, such as the importance of simultaneity and succession, as well as the possibility of the chosen moment to contain suggestions of past and future action. It needs to be pointed out, however, that Lessing's understanding of the relevance of time and temporality in art was limited and rather 'black and white'. He did not understand the involvement and importance of time in the plastic arts to its full extent, which becomes clear in his categorical belief in time belonging to the realm of poetry and space to that of the plastic arts.

For a long time after the publication of Lessing's *Laokoon*, no writer seems to have raised these issues again. Classic writers of art history, theory and criticism, such as Adolf Hildebrandt and Heinrich Wölfflin, do not refer to time at all, which comes as a surprise. The decades after the industrial revolution, 1840s onwards, were significant for several cultural changes they brought to our understanding of time. I will explain this change, which is described with the term 'temporalisation' (*Verzeitlichung*), at a later stage in the thesis. A connection between art and time was only established again after 1900 when artist groups like the futurists and cubists dealt with issues of time in their art. Yet it was not until the late 1940s that art historians showed an interest in dealing with the subject. A series of texts dating from this time are of particular interest for the thesis as they take the psychology of perception into account.

b. Johann Gottfried Herder, *Plastik*, 1778

The writings of the Prussian cleric Johann Gottfried Herder (1744-1803) – a contemporary and friend of Goethe – cover a wide range of subject areas, from ethnology to linguistics, philosophy and art. His humanist philosophy, influenced by Giordano Bruno and Spinoza is a reaction to Kant's theories, which he strongly opposed. Herder maintains that being aims for a higher, universal aim and that everything in nature and history develops according to set laws towards this. Unlike Kant, he understands time and space as results of human experience, emphasizing the role of sensory perception in this.

Plastik (published in 1778) was written during and after an extensive period of travelling with the crown-prince of Holstein-Eutin, during which he met Goethe. The essay builds upon a problem that was initially raised by the French philosopher Denis Diderot (1713-1784): the role of sensory perception for cognition. In part one of *Plastik*, Diderot's example of a person blind from birth leads Herder to investigate the role of both the sense of touch and vision for the contemplation of sculpture and painting. He maintains that "*sight reveals merely shapes, but touch alone reveals bodies*"¹², understanding sight as an artificial and most philosophical sense. Sculpture relies essentially on depth for Herder and its aim is to create one single object. With a heavy bias for the medium, he concludes the chapter with the understanding that touch is the essential sense for sculpture while painting relies only on vision; the former is truth while the latter is a dream. A link between art and time is established at several points of the argument in part one. Pictures, according to Herder are a "*continuum of things placed alongside one another*"¹³, experienced through vision while in sculpture this "*sight is replaced through touch, luminous color by clearly modeled and enduring forms*"¹⁴. Herder maintains that:

*"We have one sense that perceives external things alongside one another, a second that perceives things in succession, and a third that perceives things in depth. These senses are sight, hearing and touch. [...] All three arts [painting, music and sculpture; auth.] are related to one another as surface, sound, and body, or space, time, and force the three great media of all-embracing Creation itself, through which they encompass and delimit everything there is."*¹⁵

In the following parts of the essay, Herder continues to compare painting and sculpture, drawing on issues such as different treatment and representation of clothing and beauty. Here he also explores how far these media are liable to changes in taste and society. Drawing on examples of Greek sculpture he concludes that due to its nature, unity and expression in every detail, good sculpture is timeless and eternal. The argument then continues with a discussion on female beauty and the body in Greek sculpture. In the conclusion in part five, Herder returns once more to the subject of time in art, considering the time it takes to contemplate sculpture through touch.

Like Lessing's *Laokoon*, *Plastik* is an essay that is heavily focussed on Greek sculpture and similarly draws on the differences of the media of painting and sculpture. The issue of time is also treated, limited to issues of succession and simultaneity.

¹² Gaiger (2002), p. 35

¹³ Ibid, p. 36

¹⁴ Ibid, p.37

¹⁵ Ibid, p. 43/44

Herder's relevance for the thesis is in his early focus on sensory perception and particularly his emphasis on touch in relation to sculpture.

c) Étienne Souriau, *Time in the Plastic Arts*, 1949

As the first of these recent texts, I shall examine Étienne Souriau's essay as it provides a fairly comprehensive overview of the subject. In *Time in the Plastic Arts*¹⁶ Souriau, a French scholar on film, points out the great significance of time as an aesthetic factor and principle that is characteristic in art forms, like painting, sculpture and architecture. He refers to these as the 'plastic arts' and compares them to media that have traditionally been related to time. Souriau traces the roots of the fact that temporal factors in visual art have been ignored, back to the writings of Immanuel Kant. According to his theory, his ideas lead to a misconception of spatial and temporal art forms¹⁷, where sculpture in particular is regarded as purely spatial, almost removed from our human experience of space *and* time. I will demonstrate in the course of the thesis that it is not only necessary to see time as an important factor in sculpture, but to adapt a holistic understanding of the inter-relationships of time, material and form to fully understand works of art in this medium.

Souriau identifies the importance of time for our perception process in the contemplation of a building, a piece of sculpture or a painting. Unlike film, theatre or music, the spectator or beholder has the freedom to choose the period of contemplation. Souriau points out that the architects of cathedrals may have taken this temporal factor of perception into account.

There is another factor of even greater importance than the psychological time factor of an artwork, which he calls 'intrinsic time'. This could be described as the little universe in which an artwork is set. Like in a novel or a film this universe extends beyond the acting and through certain clues we are able to gain understanding of the previous life experiences of the protagonists and in some cases even their future. Souriau maintains that this similarly applies to painting or sculpture. The chosen moment, if selected carefully, can offer insight into and understanding of the past and the future of the action and its characters.

In chapter VI, Souriau examines more widely recognised issues of time that are often used in connection with works of art, such as rhythm. After comparing music with painting and sculpture he concludes that the term rhythm is rather misleading and confusing when being used for plastic arts.

¹⁶ First published in *The Journal of Aesthetics and Art Criticism*, Vol. VII, No. 4 (1949), pp. 294-307; reprinted in Langer (1958), pp. 122-141

¹⁷ A misconception that is still evident in terms like 'time-based' or 'lens-based sculpture', where the medium is described rather than the context of the artwork. The term 'time-based sculpture' can be particularly misleading as it obscures the existence of temporal factors in other sculptural media.

In his conclusion Étienne Souriau stresses the necessity of recognising the factor of time in art in order to understand the subject of time as a whole. Not examining this point in detail but perhaps encouraging further research, he states:

*"These facts [the examined time factors in art - auth.] would be of great significance also for the psychological, philosophical and even scientific study of time. Because one would have but an insufficient and imperfect conception of time, if one did not take account of the documentation which aesthetics furnishes on this subject. In that immense and fundamental activity of the human race, the realm of the arts, man exercises the power to master time, to fashion and form it, to vary it qualitatively, and to generate it by means of which the greatest plastic masterpieces form the most authentic evidence."*¹⁸

Further, he points out that there are fewer temporal restraints for makers in the plastic arts than authors in other media, like composers or film-makers, who are restricted and tied down by the temporal necessities of the work such as time frame, length and difficulty of repetition. Temporal issues are in general more indirect and subtle in sculpture and painting.

d) Micheline Sauvage, *Notes on the Superposition of Temporal Modes in the Works of Art*, 1953

This essay¹⁹ was first published in *Revue d'Esthétique*²⁰ and reprinted in Langer's book *Reflections on Art* in 1958. It is this text that provided the basis for Rawson's lecture and script dealt with below. Sauvage's essay, however, is less illustrated and altogether less clear than Rawson's text and I will therefore examine their ideas in common in the review of his essay. Referring first to Étienne Souriau²¹, she examines the meaning of 'temporal' and 'temporality' and then goes on to identify and analyse four different levels of temporality in art. The opening passage is, however, noteworthy as she refers here to the obvious presence of time in all works of art:

*"It is undeniable that a work of art is temporal, that there is a temporality in any and all works of art, however valuable and firmly-grounded the distinction between the plastic and the musical arts may otherwise be. Anything is temporal, which is in time, or involves time, or is a prey to time. Such is clearly the case with a sonata, a novel, a poem, a motion-picture, or a theatrical production; such is likewise the case with a canvas, a monument or a bas-relief. All these are quite evidently entities concerned with time."*²²

¹⁸ Langer (1958), p. 140

¹⁹ Ibid, p. 161 ff

²⁰ *Revue d'Esthétique*, Vol. VI, No. 3 (1953), pp. 277-290

²¹ Langer (1958), p. 122 ff

²² Ibid, p. 161

e) Philip Rawson, *Time in Art*, 1976

Rawson was lecturer at the Royal College of Art and curator of the Gulbenkian Museum of Oriental Art in Durham. His specialist field of research is oriental and Japanese Buddhist art and he is the author of several publications in the field of art theory and history, but is possibly most renowned for his book *Seeing through Drawing*²³. This theory and history of drawing was based on a BBC production and has become a standard work for art students.

Time in Art is a brief introduction to the topic with many references to Sauvage's work. Although it is an excellent general introduction to the subject, many aspects are just touched on or only marginally dealt with due to the nature of the work as a lecture script. Rawson follows Sauvage's structure of distinct division of art-related time and the strength of the work lies in its summarising and categorising character with its application to a wide range of art forms. Rawson covers various media, from traditional painting, drawing and sculpture to calligraphy, theatre and film. He uses the following categories that were initially introduced by Sauvage:

- T₁, time that is related to the actual physical history of a work of art starting with its creation, covering its art-historical existence. It essentially describes the physical existence of the work²⁴.

- T₂ is the time needed to contemplate or perceive a work of art. Being an obvious factor for the duration of film and theatre, it is less determined for traditional visual art.

- T₃ refers to the time needed for a work of art to fully develop its inherent message, where it is possible. Again it is very obvious for a movie that needs the length of its time to unfold its story-line. Sauvage uses the term 'time evoked' and states that T₃ "*consists of the temporal signification implied by the thing represented*"²⁵.

- T₄ is defined by the author as time represented, the time in which a particular work of art is set, such as a certain historical period or mystical time.

These are the four aspects of time that both authors refer to and in the course of their essays explain and illustrate. In general, these categories make sense but there is a definite need to elaborate and explain them in greater depth, as many questions are left unanswered or even arise out of them. Particularly T₂, the aspect of perception, is only lightly touched on, leaving us with questions regarding the temporal factors of perception. As regards T₃ we do not gain any knowledge on how past and future are embedded and read in visual art and how we are able to perceive such information in a static piece of art. Sauvage, quoting the music historian Gisèle Brelet, points out that:

²³ Rawson (1979)

²⁴ We also need to include the theoretical or imaginative existence of lost or destroyed work, as it can still have a considerable impact on art history.

²⁵ Langer (1958), p. 163

*"The time of a plastic work is purely subjective, in us rather than in the work; the work does no more than evoke it and invoke it, for it is powerless to acquire time in its own right and to inscribe it in the objectivity of its form."*²⁶

We have to ask here: How is time evoked? Does such evocation relate to conditioned or inherent understanding? As this is one important aspect of time in art that has not been researched in depth it will be raised in course of this thesis. Different to Rawson, Sauvage deals with the particular aspect of temporality, pointing out that "*T₁, T₂, T₃ designate the temporalities of a work, T₄, its chronism*"²⁷.

f) Götz Pochat, *Bild/Zeit*, 1996 and *Zeit/Los*, 1999

These thoroughly researched publications in the field of time in art, both in the German language, present the reader with an analysis of temporal question in a wide spectrum of examples by combining a phenomenological angle of the subject with a scholarly approach to art history.

Bild/Zeit is also entitled *Eine Kunstgeschichte der vierten Dimension*, 'an art history of the fourth dimension', and the focus of this publication is indeed temporality and narrativity in art works throughout history. After introducing the subject of time in art, Pochat discusses the issue using selected examples from pre-history to early Renaissance with a specific stress on experienced time (*Erlebniszeit*). He analyses the development of theories on time in the introduction, starting with St. Augustine, leading on to Herder and Kant, followed by Bergson's and Husserl's concepts of time that are then analysed in greater depth. From there a variety of phenomenological and existential concepts are discussed, arriving at theories that relate Gestalt to time. Pochat then develops a structure of experienced time, a phenomenological analysis, which he then relates to the interpretation of works of art and explanations of examples of paintings by Pieter Brueghel²⁸:

In a first phase, the contents of the painting are scanned intuitively, involving protention and retention, resulting in a spatial and temporal presentation of the content. In the next phase the meaning of these contents is *represented* through retention, where both temporal and spatial composition is analysed in order to establish unity between perception and experienced world. Finally this leads to understanding and interpretation (*Auslegung*) of the work. This is an analytical structure that he then applies to a wide range of examples within each era of art history.

²⁶ Ibid, p. 168

²⁷ Ibid, p. 170

²⁸ Refer to Keller in Wagner (1964), pp. 44-69. Pochat's discussion on retention was first published in Thomsen and Holländer (1984), p.68.

Zeit/Los was a publication that accompanied an exhibition at the Kunsthalle Krems in 1999 and contains three brief essays by different authors as well as a long art historical reflection by Pochat himself. Structured similarly to the previous publication, he starts with Egyptian art and ends with paintings of the late 19th century. Plates and art historical interpretation of the works then follow this introduction, with a specific focus on temporal elements. Being more pragmatic and applied to its accompanying purpose, Pochat does not discuss psychological and phenomenological understanding of time in depth as in *Bild/Zeit*. What is significant about this publication, however, is the wide spectrum of examples that have a distinct temporal content.

I had the opportunity to meet Götz Pochat at the 'Thirtieth International Congress of the History of Art' in London in September 2000, a conference that focused explicitly on the topic of time. Covering a wide range of subjects, one section dealt in particular with time and sculpture. Two sections, 'Visual narrative time' and 'Look, see, behold' were particularly relevant for the perception of temporality in art, although most papers applied a very narrow band of temporal issues to the interpretation of examples from the history of art with little reference to any methodology or common terminology. Two papers, Götz Pochat on 'Time represented in visual Art' and Werner Wolf on 'Time and Narrativity - a literary perspective', went into the topic in sufficient depth.

Wolf, a literature historian from Graz, discussed conditions and aspects of narrativity within the literary context and the possible application of the term 'narrative' to visual art. In the paper and following discussions the obvious lack of a suitable terminology and methodology in the visual arts became apparent.

Pochat gave a brief overview of the context of the problem and referred to Husserl and Bergson as well as to a link with Gestalt theory as a way of understanding the riddle of time in art. In this particular paper he identified five areas of time in art: movement, stroboscopy, genuine time, narrativity and historical painting. In meetings outside the organised seminar programme, I was able to discuss the issue of time and art in greater depth with Professor Pochat. We agreed on the fact that the problem is still under-rated as well as misunderstood resulting in many publications and research only superficially touching on the subject. He also stressed the lack of a sufficient terminology.

g) Rudolf Arnheim, Jürgen Weber and Axel Seyler, various texts

Writings of these Gestalt theorists have been cited at several stages in the thesis. All are concerned with the application of Gestalt theory to the visual arts and have contributed to the field of research in their specialist area. Arnheim examines a variety of pictorial issues, such as space, form, colour, among others in terms of the beholder's perception. Weber examines the relation of cognitive schemata of form, movement and colour to

real perceptual stimuli. Seyler follows a pragmatic approach, offering concrete Gestalt principles that are applicable to art theory. Their individual writings will not be reviewed here for reasons of limited space.

h) Gerd Achenbach, *Das Kleine Buch der Inneren Ruhe*, 2000

This German philosopher is concerned with a rather pragmatic approach to philosophy that relates to everyday life. Based on the understanding that philosophical ideas need to be applied to our social life, he has founded the 'Schule für angewandte Philosophie' in Cologne. Two of his publications are of particular interest for this investigation as they are concerned with the understanding of time and temporality in our society: *Alles-auch die Zeit-hat seine Zeit* together with a chapter of his recent publication *Das kleine Buch der inneren Ruhe*. Both texts explore aspects of time that have changed increasingly with the development of post-war societies and the accompanying experienced 'acceleration of time'.

In the essay '*Alles - auch die Zeit - hat ihre Zeit*', (translates as 'Everything, even time has got its time') Achenbach explores the background to our present understanding of time in everyday life. He argues that the loss of established values of the traditional, religious and social kind has led to a 'rule of temporality' over the course of the last century. In simple words: concepts of temporality have replaced concepts of eternity. The loss of accepted values has been replaced with another universal value: time itself. This change is evident in many aspects of life in contemporary societies. Achenbach's interpretations will be a central reference for the exploration of contemporary concepts of time in chapter one, where his theory will be discussed in greater detail.

i) Henri Bergson, *Time and Free Will*, 1896

The French philosopher Bergson was born in Paris in 1859 where he also died in 1941. He taught at the Collège de France, subsequently became a member of the Academie Française in 1914 and received the Nobel price for literature in 1928. His theories on life and time made him one of the most significant French philosophers of the 20th century. Having published numerous books and essays, his teachings were a strong influence on French existentialism in the post war era.

Bergson is one of the most important followers of 'life philosophy' or vitalism, his central understanding being the distinction of body, matter and brain from consciousness, spirit and mind, and as such, between intellect and intuition. It is important to stress that he always acknowledges this duality as forming a unity, a whole. Maintaining that the brain is only a '*rigid, automatic tool for thinking, being*

able to grasp the solid, dead elements of inorganic nature'²⁹, he regards it as insufficient for understanding the creative activity of life. Bergson defines the function of intellect in comprehension, immobility (working with set information) and being, due to its function as a spatial mechanism that works with concepts, abstraction, analytic and symbolic processes.

According to Bergson, the intellect obscures the relation between reality and consciousness, but acknowledges its strength for systematic and rational thinking.

Bergson sets intuition in opposition to this intellect. Life, which is described with terms such as becoming, vitality and changing processes in his understanding, can only be understood through intuitive cognition. He regards the individual as an irrational and in-divisible entity and life can only be experienced through living and intuition. Like the individual, the universe as a whole unfolds according to its inherent life forces, or as Bergson calls it, *élan vital*. Intuition is able to comprehend movement and change as well as becoming and duration.

Bergson developed his concept of time on the basis of this understanding in *Time and Free Will*, 1896, a key text for this thesis. Being a 'process philosopher', who regards the flow of time as a metaphysical fact, he differentiates here between true time (*durée*) and measurable time, a concept that will be introduced in greater depth in chapter one.

j) Franz von Brentano, Edmund Husserl and Martin Heidegger, various texts

In the area of time concepts and time consciousness we can find three authors who have approached the subject from phenomenological and existential angles: Franz von Brentano, Edmund Husserl and Martin Heidegger.

The existentialist Martin Heidegger (1889-1976) develops his understanding of being and human existence in the lecture script *The Concept of time* (1924) and later more explicit in *Sein und Zeit (Time and Being)* of 1927. He regards temporality as the basic structure of human existence, considering past, present and particularly the future as a necessary precondition of being. Time is real for him and neither contained in the subject nor the object, nor is it a framework in which events and processes happen.

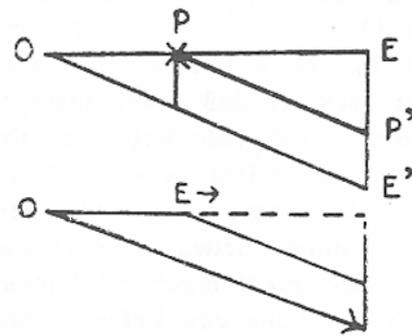


Figure 2: Husserl's concept of internal time consciousness
P present moment
P' present moment in retention
OE line of present moments

²⁹ Unidentified source

Heidegger's teacher Husserl (1859-1938), together with Ehrenfels and Meinong, a disciple of Franz von Brentano (1838-1917)³⁰, has laid the foundations to Gestalt theory and is often described as the father of phenomenology. He develops a concise model of time experience and consciousness in his book *Vorlesungen zur Phänomenologie des inneren Zeitbewusstseins*, which is based on a series of lectures given in 1905.

At the beginning of his exploration, Husserl refers to Brentano's understanding of time, which is based on a subjective view of time in rejection of objective aspects such as clock-time. In his view objective time data are as abstract as location data in terms of defining spatial relations of objects and are thus limited for the understanding of time or space. Brentano had developed a theory of the psychological origin of time imagination (*Zeitvorstellung*) based on association and imagination using the example of the perception of notes and melodies in music. To create a consciousness for duration, Brentano suggested an 'original association', a trace of an original sensory stimulus, that is retained by the memory or imagination (*Phantasie*). This imagination is also the source for the understanding of 'future', based on expectation. He distinguishes, however, between real present and imaginative or unreal past and future. Brentano is, according to Husserl, the only person who had a sensible explanation of the origins of ideas of time but was unable, however, to resolve the question of "*how time consciousness is possible*"³¹. Amongst other reasons, he also criticises Brentano's theory on grounds of confusion between time perception and time imagination.

Husserl also uses the perception of music as the starting point for developing his theory of time consciousness. Temporal objects, such as notes in a melody, rely on a continuous combination of memory, punctual perception, and expectation. Although there can be no consciousness of an individual note before its actual existence, there is a definite retention of it after it has been perceived, according to Husserl. The appearance of the note will change the longer it is retained in memory in what he describes as the 'continuity of constant change' or *Ablaufskontinuität* (Figure 2)

Each present moment in the flow of time and the stimuli it presents displays a continuous mode of termination, they fade, as it were, every impression thereby changing into retention, becoming 'primary memory'. In retention, the impression becomes weaker and weaker, like the tail of a comet, and a 'field of time' continuously obscures older impressions and stimuli, while new ones occur every present moment. This continuous combination of retention and perception, the comprehension of past and present, for example in hearing a melody, is the basis of time consciousness and holds true for any temporal object.

³⁰ See Appendix 1, *Introduction to Gestalt Theory*

³¹ Husserl (1964), p. 40

However, Husserl distinguishes between primary memory of a just-faded stimulus and secondary memory, the re-collection of distant and non-continuous original stimuli, like remembering a once heard melody. He points out that the latter is a re-presentation of previous stimuli, but is not perceived as such.

k) Leonard Koren's *Wabi-Sabi for Artists, Designers, Poets & Philosophers*, 1994

Publications on the aesthetic system of *wabi-sabi* are relatively rare, as it has been passed on from master to disciple within the Japanese *iemoto* system, a hereditary line of Zen masters. The research relies on two key texts in the field: Kakuko Okakura's *The Book of Tea* (1906) and Leonard Koren's *Wabi-Sabi for Artists, Designers, Poets & Philosophers*. Although Okakura does not use the term itself, all issues discussed in his book relate to the concept of *wabi-sabi*: it is the first literary account that deals with the subject. Koren's book on the other hand is focused on *wabi-sabi* and attempts to make its concept available to 'Western' readers. It applies its aesthetic understanding to art, design and architecture and is therefore of importance for the discussion. Koren introduces the history, concept and relevance for the creative practitioner in his book, a summary of which has been included in a previous section.

CHAPTER ONE:
SOME CONCEPTS OF TIME

1. Intuition and intellect and their relationship to time

This chapter offers an overview of some aspects of our present understanding of time in contemporary society and explores the significance of Bergson's cognitive dualism, as described in the previous section.

The reader may imagine the following journey. A short, 15-minute walk brings us from home to the train station, where we arrive 15 minutes too early for the ten o'clock train that we intend to catch. After a period of waiting, we board the train and the ride takes three hours, which we spend looking out of the window, watching the landscape go by. We doze off for fifteen minutes and walk around the train for a while. At one o'clock we arrive in an unfamiliar place and after a quarter of an hour waiting unsuccessfully for a taxi, we decide to walk to the place where we have arranged a meeting, which takes another fifteen minutes.

The whole journey that we have undergone has taken up four hours, containing several shorter periods of various activity, some succeeding or preceding another, others being part of another. Each of them, however, has been measured by a clock. The clock plays an undeniable role in this example as well as in everyday life: clocks set a widely accepted standard. Without synchronised measuring devices³² -our watch and the station clock in this case- we would not be able to meet the train at the scheduled time, which, as a consequence, would mean long and erratic waiting times. Measuring devices, chronometers, clocks and watches refer to agreed standards: mean time and local times. Any event that has to be available to a wide group of people refers to a certain point of time within this standard. In terms of our train journey, this arranged point of time is determined by the schedule, the time table, which refers to two independent, but synchronised events: the arrival of a train and the abstract indication of an external mechanical device: the watch. The specific configuration of two indicators, the hands of the clock, allows us to make a judgement of time. In more abstract terms: the specific correlation of the two indicator hands coincides with the arrival of the train. We are relatively unaware of this synchronisation as it is an abstract but conditioned concept. Expecting the train at ten, one glance at our watch tells us whether we have to wait longer, are in time or have even missed it. We have now widely accepted standardised time, which regulates a vast number of events and occasions in our lives that either start or end at certain points of time.

Besides the concept of points of time, time on our watches and dates in calendars, we also relate to standardised time spans. There is no questioning that 15 minutes of

³² Notably, it was the development of a nationwide rail network and the necessity of reliable arrival and departure times that initiated a standardised time throughout the UK as late as the end of the 19th century. Previous to this, local time varied with latitude and sunrise/sunset times throughout the country.

walking to the station and 15 minutes waiting on the platform amount to an equal length of time when referring to our watches. The three-hour train journey is undoubtedly 12 times longer than our fifteen minutes walk. A visualisation of the journey in relation to this concept would look like this:

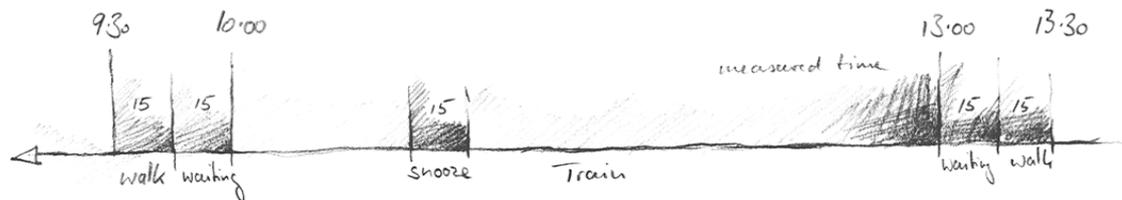


Figure 3: Clock-time diagram of journey

What I have explained here is our concept of clocktime, measurable time that dictates and determines much of our actions in daily life. It is a truly abstract concept, derived from the diurnal rhythm where varying day and night time hours have been adjusted and evened out into 24 units of equal length: a culturally determined intellectual construction first introduced by the Babylonian astronomer Kidinnu around 320BC³³.

I will now go on to analyse the train journey from a different perspective. The journey in the example consisted of five periods of equal length:

- a walk from home to the station in a familiar environment
- waiting for the train on a windy platform
- a nap on the train
- waiting for a taxi, anxious to arrive at a meeting at an arranged time
- walking in an unfamiliar environment

Although all these events and actions occupy a similar 15 minute period when measured by a clock or watch, they are experienced in very different ways by the individual experiencer who is directly involved.

We might know for sure how long it takes us from home to the train station; we are not in any rush and perceive our familiar environment in a confident and relaxed manner. There is no anxiety or confusion involved as we realise that it will not take us more than 15 minutes for sure. The walk from the train station to the meeting in the unfamiliar town is a completely different experience. We are confused by the spatial concept of the place and we do not yet possess a cognitive map of the place. Furthermore we are anxious to arrive at the meeting on time. In comparison to the first

³³ Pochat (1999)

walk, these fifteen minutes will appear much shorter, while the time waiting for the train on the draughty platform in physically uncomfortable conditions will appear much longer. Waiting for a taxi may appear to take ages in comparison to the time it takes to wait for the train. Waking up from a nap on the train we seem to lose all sense of time and space, not sure how long we were asleep and where we are. Although these fifteen-minute periods occupy exactly the same length of measured time, they leave very different impressions on the person experiencing them (Figure 4).



Figure 4: Experienced time during journey

This latter understanding of time is described by Bergson as intuitive, cognitive or experienced time, its nature is subjective rather than objective and depends on the observer or experiencer and the circumstances.

This example from everyday life shows that there is a clear discrepancy between time as we measure it and as we experience it, a discrepancy that is not always obvious. We are used to relying on watches and clocks rather than our intuition, using alarm clocks rather than natural body wake cycles. This acceptance of measured time as the predominant, 'true' time has obscured our awareness of intuitive time. It is partly in response to this that this thesis deals with experienced time.

2. Bergson's concept of time

According to their essentially different understanding of time, philosophy distinguishes between two schools of thought: process philosophers and philosophers of the manifold. While the latter maintain that flow of time is an illusion, process philosophers regard the flow of time as an important metaphysical fact. Respecting the limitations of the human intellect, process philosophers stress the importance of non-rational intuition in relation to time consciousness. The Anglo-American metaphysician Alfred North Whitehead states that:

*"It is impossible to meditate on time and the mystery of the creative process of nature without an overwhelming emotion at the limitations of human intelligence."*³⁴

The most influential process philosopher is Henri Bergson. The epistemological dualism of intellect and intuition is the essence of his work and influences his theories on time, which are essential for any study of this area. He sets out the foundations for his understanding of time in his book *Time and Free Will* of 1896, where he reaches the conclusion that duration, the temporal essence of life and reality, is indivisible and not spacious (which will be explained later in this section). As such, duration cannot be understood by the intellect. Since true time, duration (*durée*), consciousness, even life itself is in constant flux and does not contain divisible stages or states of existence, it can only be understood by intuition. Another key element in Bergson's theory is the interpenetration of time as a consequence of this continuous state of flux. The present contains the past and subsequently the present can only be understood in relation to the past, or in Bergson's words *"the nature of what comes after only finds its explanation by reference to what came before"*³⁵. Past and present are not two separate stages of time but one inter-connecting process.

In *Time and Free Will*, Bergson arrives at this concept after a long discussion on quantitative differences of conscious states, psychic (unconscious) as well as muscular, such as desire, sorrow or joy. He also takes aesthetic feelings into consideration, which I will discuss in greater depth later on in this chapter. In the course of his thoughts, he compares the relationship of inner, psychological states to physical, or outer sensations.

The second chapter of the publication is the most significant for the development of Bergson's theory of time. Here he develops the idea of duration (*durée*) out of the multiplicity of conscious states, reflecting the clear distinction he makes between spatially organised intellect and freer intuition. Using the example of the number as a multiplicity of parts of a unity³⁶, Bergson realises that these identical units need distinction in order to be differentiated. The distinction required is one of spatial position, like sheep in a flock. A successive position of sheep in duration can only count as one sheep and simultaneity in space is therefore significant as a way of arriving at the concept of number. Five sheep or circles, 'OOOOO' become '.....' which eventually leads to the abstract concept of the number '5'. This abstraction process has become obscured and unconscious, which has led to the confusion that counting, e.g. 1-2-3-4-...-50, is not counting in duration but is an additive, essentially spatial process: *"every*

³⁴ Whitrow (1980), p. vii

³⁵ Bergson (1910), p. 148

³⁶ This understanding is similar to 'supersummativity' in Gestalt theory, the principle that the whole is more than the sum of its parts.

clear idea of number implies a visual image in space"³⁷. Numbers are units and are regarded as divisible, the forming of numbers being made up of steps, even if infinitesimally small and as a result forming numbers is a discontinuous process (interrupted and in stages). Bergson states, that:

*"From the beginning, therefore, we must have thought of number as of a juxtaposition in space. This is the conclusion which we reached at first, basing ourselves on the fact that all addition implies a multiplicity of parts simultaneously perceived."*³⁸

Referring back to chapter one, Bergson identifies two forms of multiplicity: material objects in space and conscious states that are not countable in space. The first, as described above, are objects that we can perceive and count visually to make up a sum, such as individual sheep that make up a flock. The second leads to imaginative numbers that are imagined as a sum – '594' for example. The ringing of a church bell can either be counted as individual sounds or can form an imaginative rhythm in the head, a Gestalt as a whole; it can be regarded either as quantitative or as qualitative. Bergson arrives at the provisional conclusion that counting, as a quantitative operation, must take place in space, as otherwise the intervals remain. Yet, they can not remain in space as they have pure duration: counting of sensations, like this ringing of a bell or musical notes, can only take place with the aid of symbolic representation in space³⁹. The evidence of this conclusion, according to Bergson, is the impenetrability of matter, the fact that two solid bodies cannot occupy the same space at the same time. He refers to this impenetrability as being a result of *"property of number rather than of matter"*⁴⁰ and further: *"the impenetrability of matter is not a physical, but a logical necessity"*⁴¹. This evidence has important implications on the nature of sculpture, as I will demonstrate in chapter two.

3. Understanding of time in contemporary society

³⁷ Bergson (1910), p. 79

³⁸ Ibid, p.85

³⁹ The reader is encouraged to conduct the following experiment. Tap out a short and simple rhythm of eight quiet and loud knocks with your finger: o OO o OO oO. This rhythm can be remembered and recalled relatively easily: quality. To determine the number of taps as an after-thought one has to recall the rhythm slowly in one's head, in one's imaginative space: quantity. With evenly distributed and homogenous knocking this is nearly impossible: o o o o o o o o. Only when we are able to group distinct individual noises are we able to count them.

⁴⁰ Bergson (1910), p. 89

⁴¹ Ibid, p. 88

In this section I examine the cultural context out of which our present understanding of time has developed. The focus will be on influences that are relevant for a more pragmatic and populist understanding of time that have relevance for the argument. Scientific theories, such as relativity and quantum theory have not been taken into consideration here. The purpose of this section is to get a clearer picture of our 'every-day' understanding of time and to identify where confusions and difficulties within this concept lie. The following issues will be addressed:

- a) temporalisation, the cultural shift from spatial to temporal processes and organisation
- b) the confusion over direction of time flow
- c) the acceleration of time
- d) wabi-sabi and its relation to Achenbach's theories

a) Temporalisation

The relationship of man to time and temporality has changed in the course of cultural history: concepts, different cultures and eras have given rise to differences in understanding and importance of time and temporality⁴². The most significant recent change in the cultural understanding of time happened between the end of the 18th century and the middle of the 19th. The effects are still of great importance for contemporary societies. The change was a move from spatial towards temporal understanding or rather from an understanding of spatial-temporal to purely temporal concepts, a move that historians refer to as *temporalisation* or *Verzeitlichung* (Matussek, 1998). This concept is linked to a distinct acceleration in many areas of our lives. The reason why this acceleration has only become noticeable in recent years may lie in its hidden nature: time is an intrinsic element in all processes of life and as such is often not consciously observed. Even at the time when this distinct move from spatial to temporal attitudes happened it was hardly noticed. Johann Wolfgang von Goethe, however, was an exception and not only identified this change, but referred to it in some of his literary works, for example in *Wilhelm Meister*. I will deal with Goethe's understanding of time more specifically in another section but first want to give a contemporary account of the problem from a philosophical point of view.

The German philosopher Achenbach recognises the issue of temporalisation in '*Alles auch die Zeit hat ihre Zeit*', pointing out that a temporal organisation has replaced spatial order. Fashion, for example, has moved away from reflecting regional differences and has acquired a temporal diversity, as similarly have food, architecture⁴³,

⁴² Some of these concepts have been examined in a former essay on the history of time in philosophy and science.

⁴³ Evident in terms such as intensionalism and modernism.

political systems, etc. Achenbach describes the present era as being 'the time of time'⁴⁴ and identifies this focus on temporal issues, as well as a distinct misconception of the direction of time, as being responsible for many problems in contemporary society.

b) The confusion over direction of the flow of time

The flow of time ('real time') from future towards the past is a physical fact that is expressed in the laws of thermodynamics. It is also evident in several linguistic and etymological terms. The word *past*, for example, derives from 'passed', i.e. events that have passed us⁴⁵. The American Gestalt-psychologist Rudolf Arnheim uses the example of a dancer to describe the flow of time in a performance in the essay *A Stricture on Space and Time*⁴⁶. He states that "*she [the dancer] arrives out of the future and jumps through the present into the past*". It appears that Arnheim is aware of confusions about the direction of time.

It is however often assumed the other way round, from past to future. Achenbach uses various literary examples to show how we assume time to flow from the past towards the future, expressed in phrases like 'to go with the times', 'leave the past behind us', 'towards a new...', 'towards the future', 'the future lies ahead of us' etc. Various evidence can be found to demonstrate that this is a fundamental misconception of our present understanding of time. Achenbach deals with the effects of this confusion, including the insecurity about the unknown future and a lack of reflection and reference of past events and identifies this fundamental misconception as the basis for the domination of temporality in contemporary societies. Constant change has replaced lasting, eternal values as a principle in itself.

This discussion on directions of time poses another question: are we dealing with a misconception or a misperception? In the discussion on Bergson and his concepts of time I have analysed the importance of succession for our understanding of time. Succession is a series of events in sequential order and imposes the presence of a direction: whether one event follows or precedes another. We can only perceive the following event while the preceding one is still contained in the psychological present, retained in the short-term memory (but effectively being past). The perception of an event preceding a subsequent one is not possible. What may occur occasionally in the form of a *déjà vu*, for example, is psychologically understood as a confusion of our short-term memory. The second law of thermodynamics supports this assumption on a physical level, but how do natural laws relate to our perception or conception of

⁴⁴ "Die Moderne ist die Zeit der Zeit", Achenbach, p. 48

⁴⁵ The German term for future is *Zukunft*, describing events that come towards us.

⁴⁶ *A Stricture on Space and Time*, Critical Inquiry, Vol.4, No.1, summer 1978

directions in time? The example of an apple falling from a tree, may clarify the issue: the knowledge of the apple being on the tree is past experience, while we experience and perceive its fall now, in the present moment; the expectation of the apple touching the ground lies in the immediate future, even if fractions of a second ahead. The apple was on the tree before the fall happened, so this past event should actually be ahead of us, according to the above theory of Achenbach. Yet we also perceive it as an event that lies behind us. What creates this confusion?

Achenbach's theories are focused on contemporary societies and little discussion on the specific relationship between time and art can be found in his work. Although his ideas do not seem to apply to any expression of temporality in a work of art as such, they stress the significance of tradition as a temporal concept. Achenbach's ideas are relevant to any exploration of tradition and -in relation to this particular investigation- to the position of the sculptor within a tradition, which will be discussed in chapter three.

c) Time accumulation

Besides the confusion regarding the direction of time, Achenbach identifies another misconception about time accumulation in his essay *Langsamkeit und Stille*⁴⁷. He refers to Michael Ende's book *Momo*⁴⁸, stating that the constant need for novelty and change has caused restlessness in our society. In his award-winning novel, Ende uses the metaphor of the 'grey men' of the time bank who offer the saving of time to those people who run short of it in their lives. Achenbach refers to Ende's metaphorical description as the 'Momo-paradoxon', the assumption that time is a resource, leading to the misunderstanding that the more time we save, the more time we have. Time thus becomes an economic factor, a commercial value of 'time units'. 'Taking one's time' carries negative attributes in our society and inevitably means financial loss in an economic value system.

d) Wabi-sabi and its relation to Achenbach's theories

Wabi-sabi is an aesthetic system that addresses spiritual, metaphysical and ethical values of objects and material and its understanding of time relates in many respects to Achenbach's concepts.

Wabi-sabi emphasises the importance of the present moment, almost totally neglecting the future. Objects, places and people are valued as they are in their present state, regardless of age, state of decay, imperfection and so forth. This importance of the

⁴⁷ Achenbach (2000)

⁴⁸ Ende (1973)

present is rooted in Zen Buddhism, with its similar emphasis on the present and rejection of the future and past as non-existent. Although wabi-sabi accepts the past in form of memory, it does not recognise it as a real state of existence. The aspect of transition and passing as manifestations of the present is subsequently the centre of wabi-sabi's understanding of time. The present is not regarded as a fixed state but as a gate in the passage of time. Everything is regarded as being in transition, regardless of material qualities, solidity, abstract values, etc. Good reputation is in transition, as is a stone; a mountain as much as human beings, companies, political and religious systems and so forth: wabi-sabi ignores lasting values such as durability and permanence.

Old, imperfect or decayed objects are valued as much as new things in the world of wabi-sabi. Scars, deformation and visible marks of ageing are considered as improving the value of an object, as they represent a form of visible memory of past events.

The understanding of the relationship of time and object in wabi-sabi is deeply rooted in the observation of nature. It maintains that it is the responsibility of the individual to observe nature with great awareness and to discover for him/herself the secrets of one's environment, as wabi-sabi does not offer a universal teaching or philosophy. Awareness, consciousness and perception are integral aspects of its concept, aspects that it has in common with the philosophy of Achenbach as well as with teachings of spiritual leaders like Jiddu Krishnamurti. To enable the understanding of 'universal' qualities, it requests careful observation of qualities such as form, shape, colour and material, all of which can give evidence of temporal expression, transition and change. Such qualities do not lead to conclusions of practical and economic value but have to be understood as intrinsic values of the object without judgement of any kind. In this sense, wabi-sabi differs from present concepts of time in relation to objects.

The 'modernist' concept of time, on the other hand, is essentially future orientated. It emphasises aspects of new-ness, innovation and values the new more highly than the old, values being commercially and economically determined. A new car, for example, is more valued than a ten-year-old car; a scratch, mark or an accident on a new car diminishes its monetary value instantaneously. There are, however, areas where a wabi-sabi-like value system exists in contemporary society, most obviously in collectors' circles and in art. A classic racecar, for example, increases in value if it contains marks inflicted by famous drivers in the past.

What I have described so far are some aspects of the contemporary understanding of time in our society and the issue of tradition within realist sculpture. The discussion will now turn to the centre point of the thesis, the perception of temporal phenomena and their equivalent in sculpture.

4. Introduction to Gestalt theory

Gestalt theory, or Gestalt psychology, is a central theory within the psychology of sensory perception that developed in the late 19th century as a reaction to the then still widely accepted elementary and atomistic theories of cognition of British empiricists like Locke and Hume. The heart of research was Austria and later Germany and the USA where researchers and scientists such as Wertheimer, Koffka, von Ehrenfels, Mach and Köhler developed a psychological theory that was proven with experiments that provided objective and repeatable results. A holistic approach (as opposed to elementary theories) allows its application to a wide spectrum of disciplines, such as therapy, diagnosis, but also literary, music and visual studies. In the last field and its particular focus on art and design, the writings of Rudolf Arnheim are possibly the most renowned in the English-speaking world.

The core understanding of the theory is that our visual process of perception, as well as all other sensory processes, is essentially *holistic*, integrating the decoding of *semantics* and involving pre-rational *evaluation* (Seyler, 1995, 2003). This means that we perceive complex structures as one unit, introducing the concept of our vision as dealing with *Gestalten*, or con-formation. The term denotes an entity, which exceeds the multitude of the parts or elements it consists of, or, in other words, the whole is more than the sum of its parts (principle of supersummativity). It maintains further that the decoding of meaning (*Bedeutungszifferung*) of such a complex structure is happening as part of the perception process and as such is pre-rational. The complex configuration of a face, for example, is instantly recognized and understood without the need for rational analysis and synthesis of its parts.

Given this, Gestalt theory maintains that the perceptual process is an intrinsic, integral element of cognition, as opposed to the senses being mere information organs for cognition. Perception is selective and as such involves an evaluation process to distinguish important sensory information from a mass of stimuli of lesser importance. A fast moving, brightly coloured parrot, for example, is immediately spotted within the complex patterned visual field of landscape and sky. High speed and bright colour are on top of the inherent visual hierarchy. These basic principles necessarily determine the perception of sculpture. Complex objects are perceived in their entirety, even if assembled from parts or consisting of a multitude of forms. Our vision attempts to extract meaning from a complex sculptural object, a process that allows us to decode artwork, even if aspects are abstracted from the natural image. A portrait drawing, for example, is seen as a face despite the fact that the third dimension, movement and colour, are withdrawn from the image. This process of ‘forceful decoding’ can, however, create problems if a sculptor tries to create truly abstract work, as the beholder inevitably will try to find meaningful patterns in the object. Form is on the bottom of the ‘perceptual hierarchy’, which means that colour and dynamic movement can distract

from *formal* elements such as volume and mass. Photographers subsequently often prefer black and white media to record images of sculpture work.

On the basis of these three essential elements of sensory perception, Gestalt researchers have developed a series of principles of perception that cover and explain a wide range of phenomena and stimuli. These hypotheses have been proven by experiments that produce objective, repeatable and independent results with a wide spectrum of tested subjects. The results demonstrate that our sensory perception shares basic and similar structures and that it clearly follows objective and basic patterns. These patterns are of course culturally differentiated in their specific details, but in their objective character supersede particular cultures. They belong to the human species as a whole. This fact makes Gestalt theory a valuable and versatile tool for criticism and evaluation in an art and design context. It needs to be stressed, however, that it is not a tool for producing good design or art; it can only explain how the beholder perceives work; it cannot replace intuition in the creative process.

5. The sense of time

The intention in this chapter is to analyse sensory perception involved in temporal phenomena with Gestalt theory and to assess in how far this method is able to serve this purpose and whether it can actually be applied to temporal sensations. Sensory stimulation is a necessary pre-condition for the 'presence' of a Gestalt within a perception process, obvious for example when we perceive a melody by hearing sounds that stimulate our auditory organ. In the case of a cloud formation, we see with our eyes that form is created by its substance. But is there such a thing as a temporal sense; is there temporal sensation or stimulation as such? Classical sciences only distinguish between five senses and do not identify a sense or even physical organ for the perception of time. Rudolf Arnheim states in his *'Stricture on Space and Time'* that *"intrinsic time is not perceived, probably because the time dimension possesses no sensory medium of its own"*⁴⁹. In the same essay he quotes Paul Fraise, who, on the contrary, refers explicitly to a 'sensory mode of temporality'. Fraise, professor of experimental psychology at the Sorbonne, deals specifically with the subject of the perception of time in his book *The Psychology of Time*⁵⁰, where he refers to experiments of various researchers in the area. Fraise identifies three categories of reaction to change and time in our environment:

⁴⁹ Arnheim, (1986), p.86

⁵⁰ Fraise (1963)

a) conditioning to change on a very basic biological level. The unconscious reaction of man to periodic changes in the environment, such as diurnal rhythms that control our sleep and wake patterns, for example. On this level many basic relationships of body function and rhythms in our environment are established.

b) perception of change. On this level we find, for example, the conscious perception of simultaneity and succession and the aspect of a psychological present that enables such observation.

c) control over change. The presence of memory and consequently the formation of a concept of past and future.

According to Fraisse any response to time by any form of life fall into one or more of these categories. Response of whatever kind follows perception of stimuli even on the lowest level of the above.

There are certain kinds of stimuli that cannot be assigned to any of the classical sensory categories above, such as spatial sensations⁵¹. These categories are not as distinctive as they seem and the concept of senses is not holistic from the outset but categorised, based on mechanistic or elementary theories. Consequently the adaptation of these categories will present difficulties for the argument. Over recent years, however, theories have been put forward that relate to the evolution of our various senses out of a single, initially undistinguished sense, reacting to basic but undifferentiated stimuli in earlier, primitive forms of life. It can be argued that the holistic character of our sensory perception has evolved from such archaic sensory simplicity, describing a form of sensory rudiment. Such a hypothesis would explain why our sensory perception is not clearly distinguishable, categorised or fragmented, but rather of an ambiguous and synergetic nature. People with sensory disabilities like blindness and deafness compensate their imparity with particular sensitivity of other organs. Very low frequencies, for example, can be felt in the abdominal region as well as being heard, stimulating the tactile as well as the audible organs. Diurnal rhythms, day and night, cannot only be noticed by different light and colour sensations of a visual kind, but also by a difference in audible sensations, such as lower noise levels, as well as feeling the drop of temperature and noticing a different variety of smells. All these perceptions contribute to our differentiation between day and night, which is a complex temporal phenomenon. These perceptions are linked to an inner 'body clock'

⁵¹ Notably, both, space and time, are *a priori* according to Kant, who describes them as concepts rather than percepts.

that relates to the diurnal rhythm, its periodicity for most species, including humans, being between 23-26 hours⁵². Many animals seem to have a clear sense of time that determines their life-rhythm and behaviour⁵³. Although sensory perception varies a lot between species, it can be argued that there may be an equivalent temporal sense present in human beings in a less developed or even rudimentary state, a distinctive archetype of a temporal sense that needs to be direct, instantaneous and non-conditioned.

6. Understanding time as a Gestalt

Christian von Ehrenfels realised that Gestalt theory can be extended towards more complex and 'temporal' sensations of the kind that we are dealing with⁵⁴. In his essay 'On Gestalt Qualities', Ehrenfels clearly distinguishes between non-temporal and temporal Gestalt qualities, the difference being that the former are instantly perceivable, and the latter unfold over time. These can be simple, expressing gradual change like darkening at dawn, or complex, like a melody or performance. Ehrenfels regards the sequence of stimuli, the individual tones, as a complex Gestalt quality that is not an object as such but is experience of inner perception.

Can time itself then be a form of Gestalt, as there are temporal Gestalt qualities? A Gestalt of time based on an external sensory stimulus must subscribe to the basic principle of a Gestalt as being constituted of parts, which form a unity. Do these parts of time exist, and if so, what are they? In this context one might refer to Aristotle's *Physics*, where he stated⁵⁵:

"Further, when a divisible thing exists, if it does, either all or some of its parts must exist. But time is a divisible thing of which some has occurred, while some is going to be, and none is. For now is not a part of time, since a part can serve as the measure of the whole, and the whole must be composed of parts, whereas time is not composed of nows."

Sorabji (1983) offers two solutions to Aristotle's problem. One is, that the present has 'length', if seen as an experienced, psychological presence. The other point is that past and future can be regarded as real, as there are proofs of the past's existence, for example in form of fossils, ruins and such like. In a strict mathematical understanding of time, Aristotle is right, but we have to consider more than this one definition of time

⁵² Different researchers, notably Kayser, have found variations within humans. Fraisse (1963).

⁵³ Schischkoff (1991)

⁵⁴ In Smith (1988)

⁵⁵ Sorabji (1983), p. 12

and consequently, a phenomenological or perceptual approach to the problem of time is more appropriate in this particular argument.

Tunner (1984) refers directly to 'SinnGestalten' (meaningful Gestalt) in relation to time and stresses the significance of time within the psychological field⁵⁶, referring further to Lewin (1943). For Tunner this Gestalt seems to be apparent in the *psychological present*, which Whitrow describes as "the most fundamental temporal experience"⁵⁷ (Figure 5). The term does not refer to a mere fractional moment of transition

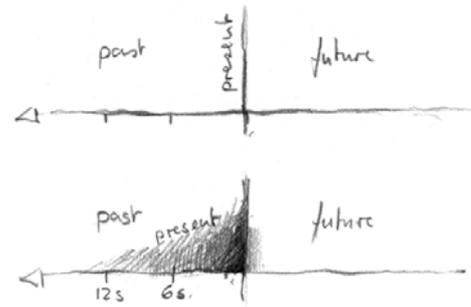


Figure 5: Mathematical and psychological present

between past and future (the 'mathematical present') but to a period of time that extends into the past; in other words, events that we have perceived in the immediate past still exist in the present. When reading the end of a sentence, we perceive the beginning of it as still contained in the present, a memory process that is of absolute importance for its understanding. The concept of the psychological present was developed by E. R. Clay in 1882, who initially used the term *specious present* in order to distinguish it from true, mathematical present, which can be defined as the knife-edge borderline between past and future. Clay was followed by William James, who argued that this extended present is based on overlapping stimuli in our nerve system that gradually fade away⁵⁸, an idea that is present in Husserl's theory of inner time consciousness. The duration of this psychological present is variable and depends on several factors, such as attention, expectation and memory. This varying duration can be described with the example of clock hands: we are able to notice the movement of the second hand but not the movement of the other hands (minute and hour) in the same perceptual field. Bertrand Russell referred to the example of a falling star where we read its different locations as a movement from A to B within one mental present.

Husserl (1928) does not explicitly refer to the 'psychological present', but stresses the importance of *Ablaufskontinuität* as the basis of our time consciousness: the retention and continuous termination of a present impression in the past. According to him it is a combination of memory, perception of present sound and also partly expectation that constitute a musical sound. Notably, he uses the term *ZeitGestalt*, time-Gestalt, when he distinguishes clock-time with its empirical data from experienced time and 'phenomenological reality'.

⁵⁶ Tunner (1984), p. 112

⁵⁷ Ibid, p. 77

⁵⁸ Whitrow (1980), p. 75

The psychological present is closely related to our concept of the past. As soon as we consciously distance ourselves from a perceived event, it is retained in memory. Only when we are directly and actively involved in the observation of the event, do we regard it as present: its duration is experienced as psychological present or *temps vécu* as Bergson named it. Familiarity is a major factor for the perception of pastness within our memory in this context. The phenomenon of *déjà vu* is understood as a confusion of our psychological present and past experience, memory, which causes a familiarity with the presently perceived event.

Memory and our concept of the past are inseparable: we memorise events and objects of the past, which have literally *passed by* with the flow of time. Scientists differentiate between a long term and a short-term memory, the latter being relevant to the above-described extended present, but also for the concept of pastness, which is subjective. A long past family celebration, for example, only exists in the memory of individual family members in slightly different forms. Together with the event, the spatial constellation of people, objects and environment is irreversibly gone, too. Even though we are able to recall such an event from our memory, the particular spatial relationships have been transformed onto a different level of consciousness: our image of the event has become subjective and less detailed. But our memory image does not only differ in spatial details: our understanding of temporal relationships seems more confused, too. Our memories consist of a series of blurred 'stills', which clearly differentiate them from the temporal relationships that we perceived when the event was present (*durée*). The temporal constellation of events -a temporal Gestalt- of the psychological present differs to a great extent from a past constellation in our memory. The distinctly successive nature of events in the present forms a Gestalt that simply cannot be recalled from memory.

Tunmer (1984) defines the term perception in relation to time by stating that: "*perception is the direct reaction to a present stimulus*"⁵⁹, pointing out that a Gestalt is only present within a very brief period of time, i.e. the psychological present. If these periods extend in time, the Gestalt disintegrates. Fraisse (1967) gives the example of a musical melody whose Gestalt relies on the intervals between the individual sounds. If these intervals are extended in excess of the duration of the psychological present, the Gestalt, or melody, breaks up. According to Fraisse, this 'limit of Gestalt disintegration' (*Grenze des Gestaltzerfalls*) is ranged between 1.5-2 seconds. It appears that this limit is identical with the psychological present, which is indeed a period in which a Gestalt is sensorily perceived. Researchers refer to varying periods between 0.5 up to 12 seconds for the psychological present, depending on the conditions of the experiments

⁵⁹ Tunmer (1984), p. 113

(Boring, 1963, Block, 1979 and Dorsch, 1976). Most scientists, however, assume 6-12 seconds as a realistic figure.

This discussion on psychological and phenomenological basis of time perception is relevant for the understanding of temporality in sculpture. This will become clear in the following sections.

7. Gestalt and wholeness in wabi-sabi

Gestalt theory is a psychological discipline that deals explicitly with sensory perception but does not supply a metaphysical or spiritual basis. Wabi-sabi on the other hand is an aesthetic system that offers a holistic spiritual and philosophical approach. A comparison of the two seems difficult, but they do have several aspects in common. Both 'theories' are strongly based on sensory perception and consciousness, whether it be visual, tactile or audible. Wholeness is an essential characteristic of Gestalt phenomena, as it is of wabi-sabi. Being a comprehensive aesthetic system, the latter integrates individual observations into a whole, by creating references between universal 'values' and the individual object: it never separates the individual from the 'greater picture', the universe.

Wabi-sabi reflects semantic qualities in so far that any observation has its value and meaning and that nothing is pure accident. A flaw or scratch on the glazing of a pot, for example, is valued as a manifestation of the object's history and is meant to be perceived as such. A repair of a broken object is not disguised but carefully emphasised to make it obvious to the beholder. For this reason, tea masters used to rub gold dust into the mended crack of a teapot.

The role that evaluation plays in the perception process is a fundamental difference between Gestalt and wabi-sabi. It is an important aspect of the perception process in the understanding of Gestalt psychologists who maintain that any visual stimulus is instantaneously evaluated by our visual system for its relevance. A fast moving object is identified immediately for its possible danger, to refer to an earlier example. In the 'world' of wabi-sabi there is no such hierarchy of importance and values as all objects share the same fate of evolution, transition and passing. Beauty is an intrinsic element of ugliness and greatness can be found in unimportant detail. It rejects material hierarchy, which is similarly unimportant to the visual process understood by Gestalt theory. Material values, determined by rarity and durability are economic considerations that are of lesser relevance to our perception than surface qualities or colour for our perception.

CHAPTER TWO:
THE PERCEPTION OF TEMPORAL PHENOMENA
AND THEIR EXPRESSION IN SCULPTURE

1. Overview

This chapter forms the core of the argument, drawing together findings from studio practice, examples from art history, observation from nature as well as their subsequent Gestalt analysis. These will be applied to a series of natural and temporal phenomena that have particular relevance for the temporal expression in sculpture. The main analytical tool, Gestalt theory, will be briefly introduced first; a more concise explanation is enclosed as an appendix, including its history and some basic principles.

2. Application of Gestalt theory to temporal phenomena

The following analysis of temporal phenomena is based on the understanding that time and temporality rely on sensory perception and as such can be explained by a psychological theory, in this case Gestalt theory. In the previous section I have discussed the issue of a temporal sense, the existence of which has been assumed by some researchers, but denied by other writers in the field. This discussion is of particular relevance for the thesis, as the argument will predominantly focus on the role of sensory perception for our understanding of time. It is understood here that our temporal consciousness is based on information acquired by our visual, acoustic and tactile senses. Events are set in the matrix of space and time and are perceived with our senses. Their presence enables judgement about space, the distance of two moving objects for example, but also about time. Without seeing lightning and hearing the ensuing thunder however many seconds later, we would not be able to gain understanding of the 'temporal space', duration, separating the two. The recollection, through memory, of past seasons gives us an understanding of time that has passed. The concept of seasons is largely based on sensory information, such as changes in temperature, colour and form of trees, light levels, etc.

The investigation is concerned with the observation of temporal phenomena in nature and their expression in and relation to sculpture. As a practicing sculptor I am primarily interested in the relationship of form, material and time in the plastic arts. *'Kunst ist der Niederschlag ihrer Zeit'* - Art is the sediment of its time - was one of the first definitions⁶⁰ of art that I encountered in my studies. Despite its simplicity this brief statement gives valuable insight into the temporal nature of art. Any work of art

⁶⁰ Fr. Jahn, sculptor and art teacher

contains an understanding of the world and life of the era in which it was created, expressed through the artist in his or her lifetime. If this statement holds true for issues of political, philosophical, religious and scientific understanding, does art not also reflect society's concept of time?

Symbolic and allegorical representations of temporal objects and subjects are examples in the history of art. The interpretation of *vanitas* paintings of the 17th and 18th century, for example, is enabled by understanding the symbolic connotations of the objects: symbols, in this case, are agreed signifiers of time. I will not address such symbolic issues but will rather focus on the intrinsic aspects of time in a work of art. Unlike symbols, allegories and metaphors, these aspects are not culturally conditioned, but are part of the cognitive process. It is understood here that such aspects of temporality in art have parallels in life. This parallel link is the basis of the following investigation, where Gestalt theory will fulfil the role of a mediator or interpreter of a series of temporal phenomena.

The analysis of each temporal phenomenon includes of the following elements:

- a) Nature of the phenomenon and description of its natural occurrence. A phenomenon (*Erscheinung*) is understood here in the wider sense of the appearance of an underlying but not necessarily identifiable reason, or a subjective and unquantifiable sensation. Archaic examples of a very general kind are examined alongside more specific ones. The selection of phenomena does not claim to be complete and is based on the observation of my own environment, but occasionally includes literary and cinematic references. All phenomena have, however, been chosen on the grounds of their significance for sculpture.
- b) Analysis through applying Gestalt principles and concepts outlined in the literature review. This stage includes the application of principles that are used to describe spatial-visual phenomena (*räumlich-anschauliche Phänomene*) or attempts the development of specific temporal Gestalt principles from these. It also includes an analysis of the senses that are involved, the kind of stimulus and questions of structure, composition and consistence (Ehrenfels *Qualitäten*).
- c) Identification of equivalent expression, presence or manifestation in the medium of sculpture and subsequent analysis. I examine how far temporal phenomena in life have been translated into or are intrinsic in sculptural language, and how far these differ from life. This analysis again involves the application of Gestalt theory and there will be a selection of examples from art history. Findings and solutions from my own studio practice are presented here.

2.1. Accelerated and retarded experience of duration

Description of the phenomenon

The phenomenon described in this section reveals the influence of the amount of visual stimuli as well as the observer's state of mind on temporal consciousness. These are relevant factors for compositional issues in sculpture and their impact on the beholder.

Being at sea, whether in a small rowing boat, a sailing yacht or even a ferry, offers us a unique visual and temporal experience. Watersport activities are regarded by many as an ideal pastime for forgetting the rush and pressure of everyday life, an opportunity to 'switch off'. Other people, however, rely on the sea as the source of their income and as such the sea forms their daily work environment. Whatever reason or incentive, all these people share similar sensations concerning the passing of time at sea: confusion about time passed, often experienced as 'slowing down', leading to the underestimation of time spent at sea in comparison to clock time.



Figure 6: Burke; *Sea and Sky*, 2002

During regular rowing and occasional sailing trips, I have experienced such sensations myself. A kind of confusion seems apparent over the time that has passed during a journey. If watches or clocks are not consulted during the voyage, this duration is generally underestimated on return. One hour's row between two headlands about 2-3 miles apart can appear to last half that time. Time often appears to pass at a much slower rate in comparison to measured time or an observer's estimation on land. Experienced sailors tend to embark earlier on a journey in order to counteract their under-estimation of time experienced on previous journeys. On a sailing cruise of several days duration, similar sensations can be observed over a longer time scale.⁶¹

Experiences of such mis-judgement of time are evident in literature of different ages. In Irish literature, the mythological journeys, *imramai*, are a splendid example. These journeys are undertaken voluntarily in rowed skin-boats, not unlike the currachs that are still used on the West coast of Ireland today. The narrative of most of these legends is similarly simple: the protagonist is lured, chooses companions and sets out to sea. After

⁶¹ The information was acquired in talks with a number of sailors, who all recalled the same experience. There is scope, however, for an empirical study of this phenomenon.

several adventures, the party finds a promised land, stays a while and, overcome by homesickness, sets back to the native country. In the Voyage of Bran, *Imram Brain Mic Febail*, for example, the protagonist and his mates follow a challenging lure in form of a beautiful woman. They find, after various adventures, an island that offers them splendour of food, sexual delight and eternal life: the happy otherworld. After a certain period of time, however, some of Bran's companions get homesick and, with the reluctance of the island's inhabitants, they decide to return to their Irish homeland. On their return they find the land changed and realise that not months have passed since their departure, but years and generations. As a metaphorical expression of this, one member of crew steps on land and turns immediately to dust⁶².

Many voyage tales follow a similar pattern: the *Epic of Gilgamesh*, Maelduin's voyage, the *Navigatio Sancti Brendani Abbatis*, Homer's *Odyssey* and contemporary texts, such as Paolo Coelho's *The Alchemist*. Even many *Bildungsromane*, J.W. Goethe's *Wilhelm Meisters Lehrjahre* for example, follow this internal structure.

I argue that such stories reflect the significant difference in temporal judgements of the voyagers and those they have left behind at home. Kuno Meyer remarks on the time experience by Maelduin in his commentary on the *Imram Brain* that:

*"Maelduin and his men stay three months, and it seemed to them that those three months were three years."*⁶³

The experience described here refers to their stay on land that appears longer in comparison to their time at sea, which the protagonists are more familiar with. As such, this example shows a discrepancy of or confusion over the time spent in different environments. Even though this discrepancy may be exaggerated, we can assume that it is either based on a comparison of observations of those at sea and independent observers on land, or on different estimates of the travellers themselves.

In the 6th century, when the story of the *Voyage of Bran* has its origin, no means of precise time measurement at sea like chronometers were available to the seafarer⁶⁴. Neither could he precisely determine the time of the year by observing distinct recurring seasonal events or solstices. We also need to consider that when these stories emerged, time was not conceived of as linear and homogenous, but cyclic and heterogeneous. For the mariner, the confused time sensation, the magical lapse of time, was to do with the nature of the mythical island itself.

⁶² I have applied this temporal/spatial organisation to the submission for The Hurst sculpture competition (see enclosed CD-ROM).

⁶³ Meyer (1895), p. 164/165

⁶⁴ The story evolved as part of the oral tradition before being written down in the form of a manuscript in the thirteenth century. As it exists now it has been assembled from several manuscript fragments, dating from 13th to the 16th century.

The influence of events on our perception of time is of a psychological nature and even the advent of precise measuring devices have hardly changed this sensation. Sailors describe similar experiences in modern times. Tim Severin re-created the voyage of St. Brendan⁶⁵ in a small hide-covered boat in 1976/77, in order to demonstrate that a journey across the Atlantic, as described in the *Navigatio Sancti Brendani Abbatis*, would have been possible in such a craft. While the original voyage supposedly took at least seven seasons, Severin and his crew managed the distance in two summers. In his book *The Brendan Voyage*, Severin describes life at sea with its change from quiet, uneventful periods that are interrupted only by the routine of changing watches and occasional manoeuvres, to eventful and busy moments, such as storms, whale sightings or landfalls. Several times he points out the effect of these events on the crew's perception of time:

*"On the whole, there was little idle conversation among the crew. Like dry clothing, we tended to dole out our thoughts and our comments little by little, knowing that there was much empty time ahead. One side effect, George noticed, was how our conversations actually slowed down. George was using a tape recorder to make a soundtrack for a film about the voyage, and when he played back the day's recording he found it was very frustrating. One person would ask a question. There would be a long pause; and then the reply would come back. [...] Each man reacted in his own way to events, and his experience did not necessarily mix with the ideas of his companions. Nowhere was this more true than on watch. Then the helmsman was often the only man to see the distant single spout of a whale, the sudden jump of a dolphin, or a changing pattern in the sky. Some incidents passed in a flash before there was time to rouse the other crew members-others happened so slowly and gently that they were only perceptible to a man obliged to wait by the helm for two hours at a stretch."*⁶⁶

Another modern account of the underestimation of time at sea in the wake of advanced technology was expressed in the film drama *'Das Boot'* (1981), a German TV production based on the original account of a wartime correspondent in a submarine. Although available as an edited 150 minutes cinema version, the original production is an exhausting five hours in length. The director Wolfgang Petersen reflected on the correspondent's description of the slow passing of time on board by visual means in the medium of film.

The occurrence of this phenomenon appears to be restricted to certain spatial situations, being particularly obvious at sea. The literary and film examples that I have chosen span several centuries but their significantly different understandings of time do

⁶⁵ St Brendan refers to several mis-judgements of time in the *Navigatio*, for example that he and his monks repeated the same leg of the journey for seven years. Such statements, however, need to be treated with caution, due to the symbolism in the numbers used.

⁶⁶ Severin (1978), p. 208

not affect the experiences and observations, which are surprisingly similar. Therefore it is unlikely that this phenomenon is culturally conditioned, but of a sensory/perceptual nature.

Analysis of the phenomenon

The important role that space seems to play in this temporal phenomenon leads to the conclusion that the most significant sense involved here is vision. Auditive sensations and smell need to be taken into account to a certain degree, too. Bergson distinguishes between spatial and temporal perception and, referring to his *durée*, points out that this real, qualitative time is independent of quantitative spatial perception⁶⁷. This understanding, however, has resulted in criticism by writers like Bertram Russell and William James. The latter refers to the importance of intentionality, a key principle of object theory⁶⁸ in phenomenology: there is no duration without something that endures⁶⁹. It appears that the present example supports this criticism of Bergson's theory in the respect that there is a definite influence of space and visual events on the described phenomenon. The events that contribute to the perception of time appear at first sight to be quantifiable in space and due to the long intervals between them; they cannot have a significant over-all Gestalt within the psychological present. The intervals, however, are crucial for the experience of time in this phenomenon. Even though the intervals between events at sea appear to be 'event-less', they nevertheless represent a form of duration in themselves, as well as having a subject that endures them, i.e. the seafarer. The duration of the interval itself is indeed not quantifiable at all, due to a lack of significant events of successive nature. Furthermore do these intervals not display any Gestalt characteristics or Gestalt qualities as a result of this absence? These event-less intervals give the seafarer no significant external, sensory stimuli on which to base his/her judgement of time: s/he relies completely on inner time perception (*durée*). I argue that this absence of reference points, and subsequently the reliance on one's own inner time perception contributes significantly to the confused judgement of time in the described examples.

Other, less striking visual stimuli confuse this judgement even further as with the absence of significant events, visual-spatial sensations become crucial in this case. The wide open space of the sea and its distant horizon provides an extensive visual field. The events taking place in this field are few and far between. Successive and simultaneous events are relevant factors that enable an estimate of time to be made.

⁶⁷ Bergson (1910)

⁶⁸ Object theorists, like William James and Alexius Meinong, maintain that there is always an object involved in a sensory act, even if it is non-existent. A memory or thought is even defined as an object, as existence is not regarded as essential for objects.

⁶⁹ Pearce (1991)

More or less unconsciously, we often estimate the duration of an action by comparing it with familiar previous action. This process is difficult, near impossible at sea as a result of the lack of comparative visual and audible events of clearly distinguishable nature. There are periods of low intensity sensory stimuli: sky and sea form are apparently endless and uniform entities (Figure 6), the sounds of water and wind are continuous. These periods display a low intensity of perceptual forces.

The relevance of experienced stimuli on our time consciousness, affecting our experience of duration, has been analysed by Keller; Pochat (1996) asserts:

“Intensified retention through a great amount of experienced [stimuli] or intensified expectation (Protention) in the case of fewer contents (i.e. Increased expectation) leads to the extension of [experienced] time (i.e. intensified memory). Reduction of time happens with weak retention and an abundance of contents (Kurzweil), as well as with reduced expectation and scarce contents (eventless and little expectation).”⁷⁰

According to this assertion, a twofold experience of time at sea is possible, which explains the difference between the first example as well as ‘Bran’s experience’ and the statement on Maelduin. Greater expectation, together with fewer visual stimuli extends our experience of duration at sea, i.e. it appears longer than it really is. Maelduin’s men were looking forward to their adventures and they experienced time as longer than it really was. Less pretension, or focus on the future, together with fewer stimuli appears to shorten time. At sea, enjoyment and focus on the present moment, the now, makes time appear shorter than it really is, i.e. more time has passed than expected. Bran’s men, bound in the present, enjoyed themselves on a small island and did not notice the passing of time.

Tunner (1984), referring to Mach, also stresses the importance of the quantity of perceivable events for our perception of time. He argues that a low frequency of events causes the observer to overestimate the time passed, like in Maelduin’s experience. Yet, Tunner also emphasises the importance of involvement in action over mere perception. This direct involvement of the observer leads him/her to the conclusion that less time has passed than in comparison to measured time. This conclusion also supports the observed phenomenon: the active involvement of the observer in this example is limited in many cases to repetitive or occasional routine action such as rowing or manoeuvres like tacking.

In the course of his essay Tunner refers to another important factor in the perception of temporally simultaneous events: the psychological present. As I have explained above, this can be described as an extended present, involving past and future and is

⁷⁰ Pochat (1996), p. 18

significant for the discussed phenomenon for the following reason. Events at sea are separated by considerably long periods of time (intervals) and are experienced as an interrupted flow of unrelated events, rather than events that are simultaneous. The occurrence of significantly strong sensations, such as sightings, can vary from minutes to days. Rhythmic action, like that involved in rowing, offers too small a unit to make a conscious judgement with; on long cruises, sailing boat manoeuvres are divided by relatively long periods with no events in between. To be experienced as present in a psychological sense events need to occur within a period of a few seconds (between 6 and 12 seconds)⁷¹. Stimuli at sea rarely fall within this time span and it is this low density of stimuli in the present that leads the observer to an under-estimation of the time passed. The relevance of this discussion for sculptural composition will soon become clear.

According to some of the literary accounts referred to above, events seem to stand out from the routine on board, as well as from the uniform environment at sea. The relationship of events and intervals share similar characteristics of visual figure-ground relationships researched by Edgar Rubin in the area of Gestalt theory. Events, periods of dense and intense action, stand out as significant Gestalten from the 'background' of continuous rhythms and routines: they form a temporal figure-ground relationship, so to speak. The continuous awareness of duration provides a field, a background in which significant, but brief events are set. To the beholder such events appear more significant than everyday routines and as such stand out. There are notable similarities to the visual 'fence phenomenon', described by Koffka (1922). In Figure 7, the lines close to each other are perceived as the foreground figure, even though no distinct figure or background is evident.

Rubin remarked "*the ground has more of a substance- and the figure more of a thing-character*"⁷². The same holds for temporal relationships: the events are the 'things', the continuous passing of time the 'substance'.

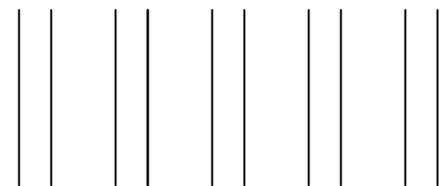


Figure 7: Fence phenomenon

Graphically, the events at sea can be visualised in the same way as the 'fence phenomenon': brief, intense periods separated by wider intervals. Arnheim (1974) maintains that a Gestalt can only be understood in relation to its environment and that the figure appears dynamic in comparison to the calm ground. Without the ground/duration, the figure/event cannot exist, but the event also contributes to the perception of duration, the ground so to speak, and - with reference to visual figure-ground phenomena - concludes that:

⁷¹ Kurt Lewin emphasises the presence of a temporal field (Lewin, 1943 in Tunner, 1984)

⁷² In Koffka (1922)

“We have said that the figure cannot exist without a ground. Can ground exist without the figure? [...] I have tried to prove that it cannot, and that mere ground would be equivalent to no consciousness at all.”⁷³

It appears that the density and distribution of stimuli within the visual field play a significant role in our temporal perception. Amount and clustering of events and objects can shift the experience of time from short to long, from over-estimation to under estimation. This experience is possibly linked to the absence or restriction of perceptual forces in the visual field (Arnheim, 1974). Perceptual forces are relationships, links between objects and/or spaces in our visual field that vary with distance, density and individual qualities. Urban street life (Figure 8) or a walk in a forest, for example, present us with a vast multitude of such forces, relationships between buildings, people, signs, trees etc. These relations have various directions: horizontal, vertical and depth. The latter is perceivable through a range of visual impressions that allow us to judge depth (Seyler, 1995). Furthermore, the same urban environment contains a particular density of visual sensations, carrying a richness of information that can at times be tiring. We perceive a multitude of different objects, static and dynamic, signs that carry coded information, great numbers of forms and shapes. Many of these are of no immediate significance for the observer and our perception is presented with the exhausting task of filtering the important information out of such stimuli.

The experience of the directions and density of visual stimuli in a sea environment is of a completely different character, a difference that, I argue, has important implications for our temporal perception. To start with, there are far fewer graspable objects at sea than on land⁷⁴. Perceptual forces between these objects at sea are generally horizontal and as such linear. Ships and boats are moving horizontally, in a linear fashion and at a steady pace; distant land appears as a strip of colour and shorelines present different layers of waterlines. Few vertical objects such as masts are noticeable. The experience of depth relies on a limited amount of information with the absence or restriction of colour-fading, superposition (overlapping), aerial perspective, diminishing detail, distinction between objects and the softening of their shapes with distance. The absence



Figure 8: Holger Lönze, *Urban Scene in Pistoia*, 1998

⁷³ Ibid

⁷⁴ The stimuli are less *dinghaft*, i.e. touchable, graspable and concrete objects.

of all these usual depth factors is significant for our experience at sea: a wide visual field that presents us with largely horizontal relationships between objects, subsequently providing little or no visual resistance. Visual resistance is a perceptual quality that relies on a dense distribution of vertical objects (a forest is one of the clearest examples) and makes an important contribution to our experience, visually as well as temporally (Kückelhaus, 1985). The distribution of these objects is significant. Rather than having a dense distribution, like in an urban environment (Figure 8), the few objects, such as ships and birds are a great distance apart. Perceptual forces between them are hence weak and they subsequently appear unrelated.

In this last section I have applied Gestalt principles to visual stimuli and examined their contribution to our time perception. I argue that these principles are also directly applicable to similar temporal phenomena. The 'dense' action of an event with simultaneous and successive happenings provides a kind of temporal resistance to our time perception, not unlike the trees in a forest in the visual field. Long periods of rhythmic patterns and repetitive routines can be compared with the equivalent visual example of a walk along a motorway, both lacking significant visual -or temporal- resistance. Perceptual forces are in this context similarly relevant for visual as well as for temporal perception.

The relevance for sculpture

In the section above I have compared the distribution of visual stimuli within the perceptual field of two different environments: urban and maritime, emphasising the difference of directional and depth qualities as well as perceptual forces. Subsequently I related those experiences to our different perception of time in these environments. I argue that such visual qualities are of similar relevance to sculpture and similarly carry temporal connotations. In art, these issues are linked to the composition of the work. The choice of reliefs as examples to illustrate my argument has been made on the grounds that they do not require the beholder to move around the work, unlike free-standing sculpture. One is able to contemplate the work while being static, without the physically active involvement of moving around the work, which would affect the perception of time. Painting and photographic work do not require such movement either but they are less suitable given that the particular focus of the thesis is sculpture. Compare the following works:

a) *The Storm on the Lake of Galilee* by Lorenzo Ghiberti (1378-1455), 1403-24 (Figure 9). The panel is part of the first bronze door (north door) of the baptistery at Florence. The 18'6" door describes scenes from the Old Testament and the individual images, measuring 16"x16", are set within surrounding quatrefoils which have determined the

composition of the plates. This haute-relief image depicts the event where the apostles are in trouble on Lake Galilee, St. Peter holding Jesus' hand, who is walking on the waters of the lake. The two figures determine the right foreground of the image space while the open boat with the other apostles and its sails ruffled, occupies most of the middle ground. No background is visible⁷⁵.



Figure 9: Lorenzo Ghiberti, *Storm on the Lake of Galilee*, 1403-24

b) Giacomo Manzù's (1908-1991) *Crucifixion* of 1942. A single, rectangular bas-relief panel in bronze of about 12"x8½" which is now in the Gualino Collection in Rome. The topic is again a scene from the New Testament and forms part of a series of bas- and haute-reliefs on the crucifixion theme that Manzù worked on between 1939 and 1951⁷⁶. The composition is surprisingly simple: the panel is divided vertically almost in the middle by the post of the cross, separating a naked Christ hanging with one arm on the cross to the left and a soldier, wearing a loin cloth and a twentieth century combat helmet, to the right. Despite a slight offset on the ground line no depth signifiers are obvious, establishing only a close fore- and middle ground relation. No horizon-line or background is used.

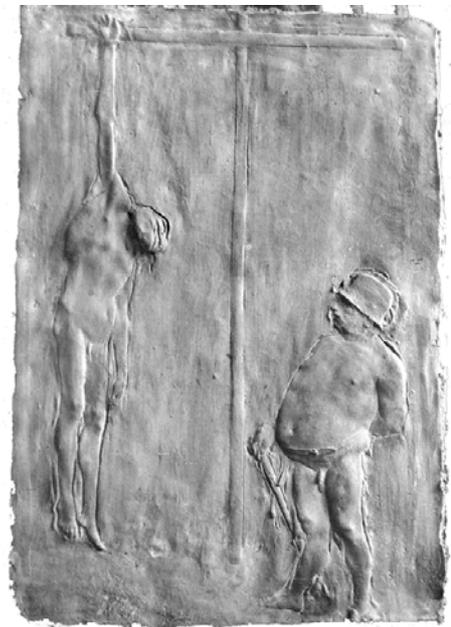


Figure 10: Giacomo Manzù, *Crucifixion*, 1942

c) Holger C. Lönze, *Night Moves* of 1998 (Figure 11). A relief triptych in bronze (6"x16"), which is divided in three sections of different size⁷⁷. This bas-relief is based on a life study on a wax panel executed during a residency at the Centro del Arte Verocchio in Casole d'Elsa in Tuscany the same year. The three panels depict a full reclining female nude in frontal view. The image shows two slightly varied poses, with

⁷⁵ The description follows the traditional partition of relief work in fore-, middle-, and background. The overlapping of the image parts and subsequent covering of more distant items determine this compositional division. Work may use all or only some of these layers.

⁷⁶ This time period appears rather long considering relatively similar work on a very specific topic within a sculptor's oeuvre. It should be noted, however, that Manzù virtually stopped working between 1943 and 1951 and that the series culminated in the execution of the bronze doors for St. Peter in Rome.

⁷⁷ The panel was initially divided for convenience of transport from Italy to Ireland, but I decided to retain the division with slight alterations to the proportions.

the left leg stretched out, as well as being drawn towards the body. There is no distinction of the different ground levels.



Figure 11: Holger Lönze, Night Moves, 1998

Comparing these three reliefs with a view to examining their temporal issues, I will first consider their compositional structure. The image structure

of my own work is simple, consisting only of the horizontal positioning of the reclining figure within the pictorial space. No spatial organisation in the third dimension is evident and no further objects or figures occupy the space. The image appears instantly graspable and requires very little effort and time from the observer. Yet, judging from feedback from various onlookers, the difference between the two poses only becomes evident after a certain time of looking at the work - it appears that details of even simple compositional organisation may not be instantly graspable. This observation seems to contradict the assumption of Gestalt researchers of instantaneous understanding of a visual stimulus. First of all, we need to bear in mind, however, that the given example differs from real-life experience in so far that it displays stages of a movement that is extended in time. It is an abstraction that cannot be instantly understood by our vision, but probably needs 'intellectual' analysis. Secondly, it needs to be considered that the particular nature of a bronze relief presents an abstraction and confusion of the image depicted that can make it more difficult to identify all details of the subject.

Manzù's composition is more complex, involving more objects and figures in the compositional space, building a distinct relationship between them by using area, pictorial connections and positioning. The geometrically crisp presentation of post and beam of the cross serve the double function of dividing space as well as contributing to the subject matter. There is an invisible link between the figures, not only achieved by their line of sight but also by the angle of the soldier's sword. This line, together with the position of the soldier's torso, is a strong diagonal force in a composition that is otherwise largely dominated by verticals - the post as well as arm and body of Christ. Such perceptual forces establish a rich and complex pattern of relationships even in a relatively simple composition such as in this work. In order to understand this complexity of relationships fully, the observer requires time. Despite its simplicity, the work holds the beholder's attention and excitement and the time spent in front of the work appears brief, even though the time needed to understand the structure in its entirety is considerably longer than in the previous example.

The third example, Lorenzo Ghiberti's *Storm on the Lake of Galilee* is an example of a more complicated kind. The image is rich in objects and figures as well as in 'action'. Two of these are evident: a discussion amongst the apostles in the boat and the contact between St. Peter and the figure of Christ on the water. These scenes do not stand as single events but are connected through a multitude of compositional aids, such as positioning and distribution of masses, visible and invisible lines as well as size (Figure 12). Despite the number of apostles, and the area they occupy, the visual balance is shifted to the right, to the figure of Christ. The majority of curved lines (gunwale of the boat, folds in the drapery and the broken staysail or halyard of the lug sail) and straight lines (yard, some tack-lines) also meet at this point. A complex of voids with the darkest areas of the haute-relief forms a semi-circular group. All of these are read in the usual manner, towards the right (Seyler, 1995). Invisible diagonals support the subject matter compositionally. The yard of the mast is read as slanting downwards as are many other lines in the boat image, evoking negative feelings, while lines around the figure of Christ are all rising lines. These include not only the rope that two of the apostles are pulling, but also the line formed by the body and arm of St. Peter and the right arm of Christ, as well as the line of sight between the two. Ghiberti organised all the compositional elements that are perceived as positive around the forthcoming rescue in the form of Christ. In order to unfold this multitude of relationships to its full extent, the beholder needs a substantial amount of time; the compositional organisation cannot be understood instantly. Ghiberti manages to hold the experiencer's attention for a long time and as such evokes a sense of duration in relation with the subject.

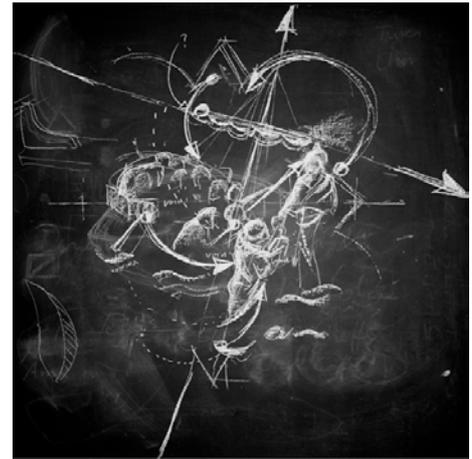


Figure 12: Composition of Ghiberti

The amount of actions in the panel and their compositional distribution in the form of concentration and relaxation within the pictorial space are similar to the distribution of events and objects in the visual field at sea. Ghiberti's example can, to a certain extent, be compared to the mass of visual impacts in an urban environment, the other examples, simpler in composition and amount of visual elements are comparable to visual stimuli at sea. The beholder of *The Storm on the Lake* is indeed kept busy with the deciphering of all the relationships in the work, without getting bored⁷⁸. The

⁷⁸ The experience is *kurzweilig*, i.e. time appears short.

experience of time is different to that of contemplating any of the other reliefs, where the observer will need less time to understand the image, but not to contemplate it, which can occupy more time. The understanding of meaning is a collaborative intellectual and intuitive process. The decoding of visual information is part of the perceptual process, but its literary links need to be established rationally. The latter is related to the beholder's experience and his/her knowledge of the subject matter can shorten the process of unfolding the narrative of a work of art. Contemplation, on the other hand, can be seen as an intuitive process of the beholder, inseparably linked to perception. It exceeds the process of understanding the inherent subject matter in so far that more refined relationships of the visual elements of the work can be established by means of visual thinking. Different to understanding a work of art, contemplation also evokes feelings and can trigger recollection of memory.

The time needed by the beholder to decipher pictorial information increases with the complexity of the image: the more information is given by the artist, the longer the beholder needs to comprehend it. However, the beholder experiences time as reduced, due to weak retention and a great amount of contents, to use Keller's definition. The sculptor has at his hands a range of means to help the experiencer handle the amount of visual information, such as clear composition, order, emphasising of form etc. The medium of the relief facilitates the inclusion of these means, allowing the sculptor to follow a clear sequential narrative. Very complex sculptural relief pieces are possible in this way, such as Jürgen Weber's (b. 1936) bronze relief *Krieg oder Frieden*, 1965/71 (Figure 13).



Figure 13: Jürgen Weber, *Krieg oder Frieden*, 1965/71

2.2. Simultaneity and succession in form and volume

Occurrence of phenomenon in nature and analysis

In our everyday life, as in nature itself, we are surrounded by a multitude of forms and volumes. In general, it can be said that these are properties of isolated objects, that themselves occur individually. A desk may hold a lamp, pencils, a computer, and a vase. The objects exist on their own, but have some sort of relationship with each other that can be determined for example by matching colours, style, function or position. Their forms also establish relationships, as there is a multitude of direction factors, perceptual forces, as well as expression of form and contrast of volumes. Forms and volumes are also connected by distance, the closer they are, the stronger their relationship. What these individual objects and their forms and volumes do not do is interlock or penetrate each other. They cannot become physically one object; they will always maintain their formal and material integrity under normal conditions.

There are some instances, though, where such integrity of form may be weaker or less clear, usually when a substance or object of greater solidity is contained in one of lesser solidity. This is indeed a common case as all objects are present in their surrounding air. But due to the ethereal and transparent nature of air and its almost complete absence of sensory stimulation (with the possible exception of smell and temperature) it has no significant perceptual integrity, i.e. is not noticed as a continuous sensory stimulus. A rock in water, however, is a different case (Figure 14). Both substances are visually and tactilely perceivable, and one, the rock, is clearly surrounded by the other, the water. Parts of the rock are exposed and we assume the continuation of its mass under the surface of the water. This assumption is often supported by the fact that the water level rises and falls, whether with the tides or a short-term swell of the sea. In any case the water tightly embraces the form of the rock. The colour of the rock affects the appearance of the water through reflection and partial visibility and, vice versa, the water adds a lustrous surface to the rock and darkens its appearance. This has the effect that the two seem to form an even more uniform mass. In terms of the earlier definition of volume, they are one. Clearly, however, from the material side, they are not one and neither are their qualities.

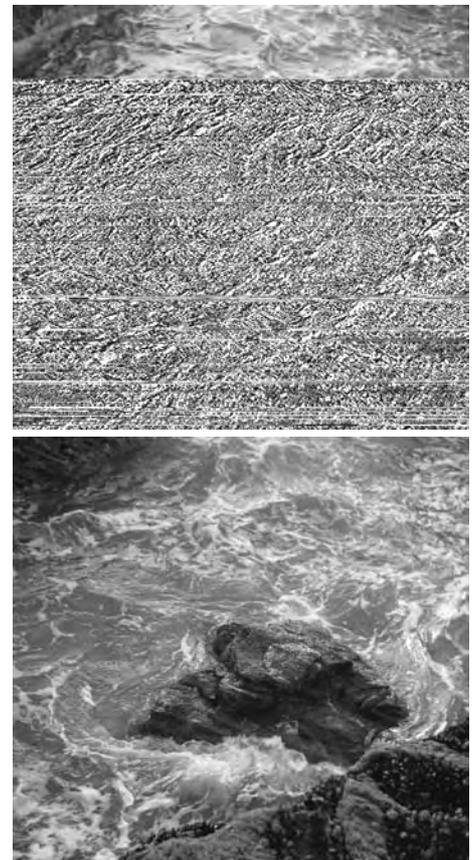


Figure 14: Anne Burke; Rock & Water, 2002

The continuous rhythmic change of the waterlevel of a swell around the rock exposes and submerges the form of the latter. In relation to our perception this means that the rock's appearance is constantly changing from visible to invisible. The frequency of wave action is likely to fall within the accepted period of 6 - 12 seconds for the psychological present and subsequently immersion and exposure of the rock by the sea are understood as related and successive changes of one single event. The process is perceived as movement and has a clear temporal Gestalt. Tidal action on the other hand with a six-hour periodicity falls well outside our psychological present. As a consequence, such tidal exposure of a rock and its complete immersion do not appear directly related to each other for an observer: they are not observed as movement but as static stages. The observer relies on other visual hints (such as tidal lines or growth) to establish a relation between the water and the rock and subsequently principles of causality become a stronger issue⁷⁹. In terms of figure-ground relationships, the rock appears to dominate as the figure with its distinct Gestalt and contrasts, but also its permanence, while the surrounding water with its ubiquitous presence and only slight variations in colour and contrast remains the background.

A different occurrence of simultaneity in form appears where individual objects are contained in a larger one, such as organs in the human body. They are, however, to a large extent not visible in this case as they are inside the body, while the visible ones (eyes, mouth, nose) form parts of a Gestalt and are seen as parts thereof (i.e. the face) and not as individual objects.

Significance for sculpture

The phenomenon described in this section is a crucial element of the temporal nature of sculpture in terms of image and context. Although there is necessarily a relation to the way we perceive events in nature and life as either successive or simultaneous, it will become obvious that sculpture has at its disposal a variety of ways in which it can - and has to- express this temporal information differently. It will also become clear that these possibilities are rather unique to sculpture within the realm of art due to two particular qualities of the medium: its form and material.

First I would like to clarify some of the sculptural terms that are used in this context: *form, space, volume* and *mass*.

a) *Form* is, in simple terms, the external three-dimensional occurrence of an object that is perceived through our sensory perception, particularly the visual and tactile senses.

⁷⁹Albert Michotte and the Louvain school of Gestalt theory focused particularly on the aspect of causality in our perception.

Although form and shape are often used synonymously, the former differs from the perception of shape, e.g. in painting, in so far that it involves depth beside vertical and horizontal extension. The majority of principles of depth perception (Seyler, 1995) are only relevant to large scale space perception, e.g. of a landscape, and do not apply to sculpture in the context of the discussion. Therefore we can exclude the following:

- atmospheric perspective,
- diminishing detail,
- contrast,
- colour brightness,
- size difference.

This leaves overlapping of form, motion parallax and stereometry as the only relevant factors. Indeed, the last two come into their own at short and medium distance, as the angles between the object and the eyes are increased in these cases (Figure 15). Subsequently the angles – as well as the difference between the images – increase and the images change faster by moving around an image at close distance. The importance of the depth extension for sculpture will be explored further in the section on surface texture

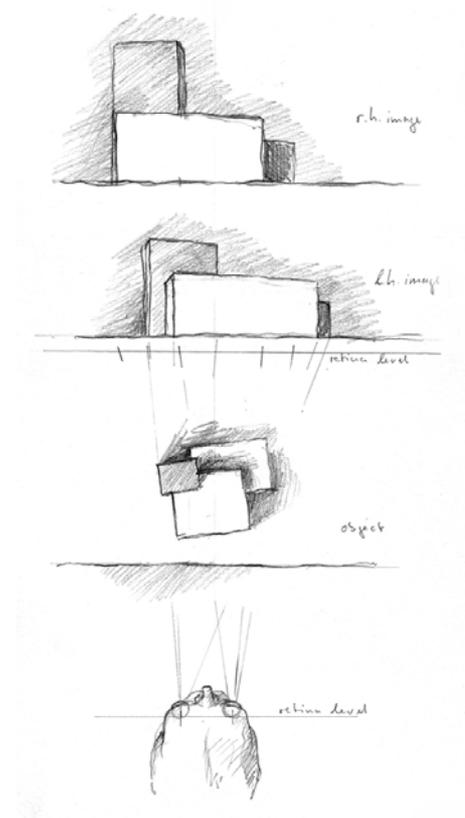


Figure 15: Stereoscopy

b) *Space* is understood here in the sense of *Luftraum*, aerial space, that encloses the form of a sculpture which itself has displaced space. Henry Moore once explained the term by demonstrating that one's hand appears differently when holding an apple to holding a pear⁸⁰.

c) *Volume* is here defined as the three dimensional extension of an object or parts of it. It is not equivalent to the scientific definition of matter, i.e. air, in most cases, displaced by an object and as such quantifiable and measurable. In artistic terms, and in sculpture in particular, volume is a qualitative aspect of the work. Parts of a sculpture are referred to as volumes when they obtain integrity within the work. They are important elements as the relationship of volumes defines the composition. Volume is the essence of sculpture for the Italian realist Arturo Martini: “*The sense of the plastic creates volume;*

⁸⁰ Unknown source

volume in expressing itself becomes a shape; the shape takes the shape of another shape. That should be the language of sculpture"⁸¹.

d) *Mass*, in this visual context is directly related to volume, once again different to the common quantitative definition. It incorporates the visual effect of perceptual and compositional forces that act on the form. The concept of gravity can alter the perception of a volume, not by physical action like pressure, but visually.

These distinctions have led to the definition of 'sculpture' in this thesis as objects that contain form, space, volume and mass and whose temporal nature is essentially simultaneous. It is distinctly different to time-based art that has been briefly mentioned in the introduction. The media of performance art and video are in their temporal nature closely related to film, literature and music in so far that they use 'real time'. In both media, the unfolding of the message or image is linear and essentially sequential, a stream in time so to say, and the time required by the beholder to perceive the work is determined by the work itself. To use Sauvage's terms, T_2 is equivalent to T_3 in this case. Both represent temporal succession of events in a sequential order, events unfolding after one another, while in traditional sculptural media, they unfold beside each other and T_2 as well as T_3 is open to the choice of the beholder. This will become clear in this section.

Although video is occasionally classified by the term 'lens based sculpture', it does not display any of the essential object qualities of sculpture that have been described in the previous section. This medium can represent three-dimensional information of form, space, volume or mass as a dynamic two-dimensional image, but it enforces the duration of their representation on the beholder. The camera can surround a virtual/real object in full, but the person experiencing the image cannot interact. The sensory experience of video is limited to visual and auditory senses, cutting out smell and the feeling of space, which is important for the experience of architecture and large-scale sculpture. Neither does it offer the sculptor or beholder a tactile experience in the way that traditional sculpture media do, as we will see in a later section.

'Performance art' is different in so far as it can express form, space, volume and mass in a way similar to natural and artificial objects, including sculpture. The important distinction, however, is its temporal nature. The work is generally sequential and the beholder's time is determined and restricted by its duration. Arnheim concludes:

"In the arts, the timeless media such as painting, sculpture, or architecture can be thought of as the human mind's refuge from the Heraclitic flow of events, by

⁸¹ Martini (1945)

which things located at different moments of time are, in the strictest sense, unrelatable. The artist may synthesize in a single image aspects of a story remote from one another in time and thereby make their relation directly visible."⁸²

The synthesis of successive events in a single image is the essential problem in this section and I will take the relief examples of the previous chapter as a starting point for its discussion. In two of these reliefs, Manzù's and my own (Figures 10 and 12), we are dealing with 'simple' narratives. The events, if at all present, unfold in the depicted moment. A woman sleeping, a soldier looking at the dead body of Christ. There are, inevitably, hints to past and future that are not linked to perception but to knowledge. We know the story of Christ and the events leading to his death and the subsequent resurrection. We also know that the woman must have laid down to get into the present reclining position and acknowledging tension in the muscles, even though asleep, we understand that she is indeed sleeping, rather than dead and will subsequently wake up and rise again. Yet, these aspects of time, previous and forthcoming events, are necessarily based on acquired knowledge or understanding and are often conditioned.

Ghiberti, on the other hand, not only uses the beholder's knowledge of the circumstances that are leading up to the event in this biblical scene - and the known rescue -, but actually introduces a second time-level. The boat with the apostles is struggling in the storm and at the same depicted moment, the rescue is already happening. A second time-level is compositionally used as a narrative aid. What he expresses through the sculptural medium is the simultaneity of a successive course of events: an impossibility, even contradiction in real life⁸³. This representation of succession as simultaneity in the pictorial space is a recognised probability for the visual artist. Rudolf Arnheim points out that:

*"Painting and Sculpture are manifestations of the contemplative attitude. They show the world of action transformed into simultaneity."*⁸⁴

He argues that this transformation is only possible by transferring the temporal and as such intuitive sequence of live events into a spatial, measurable relationship. With this explanation he is supporting Bergson's theory on time and actually refers to his concept of *durée*.

*"Transposition of the temporal into the spatial mode can indeed be said to occur, especially when it is interpreted as succession being replaced by simultaneity."*⁸⁵

⁸² Arnheim (1992), p. 39

⁸³ This phenomenon is not to be confused with the inclusion of mirror images in a work of art, which is referred to as simultaneous representation (Meyer). The latter is a pictorial aid and merely presents a different viewpoint of the depicted scene by means of reflection, which is indeed possible in nature.

⁸⁴ Arnheim (1986), p. 80

Arnheim fails to explain, however, how this transposition is actually achieved and how the beholder is able to read it. There are no occurrences at all in nature where the unfolding of events or change within a certain period of time can happen at the same moment at the very same place. Even though one could argue that waves show various stages of succession simultaneously, it needs to be pointed out that these waves are essentially different individual objects (or rather: events), even though they are occurring in the same medium. Indeed, I argue that this 'simultaneous succession' is unique to the visual arts⁸⁶. It can only happen in the pictorial space, whether it be two or three-dimensional. What, then, are the qualities of painting and sculpture that allow this possibility to happen? Three conditions can be identified: temporal abstraction, a static medium and a simple narrative.



Figure 16: Simone Martini, *Miracle of Boy Fallen from a Balcony*, 1328

a) Temporal abstraction

The abstract nature of these artforms is a necessary prerequisite for this phenomenon. The artist, who has the freedom to decide what to fill the space with, is able to select on one or more moments of a narrative and assemble them simultaneously by means of composition. This freedom of abstracting from the natural temporal structure is unique to these 'classic' visual art forms. Photography, for example, is more reliant on technical features, such as double or long time exposure and darkroom manipulation, in order to represent more than the one moment.

b) Narrative

The artist relies to a certain degree on the beholder's knowledge of the depicted narrative. In Ghiberti's case we are aware that the troubled apostles and the rescue by Christ are the different elements of the very same narrative or literary story. We recall that these events are connected, yet temporally distant and as such separated in the

⁸⁵ Ibid, p. 79

⁸⁶ Film, music, performance and literature are not able to express this curiosity either due to their temporal-linear nature and the subsequent unfolding of events in succession over a period of time.

original text. The elements of this narrative, their meaning⁸⁷ and the pictorial setting are visual equivalents of literary narratemes.⁸⁸

Knowledge of the literary story in the example, however, is not a condition for understanding the work and the artist can use alternative techniques. If the artist is able to identify the same visual element through repetition in the visual space, knowledge of the narrative is not necessary. Outstanding examples in painting are Simone Martini's *Rescue of a Boy fallen from a Balcony* (Figure 16) and *The Boy bitten by a Dog*. In both cases there is no need for prior knowledge of the story as Martini (c. 1280-1344) emphasises clearly by his choice of the colours of the garment that the boy in danger and the rescued boy are one and the same person. This develops a pictorial image into a narrative by introducing elements (narratemes) of change and inter-relation. Wolf (2000) defines narratemes:

*"The creation of, or reference to, a possible world in which time and change play a vital role and which consists of concrete and specific elements, in particular: anthropomorphic beings as the focus of change, and some kind of action or events as a manifestation of this change."*⁸⁹

This literary principle can be adapted to a pictorial narrative, as Simone Martini's example clearly shows. It is visually applied by introducing the boy as the focus of change and the events as the manifestation, which enables the beholder to understand the narrative in the painting without knowing the literary, biblical story. Such simultaneity is not limited to only two subsequent stages. The German photographer Martin Liebscher has used this pictorial device in his digitally manipulated photographs, such as *Termingeschäft* ('Deadline') of 2001, (Figure 17)⁹⁰ where the



Figure 17: Martin Liebscher, Termingeschäft, 2001

⁸⁷ See glossary.

⁸⁸ Narratemes are core traits of a narrative, according to Werner Wolf (2000). They are necessary elements that make up the narrative and they are indeed comparable to Gestalt qualities. One can, indeed, identify certain Ehrenfels qualities in an oral story, such as a sequential composition and character (Wesen). Similarities, as well as substantial differences, were pointed out in a paper by Wolf given at the Time conference in London 2000. He distinguishes the following narratemes:

a) representationality, experientiality and meaningfulness; b) selection and inter-relation of narrative elements; c) creation or reference to a possible world.

⁸⁹ Wolf (2000)

⁹⁰ www.martinliebscher.com

same person appears forty times in the same setting, and is again clearly identifiable by his clothing. This image visualises a different kind of narrative compared to Martini's, yet again the beholder is able to piece the story together with the aid of the protagonist's movement as depicted by the artist.

c) Static media

There is yet another element necessary to imply 'simultaneous succession', which I argue is the most relevant: a static image. I clarify this point first by means of an example of a medium that almost defies the ability of simultaneous succession. Film or theatre cannot express successive events *at the same moment* as easily (with the possible exception of split screens), due to their necessarily successive nature: they are real time events. A prescribed duration or 'beholder's time' as Souriau (1949) calls it, is the nature of these media, a *conditio sine qua non* and their temporal structure is linear, to use a spatial term. Sculpture and painting are, to use the same terminology, in a sense 'punctual' or momentary. They do not rely on change and succession to unfold their message but are constant and static. Different to the performing arts they even exclude succession of events and their natural sequential course. Media like sculpture, photography and painting are abstract in terms of their depiction of time. A relief sculpture for example, such as Manzù's, is a pictorial image that is abstracted in many points from a real image: three dimensional space has been abstracted to a flattened relief space, a multitude of colour into the bronze's patina, real size people into small scale images and a variety of textures into even smoothness. Besides all these visual abstraction there is also temporal abstraction: a multitude of successive and simultaneous events at a given time in real life is abstracted to one simultaneous moment in the pictorial space of the relief.

Film, music and theatre on the other hand use 'real' time, duration, to express their images or message. These media have the ability to compress time of real events to the duration of the performance, but rely largely on succession for their unfolding within a story. The quality of sculpture to abstract temporal events and present them as simultaneous is a most important aspect of its ability to transmit a visual message and is a prerequisite for other phenomena described in the course of this thesis. I would like to stress again that this quality is not possible in nature and therefore represents an abstraction through the removal of temporality in the form of duration. It is thus unique to artistic media, such as sculpture and painting.

What I have discussed so far is the possibility of describing successive events simultaneously in the two-dimensional pictorial space, *events taking place in parallel* rather than sequentially. The objects occupy this pictorial space simultaneously *beside*

each other; they are simultaneous in time but not in space. But there is yet another dimension to it: the possibility of objects occupying the very same space simultaneously *inside* one another. ‘Inside one another’ is understood as the material penetration or interlocking of volumes and masses of two or more objects

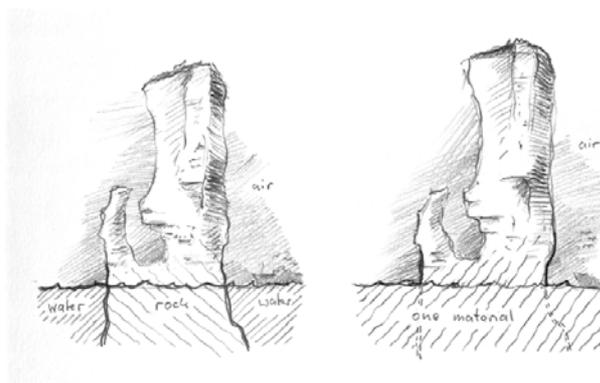


Figure 18: Rock in the sea

and as such forming one physical and material entity (*Ganzheit*). Such simultaneity in time *and* space has no manifestation in our experiential world, no example I know of would truly show such an existence. Waves and rocks from the example described above may offer such an appearance at first sight but will not qualify because the two are not truly penetrating each other by means of sharing the very same physical space (Figure 18). One is merely filling the void created by the other material, a fact that applies to most examples that seem relevant at first. The crucial element is material, or in wider terms, matter. For two objects to share one and the same space, they essentially need to be of the same matter and, I argue, of uniform consistency (Figure 18, the figure to the right). Two different, complex objects, such as human beings, cannot share such consistency of matter.

In *Time and Free Will* (1910), however, Bergson describes the physical fact of the impenetrability of matter as a logical rather than physical necessity. He gives this example in relation to the discussion about the spatial nature of number while developing his theory on time. The following quote makes his intentions clear and will also clarify the relationship of time, form and matter in the context discussed:

"[...] As a matter of fact, each of us makes a distinction between these two kinds of multiplicity whenever he is speaking of the impenetrability of matter. We sometimes set up impenetrability as a fundamental property of bodies, known in the same way and put on the same level as e.g. weight or resistance. But a purely negative property of this kind cannot be revealed by our senses; indeed, certain experiments in mixing and combining things might lead us to call it in question, if our minds were not already made up on the point. Try to picture one body penetrating another: you will at once assume that there are empty spaces in the one which will be occupied by the particles of the other; these particles in their turn cannot penetrate one another unless one of them divides in order to fill up the interstices of the other; and our thought will prolong this operation indefinitely in preference to picturing two bodies in the same place. Now, if impenetrability were really a quality of matter that was known by the senses; it is not at all clear why we should experience more difficulty in conceiving two bodies

merging into one another than a surface devoid of resistance or a weightless fluid. In reality, it is not a physical but a logical necessity that attaches to the proposition: "Two bodies cannot occupy the same place at the same time." The contrary assertion involves an absurdity, which no conceivable experience could succeed in dispelling. In a word it implies a contradiction. But does not this amount to recognising that the very idea of the number 2, or, more generally, of any number, whatever, involves the idea of juxtaposition in space? If impenetrability is generally regarded as a quality of matter, the reason is that the idea of number is thought to be independent of the idea of space. We thus believe that we are adding something to the idea of two or more objects by saying that they cannot occupy the same place: as if the idea of the number 2, even the abstract number, were not already, as we have shown, that of two different positions in space! Hence to assert the impenetrability of matter is simply to recognise the inter-connection between the notions of number and space, it is to state a property of number rather than of matter."⁹¹

I argue that Bergson's understanding of time has fundamental consequences for sculpture, even though he does not consider artistic implications in his theory. The essence of this statement is that due to a logical, rather than physical necessity, two solid bodies cannot occupy the same space at the same time in nature. Does this fact apply to sculpture too, or are the plastic arts able to overcome this natural fact in an artistic, creative manner; can sculpture even give evidence of such impenetrability of matter due to its very nature? I will demonstrate that it can indeed do this.

Traditionally, figurative sculpture has separated different bodies, any interaction between two or more figures took place on the surface or via spatial relations: Rodin's *The Kiss* and the *Burghers of Calais* exemplify these two relationships. Interlocking or penetrating bodies are a rare case although clearly possible. The following categories of simultaneous representation through intersecting form and volume can be identified:

- a) multiple, successive stages of a figure
- b) two or more different figures
- c) two or more abstract objects
- d) architectural space and form
- e) two or more depicted real objects
- f) combination of objects and human figure

With examples of my own work I will describe 'simultaneous succession' in interlocking objects. It will become evident that the temporal message differs in these examples and categories.

⁹¹ Bergson (1910), p. 88/89

a) Since December 1999 I have been working on a cycle of sculpture that investigates the penetration of form in its formal language. This work has originated in the initial investigation of the nature of successive and simultaneous form in space and time. Successive stages are combined in one sculptural object, their forms interlocking and as such creating new form. Examples of this investigation are *Quintuple Head (Portrait Johnny Johnson)*, in bronze, 1999 (Figure 19), and *Double Portrait (Tara)* (Plate 6) also in bronze, 1999. Although satisfying as sculptural pieces in themselves, the theme of multiple portraits has not been followed up further as an inquiry into succession. In relation to Bergson's comparison between intellect and cinematography⁹², the subsequent stages of these portraits are no more than successive frozen moments, like individual frames of a film strip or like Martini's dual representation. This representation of movement can be found in art movements in the early 20th century, such as Cubism and Futurism. Umberto Boccioni's *Unique Forms of Continuity in Space*, 1913 and Duchamp's *Nude Descending a Staircase No. 2*, 1912 are classic examples of such representation of succession. Although creating interesting formal interrelations, they do not offer any deeper or different insights into the nature of time in sculpture, they remain rational rather than intuitive statements⁹³.



Figure 19: Holger Lönze, *Portrait J. Johnson*, 1998

Such multiple representations in sculpture are not unusual in the history of art. The Lough Erne area in Co. Fermanagh has a long tradition of carving heads in local stone, stretching from the Neolithic era, to medieval times and right through to the 20th century. In a small graveyard on Boa Island we find a stone carving of what is referred to as the Janushead,

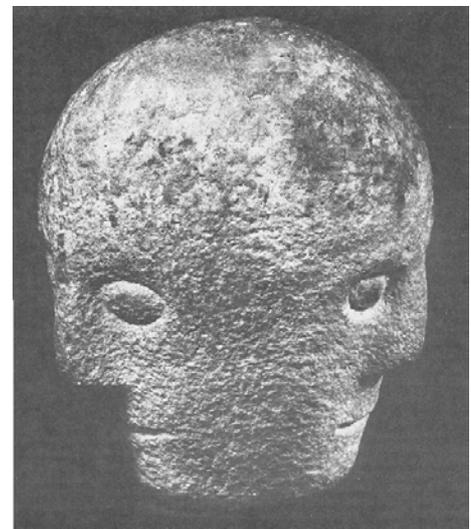


Figure 20: *Three-faced head of Corleck*

⁹² Donato Totaro (2001) *Time, Bergson and the Cinematographical Mechanism*

⁹³ The obvious relationship of this discussion to artistic styles such as Cubism and Futurism is not further explored in this thesis with the understanding that it would stretch the boundaries of the thesis too far.

dated between the 3rd century BC and the 5th century AD. This herm⁹⁴ has one face on each side, the two skulls occupying the same volume. On the three-faced head from nearby Drumeague, Corleck, Co. Cavan (Figure 20), dating from the same period, all the skulls occupy the same form and volume. Relating Gallo-Roman imagery to Celtic artefacts, Helen Hickey interprets the triple depiction of the face in a single piece as follows:

“One cannot be sure that the triplication of the face was intended to represent a particularly powerful god but it does suggest that the Corleck god was regarded as being all-seeing”⁹⁵

We also find similar examples of shared volumes on medieval columns that are decorated with up to three partly interlocking figures. Medieval imagery often displays animals that share parts of their body, as can be seen in the ‘Hare window’ of the cathedral in Paderborn, Germany or in the wall paintings in the abbey church of Clare Island, Co. Mayo. In the former, three hares ‘share’ three ears, while in the latter example four dogs are linked via their legs. It is noteworthy that in the sharing of body parts these two examples contribute to a dynamic perception of the image, a form of ‘medieval cinematography’, so to speak.

b) The group of multiple portraits led on to a series of sculptures that concentrates on simultaneity of form in space and time. The *Suleika cycle*, inspired by Goethe's poetry collection *West-Östlicher Divan*⁹⁶, is different to the multiple portraits as it uses individual images of different bodies penetrating each other. Although leading to a similar formal language, the implications of Bergson's theory are essentially different here. The work does not express successive stages in time and reality, but shows simultaneity of form of independent figures. These pieces now overcome the principle of the impenetrability of matter, as, from an artistic point of view, different forms truly penetrate one another; in a physical sense, we are dealing with one and the same material, one bronze form. This cycle shows that, in its own way, sculpture is able to overcome this natural fact, or, in other words, is able to show this fact in a different light, creating insight in an intuitive way.

The implications of this work support Bergson's theory that impenetrability is a consequence of number rather than of matter. The sculptural matter of two forms, bronze in this case, is well able to occupy the same space at the same time. The paradox these pieces express is indeed a numerical one; two bodies are one. This works only in

⁹⁴A term referring to sculpture in which only the head is fully worked, the remaining material is only roughed out or squared off.

⁹⁵Hickey (1976), p. 19

⁹⁶Goethe (1974)

the case of simultaneity of different forms in time, but not in the case of the first series that expressed simultaneity of one multiple form in time.

I agree with Rudolf Arnheim's assertion that art can allow us insight into complicated subjects, such as time, by allowing unusual and unconventional approaches to the problem.

"This is even more obvious in the figurative arts of painting and sculpture, in which the visual dynamics of the bodily shape of, say, a tree or pyramid is rendered by the same means as the locomotion of a jumping horse or an ocean wave. Visual dynamics is an indivisible unity, not broken down into space and time. We conclude that we shall do justice to perceptual experience only if we abandon the pre-established frameworks of space and time and instead look with unprejudiced eyes for the categories the experience requires."⁹⁷

Even though other artforms also appear to be able to express simultaneity in space and time, I argue that it is sculpture that is able to demonstrate this in the clearest form. Painters, like Jack Crabtree have used a multitude of some image parts in their work; a portrait of the writer Brian Friel in the Ulster Museum in Belfast, for example, contains the poet's hands in several positions, as such visualising succession in the pictorial space. The example shows a representation of successive stages occupying the same area in the pictorial space, but essentially the image is a representation of the object, being abstracted from its third dimension. In sculpture this third dimension, depth, remains intact and interlocking objects occupy the same *real* space: volume.

In the quotation above, Arnheim specifically refers to the '*figurative arts of painting and sculpture*'. The limitation of figuration, or rather representational objects, is important to the ability of sculpture in particular, to express simultaneity in time *and* space. The fact that the beholder is able to recognise individual objects in a sculptural composition as representations of real objects is essential and I argue that abstract work lacks this ability⁹⁸.



Figure 21: Holger Lönze, *Architectural Composition*, 2002

c) An abstract composition of five interlocking cubes (Figure 21) demonstrates the penetration of volumes, but the beholder is unable

⁹⁷ Arnheim, 1986, p. 81

⁹⁸ It is understood, however, that the essence of abstract art is entirely different to representational art. In this context the focus is only on the difference in their formal ability to express or contain aspects of time.

to recognise any representative image⁹⁹. Although the object expresses simultaneity in space, in the form of penetration, it does not express simultaneity in time, as the viewer does not relate aspects of temporality, such as movement, ageing, etc. to abstract geometrical bodies. The relationship of abstraction and temporality is important. Abstraction is essentially an intellectual process, while time is intuitive, to use Bergson's distinction. I argue that the beholder is unable to establish the link of abstract objects and temporality in the form of simultaneity and succession.

d) The next example (Figure 22), again a composition of five cubes¹⁰⁰, is different, however. Openings in the volumes are reminiscent of doors and windows and the beholder makes an architectural connection relatively soon after approaching the piece. Yet again, we do not relate temporal qualities to the forms and again the expressed simultaneity remains spatial, rather than temporal. Five pieces resemble different stages between abstraction and realism and subsequently carry different temporal connotations.

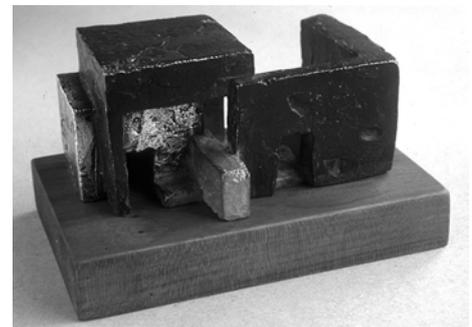


Figure 22: Holger Lönze, *Via Cavour*, 2002

The reference to architecture might be helpful here. Le Corbusier's monastery La Tourette (Figure 23) is conceptually a similar, yet large-scale composition of such cubic forms as they are perceived as volumes and not as enclosed spaces from the outside. The internal spaces of any building are essentially interlocking volumes, yet contained in a more or less complex and intersecting geometric mass on the outside. The penetration of volumes and form is merely spatial, but is certainly not regarded as having any temporal implication of the kind described above.



Figure 23: Le Corbusier, *La Tourette*, 1959

⁹⁹ The piece, however, is actually representational and is called *Architectural Composition II (Tower)*. Only with the hint of the title, is the beholder able to link a real object with the sculptural object.

¹⁰⁰ *Architectural Composition I (Via Cavour 30)* refers to a spatial analysis of the top floor (the former kitchen) of a 14th century palazzo in Florence, Tuscany. It is related to a composition exercise during my studies under Axel Seyler at Detmold, Germany. A cube is dissected into segments that are altered in their spatial organisation; the volumes will create a solid cube if 'shifted' back in space.

e) Another stage in this list of examples is the piece *Donegal Currachs*, 2002 (Figure 24). The object is instantly recognisable as an assembly of interlocking boat shapes. But besides the obvious spatial simultaneity it becomes instantly obvious that such a placing of boats in real life is impossible. Real boats



Figure 24: Holger Lönze, *Three Currachs*, 2002

cannot occupy one space at the same time. They can be in one place at different times or at one time in different places, but not both at once. The imagery of the sculpture is understood as a reflection on real objects and seems to carry similar temporal qualities, while the previous two abstract examples do not have such a temporal message. This example is therefore the link between abstract and non-temporal penetration of form and the intersection of human figures expressing temporality. I would, however, question Arnheim's previous assertion that visual dynamic, and with it temporality, is limited to the human figure in art. It is clear from this example of the boats that representative or realist art in a wider sense is capable of making a temporal statement. "*Visual dynamics of time and space*", to use Arnheim's words, is prominent in a wide range of representational images of real objects, rather than just in the image of the human figure.

f) The intersection of human form and real or abstract object is the last category in this list. The burden of Axel Seyler's *Atlas VIII*, 1970 (Figure 25) becomes one with the human body by replacing or rather sharing the volume of head and shoulders. The simultaneous spatial and temporal presence of human being and load stand as a metaphor for the human condition, the burden in life. The work becomes readable and meaningful through this simultaneity as a compositional tie between pictorial elements.

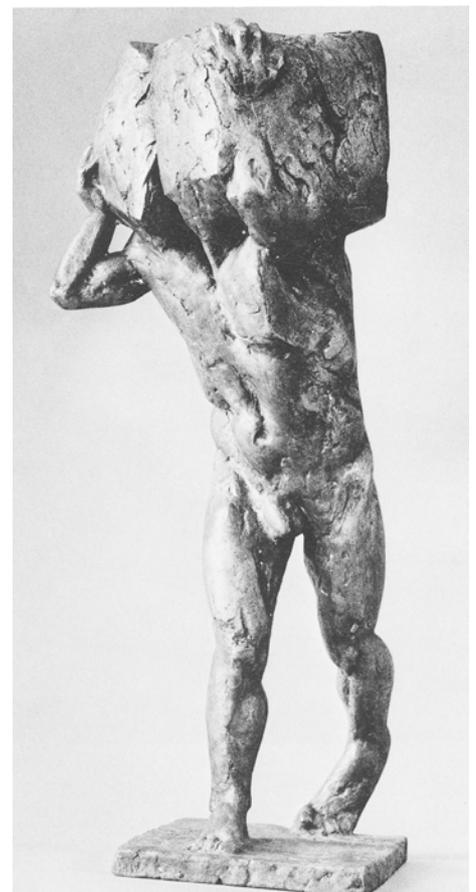


Figure 25: Axel Seyler, *Atlas VIII*,

The simultaneous depiction of form through interlocking volumes, expressing shared space and time, is a significant pictorial means (*bildnerisches Mittel*) in the hand of the figurative sculptor. With it, the artist is able to express a temporal message that can support the concept and idea of the work. It has become clear, that the sculptural object, particularly if figurative, stands out from other art forms in the way it is able to depict simultaneity of form and matter. This is a significant link in the relationship of material, form and time. Other ways in which material and form are inseparably linked to temporality in sculptural media will be explored in the following sections.

2.3. Perception of change and movement in material

Description of the phenomenon and analysis

Movement is essentially a continuous change of form over a period of time in space. The two phenomena chosen for this thesis incorporate movement with very different origins and effects: movement in fugitive and fluid materials such as clouds and water and movement in the human form¹⁰¹. The former present us with a kind of movement of material and form that is initiated by outer intangible forces, such as wind and periodic mass forces. This relationship is of great significance to sculpture, not only in terms of the interaction of sculptor and material by creating a form through modelling, but also in terms of the expressive limitations that the material poses on traditional sculpture.

First I will describe the experience when observing a formation of clouds. The observer is confronted with a natural spectacle that is surrounding us constantly and is in no way unique, yet its appearance is always different and constantly changing. Clouds appear in various forms, colours and sizes, occupying large spaces on a great scale in the sky. Their form appears to be of one solid mass; white cumulus clouds, for example, display a very defined volume and a distinct material unity (Figure 26). Yet, despite this unity and solid appearance the form is undergoing continuous change. This can either be a rapid re-formation of clouds or a slow movement that requires a reference point on the horizon for it to be noticeable. The movement can be linear, horizontal or vertical, such as with a thunderstorm cloud, radial in the case of a hurricane or whirlwind, or a complex combination of all these. In any case the observer is confronted with a continuous transformation of fugitive volumes and forms and can in no way interfere with this movement or be actively involved in it.



Figure 26: Cumulus clouds

These transformations and movements are not self-motivated; the cloud does not do what it wants to do, so to speak. A cloud is neither the result of 'formative causation', to use Rupert Sheldrake's term, nor does a form of *entelechy*¹⁰² determine its appearance: it does not possess any intrinsic determination to form. Clouds are the result of interaction between a passive material (waterdrops) and external energy in the form of wind, temperature, light, but are also determined by the solid landscape

¹⁰¹ This is explored in chapter two, section 6.6., The transitional moment.

¹⁰² See glossary.

formations beneath. The multitude of variations in these forces and their continuously changing nature determine the fugitive Gestalt of the clouds that we see.

There is no final shape to a cloud. A photograph of a cloud only captures one single moment of a continuous transition without distinguishable stages. Yet, despite this individual and fugitive nature, distinct formations have been categorised with Latin names such as cumulus (piled), stratos (layered), cirrus (feathered) or stratocumulus for intermediate forms. These names, however, can only capture transitional stages of a continuous, ongoing transformation and are not definitions of any one individual cloud. While cloud categories are relatively abstract meteorological terms, there is another recognition and labelling process on a more basic, individual level (Gombrich, 1960). This happens when, while watching clouds, we can see images in their particular constellations: a group of clouds may resemble the image of a face or an animal, for example. Such images are of the same fugitive nature as the cloud itself and we can hold on to it until it becomes more and more abstract, disappearing into a 'shapeless' and 'meaningless' volume.

The Renaissance painter Andrea Mantegna (1431-1506) used this as a means to express metamorphosis between nature and human images in his paintings (Figure 27) as have many contemporary artists. Seyler plays with the ambiguous Gestalt of clouds in *Wetter* (weather, Figure 28) by giving it a distinct shape that becomes relevant to the subject matter: in this case the cloud-like hand is pouring out the rain and the face is blowing the wind, both a metaphor for weather.



Figure 27: Mantegna, detail



Figure 28: Axel Seyler, *Wetter*

To an extent, this description of clouds holds true for the perception of waves. Again a soft substance is involved that is formed by a variety of external forces and again the result is continuous and fugitive without distinct stages. Gravitational forces, however, largely determine the predominantly horizontal pattern of movement, and a distinct

rhythm clearly differentiates the observer's temporal experience from the former. While clouds offer a continuous transformation, we observe a continuous, rhythmic pattern in waves. The waves occur at regular intervals that are distinguishable, measurable and, like any pattern, repetitive. The wave is undergoing a development, from swell, to breaking and finally to its dissipation on the beach during each interval. Dynamism and periodicity of waves are described with mathematical sine curves and fall, like clouds, in certain categories.

While clouds can only be perceived visually, there is an audible experience involved in the observation of waves, particularly in their final occurrence as breakers. Their material, its pressure and temperature can be experienced by our tactile sense and can even have a distinct smell. As such they present a more encompassing experience than clouds, involving the observer more thoroughly. This multitude of sensory experiences makes an important contribution to our temporal experience of the sea, which I have described in chapter one in relation to the involvement of the observer (Tunner, 1984). Yet it is the wave's rhythmic nature, audibly and visually experienced, that makes the most remarkable contribution to the temporal experience.

Clouds and waves consist of water in different physical states: steam and liquid. In both states the material's fugitive particles react to external forces, which is relevant for its temporal behaviour. Water cannot react as sensitively and quickly to these often subtle forces in its solid form, ice: glaciers, for example, show a very slow movement. The material quality is related to a form of temporality here: a combination of time and the material's fugitive nature results in formal appearance. Time is present in the form of duration, as periodicity of the wave, and also in the enacting forces as velocity (described in the equation $v=d/t$). The result of this combination of material and temporality is the fugitive form of clouds and waves: movement.

Despite their constantly changing constitution and their non-graspable nature, clouds are not regarded as events but as objects, as Rudolf Arnheim points out:

"Mostly we are in the presence of objects, which appear to us as stable entities, and actions performed by them. The gestures of a speaker are actions, but the speaker himself is perceived as a persistent thing, whatever biologists and physicists may say to the contrary. Even a cloud is experienced not as an event, but as an object in transformation; and the same is true for examples in which change does not depend on movement - a lobster turning red, a potato getting tender." ¹⁰³

¹⁰³ Arnheim (1974), p. 373

The distinction between event and object seems clear in the example of the clouds but does it hold true in the case of waves? While clouds are definite objects, I argue that waves are seen as events. Several factors support this hypothesis.

a) Semantics

First of all, some clouds bear elements of individuality: a distinct form, and sometimes we tend to read meaning into their appearance, even for only a short period. Gestalt theory maintains that our vision tends to identify meaning instantly and in the case of clouds this tendency is stimulated by the abstract and 'meaningless' mass of the formation. Unlike clouds, waves have immediate semantics and are recognised for what they are and our vision does not attempt to go further than that. It is impossible to see an image in a wave: waves are not ambiguous.

b) Sensory complexity

The second factor is that we perceive liquid water as a distinctive and uniform mass, a tangible material. We can have a multiple, sensory experience of water that assists the understanding of its material qualities. We can feel and hear the water, as well as see it and therefore we understand that it is not a solid object in transformation. With clouds we rely on our visual sense alone and thus perceive them as solid objects in transformation.

c) Continuity

The following, third factor seems the most important to me in terms of temporality. The transformation of a cloud as an object is a continuous and uniform event, with no end and no beginning. The transformation happens over a long period of time, clearly exceeding the psychological present of the observer, who needs to remember (retention) a distinct shape and the development of a specific cloud. In the case of the wave, the time period involved is far shorter and each wave is a finalised event. The full development of a wave as a visual experience takes place within the psychological present (6 to 12 seconds). Although tides are waves in the strictest sense, they are not perceived as such due to their long interval period: the change is not recognisable within our psychological present. The wave being a finalised event is of even greater importance: in comparison to the cloud it has a clear end that is marked by breaking and running out. But it is the form of the wave that ends and not the material water. Unlike clouds, the water, or rather the sea, is seen as the object in transformation but the wave is an event happening within it.

The different material qualities of waves and clouds, both carriers of form, have very distinct temporal connotations: one is seen as an object, the other as an event. Events, like objects, have Gestalt qualities as Ehrenfels maintains, distinguishing them as temporal and non-temporal. Some other Gestalt qualities such as structure and composition are also evident. Historic events comprise a distinct structure, evident in the succession of minor events leading up to them, as well as their temporal unfolding and their general circumstances. Individual parts or 'sub-events' can be seen as events in their own right but only make sense in a certain order within the circumstantial context of other events and - most importantly - through their contribution to a major historic event. Just as the nature of a Gestalt quality is obscure in comparison to the parts it contains, a historic event is similarly abstract in relation to its clearly identifiable incidents. The potato blight fungus played an important role in the Great Famine of Ireland in the mid 1840s, but several other political, social and economic factors contributed to the crisis. Only the combination of all these factors (parts) transformed this crisis into a distinct major historical event (Gestalt). The Great Famine can only be understood in its entirety when all the contexts and developments are taken into consideration.

Consideration should be given to the assertion that a visual (*räumlich-anschauliche*) Gestalt is formed as part of a perception process that takes place in the present moment. Is this equally relevant in the case of a temporal event-Gestalt? What we consider in the example of the historic event of the famine is the recollection of a past event, secondary retention to use Bergson's definition. Its Gestalt is already established as a memorised, but recollectable formation, just like a once heard melody. Any event is, however, understood as encompassing several issues and incidents by a remote 'observer' at the present moment, separated from the original event. Only retrospectively does a historic event in the past also appear to have a Gestalt for an 'observer' in the here and now. The understanding of the event with hindsight, by the contemporary experiencer, may be entirely different given likely differences in their respective understanding and knowledge of the social, political and cultural context of the event. I assert that the secondary memory¹⁰⁴ of a temporal event is more ambiguous than the secondary memory of an object, yet both differ distinctly from the initial perception.

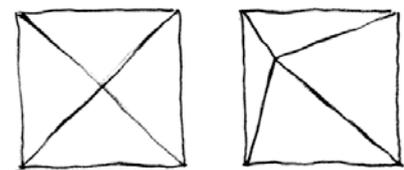


Figure 29: Pyramid

¹⁰⁴ According to Husserl, the remembering of events that lie back in time, i.e. are not contained in the psychological present.

As in visual perception, a semantic quality is evident in an event Gestalt in the form of a series of related sub-events that can be interpreted in a meaningful way. Abstract and confusing visual information is resolved through visual perception by means of transforming information into another, higher dimension. While most beholders read the figure on the left (Figure 29) as a diagonally divided square - and as such two-dimensional -, they would also understand the one on the right as a pyramid, i.e. three-dimensional. In the case of a temporal event, the abstract, linear, but interfering movements of water, for example, are transformed to the higher Gestalt of a wave. A temporal event, whether it be a wave or a historical event, has unity and is further defined by the Gestalt principle of enclosure (*Geschlossenheit*) or completion. The wave has clearly identifiable developments that mark and complete its course: swell, forming, breaking, and running out. Different verbs are used to identify its development, showing the wave's significance as an event.

Events possess Gestalt quality, just like visual objects, and, despite their successive nature, temporal objects, such as clouds or waves, are *Gestalten* in a true sense. They differ, however, in their existence as either objects or events. Both are clear examples of a similar time-material-form relationship and the relevance of this relationship to sculpture, in the context of the examples given above, will now be explored.

Relevance to sculpture

Let us first consider the relationship of material qualities and formative forces in sculpture. In the above examples, forces such as wind, temperature and light act upon the configuration of water molecules and the respective material, which itself is soft and malleable, thereby offering minimal resistance to these forces.

The materials and processes of traditional sculpture show parallels: external forces of various types are also applied to a more or less malleable material. Even though more evident in the process of modelling than in carving, the principle applies to both. In the technique of modelling the hand of the sculptor applies pressure to soft materials such as wax, clay or plasticine, which is applied, redirected and removed. The material particles bear and express form, the idea and skills of the



Figure 30: Henri Cartier Bresson, Giacometti modelling

sculptor are the formative cause. This process requires less physical effort the softer the material is. The use of material that is very soft is often recommended as being beneficial to the development of an idea, particularly when beginning new work. Many sculptors, like Alberto Giacometti (1901-1966), prefer to work with soft clay in the early stages of modelling (Figure 30). Seyler always recommended use of very responsive drawing media, such as charcoal, for drafting out a sculptural idea: the use of soft pencils as long as the idea is still 'soft'¹⁰⁵. Yet, similar to water in a wave, the material needs to give a certain amount of material resistance to the formative forces. The wave only takes shape as a result of the cohesion of the water molecules and their 'unified resistance' against the force. Resistance is also important in the sculptural process. The counter force, the cohesive resistance of the modelling material has to be just right for the artist to let the idea shape and materialise.

This stage in the 'life' of the sculptural object has the character of an event: the work has no identifiable Gestalt and appears as quickly changing, it is a mass without a meaningful form or Gestalt in the hands of the artist. Yet, as soon as we are able to recognise an image in this mass, the strong structural Gestalt qualities forces us to focus on the object Gestalt rather than the temporal event¹⁰⁶ Gestalt or process. This indicates that visual Gestalt qualities in objects are stronger than in events and that subsequently objects are clearer *Gestalten* than events, forming a perceptual hierarchy. What is evident in any work in progress is the presence of temporality and time. The material changes and successive 'stages' in its development are noticeable. Throughout the process the varying application of the sculptor's forces are shaping and forming the material. In contrast to the clouds and waves, however, this process is intentional, a kind of formative causation. This quality remains throughout the process, from modelling right to the casting process, after which there is a significant change in the temporal quality of the material and its form.



Figure 31: Medardo Rosso, *Malato all'Ospedale*, 1889

The soft consistency of many traditional modelling materials, although ideal for the working process, renders the work vulnerable to damage and change through heat, dampness and impact. The requirements of editioning and economy often rule out such

¹⁰⁵ He also pointed out that, unlike painters and draftsmen, most sculptors lay the wash before the pen drawing in graphic work. This technique reflects a 'building up' from a less determined stage towards a more specific, detailed one, not unlike working from a rough layout to fine detail in a plastic work.

¹⁰⁶ This object-event shift might relate to the transfer to a higher dimension in cases where an object is confusing or 'makes no sense'; see Principle of the simplest form in Appendix 1. Is it possible that the time element, an object in movement and becoming, is an event as such, and as such a higher dimension?

soft modelling materials as inappropriate for the finished object¹⁰⁷. Only few sculptors leave the work at this stage, and where they do so it is generally regarded as a sketch or maquette for the development of larger and again more permanent work. The bozzetti of many Renaissance artists demonstrate this method, such as the unfired terracotta sketches of Michelangelo or Giambologna. The Italian 19th century sculptor Medardo Rosso (1858-1928) deliberately kept the work in his preferred modelling material wax, applied over a plaster core to give it additional strength¹⁰⁸ (Figure 31).

In general the modelled work is at this stage transferred into a more permanent and durable material, a variety of which are available to the artist such as metal (bronze, aluminium), resins or mineral based materials (plaster, ciment fondu). These materials use the model of the sculptor as a pattern. The process involves first making a mould and then casting the work; at this stage there is a change in the material's physical state. An alternative method is the indirect translation or enlargement of the work by craftsmen or artisans, who carve it in stone or wood, often enlarging it. This process is still favoured by some artists but is only rarely used nowadays due to high labour costs. Whole industries have developed around these processes in areas where material is relatively easily accessible. The workshops in the marble quarrying area of Carrara and Massa are good examples of such developments (Figure 32). In the end, the choice of material and processes depends fully on the artist's preference. Henry Moore concludes:



Figure 32: Marble workshop, Carrara

“For me, sculpture should have a hardness, and because I think sculpture should have a hardness I really like carving better than I like modelling. Although I do bronzes, I make the original which is turned into bronze in plaster, and although anyone can build a plaster up as a soft mixture, that mixture hardens and I then file it and chop it and make it have its final shape as hard plaster, not as a soft material.”¹⁰⁹

¹⁰⁷ In the 20th century other perishable materials have been introduced to sculpture. Materials such as organic substances are applied with the deliberate intention that they do not last and can, in some instances, emphasise their relation to the natural course of time and change. Due to the focus of the thesis, such materials will not be discussed here. Sand, ice and food (salt dough) have clearly been used to model temporary objects throughout history. Simple objects like snowmen and food decoration show that such pliable materials invite human interaction with them.

¹⁰⁸ The wax will also harden out considerably over time, making it less vulnerable to temperature change.

¹⁰⁹ Moore (1966), p. 60

The different materials used by the sculptor deliver sensory information, both visual and tactile, that contribute to our understanding of time in the context of form and material. Such implications are twofold: time in terms of perception of change, but also in the form of judgement of appearance, as I will describe in another section. Soft material has the ability to change its *formal* appearance. This transformation of form is particularly noticeable in the modelling process. Change is a significant factor in our cognition of temporality, supporting the establishment of a concept of time¹¹⁰. The temporal quality of the material changes dramatically with the transfer of the sculptor's initial model into a permanent state. Materials like bronze or stone (apparently) do not have changeable qualities as the modelling material does. Solidity and hardness are regarded as equivalent to permanence and durability¹¹¹. The Danish sculptor Thorvaldsen compared such material qualities to equivalent stages in religious mythology, stating '*clay is life, plaster death, marble resurrection*'¹¹². Temporal information of permanence relies largely on our tactile sense, as we are often unable to distinguish hard from soft materials purely by sight. Plasticine, for example, can have the appearance of a plaster or ciment fondu cast in colour and lustre. The link between tactility and temporal perception is of great importance for sculpture and needs to be explained further.

Touch is widely understood as a sense that is able to inform our cognition about texture, form and temperature¹¹³, but not about temporality. The movement of clay particles under the pressure of the sculptor's fingers carries sensory-temporal information of change and, as such, of temporality. Our tactile sense is able to perceive movement as much as sight can, a fact that makes it an important issue in sculptors' approaches to their work. Alberto Giacometti has reportedly often worked with closed eyes, a technique that eliminates all visual information and enables concentration on the tactile sense (see again Figure 31).

¹¹⁰ The concept that 'everything is change' was central to Aristotle's understanding of time.

¹¹¹ Public commissioning bodies state durability and permanence as major criteria for sculptural work and in this context hard and solid materials such as bronze are often regarded as the most appropriate material.

¹¹² Rasmussen (1992), p.164

¹¹³ However, I would argue that temperature is related to a different sense, as the sensory information of temperature is not related to the surface structure of objects that informs the tactile sense.

Henry Moore (1898-1986) used a large number of small-scale maquettes and objects in his studio, which he called *touchy feelies* (Figure 33). It was explained to me by one of his assistants, Michel Muller¹¹⁴, that Moore often handled these pieces with his eyes closed. Moore asserts:

*“Tactile experience is very important as a aesthetic dimension in sculpture. Our knowledge of shape and form remains, in general, a mixture of visual and tactile experiences. A child learns to judge distance by touching things, and our sense of sight is always closely associated with our sense of touch. [...] A child learns about roundness from handling a ball far more than from looking at it.”*¹¹⁵

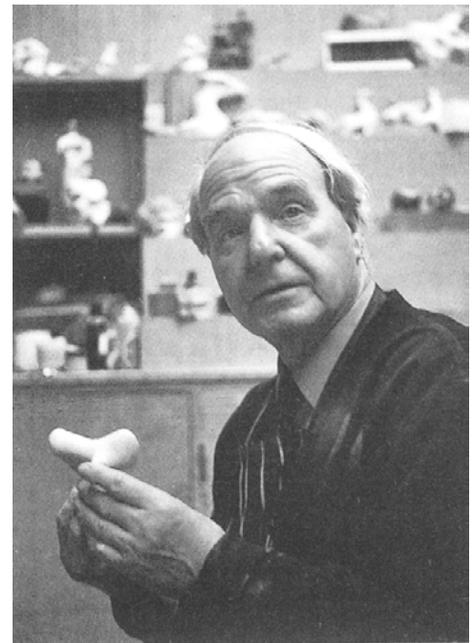


Figure 33: Moore with touchy-feely

Moore’s maquettes were usually finished objects that were cast in bronze and would therefore not have the changeable quality of clay. Yet, handling a small object still provides sensory information on form and time, as the form moves through one's hands in time. Contrary to the practice of many galleries and collections, most sculptors intend their work to be touched. Surrounding a piece in one's own time to perceive it in full is as important for the tactile sense as it is for the visual sense. The ability of visually impaired people to contemplate -and also to create- works of three-dimensional art is well recognised. Reading Braille by touch contains perceptual time in the form of duration, just as reading by sight does. The importance of touch for the perception process has been pointed out by Johann Gottfried Herder as a reaction to Diderot’s essay *Letter on the Blind for the Use of Those who can See* of 1749. Herder regards touch to be the basis of visual experience and Gaiger asserts:

*“[...] Herder reverses Diderot’s question. He does not ask: What can the blind perceive without the use of sight? But rather: What could the sighted perceive without the use of touch? What could we actually see if we had been permanently deprived of the ability to grasp things with our hands and to intervene physically in the world through our bodies? His answer to the question is: far less than most of us think. Drawing on the writings of Locke, Cheselden, Berkeley, and Condillac, he argues that we gain an awareness of three-dimensional space only through our sense of touch, and that concepts such as solidity, mass, volume and depth cannot be derived from vision alone. [...] Bodies, or three-dimensional forms, are first revealed to us through our sense of touch.”*¹¹⁶

¹¹⁴ During a visit in Perry Green, summer 1989.

¹¹⁵ Moore (1966), p. 133

¹¹⁶ Gaiger (2002), p. 15

Depriving a beholder of experiencing sculpture by touching the work can considerably reduce the enjoyment and full contemplation of a work. Many collections prohibit their displays from being touched by the public for reasons of conservation and safety, a measure that is often unnecessary and in clear contradiction to their creator's intentions (refer to Moore's statement above). Apart from this museum situation there are other reasons for the exclusion of the tactile sense in the perception process. Many sculptors of the generation of post-war artists either use materials that are not meant to be touched or use ways of presentation that preclude direct tactile contact between the onlooker and the object displayed. The former includes works in materials that are unsafe or unhealthy to handle, such as lead. The two hundred lead books in *Zweistromland*, 1986-89 by the German painter and sculptor Anselm Kiefer (born 1945) can only be experienced with hands protected by gloves, a precaution that considerably alters the beholder's sensory experience. In such cases, the sculptor's considered choice of material involves intentionally denying the beholder the direct sensation of touching the material.

The tactile sensation can also be prevented by encasing work in a container, for reasons of either protection or preservation. Necessary to keep the object in a controlled climate, this method is often used for archaeological objects or more fragile works of art. However, a more liberal choice of materials in post-modern sculpture, combined with a question of the nature of the exhibit, has brought such methods into the context of contemporary art. Damien Hirst's shark that is preserved in formaldehyde, is such an example. As the object itself is secluded from touch, the case is now becoming the tactile interface: children's fingermarks on the glass clearly demonstrate the urge to get close and feel the piece. Similar to Mark Quinn's self-portrait, which will be further discussed in the following section, Hirst's shark is made of a perishable, organic substance which needs to be kept in a controlled environment to preserve its *present* state. This can only be achieved by limiting the object's potential sensual experience to the visual sense only.

The documentation of sculpture that uses perishable materials raises further issues in terms of tactility. In order to preserve an object beyond its limited physical existence, photography or video recording is required, media which by their nature prevent the work from being experienced by touching altogether. In my own work, *Parkway Pavilion*, a temporary installation only existed for eight weeks and now can only be experienced through photographs which cannot communicate any of the sensory qualities of the original work.

A notable difference between the visual and tactile sense is the speed with which the perceptual process works. Gestalt theory maintains that the process of cognition in visual perception is immediate, i.e. Gestalten within the visual field are directly and instantly identified and understood¹¹⁷. Tactile perception is slower as the object needs to be explored physically. The wide and deep sensory field of vision encompasses a large variety of stimuli at the same time, while the sensory field of touch is limited to the area of direct contact between skin and object (usually the finger tips). We are, for instance, able to perceive a Gestalt complex of up to five words at once, while reading Braille the text needs to be scanned letter by letter, however quickly. This difference of speed in the perceptual processes related to touch and sight have been explored as early as the 18th century. Herder concludes that:

*“In general, what we touch with our hands appears larger than what we see with our eyes; the eye is quick like lightning, taking in an object in an instant. But the hand never touches an entire object. It cannot grasp a form all at once, with the exception of the sphere, which is the form of stasis and contains perfection in itself. [...] But with articulated forms, the work of the hand is never complete: it goes on feeling, so to speak, infinitely.”*¹¹⁸

It can be argued that the tactile sense is more developed in sculptors than in people who do not rely that strongly on this sense and it is also understood to be better developed with people who are visually impaired. The improvement of tactile perception through exercise was recognised by the Staatliches Bauhaus, whose founders encouraged the significance of the equal development of all the senses. Rasmussen (1992) writes:

*"Here [at the Bauhaus in Dessau, auth.], new methods were introduced to train the senses to a higher degree of awareness than in ordinary schools. The Bauhaus wished to avoid conventional architectural thinking and to liberate the creative capacity of its students. Instead of listening to lectures on traditional methods of employing materials they were to learn for themselves through their own experiments. By recording their impressions of the various materials they worked with, the students gathered a compendium of valuable information for future use. Emphasis was laid not simply on the appearance of surfaces but particularly on the feel of them. The tactile sense was trained in experiments with textures systematically arranged according to degrees of coarseness. By running their fingers over the materials again and again, the students were finally able to sense a sort of musical scale of textural values."*¹¹⁹

¹¹⁷ Seyler (1995)

¹¹⁸ Gaiger (2002), p. 94

¹¹⁹ Rasmussen (1959), p.176f

The tactile sense is of great importance in relation to the materials that a sculptor works with and the movement of the material in the working process bears temporal information that is perceived through both touch and sight. Both of these senses are crucial to the analysis of the next phenomenon.

2.4. Temporal information delivered by surface quality

Description of the phenomenon in nature

Surface texture and colour play an important role in our daily handling of food, providing us with basic information that is necessary for survival. When selecting fruit for eating - an apple, for example - we need to make our choice on the basis of its exterior appearance. There may be the choice between a smooth, shiny green and red apple that gives firm, yet not hard, resistance to the touch and a wrinkly, dull apple that appears soft, even squidgy when handled (Figure 34).



Figure 34: Old apple

The selection is made almost instantly, without long thought processes or the need to take information from the supplier into consideration: we select the firm, smooth and brightly coloured apple - it is the fresh one.

The significance of surface qualities for temporal information can be demonstrated with a wide variety of natural phenomena. Old age is instantly obvious in deeply engraved timber, the coarse surface of an ancient oak, the deep wrinkles on the weathered face of an old farmer and even in ancient rocky landscapes with their deep crevices¹²⁰.

With the apple, there is no possibility of using the senses that are directly involved with our quest for food (taste and smell) and for the initial selection we rely on visual and tactile information alone. Visual, in that we judge the apple for its 'fresh' looks, and tactile, in that we feel and press the fruit for its firmness. There seems to be 'instantaneous translation' of sensory data, as we are not really interested in the feel and looks of our food for survival. Yet, the process influences our basic judgement of good and bad food. The visual information is necessarily influenced by the external qualities of the object, and from this outer appearance we are able to make a judgement about the overall quality of the apple, particularly what it is like inside. This is an essential factor for survival.

What exactly are the characteristics of this exterior appearance that are relevant as sensory stimuli? Size and pattern are of little significance, they may vary with different varieties. Lustre and colour can also vary, yet, a dark brown colour would raise the suspicion that we are handling a rotting apple. The most important sensory data, I argue, are texture (including firmness) and form and both are related in the sense that texture is form on a smaller scale with its minute variations of depth and extension.

¹²⁰ Goethe has made this link in relation to the geological age of rock formations in the Harz Mountains. Matusek (1999)

The relevance of form and texture, perceived through sight and touch, is not yet obvious and so far I have only referred to their link to our food judgement for survival. I argue in this context that the sensory stimulus not only supplies us with data on good or bad food, but that it transmits information of an essentially temporary nature. Freshness is equivalent to newness in this case, and a dull, wrinkly apple is labelled as an 'old apple'. It is not only a matter of labelling but we conclude that the wrinkly apple has been there for a while – the conclusion that we form relates to the duration of its existence. Surface qualities, perceived by touch and sight, are directly related to temporal cognition. The sensory information is relevant to our survival and hence inherent, immediate and direct rather than culturally conditioned.

The notable changes of an apple from smooth to heavily textured, fresh to old, take place over a reasonably long time. This time span falls well within a human lifetime, but is far too long to fall within the psychological present. It is not perceived as movement, which it actually is. The dehydration and alteration of the apple's inner structure creates constant gradual changes of the outer surface in the form of contraction and as such movement of the surface. We do not perceive movement, a temporal event Gestalt, but rather a static object.

This temporal judgement of old and new, which is formed on the basis of our sensory perception of surface information, fulfils the basic semantic and evaluation criteria of a Gestalt and the object is perceived as a whole, either visually or tactilely¹²¹. It also satisfies Ehrenfels' criteria of a temporal Gestalt.

Occurrence in sculpture

In a previous chapter I dealt with the importance of the tactile sense for the perception of physical change and flow in the material itself and maintained that such movement delivers temporal information through touch. I will extend this argument here by dealing with tactility in the context of temporal information derived from the texture of the material surface and will then consider surface colour.

The work of Axel Seyler shows a well-developed sensitivity for modulation of the surface. The majority of his sculpture displays a deliberate and carefully considered application of smooth and rough texture as a means of formal expression. Such modulation reflects light in different ways, which enhances form. The lustre convex forms are the brightest parts of the sculpture, while the rough textures of deeper areas and crevices appear dark, even though they are on the same level as the former. The

¹²¹ It is worthwhile experiencing this wholeness by handling an apple with closed eyes. There is an immediate cognition of roundness, texture, temperature, and firmness. Yet the 'full picture', including all details is built up over a short period of time: beholder's time.

reticulations of the drapery in *Demeter IV* of 1981 (Figure 35) show clearly the enhancement of darkness through rough surfaces. The dress is modelled on the same plane as the hip, yet the area appears deeper due to the fine shadows that are cast by the coarse modelling style. A similar effect is achieved by similar treatment of the left thigh, where one single plane is modelled continuously but with different densities resulting from the application of clay pellets.

Building up a piece of work with clay pellets is a traditional method that was particularly favoured in European portrait sculpture of the 1930-1950s (e.g. John Sherlock's *Portrait of Derek Hill*, Ulster Museum, Belfast). Small balls of clay were applied on top of the coarsely modelled structure or skull to build up the final surface gradually. T. Huxley Jones, portraitist and lecturer at the Royal College of Art, favoured this method of modelling and insisted on the importance of



Figure 35: Axel Seyler, *Demeter IV*, 1981

“[...] making the clay work, that is the pieces are not just put on arbitrarily: they must mean something in relation to the form they are intended to express.”¹²²

Peter Dormer asserts that Jones’ method manages to

“[...] to create an effective sensation of human flesh – as though, having ensured he had the underlying structure, first of the bones, then the muscles, he was able in his final act to create the skin. He created a surface that was alive. [...] The sort of surface that practitioners

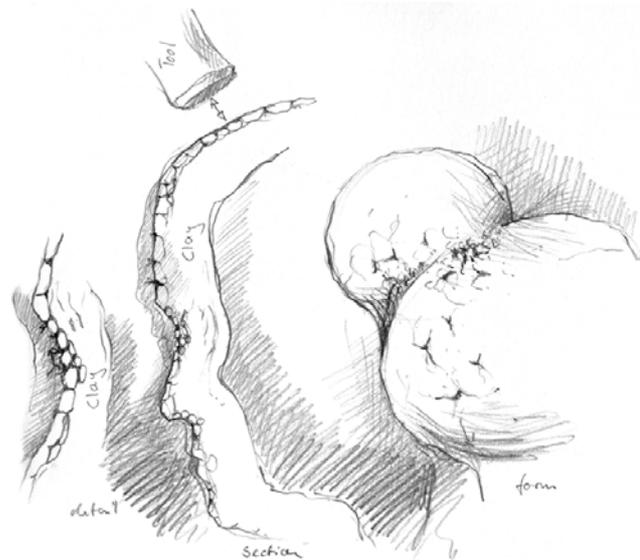


Figure 36: Clay pellets

¹²² In Dormer (1997), p. 223. Jones also insisted that no clay pellets should be removed after being placed on the object. This, so argues Dormer, makes the modeller ‘think hard before committing himself’. The maker sets himself a standard, so to speak.

dread is that which is akin to a cheap plastic bucket: unresponsive to light and shade, no material depth, and, as it happens, no plasticity."¹²³

Seyler has adapted a similar method to enliven the surface by applying pellets in varying density and flattening them down to different degrees. Higher density results in a smooth, even surface, the little clay-balls barely visible, while a lower density achieves a deeply cratered area of varying reflective intensity (Figure 36). The result is a lively surface, expressing inner and outer pressure on the sculptural form. Inner, vital forces are represented by densely modelled areas on the convex parts of the sculpture, while external forces appear to push the concave and coarsely treated crevices and depressions inwards. The comparison to a wind-filled sail with its full roundness and the folded edges springs to mind and, indeed, Seyler is a keen sailor with profound understanding of natural forces¹²⁴. There is, however, still another reason why this method of working with pellets is particularly suitable for figurative sculpture. The surface presents the beholder with a multitude of apparent movements (*Scheinbewegungen*¹²⁵), it seems animated while being essentially static. This visual effect supports the subject area of the portrait as being a representational image of a person. A modelled portrait will therefore appear more animated than the smooth cast of a death mask, or indeed a cast from life (Figure 50). The few existing life masks always served the purpose of informing the sculptor in the modelling process, but were not intended as artwork in themselves, e.g. Franz Klein's mask for a bust of Ludwig van Beethoven of 1812.

The problem is linked to the issue of depth as the surface of a plastic object does not only consist of horizontal and vertical extension (shape), but also extends into the third dimension, resulting in form. This is the realm of the sculptor, who has to express the inner forces through the depth extension of the work. Seyler stresses the relevance of depth for the plastic arts:

*"A sculptor needs to exercise his sense of depth, mentally/spiritually as well as physically. This means for the medium of sculpture not to remove the material, but primarily to add to it, to build up the piece. The form of a sphere is a point with a depth dimension for a sculptor, while a designer regards it as a multitude of circles. Plastic objects that are extended from the inside out, always appear more expressive to the beholder"*¹²⁶

¹²³ Ibid, p223

¹²⁴ It is worth noting the connection to the example of clouds and waves in a previous chapter. The full convex forms of a cumulus cloud are the results of inner forces and motion of particles that become visible on its exterior appearance.

¹²⁵ Seyler (2003), p.192. Weber (1975) uses the term *Bewegungsvorstellung*, imagined movement, to describe the illusion of movement where the object itself is static.

¹²⁶ *"Ein Bildhauer muß seinen Sinn für Tiefe trainieren, geistig als auch physisch. Bei der Plastik heißt das: wenig wegnehmen sondern immer daraufhin arbeiten, hinein arbeiten. Die Kugel ist für den Bildhauer auch ein in die Tiefe ausgedehnter Punkt, für den Designer aber eine Menge von Kreisen. Eine*

A contradiction between interpretations has become apparent here and needs to be addressed. It is understood that a rough surface enlivens an object by our stereometric vision perceiving the slightest differences of depth (Arnheim, 1974; Seyler 1995, 2003), as described here in the case of portraits. Tiny overlaps of the surface appear to change vividly with the slightest of movements of the body or eyes of the beholder. This principle has always been applied in portrait sculpture, but also in architecture. *Rustica bossa* on a Renaissance building was deliberately used by the architects to make a large wall area more interesting and lively, geared towards the pedestrian moving in the narrow streets of an Italian medieval city (e.g. Palazzo Strozzi in Florence, built 1489, Figure 38). The surface of weathered brick buildings has a similar effect (Figure 37). The fact that we perceive such surfaces as lively, however, seems to contradict the example of the wrinkled apple. Neither of the examples is a convention, both are visual phenomena and scale does not seem to play a role in either. It is possible that the understanding of durability of stone in comparison to the relative transitoriness of the apple is one key to the dilemma. The experience of relative hardness of the two by touch might allow us insight into the way the object gained its surface texture: by inner forces (drying out) rather than external forces (weathering or manipulation). The dilemma sparked off an intensive and lively discussion on the subject between Axel Seyler and myself in December 2002 that was followed by several letters and telephone conversations. In a letter from the 10th of January 2003, Seyler pointed out that:



Figure 37: Brickwall, Belfast

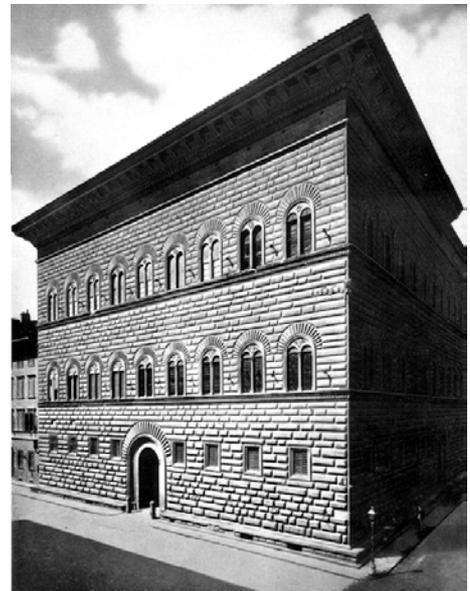


Figure 38: Cronaca, Palazzo Strozzi, Florence, 15th century

"A rough, but lively surface (i.e. not consisting of concave forms) enables the eye to see a multitude of the slightest of apparent movements (Scheinbewegungen)! Events that happen after one another in life are placed alongside each other in sculpture. Subsequently directions are read from small to large forms, from large to small (if consisting of straight forms), from below upwards, from left to right,

Plastik, die von innen ausgedehnt ist, wirkt denn auch eindringlich auf den Betrachter." Axel Seyler in a discussion on the 27 December 2002.

from stable to fragile, small to large in complex forms, etc., just as we know it from Gestalt theory. And life is movement!

And: In terms of quantity you are right with the example of fruit: but does a gherkin or raspberry not look less vital and tasty to us? And although I have avoided the temptation of space travel so far, I dare say that the more vital Earth appears rougher than the dead Mars. (But what about the cratered, scarred 'corpse' of the moon? But maybe concavity applies here again, or not?)

I also maintain, that a smooth volume only appears vital if one, perceives a difference, however slight, between dense and loose in some way (systole-diastole).

That would mean: vitality is less dependent on roughness and smoothness, but on more or less dynamism (bewegt).

I feel that a synthesis with your theory is possible... but that's your task."¹²⁷

A closer comparison of the forms and volumes of a wrinkled apple and the suggested raspberry can actually shed new light on the problem. The apple does look and feel old and lifeless in comparison to the fresh, 'young' raspberry and there is indeed a different quality of form evident. The apple's surface consists of a multitude of convex and concave shapes, but the concave outnumber the convex. Life has been drawn away from the surface through dehydration, as it were. The raspberry, however, looks vital, full of life; both forms - the overall shape as well as the individual fleshy seeds - are convex, there is no concavity present *at all*. In both cases, the surface expresses the direction of inner forces that is readable for our perception. In the example of the apple a loss of tension in the surface area (same area to less volume ratio) is created by withdrawing form-giving forces (dehydration), while in the example of the raspberries the inner forces (juices) expand the skin against the resistance of the restrictive lacing between the seeds. I argue that temporal reading, old versus new or fresh, is derived from the outer appearance of the object as a result of real or apparent inner forces, acknowledging, however, that certain ambiguity can persist.

The work of the German woodcarver Stephan Balkenhol is a good example of such ambiguity; his figures present the beholder with astonishingly vivid representations of human beings. Although depicted in stiff standing poses, their flesh is coloured and they are dressed in contemporary, often brightly coloured outfits, a treatment that contributes to their vital appearance. The main reason for this vitality, however, is the surface texture of the work, particularly the way the tools have been handled and the resulting marks. Balkenhol, along with many other contemporary wood-workers, leave chisel marks exposed, often resulting in a rough, splintered surface. This technique differs from carving methods in traditional crafts (like Bavarian limewood carvers) or many works in the history of art, where such marks are smoothed and largely removed. The effect of using hollow gauges, the most common tool for carving, is a

¹²⁷ My own translation from a letter by Prof. Axel Seyler, 10 January 2003

surface that is composed of a multitude of concave tool marks. The predominance of a concave texture, however, seems to contradict the above discussion as such a surface would appear lifeless according to that thesis. It is the pattern of ridges and the depth of the gauge marks that contributes to a lively image in Balkenhol's case. Ridges between the marks create a vivid pattern of lines on the surface that catch light and create a complex shadow pattern in their proximity: this is apparent movement. The valleys themselves are relatively shallow as the main tool used in the process is a shallow gauge with a large diameter. Such a tool leaves marks that appear less concave, and their effect is dominated by the lively, fine light and shadow pattern of the surface.

Similar qualities of surface pattern apply to other media that rely on concave tools in their production, such as repoussé (beaten copper). Again shallowness and reflective ridges counteract the perceptual effect of concavity. A good example for such repoussé is the work of Tim Shaw, commissioned for the Eden Project. Here the theme of a wild Dionysian ritual is supported by this way of treating the surface.

Koren also ascribes ambiguous form or surface texture as an intrinsic quality of the metaphysical basis of wabi-sabi, yet attributes certain other qualities to new and aged objects. His rather poetic summary of the problem brings the discussion back to sculpture again:

“While the universe destructs it also constructs. New things emerge out of nothingness. But we can't really determine by cursory observation whether something is in the evolving or devolving mode. If we don't know differently we might mistake the newborn baby boy-small, wrinkled, bent, a little grotesque looking-for the very old man on the brink of death. In representations of wabi-sabi, arbitrarily perhaps, the devolving dynamic generally tends to manifest itself in things a little darker, more obscure, and quiet. Things evolving tend to be a little lighter and brighter, a bit cleaner, and slightly more eye-arresting. And nothingness itself-instead of being empty space, as in the west-is alive with possibility. In metaphysical terms, wabi-sabi suggests that the universe is in constant motion toward or away from potential.”¹²⁸

¹²⁸ Koren (1994), p. 45

To be able to make a link between surface texture and issues of temporality in sculpture texture needs to be applied selectively, at the right spatial situation and in relation to the overall form. Seyler has predominantly used smooth, convex surfaces in *Demeter IV*. The main part of the figure itself is completely modelled this way and only drapery and 'props' are treated differently. This contrast of texture and form results in a youthful portrayal of the Greek deity Demeter, who symbolises earth and fertility. Seyler has used texture to enhance the contrast between the figure and the other elements to express this idea of vital, energetic youth. The convex body parts, however, appear to press against the resistance of lace-like elements, they are the visual expression of apparent inner, vital forces. They indeed stand beside each other in looser and denser distribution and as such relate clearly to his statement in the above excerpt from his letter.

A similar use of surface smoothness and roughness is apparent in works of many post war sculptors, often achieved, however, by different working methods. Pablo Picasso's (1881-1973) inclusion of found objects result in sharp contrasts between polished objects like bottles and modelling material. Winemaking balloons in *The Pregnant Woman* of 1950 (Figure 39), which form the breasts and belly, receive a polished treatment in the final bronze. They are incorporated in the figure by the application of large areas of clay, which partly cover the objects. The areas are only coarsely modelled and subsequently display a rough surface. Notably, Picasso has used the technique in accordance with the subject matter, the strongly convex, fully rounded objects representing the life-bearing volumes of the sculpture. Moore and Marini achieve similar effects by simply scratching some of the surface with sharp tools, such as forks, during the modelling process. Again the treatment results in the described appearance of enhanced depth and lightness.

In all examples, the effect of surface texture is used to achieve a similar message: the representation of inner, vital forces and energy. It



Figure 39: Pablo Picasso, *Pregnant Woman*, 1950

seems that many figurative sculptors of the post war era have subscribed to the idea of vitalism and vividly express this concept through their specific treatment of form and surface. A statement of Henry Moore supports this assumption¹²⁹:

"One of the things I would like to think my sculpture has is a force, a strength, a life, a vitality inside it, so that you have a sense that the form is pressing from inside, rather than having something which is just shaped from outside and stopped. It's as though you have something trying to make itself come to a shape from inside itself."

But it is not only the treatment of the surface that links these sculptors and their work, what they all have in common is that they use this particular treatment for the same subject matter, the expression of life forces in the human figure, and in particular youth or fertility. The subjects and themes are recurring in their work: the reclining figure and mother and child with Moore, the Pomona with Marini, the pregnant woman with Picasso and the Demeter with Seyler. The message of youth and life in these works goes hand in hand with a specific treatment of surface texture.

It is noteworthy that various senses relate differently to convexity and concavity. Convex form expresses inner, vital forces in sculpture that appear 'impressive' to the beholder and Rubin has identified that concavity is perceived as figure and convexity as ground in visual images (Seyler, 1995). These phenomena contribute to the fact that they appeal differently to visual and tactile senses. The sculptor Gerhard Marcks asserts that *"the tactile sense is more involved than the eye when working concave form"*¹³⁰ and Moore, talking about concave distortion between convexities (i.e. drapery) in his work, maintains that *"there can be distortions, tactile rather than visual in origin, which can make a sculpture much more exciting"*¹³¹.

Seyler (2003) has demonstrated with the example of the Temple of Queen Hatshepsut (Senenmut), Theben, (Figure 40) that the use of a building's symmetry in relation to its surrounding landscape is a design element that has been used by architects throughout the ages. The wild rock formations present a setting that enhances the

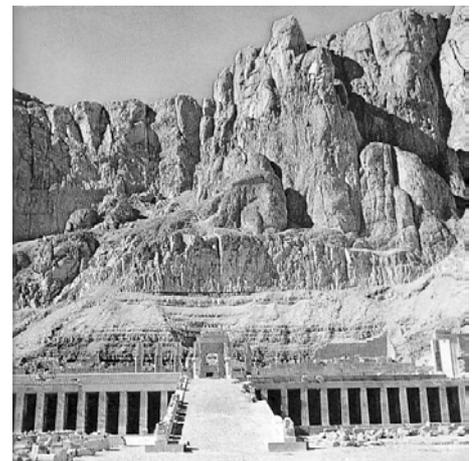


Figure 40: Temple of Hatshepsut, Thebes, 15th century BC

¹²⁹ Bland and others (1998)

¹³⁰ Frenzel (1988), p. 129

¹³¹ Moore (1966), p. 134

strict symmetry of the buildings, while this is in turn softened by the contrast of the surrounding environment. Hans Sharoun's Berlin Philharmony is another classic example where the symmetrical arrangement of the balconies is emphasised, but kept in check at the same time by the otherwise visually irritating distribution of seats. In both cases symmetrical architectural elements are significant visual interventions and the surrounding chaos is used to emphasise and moderate them. Rough surface texture in sculpture offers our vision a similarly confusing array of shapes that, in themselves, do not carry any meaning. The 'chaotic' pattern in some parts of Picasso's *Pregnant Woman* does not symbolise anything in itself and only makes sense in juxtaposition with the enclosed, smooth and independent volumes enhanced by them, just like the chaotic rocks enclose and enhance the temple architecture. Our vision is lead to focus on the more significant, smooth parts in the visual field. Within the chaos of rough texture the smooth convex areas maintain a meaningful integrity: they are a visually readable appearance of inner forces of whatever kind, just like a filled sail is the visual expression of the wind forces behind it.

The principle of unity/enclosure also applies here due to the visual integrity of such textured elements of the form. Picasso had to deal with the visual problem that the smooth shapes he added for breasts and belly are so strikingly individual and different to their surrounding, that they could not be integrated easily in the figure's overall composition. He successfully solved this challenge by gradually modelling the clay more smoothly around the curvature of the inserted form. The sculpture has thus maintained its visual unity.

The relationship of colour and time in sculpture needs to be addressed at this point. Many art historians maintain that archaic and classical Greek sculpture, like temples of these periods, were polychrome – either painted, gilded or inlaid with a variety of metals. Externally applied colour and inlay, not being an integral part of the material's surface, was lost over time and giving the architecture and sculpture their monochrome appearance that we see in collections today. In Renaissance times, when there was a growing appreciation of ancient art, this lack of colour was not understood as a temporary process, but was assumed to be a matter of choice of the ancient sculptor. Even writers like Herder in the late 18th century assumed Greek sculpture to be uncoloured, exposing only the qualities of the material¹³².

The 'fashion' of keeping the material appearance of the work has dominated, with few exceptions, sculpture right up to the time of Modernism. At least since the Renaissance, however, patination has become the surface treatment of choice for sculptors working in bronze. Nicholas Penny (1993) argues that patination was actually

¹³² Gaiger (2002), p. 54ff.

a matter of choice to the ancient Greek and even Egypt. Referring to the Greek ‘Riace bronzes’ (Figure 41) found in the Adriatic Sea in 1972, he states:

*“A patch of perfectly preserved smooth black surface beneath the crust that covered the bronze during its long stay under the sea suggests that the sculpture originally had a black patina, not unlike the blackened portions of the statuette of Ptah. In any case, we can assume that the colour of the metal was sufficiently dark to contrast with the copper of the lips and nipples. Like Egyptian bronze sculptures, these Greek statues would have resembled in colour and finish polished hard stones such as basanite and basalt [...]”*¹³³

Such dark colour was most likely achieved by using sulphides, such as ‘liver of sulphur’. Dark surface tones obscure form by restricting the range of visible light and shadow modulation. However, the lustre of bronze still displays a multitude of highlights that is sufficient enough to enliven the form. The process of patination is essentially different from painting the surface of the metal. The colour does not adhere to the surface but is an integral, cohesive part of the molecular structure: the material itself changes. Besides sulphides, weak acids, such as copper or ferric nitrate, are applied to the hot object, which oxidise the metal and display a variety of colours. This process creates a patina¹³⁴, a change of surface qualities over time. The shiny golden colour of bronze will inevitably go brown and then dark black or green, depending on atmospheric conditions. This process can take decades or centuries and is accelerated by the technique of patination, which enables the artists to achieve a more pleasant finish to the work.

Our attention is attracted by the high contrast that is created by the highlights of convex volumes and the reflection of shadows in these polished surfaces (refer again to Picasso’s example, figure 39). The rough textured areas also display a combination of light and dark, but a diffuse pattern is created and consistent areas of light and dark are



Figure 41: ‘Riace’ bronze

¹³³ Penny (1993), p. 228

¹³⁴ The Italian term patina refers originally to a polishing agent for leather and fur, but its meaning was extended in the 18th century.

kept to a minimum. Such smoothed volumes enhance the afore mentioned unity not shared by the surrounding area. The particular qualities of bronze, its ability to be polished to a high lustre, assist such contrast. While intentional patination and polishing give controlled effects, it can also be a result of ‘ageing’ itself. Pietro Tacca's boar of the *Fontana del Porcellino* in Florence's Mercato Nuovo shows that decades of visitors rubbing the boar's nose contributed to the bright shiny form of the nose standing out from its dark, rough surroundings. Clerics who regularly passed Marino Marini's *Miracolo* in Venice, depicting a collapsing horse with an erection, insisted that the horse's penis be detached on festive occasions. Repeatedly unscrewing and re-attaching the penis, however, polished it in such a manner that it now stands out visually from the dark patination of the rest of the sculpture.

The figure-ground relationship is again significant in this context. The unity that the polished surface displays allows such volumes to dominate over the ground of the dark patination and rough texture. In the context of Picasso's example, the breasts are read as the figure (or rather: significant form), the surrounding dark roughness as the ground. The reason is the strong contrast of the breasts with the diffuse light of the surrounding area, emphasising the integrity of their clear form. Volumes with a strong contrast between light and dark are set within a greyish and diffuse background.

Wabi-sabi emphasizes the effect of time on material qualities as a natural process (Koren, 1994). It promotes the use of natural materials that are prone to marking through use, with the effects of weathering and decay with age. Objects made of these materials are meant to display their temporal condition and evidence of this process is given by the surface of the object, bearing marks, stains, scratches, dents, etc. The surface is the interface between the object, the user and the environment. It mediates information to the senses but is also recipient of external forces, such as pressure, abrasion, heat and light, which will inevitably change the object's structure and appearance over time. Objects maintain their character and value even in an advanced state of decay, when they are brittle and structurally weak. Other qualities of these objects are irregularity and simplicity in form and they are often left in an unrefined state of manufacturing. The materials are used as found and the unaltered state can offer rich surface structures, enhancing their tactility. Untreated and



Figure 42: Henri Cartier Bresson, Giacometti

unmachined wood, stone and wool express such tactile qualities particularly well (Figure 42). Ageing and weathering increase tactile qualities over time by abrading softer parts of the heterogeneous structure of the material: the grain of wood becomes more enhanced; crevices in stone get deeper and wool pills. The older these materials get, the more they stimulate the tactile sense. Sharp corners become rounded, the form changes and the whole object becomes more appealing for the beholder to touch. Such qualities can be used to an advantage in the design of new objects like mobile phones and modern computer mice, which are deliberately smoothed and rounded to improve their tactility. Old hand charms, round wooden pebbles, show that the effect of temporal processes of ageing and decay can create a 'closer relationship' of object and its experiencer. The object 'grows on you' so to speak, a process often perceived with old tools and personal gadgets like key fobs.

The visual appearance of aged objects is enhanced, too, as light and shadow distribution on the surface becomes livelier. The fading and bleaching of colour as a result of light and temperature impact contributes to the enhancing of form. Gestalt theory describes a perceptual hierarchy, where movement dominates over colour information, which again is evaluated to be more important than form. Subsequently the loss of colour information will contribute to clearer perception of form. The rough surface of wooden or stone objects displays a multitude of 'apparent movements' (*Scheinbewegungen*), as described earlier in this section, which, as a result, can appear livelier when old than new.

2.5. Permanence and timelessness

The previous sections have either dealt with time in form of change or the sensory observation of the passing of time. Such temporal information gives us indeed the strongest perception of duration. Yet, there is another, non-fugitive, concept of time that shows an absence of change or events and, describes a kind of stand-still. In the following I investigate the concepts of permanence, eternity and durability in our environment as well as their occurrence in sculptural media.

Occurrence of the phenomenon in nature

Two examples shall illustrate the concept of permanence in nature to varying degrees: stones as temporal objects and landscape as temporal environment.

The natural environment contains minerals in various states. On a larger scale they appear in the form of bedrock and surface rock that determine the appearance of landscapes, and as ground sand they are present on beaches or forms part of the soil. Between these two poles, stone appears in a great variety of sizes, forms, consistencies and colours and the studies of these many substances fuel the science of geology and mineralogy. These disciplines are concerned with the composition and qualities of minerals and the genealogy and history of the geosphere. In the context of the thesis, the focus on stone is twofold: on the temporal 'message' we receive from handling and looking at a stone, as well as rock in landscape as a temporal-spatial concept.

The reader is encouraged to pick up a pebble, handle it and to look at it for a while. We may imagine here a round, relatively smooth stone and that is cold and dry to the touch. It feels solid and hard and it won't break if dropped on the ground. It also suggests that a great effort, force or heat would be needed to change its composition or external appearance. These qualities seem to apply to various types of stones that we can find, yet there are slight but distinct differences. Granite seems the hardest, together with flint and feldspar, while there are softer stones that can be scratched or split fairly easily such as slate and soapstone for example. These changes can, however, only be inflicted with the assistance of a hard implement.

Rock as the 'skeleton' of landscape offers similar qualities, yet on a larger scale. Different geological structures give entirely different visual appearances: granite landscapes give a harsh appearance while slate landscapes seem more soft, rounded and weathered. So do chalk which may even end abruptly in cliffs, like the white cliffs of Dover. Basalt and other volcanic regions have very distinct and unique features such as the Giant's Causeway in Co. Antrim. The shaping of these landscapes is obviously determined by their geological origin, the hardness of their geological foundation and

their relation to local climate over millennia. What they all have in common, however, is that they do not change their appearance instantly, with the possible exception of volcanic eruptions and earth quakes.

The material in both examples, stone and rock, delivers a strong temporal message. The objects are all very old, exceedingly older than a human lifetime; neither do they appear to undergo continuous or sudden change, nor will they perish completely in the foreseeable future. They are regarded as durable and lasting, carrying apparent qualities of permanence as well as timelessness.

Analysis of the phenomenon

What is the root of such perception and temporal understanding? The answer lies in the material qualities and our sensory perception relating to these. While this assertion seemingly implies a certain understanding of natural science on behalf of the beholder, she/he can arrive at certain conclusions through careful observation of nature, of geological constellations and rock formations in this case. Such understanding is the outcome of visual thinking and is largely independent of empirical knowledge (Arnheim, 1975). An example from cultural history may illustrate this point.

Uwe Pörksen (in Matussek, 1998) examines Goethe's understanding of nature and specifically his concept of time in relation to literary descriptions of geological ideas and their visualisation¹³⁵. Goethe's findings and theories fall into the early 19th century, an era in which geological science was in its infancy, but also an era that is significant for the changes in cultural understanding (temporalisation), as described in a previous chapter. Goethe's understanding can give us valuable insight into the temporal concepts derived from the observation of nature.

At the end of the 18th century, eternity and permanence were still understood as the essential factors responsible for the appearance of the earth's surface. Early researchers in geognostics had not yet understood the influence of extremely long periods of the earth's history on its present appearance. Goethe developed a basic idea of formation and transformation in this scientific environment. The method by which he arrived at this theory was careful observation of natural phenomena, as Pörksen describes it - "*his starting and focus point remains the visual, cognitive and ordering subject of the natural scientist*"¹³⁶. The appearance of rock formations in the German Harz Mountains was the centre of his inquiry carried out by 'visual thinking'. Goethe visualised the process in the form of a series of geometrical-analytical studies and drawings (Figure 43). He maintains that the cracks and crevices of the granite are the result of a

¹³⁵ Matussek (1998), p. 101. 'Raumzeit. Goethe's Zeitbegriff aufgrund seiner sprachlichen Darstellung geologischer Ideen und ihrer Visualisierung'

¹³⁶ Ibid, p. 103

crystallisation process (*Bildung*) and subsequent change as a result of climatic influences (*Umbildung*). Metamorphosis is as such a central idea in Goethe's scientific theory. Reflecting on Goethe's understanding of geology, we can make assumptions about his understanding of time which is different to our contemporary concept and which Pörksen describes as follows:

"Goethe must have had a fundamentally different perception of time than the one we know. Time is not regarded as disconnected from space, which is in this time-concept understood as visible space. I would like to describe this as spacetime. Time is neither understood in Newton's nor Kant's sense as a kind of eternal or pre-empirical time, which always remains constant. Nor is it understood in our contemporary view of the abstract dimension of an empty timespan whose linear vacuum increases the more objects become a future index for us. This contemporary concept of time does not determine Goethe's concept of history and is not dealt with.

Rather he perceives spacetime as a time period. He is not interested in the temporalised space, determined by time, but time, which originates in visual space, which determines its own borders and is the horizon. In his view, space articulates itself through geological eras. They have a space Gestalt rather than a time Gestalt."¹³⁷

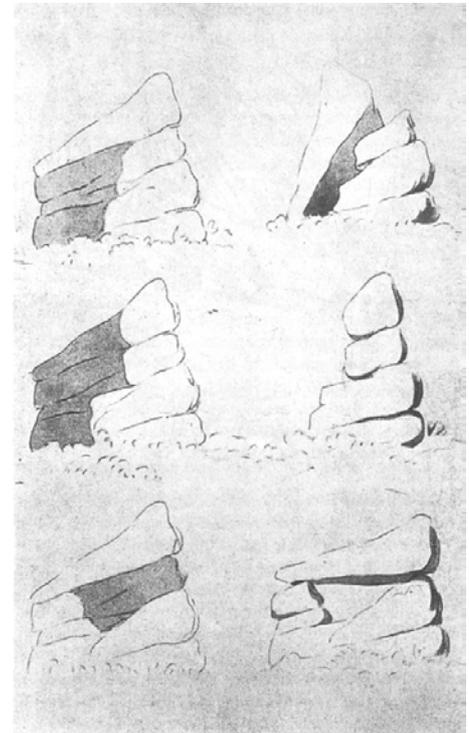


Figure 43: J.W. von Goethe, *Granitblöcke*, 1820

Goethe's concept of time has developed out of observation of nature and particularly through his geological interest. His conclusion is not a temporal-linear concept but a spatial-temporal one; hence overcoming the established understanding of eternal permanence of the earth at his time. In terms of the thesis this demonstrates a case of a temporal concept drawn out of visual thinking in relation to a material.

Goethe has developed the idea of genesis, metamorphosis and decay, a concept that shows a close relationship to wabi-sabi. Japanese *chadô*-masters often referred to poetry to emphasise the aesthetic system of wabi-sabi. Writers like Fujiwara no Teika (1162-1241) expressed the spiritual and material concept in short poems, the *haiku*. Goethe also uses literature to describe temporality particularly evident in the poetry collection *West-östlicher Divan*. This particular dialogue between Laertes and Philine in *Wilhelm*

¹³⁷ Ibid, p. 123/4, my own translation.

Meister's Lehrjahre demonstrates clearly the spiritual relationship between wabi-sabi and Goethe and their common acceptance of change:

*"Don't laugh, he said; it is awful how time passes, everything changes and meets its end! Look, here was a nice camp a short while ago; how beautiful the tents looked! How lively everything was! Everything was watched over so carefully. All is suddenly gone. The bent straw and the cooking pits will bear evidence only for a little bit longer, then the plough will turn everything over. The presence of many thousands of men will only haunt the heads of old people. Philine started to sing and urged her friend to dance in the hall, calling out: As we cannot run after time that has passed, let us worship it with pleasure as a beautiful goddess, while she is passing us."*¹³⁸

Goethe stresses the inevitable passing of time, accepting change and subsequent decay as a common, natural fate of all material objects. Aristotle's understanding of time as continuous change is evident in Goethe's metamorphic principle of *Bildung und Umbildung*, as well as in wabi-sabi's spiritual concept of transition and decay. For all of them, the principle of transition is at the heart of the relationship of form, material and time.

Rock and stone are observed with our visual and tactile senses, informing us about form, solidity, texture and other surface qualities. Their temperature can be felt, their colour and patterns seen and they may also have a distinct smell when wet. For the perception of the temporal implication, however, the senses of touch and vision seem most important.

The stone as an object does not determine the duration of the visual stimulus. Unlike other natural phenomena, such as a sunset, the substance and appearance of the stone is unlikely to change within the duration of looking at it. It is not an event but an object with non-temporal Gestalt qualities. Subsequently the beholder determines the duration of its visual stimulus. Furthermore we can repeatedly watch the stone again without the likelihood of noticing considerable change. Stone formations, such as the Giant's Causeway or the Externsteine near Detmold, Germany, have remained unchanged

¹³⁸ Goethe (1997), p. 213. *"Lache nur nicht, Laertes; es ist abscheulich, wie die Zeit vergeht, wie alles sich verändert und ein Ende nimmt! Sieh nur, hier stand vor kurzem noch ein schönes Lager: wie lustig sahen die Zelte aus! wie lebhaft ging es darin zu! wie sorgfältig bewachte man den ganzen Bezirk! und nun ist alles auf einmal verschwunden. Nur kurze Zeit werden das zerstreute Stroh und die eingegrabenen Kochlöcher noch eine Spur zeigen; dann wird alles bald umgepflügt sein, und die Gegenwart so vieler tausend rüstiger Menschen in dieser Gegend wird nur noch in den Köpfen einiger alten Leuten spuken.*

Philine fing an, zu singen, und zog ihren Freund zu einem Tanze in den Saal. Laß uns, rief sie da wir der Zeit nicht nachlaufen können, wenn sie vorüber ist, sie wenigstens als eine schöne Göttin, indem sie bei uns vorbeizieht, fröhlich und zierlich verehren."

within living memory. Consistent appearance over a long duration is important for the impression of permanence given by rocks or stones.

Occurrence in sculpture

The saying '*sich von einem Bildhaue mit einem Portraitr verewigen lassen*', 'to be eternalised by a sculptor' is a German expression used when commissioning a portrait. It may not be the principal reason behind portrait sculpture or painting, but it is certainly a driving force behind some figurative works of art. Permanence and durability are seen as essential qualities of sculpture in stone or bronze, they are inseparable and the evidence is obvious all around us. Works of sculpture have overcome centuries, even millennia, they have survived wars and natural catastrophes. The only evidence of long lost cultures and forgotten historical events were and still are works of architecture and the plastic arts. The earliest images that bear testimony to man's creative urge are small pieces of modelled clay, up to 30,000 years old, like the Venus of Willendorf¹³⁹. They are still present and have hardly changed their appearance despite the passing of 1,000 generations. Is this durability also the 'strange beginning', to use Gombrich's term, of the myth of the permanence of sculpture?

Ernst Barlach (1870-1938) was one of the most important and influential German sculptors of the 20th century. His work symbolised the plastic strand of expressionism with its clear lines, planes and volumes. Not unlike the work of Käthe Kollwitz, human beings with their spiritual quest, suffering and conditions were the one and only concern in his oeuvre. Barlach is the central figure in the *Mecklenburgische Tradition*, which ran parallel to the Berlin School. *Mutter Erde II* (mother earth, Figure 44) is a bronze piece that was made shortly after the terror of the First World War, in 1920. It depicts a single female figure, only her face and toes visible under heavy drapery in the form of a cape. Her face appears resigned, stoic and depressed, but at the same time



Figure 44: Ernst Barlach, *Mutter Erde*, 1920

¹³⁹ Like many of these early sculptures, this 'Venus' is very small and subsequently easy to carry. In comparison to most sculpture, which is essentially static, these pieces were moveable, dynamic. Seemingly they did not have a base and were only intended to be held in the beholder's or user's hand, just like Henry Moore's touchie-feelies, mentioned earlier.

full of grace and kindness. She sits, but no chair or stool is visible. This pose determines the structure of the composition, which is essentially pyramidal, but distanced from the ground by the skirt draped around her legs. The folds are bold and sharp, creating the large planes and volumes that are so typical of Barlach's expressionistic style.

The discussion on permanence in sculpture has to address two important aspects of temporality: the material quality of durability and the conceptual manifestation of timelessness in the subject; the two are, however, inseparable.

Barlach's *Mutter Erde II*, like the *Venus of Willendorf* (Figure 45) a symbol of the earth mother, seems in deep rest, sitting and awake. The only muscular tension is noticeable in the arms hidden under the heavy drapery, more suggested than visible. The sculptor has expressed no movement, nor did he attempt to suggest a moment of transition. The figure is truly at rest. Being seated, the image of the woman does not try actively to overcome gravitational forces, but rather gives in to them, the mass of her body being drawn to the ground. Barlach expressed this concept of passivity through the choice of a pyramidal composition. More than other geometrical bodies, triangles, cones and pyramids do not only manifest gravity physically, but also visually. Physically, a heap of sand will always form a conical shape as a result of gravity, with a broad base and pointed at the top. A sand heap



Figure 45: *Venus of Willendorf*, Palaeolithic

standing on its tip, the other way up so to speak, cannot exist. But gravity also affects our vision. A triangle on its base is always perceived as stable, yet passively reacting to gravity, a triangle standing on its tip is somewhat uncomfortable and visually unstable (Figure 46). The latter principle has been applied by designers in form of the 'Yield!' traffic sign: it is uncomfortable and an unusual sight in nature. The visual language of this sign aims to catch our attention to warn of possible dangers ahead.

Barlach's choice of composition makes use of this visual principle. Mother earth is giving in to gravity, the composition appears extremely stable and solid, reflecting the rested subject matter. A

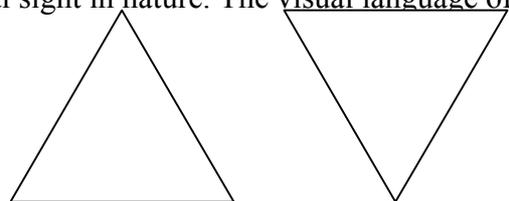


Figure 46: Triangles

strictly pyramidal form, however,

would have appeared too passive, even boring. To counter this, Barlach distanced the upper part of the work from the ground, not breaking the restfulness, but making it more active and alive by creating visual tension. Composition and iconography are inseparable. The symbolism of the earth expresses permanence, even eternity and the female element stands for active, cyclical repetition of life and birth. Connected with the earth is gravity, a physically inseparable and necessary force and a quality of any mass, hence a permanent or eternal symbol, too.

Mutter Erde II carries the temporal connotations of eternity, intended, or not, through its composition. She appears indeed at rest to the beholder, not expressing any signs of change, movement or temporality: she signifies timelessness. Barlach reinforced this impression by yet another compositional aid: the connection to landscape.

The drapery of the cape resembles images of a valley, folds showing up like waves or rather terraced slopes.

Mutter Erde II expresses an iconographic dualism between landscape and human (female) figure. This dualism is by no means unusual; we can find much evidence of it in art as well as in cultural history. The

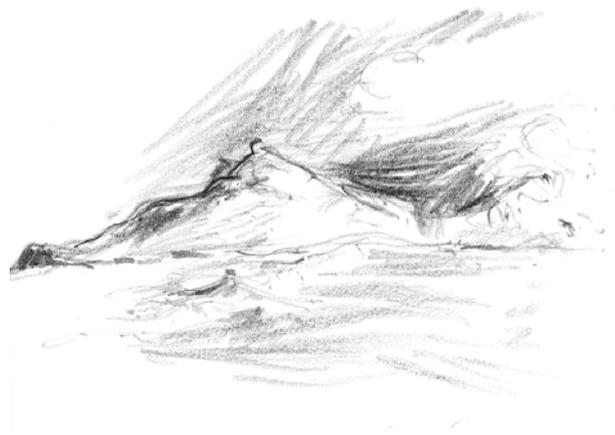


Figure 47. Holger Lönze, *Circe*, 2001

northern approach by sea to Circe on the Mediterranean coast of Italy, for example, reveals a mountainous headland. Its resemblance to a lying female figure is striking and the connection between female beauty and this landmass is evident in its name: Homer has linked the beautiful and seductive Circe with this important, fertile and visually striking area of the Campagna (Figure 47).

The German art historian Christa Lichtenstern has based a monograph on Henry Moore on the representational dualism of figure and landscape. With the examples of Moore's *Two-Piece Lying Figure No. I* and *II* of 1959 (Figure 48) and 1960 she explains the subject of



Figure 48. Henry Moore, *Two Piece Reclining Figure*, 1959

figure/landscape in his work. She refers to a quotation by Moore

that is equally valid for describing Barlach's *Mutter Erde II*:

*"All experience of space and the world springs from feeling of the body. This explains the deformation of my figures. They are not really contortions of the image of the body. I believe that one can express something non-human in the human figure, landscape for example: similar to the way we feel mountains and abysses with our body. Think of the poetic principle of the metaphor: we express one thing through the image of another. It seems to me that I can express more in such poetical penetration of the world than with the human figure alone."*¹⁴⁰

Moore was indeed drawn to stones and rock formations from his early youth and at several points refers to walks to Adel Rock in his native Yorkshire as a child. Like Goethe, he was fascinated by the permanence displayed by their solid appearance as well as intrinsic aspects of time in the form of metamorphosis: *Bilden und Umbilden*. Lichtenstern states:

*"Moore takes up the still vital heritage of the romantic era with the urge of separation and analogy, aiming towards a 'poetic penetration of the world' by means of 'landscaping' the human figure. He achieves this, however, on the basis of Goethe's Gestalt phantasies. Moore was leading as a sculptor and Englishman in this context, as well as being a spiritual follower of Wordsworth, Blake, Palmer and Turner. Like no one else in the 20th century he sharpened the understanding for the ethos of form."*¹⁴¹

Like Moore, Barlach achieves a clear separation between figurative and landscape elements simultaneously with an analogy between the two. At no point does the dualism become amorphous: figure and landscape always maintain their integrity. Inevitably this figure-landscape analogy carries an incompatible temporal dualism: the permanence of landscape versus the transience of the human being. I argue that Moore's and Barlach's work express an even more archaic understanding of landscape as permanence than Goethe does with his early understanding of *Bildung und Umbildung*. The latter indeed incorporates aspects of change and duration, not represented in the work of Barlach and Moore.

The figure-landscape dualism is also evident in the early work of the Spanish sculptor Eduardo Chillida (1924-2002). Although best known for his monumental and abstract works in iron, such as the *Peine del Viento* (Windcombs) in San Sebastian,

¹⁴⁰ Lichtenstern (1994), p. 116/118. Moore in an interview for a German newspaper in 1954; no English original could be found. "Alle Raum- und Welterfahrung geht aus vom Körpergefühl. Von daher erklären sich auch die Deformationen meiner Figuren. Sie sind gar nicht so sehr Verzerrungen der gegebenen Körpergestalt. Ich glaube vielmehr, man kann im Bilde der menschlichen Figur zugleich auch Außermenschliches ausdrücken, etwa Landschaft: ganz entsprechend dem, wie wir Berge und Schluchten im Körpergefühl nacherleben. Oder denken Sie an das poetische Grundprinzip der Metapher: auch da drücken wir doch ein Ding im Bild eines anderen aus. Mir scheint, ich kann in solchen poetischen Weltdurchdringungen mehr vom Weltganzen aussagen als mit der menschlichen Figur allein..."

¹⁴¹ Ibid, p. 118

1972-77, he turned first to figurative sculpture after giving up studying architecture. Octavio Paz describes Chillida's early work with words that reflect exactly Barlach's iconography in *Mutter Erde*, asserting that:

"The sculptures of the first years between 1948 and 1951 reveal a simultaneous and twofold attraction to the woman and the earth. The stone appears to breathe, animated by a dark urge of embodiment; for her part, the heavy female forms evolve as slow earthly spaces: mountains and plains. Mountain-woman: calm energy, yet secretly active. Is it a rigidity that precedes the awakening of elements or one where the body has fallen into a mineral-like sleep?"¹⁴²

Permanence is not only expressed in the context and subject matter of Barlach's or Chillida's work, but also in their choice of metal, either bronze or steel, as the material. It has been explained in a previous section that sculptors often transfer the soft clay into a more durable and permanent material. What is the reason for this change? Is hardness and solidity regarded as equivalent to permanence and softness to transience?

The majority of sculpture we see in galleries and museums now is made of a hard and rigid material often stone, bronze or wood. One reason is that these materials have survived the misfortunes of time whether this be natural catastrophes, wars, weathering, deliberate damage or neglect. In each case the object has proven to resist external forces of various kinds, largely through the qualities of the material it is made of. There are of course cases where the material's fate was sealed, either on account of its preciousness or usefulness for other, more urgent purposes. Many bronze sculptures and bells were melted down to serve another life as weapons, a fate that has contributed to the loss of original Greek bronzes, for example. All surviving objects however have stood the test of time due to their durability. The lack of sculptural objects in soft or fugitive materials, such as wax, unfired clay or ice, can be attributed to the fact that such materials did not last or got lost and decayed over time. We also have to consider, however, that most sculptors did not intend their objects to stay in this state and subsequently transferred them into a more permanent material of the kind described above. The soft pattern or often wax original got either lost in the process or was discarded afterwards. The lost-wax process in particular displays a process that is not unlike Goethe's understanding of creative processes in nature: a process of *Bilden* and *Umbilden*, formation and transformation. Nicholas Penny describes this rather poetically:

¹⁴² Haenlein (1981), p.23. Original text: *"Die Skulpturen der ersten Jahre, zwischen 1948 und 1951, verraten eine doppelte und gleichzeitige Anziehung durch die Frau und durch die Erde. Der Stein scheint zu atmen, wie beseelt von einem dunklen Willen zur Verkörperung; ihrerseits entfalten sich die schweren weiblichen Formen so langsam wie die irdischen Räume: Berge und Ebenen. Berg-Frau: Energie in Ruhe, doch heimlich aktiv. Ist diese Unbeweglichkeit jene, die dem Erwachen der Elemente vorausgeht, oder ist es die des Körpers, der in mineralischen Schlaf gesunken ist?"*

"Important though wax may be, especially in comparatively recent European art, as a material in its own right, its great contribution to sculpture has been one of continual sacrifice, flowing out of the moulds into which the molten metal entered."¹⁴³

In my own practice I tend to destroy all my original work made from plasticine or clay after the moulding process. There is no need to keep them as they exist in a different material and, possibly more important from the point of economy, the original material can be used for new modelling processes, saving on production costs. This is and always has been a practicality of the technology involved in the process of casting sculpture. The same applies to maquettes or bozzetti once they have fulfilled their purpose of developing and exploring a new form or composition. They were often neglected after they were translated into different material or a larger scale. In some cases, however, these are cast themselves in a more durable material. In general work in soft materials is not intended for the sculpture's final state, but there are exceptions, such as the wax and plaster sculpture of Medardo Rosso. Every material has its particular temporal characteristics.

The problem might be further clarified by turning to an example of contemporary sculpture in an 'unconventional' material. What has been discussed so far in this section is a temporal quality that is intrinsic to the material. Durability, so to say, goes hand in hand with the material of bronze, while a perishable nature is an unavoidable side effect of traditional modelling substances like clay and wax. These materials are part of well-established sculpture processes. While the material can be chosen, the sculptor can generally not influence their temporal quality. In many contemporary works, this is different, however: the sculptor chooses a particular material for its perishability rather than durability. Many sculptors have experimented in the second half of the 20th century with organic materials from chocolate to fruit and dung, whose qualities differ considerably from traditional mineral or metal-based materials. Mark Quinn (born 1964) uses such an organic material in self-portrait *Self*, 1991/96. Made of nine pints of his own blood, this life-cast has to be refrigerated constantly in order to maintain its form. In the course of the work's creation, the material was transferred from a liquid and perishable state into a hard and more permanent one. In so far it is not unsimilar to bronze which is first molten to take a form and then 'hardened' by cooling. The difference, however, is that it needs to be maintained in this state with the aid of refrigeration and to be isolated from the environment via a glass case. While a bronze-sculptor can neglect further maintenance of the work's state, Quinn had to consider and carefully plan the long-term future of the work, even re-casting of the work. The work

¹⁴³ Penny (1993), p. 218

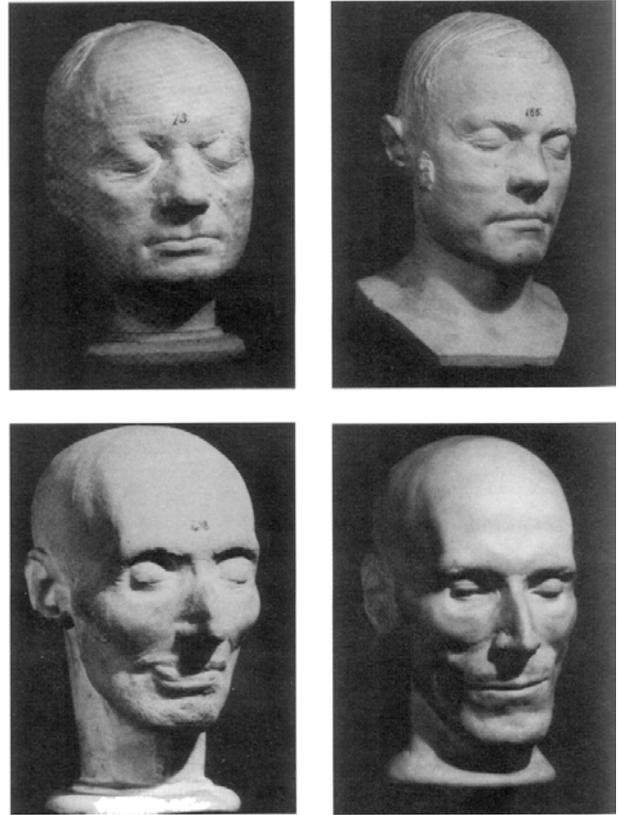
relies on the material's potential of changing state which contributes to the idea of suspended existence as part of its temporal nature. The perishable nature of the finished work is a deliberate choice for the final material, while a traditional sculptor only uses a perishable material for work in progress, as described in a previous section.

The consequences of Quinn's choice of material are complex. There are obvious environmental consequences, as the energy consumption (embodied energy value) in the long term will significantly exceed the energy value of a material whose 'natural' state in a normal environment is solid anyway. There is also a greater risk of accidental damage, as the work is not only fragile but also liable to damage by unexpected events, such as power failures and - an event that eventually proved fatal for the work - accidental unplugging of the refrigeration unit.

There are various other reasons why many sculptors prefer a durable material over a more transitory material. The economic and commercial factor is evident, given that most buyers regard sculpture as an investment and permanence is subsequently a condition, which maintains its undiminished value over time. In most cultures sculpture has served religious purposes and metaphysical permanence was reflected through the durability of the image or icon; medieval sculpture on cathedrals or relic containers are good examples of this.

But sculpture can also preserve transience of time for a long period thereafter. It can translate fugitive ideas, concepts and beliefs, but also the passing life into something more material and lasting. This is a crucial concept that becomes evident in various issues related to the plastic arts, particularly in realist sculpture: the concept of the transitional moment, the taking of life- and death-masks and the depiction of movement as such. Sculpture captures narratives and images that are otherwise contained in a more vulnerable form like literature or oral traditions: books can easily decay, orators will pass away. Sculpture preserves these concepts, beliefs and ideas and has the ability to pass them on to generations to come. It is a means of 'eternalising' culture. The knowledge that we have of ancient civilisations is carried over to us only by means of plastic objects. We know very little about the culture out of which the *Venus of Willendorf* evolved and even this little knowledge has largely derived from the objects themselves.

Portraits satisfy a similar need, i.e. the urge in humans to have a lasting counterfeit of themselves, serving a variety of purposes throughout history. There is, however, an essential understanding in the process of making or commissioning a portrait, that it is likely to outlast the sitter's lifetime. A clear juxtaposition of the transience of a person's life to the permanence of the portrait, in whatever material, is evident¹⁴⁴. The tradition of taking deathmasks (Figure 49, bottom) also reflects this understanding, as the decaying body is materialised one last time at a stage where it is still recognisable.



Deathmasks were usually taken from people remembered for their

Figure 49: Life- (top) and deathmasks (bottom)

achievements during their lifetime. The death mask subsequently visualises the person, whose name, achievements or books are otherwise the only remaining records of existence. The same holds for portraits: what is materialised in a more durable material is the visual appearance of the sitter. The difference to a death mask is, however, that the portraitist is also able to catch and manifest the ephemeral qualities of the sitter's character or personality through the handling of the material and their own perception and concept.

It has become clear that permanence of sculptural materials such as marble and bronze is often taken for granted in the same way that landscapes are attributed with an element of permanence. Even taking wars, disasters, etc. out of the equation, this assumption proves to be a fallacy. All material in the universe is developing towards a state of greater entropy, according to the second law of thermodynamics. However well kept and protected, it will inevitably deteriorate over time without the physical possibility of reversing the process¹⁴⁵. The changes are, however, very subtle and are

¹⁴⁴ This concept is even evident in contemporary art as previously described by the fate of a self-portrait by the contemporary British conceptual artist Marc Quinn.

¹⁴⁵ This was subject of the first essay written in the course of this research. The investigation was based on the medieval tomb sculpture of Affreca, wife of John de Courcy in the abbey church of Greyabbey, Co. Down.

not perceived as movement (as explained before). Further, the period in which they take place well exceeds a human lifetime and so would need careful recording in order to be monitored. Wabi-sabi provides a philosophical underpinning for this temporal phenomenon in physical objects and materials by referring to the inevitable transience of all material objects. Koren states:

“All things are impermanent. The inclination towards nothingness is unrelenting and universal. Even things that have all the earmarks of substance-things that are hard, inert, solid-present nothing more than the illusion of permanence. We may wear blinders, use ruses to forget, ignore, or pretend otherwise-but all comes to nothing in the end. Everything wears down. The planets and stars, and even intangible things like reputation, family heritage, historical memory, scientific theorems, mathematical proofs, great art and literature (even in digital form)-all eventually fade into oblivion and nonexistence.”¹⁴⁶

Stone can be described as a carrier of cultural values of permanence. This is evident in the application of the material at places of worship, memorials, etc. Moses received the commandments written on slabs of slate, the name St. Peter derives from *petra*, the rock and memorials to the dead are grave-stones. The Lough Erne area has an uninterrupted tradition of carving heads in stone for more than two millennia and rock formations have always been points to which cultural concepts were attached. The *Externsteine* in Westfalia, Germany, have been a continuous cultural focal point at least from the Mesolithic time when civilisation left its first marks in the stone. The word sculptor derives from the Latin *sculptare*, to carve and its German term is *Bildhauer*, literally translated as ‘picture or image hewer’. Culture, permanence and material are inevitably linked to each other, as each generation with their transitional existence tries to leave some permanent reminder of their understanding and concept of themselves and the world they live in.

¹⁴⁶ Koren (1994), p. 46/49

2.6. The transitional moment

The transitional moment¹⁴⁷ is possibly the clearest and best-known manifestation of temporality in realist art. The discussion of its nature and presence in works of art goes back to antiquity, particularly Greece (as described by Pochat, 1996). Classic German aesthetics focused on the issue more than 2000 years later and one particularly famous outcome of this debate was Lessing's book *Laocoön* of 1766. The subject is still of great relevance for any contemporary artist working in the figurative tradition and has been addressed by writers in the field of art theory, such as Bammes (1995) or Weber (1975). The issue is raised at this point from a different angle. In relation to previous discussions of temporal phenomena, their observation and manifestation in sculpture, I attempt here to locate the transitional moment in nature and relate it to the perceptual/psychological basis of its understanding. The essential question raised here, similar to other sections is: how does the temporal expression of the transitional moment in art relate to life and nature? How does it relate to our observation of movement and action? Having followed up, without success, several possible links and having been unable to find a temporal phenomenon in nature that is directly related to sculptural expression, I decided to start the investigation from the analysis of the transitional moment itself, in the hope that this would shed a different light on the issue. Consequently I am approaching this part of the discussion from a different angle to that followed with the earlier phenomena explored.

The phenomenon in sculpture

It is appropriate to start with defining the transitional moment and to find out how it manifests itself in art. Sculpture and painting, as well as photography, can neither express the sequentiality or succession of events nor the flow of movement through their material. They are essentially static media (as discussed before) and as such are unable to manifest in the same way the temporal dynamics of life: successive events in nature stand alongside one another in the pictorial space. Yet there is an alternative: the sculptor or painter chooses one specific moment of a given movement or event in order to transpose it in its entirety to his/her medium. This one moment then needs to describe the unfolding of the event or movement in one form or another, this moment being generally labelled the transitional moment. This is where the dilemma begins: movement in time obviously does not consist of moments or stages - a classical philosophical problem, called Zeno's paradox. The paradox describes the movement of a flying arrow as an infinite multitude of moments, in each of which the arrow is at a different position. If this is the case, the arrow, so argues Zeno, can never reach its aim

¹⁴⁷ Other terms used to describe this phenomenon are: fruitful moment, pregnant moment and transitory moment.

as there is an infinite amount of moments in time where it is at different locations. A visual equivalent, yet limited to a handful of stages or definite moments, are Eadweard Muybridge's sequential photographs of movement and actions dating from the 1870-80s. With his early photographic technology (using as many as 24 cameras for one sequence), he was able to break up the flow of such movement into individual stages, not unlike individual frames of a filmstrip or in stroboscopy. In the case of the work of the sculptor or painter, there is a choice of usually just one image or moment out of this -actually indefinite- sequence. The particular one chosen is then considered as transitional, but transition between what and at which stages? The transitional moment is widely understood as that precise moment that is able to carry a notion of the moments preceding and following the present, chosen one. It is also understood as a culminative moment where the tension, strength or pressure involved are at their highest charge, but are not yet released. Although it is an infinitesimal moment of time, it is assumed to reflect the whole of the action. But the choice is not only a temporal one, as the artist also has to consider artistic issues, such as composition, when choosing this moment. The right choice of the transitional moment does not automatically make good art: the intended statement or concept of the work and the relation to its overall composition need to be considered carefully. It is an integral part of the complete design or creative process, the *Gestaltungsprozeß*. To clarify the issue, I have chosen examples, some of which demonstrate very clearly the artist's considered choice of the moment of transition, while others are used to exemplify the choice of a moment after or previous to it. These examples give grounds for the widely accepted definition of the transitional moment in art theory to be reconsidered, at least in part.

Analysis

While studying Kolbe's *Tänzerin*, I suspected the transitional moment to not be one cumulative moment expressed throughout the whole pose, but rather an expression of a minute period of time of a movement evident in different parts of the pose. Having had practical ballet experience myself, I realised that the position of parts of the dancer's body show different stages of one movement, each ever so slightly different to the other.

Georg Kolbe's, *Tänzerin*, 1912 (Figure 50) has been referred to as a very clear example of the transitional moment in 20th century sculpture (Bammes, 1996). This image of a dancer appears to be a simple vertical/horizontal composition, expressing musical lightness and bodily movement. The dancer is standing on the front of her feet, her arms spread to build up momentum for a turn. This is exactly the chosen pose and moment: the building up, gaining force for a movement that is to be happening at the next moment. Kolbe (1877-1947) has managed to combine an idea of restfulness in the *past*, visible *present* tension and an imaginative *future* turning movement in one single pose.



Figure 50: Georg Kolbe, *Tänzerin*,

Kolbe's sculpture, however, gives us a deeper insight into the nature of the transitional moment. Any beholder with an understanding of dance will notice that upper parts of the figure are already in an advanced state of movement, notably the head, the arms just about to follow, while the lower body is still preparing for the turn. The figure does not show one single pose but demonstrates fine gradations of a fractional movement in different stages through the length of the body. The one pose, so to say, expresses slight temporal differences of an action.

While Kolbe's *Tänzerin* is a particularly clear example for the 20th century, Myron's *Diskobolos*, c. 450 BC (Figure 51), is possibly the example most referred to in art history. Only a Roman marble copy of the original early classic piece (possibly bronze) has survived, now in the National Museum in Rome. The discus thrower appears to be shown at the moment of highest tension within

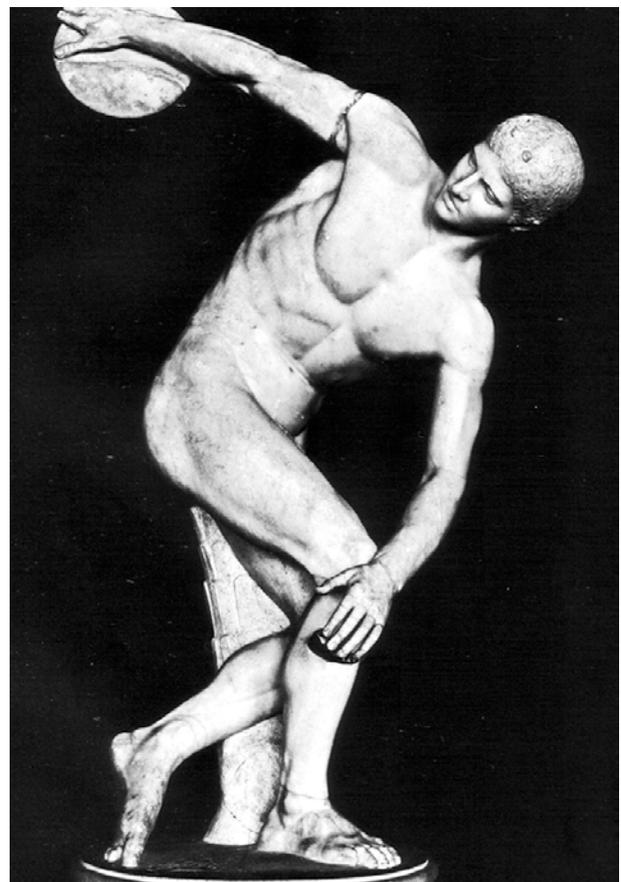


Figure 51: Myron, *Diskobolos*, 450 BC

the movement. Pochat describes it precisely as follows:

"Myron was in particular famous for his brilliance in realising such characteristic poses (rhythmoi) in his sculpture. The disk-thrower is captured in that very moment, as the disk is at rest at the height of the charging (backwards) movement; the whole figure is arriving at a point of equilibrium of crossing limbs and curves. All physical and spiritual forces are captured at a moment, which is taken out of the flow of time and out of which the motor-kinetic energy of the throw will be discharged in the following moment. The rhythm of the movement serves to visualise a rationally understandable order, according to Pollit."¹⁴⁸

A practical test, however, makes clear that this particular pose is physically unstable and almost impossible to achieve within a throwing action. The weight of the disc in a moment of rest, just after the backwards charging movement, is at the highest and furthest point possible in relation to the rest of the body, as Pochat observes correctly. This point of the movement, as well as the beginning of the throwing movement requires a stable positioning of the feet. At this moment, the whole left foot, assisted by the right one, needs

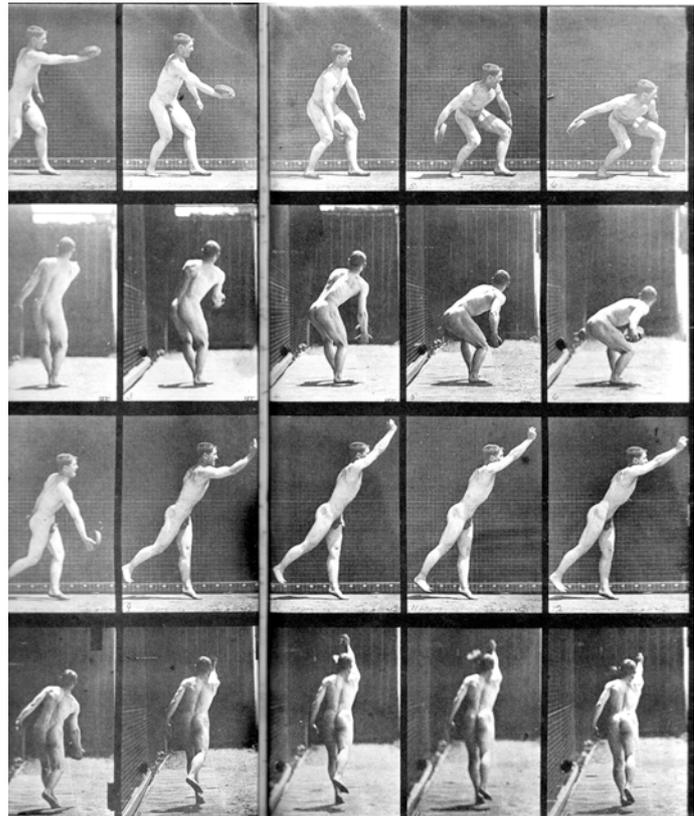


Figure 52. Eadweard Muybridge, *Disk-thrower*

to transmit the force of the disk's momentum and the weight of body and disc to the ground. The balance will only shift fully to the right foot and subsequently release the left leg, when the arm and the disc are in process of moving forwards. This can clearly be seen in the sequence of a *Man Throwing Discus* by Eadweard Muybridge (1830-1904; Figure 52)¹⁴⁹. At the end of the charging movement, both feet are pressed against the ground (image 6 and 7), only when the discus leaves the hand of the athlete, are the feet released (image 8). By contrast to Kolbe's example, the lower part of the body is slightly advanced in time to the upper part in this case. Just as *Tänzerin*, Myron's *Diskobolos* does not display one pose in one given moment, but different moments of a brief period of the movement,

¹⁴⁸ Pochat (1996), p. 107

¹⁴⁹ Muybridge (1955), plate 49

distributed over the whole pose. Pochat asserts correctly, however, that the pose's visual balance is absolutely correct, as the tree stump (which also serves structural purposes to support the weight of the stone) supports the visual force of the composition. The Greek original would most likely have been in bronze, thereby providing sufficient structural strength, which would have rendered such a 'crutch' unnecessary. It is assumed that the Roman or Greek copier somehow altered the pose slightly in order to react to the extra element compositionally: removing the stump photo-technically (Figure 53) makes the pose somewhat uncomfortable and visually unbalanced. Like Kolbe's *Tänzerin*, the *Diskobolos* is so masterfully composed that the physical discrepancy does not become obvious at all. And indeed, we are talking here about a fractional difference of time.

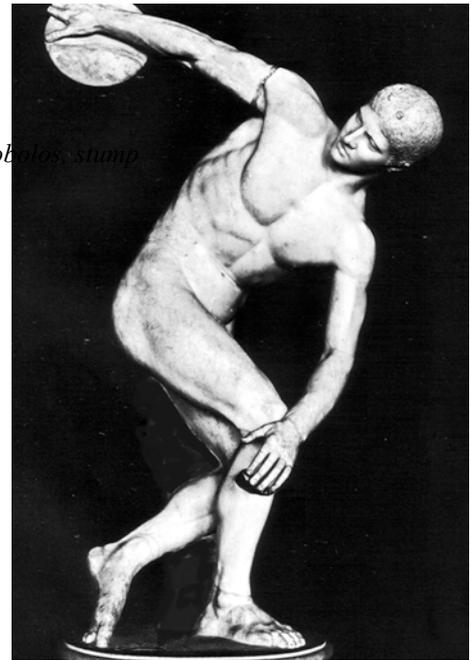
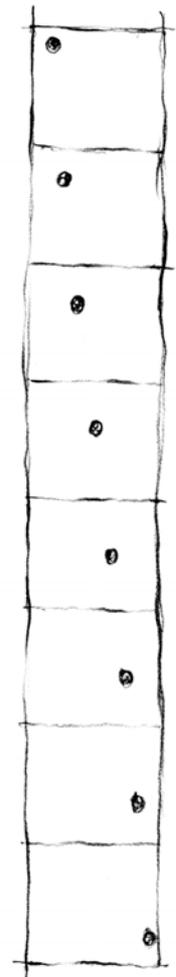


Figure 54. Ball

This fractional period of time expressed in one pose gives us a point of leverage to answer the initial question of how the concept of the transitional moment relates to our perception of time in real life. First of all, the term 'transitional moment' needs to be re-considered as the 'transitional period', a temporal imbalance or transitional irregularity. This irregularity animates and vitalises the work, creating again apparent movement. Apparent movements are a result of slightest deviations from a perceptual standard: the depicted pose is slightly different to that moment in a real pose. As such, the transitional moment does not contain an imaginative 'idea' of the future and past, as it is usually defined, but does simultaneously carry different stages present in one movement. If the arms of the dancer are regarded as the present, for instance, the head is already in the future and the feet still in the past, so to speak. This development of a movement in the figure is then animated through our eyes moving along the object, bringing into the process an active movement and time element. In this context it can be understood like a film strip, where sequential still images with the slightest of discrepancies between them are moved quickly, creating an animated image before the eyes, that moves in time. This can be explained with Gestalt



theory. Researchers like Max Wertheimer, Albert Michotte and Wolfgang Metzger often refer to apparent movement in their research, where the object itself does not perform active and actual motion in space *and* time.

In the static figure the element of time is removed and the pose only demonstrates the spatial sequence of the motion. The spatial variation, however, is contained within the one object. In reference to Figure 54, Arnheim describes the concept of stroboscopic movement, which, in its simplest form, gave Wertheimer the idea of perceptual movement and the Phi phenomenon (see Appendix):

"Consider a flying ball. The ball's successive positions in the visual field are represented in Figure 247 [Figure 54 here, auth.] as though they were photographed on the frames of a film. If in this way we eliminate the time dimension, we clearly realise that the object describes a simple shaped path; and we tentatively conclude that the principle of consistent shape, which groups the elements of motionless patterns, may also be instrumental in preserving the identity of the moving object in time."¹⁵⁰

The movement in Kolbe's *Tänzerin* and Myron's *Diskobolos* is equivalent to the ball's path, yet describes a complex motion, not unlike the photo sequence of Muybridge, but in one single object and pose. The two-dimensional nature of the examples used by Gestalt theorists, however, is here transposed into the third dimension. If we run our eyes over Figure 55, we can see the ball moving, but in this case it is not the ball that is actively moving, but our eyes. The same applies when we run our eyes over Myron's *Diskobolos*. The holistic Gestalt of the object and its composition provide *favourable structural conditions* for seeing this apparent movement. Arnheim states:

"Wertheimer's experiments had shown that under favourable structural conditions, objects appearing at successive moments in time at different locations will be perceived as two states of one identical object."¹⁵¹

This finding has great relevance for the nature of modelled or carved sculpture. The transitional moment of a



Figure 55: Duane Hanson, *Cleaner*, 1972

¹⁵⁰ Arnheim (1974), p. 388

¹⁵¹ Ibid, p. 390

movement, in the traditional understanding of the term, could easily be captured through photography or even a skilfully made life cast. What these cannot express are the different stages of the movement in the one image. This is the true realm of the modeller, carver or painter. The absence of such apparent movement is evident in hyper realist works, such as Duane Hanson's (1925-1996; Figure 54) or John de Andrea's figures, and however precise such a copy of human beings they may represent, they appear somewhat lifeless in comparison. This links back to the brief discussion on portraits before.

Traditionally, death masks were taken directly from the corpse, it would have not been appropriate to express any element of life through them, while portraits of living people were traditionally always modelled or carved. This is not for technical reasons, the knowledge of taking a mould from someone's face has been around for a long time, but rather for artistic and perceptual ones. The rough and rapid modelling of Jürgen Weber's *Mein Vater*, 1974/75 (Figure 56) or Marini's portrait of the painter *Oskar Kokoschka*, 1976/77 (Figure 57) bring the sitter's image 'to life', rendering it somewhat dynamic.

It has been mentioned before that the limitation of the transitional moment to the moment of the highest tension - or rather a brief period of slight variations of a movement - without consideration for the subject matter would only be a compositional gimmick. Depending on the concept of the work, the artist can choose any given moment of a movement or an event, and there are plenty of examples to be found in the history of

art. Like Weber (1984), I have chosen Waldemar Grzimek's (1918-1984) *Stürzender* (Falling Man) of 1962. The image represents a figure that is in an advanced stage of a fall, feet on the ground, arms protecting his head. The huge mass of his body is not even



Figure 56: Jürgen Weber, *Mein Vater*, 1974/75



Figure 57: Marino Marini, *Oskar Kokoschka*, 1976/77

stabilised by the legs anymore, they only serve the structural purpose of holding the figure to the base. This pose does not only give a slight hint of the future, but the full collapse of the figure is inevitable.

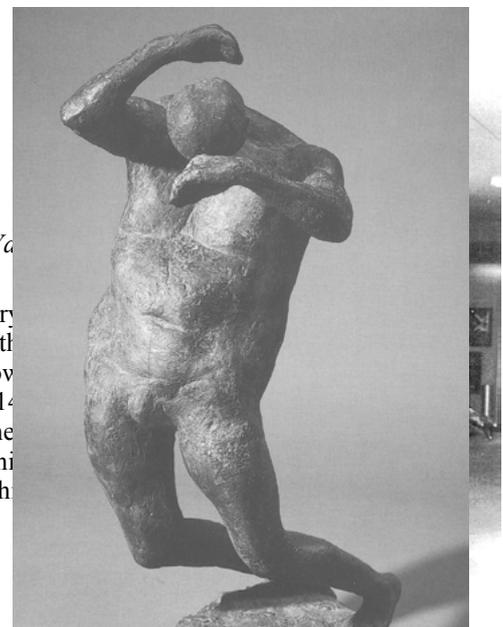
Fallender, 1963 (Figure 58), goes even further, capturing the moment just before the ground is hit. All artistic means, like moment, volumes, composition, balance, directions, etc. are subordinate to the subject of the work in both cases and Grzimek applied each of them with greatest consideration and sensitivity. In *Fallender* it becomes evident how he mastered the characteristics of the material, pushing the structural abilities of the bronze to its limits. As an experienced sculptor, he was able to synthesize context, timing, form and material in a masterful way. A similar eloquence of formal language and material is evident in the work of Marino Marini, and particularly in his horse and rider series, as will be described in the conclusion.

Figure 58: Waldemar Grzimek, *Fallender*, 1963

As a further example of this 'advanced' moment Guiliano Vangi's (born 1931) *Couple moving confidently into the Future* (Figure 59) can be mentioned. A rather conservative looking couple, festively dressed and bare footed are rushing happily but somewhat blindly into their future. The stage of the chosen moment out of the movement has already passed the transitional moment(s) – they are in 'full flight' towards their destiny – so to speak. Again, the choice of the depicted moment is coherent with the subject matter.

In the work cycle *Suleika I - III*, I engaged with the choice of a particular moment in time. The subject of the workcycle was the concern about the right moment in life, its occurrence and the element of choice involved¹⁵². *Suleika*, in Arabic, means renunciation, describing the transposition from sensual to spiritual love, which is repeatedly expressed in the poems of *West-Östlicher Divan*. The work emphasises the dialogue of female and male protagonists, their qualities, but also the hopelessness of their situation. These aspects are reflected in the three sculptures of this workcycle, the focus, however, was that one lost chance, as well as the period of second thoughts afterwards: the situation

Figure 59: Guiliano Vangi



¹⁵² Personal reasons aside, I have linked this concept to a poetry *Östlicher Divan* whose female protagonist, Suleika, describes the Jung. Born into a theatrical family, she was fostered by a widow young age. After Goethe, then aged 65, and she had met in 1814 developed between them that is recorded in countless letters the to meet her, an accident at the beginning of the journey made him him from continuing the journey. They never met again after the 1832. Goethe (1974)

of culminated tension and the moments of doubt about the missed opportunity.

Suleika II (Figure 60) and *Suleika III* (Plate 17) both reflect the moment of the missed meeting. In the first, a female and a male figure are walking determinedly in one direction, in the other the male figure is standing, waiting, while the woman is gently walking. The figures interlock in each pose, emphasising the simultaneity of time and space (as described before). Space, however, is in this case understood as metaphysical space, the one world of the lovers. In both cases I attempted to make the drama of the moment evident: the determination and intention, as well as the obvious missed meeting. Their eyes do not meet, and –with reference to Bergson’s impenetrability of matter- they are passing (through) each other without this or another chance to meet. In hindsight I became aware that the intellectual context of these pieces was possibly too complex and that the chosen moment in this case would only be obvious and understandable to a beholder with knowledge of the background of *West-Östlicher Divan*. I would indeed argue that two kinds of transitional moments are possible: the temporal moment/period that can be understood purely visually, as in Myron's *Diskobolos*, and a temporal moment/period that presumes understanding of the subject or narrative. This links back to the discussion on simultaneity and succession in the example of Ghiberti's *Storm on the Lake*. In Ghiberti's piece, I argue, this is not as strong as in Myron's and subsequently the work cannot stand on its own without additional information about the artist's intention. This is the shortfall of *Suleika II* and *III* in terms of the imagery or narrative.

Suleika I (Figure 61), however, does not intend to show such tension, but rather the opposite: it describes the after-climax, the hopelessness of the situation. The image had to express a temporal message – the lack of a future



– as well as contain some element of reflection on the past. The figures are standing this time, motionless, but again interlocking. They share time and space (their world) through interlocking volumes, but as individuals they are separated, facing different directions. The male figure is in deep thought, in a reflective mood; she is resting, looking back over her shoulder. The choice of temporal mode and moment has proven more successful here than in the other two cases of the series, as the chosen moment is more in tune with the content of the work.

Multiple Portrait (J. Johnson) of 1999 (Plate 5) shows five stages of the head movement of the sitter. The sequential forms are interlocking, creating one single object. Not one single transitional moment is chosen, but sequential moments. An apparent movement is created again, one that is very similar to Arnheim's example of the flying ball. In comparison with the slight movement evident in Myron's *Diskobolos*, however, the motion is very clear in this case. The beholder's perception is presented already with a solution, while in Myron's piece the eye has the active part of making sense of the slight deviation from a similar static pose, a task that leads to the 'perceptual conclusion' of movement. By presenting the beholder with this solution, the perception of movement is somewhat weakened: like similar multiple and sequential expressions of movement, *Multiple Portrait* may be satisfying in compositional terms but fails to carry the intended temporal message sufficiently.

Three conclusions can be drawn from the analysis of different works of sculpture that have been discussed here.

a) The depicted moment has to be carefully chosen and formally expressed in accordance with the content or subject, whatever the medium. They are inseparable as Weber states, concluding his reflections on the transitional moment by asserting that:

"These thoughts show how silly it is to distinguish between form and subject in art. The synthetic means, the organising factor in art, does not only create unity of form, but is also carrier of the message or content. There is no formal unity without thematic unity. They are not even two sides of the coin, which could indeed be separated. All formal quality is at the same time a thematic quality. A subject which has not become form can only exist as a title."¹⁵³

b) The nature of the transitional moment needs to be re-considered in many works of representational art. It is widely understood as a culminative point of time, as only being able to carry a metaphysical suggestion of a past and a future, without bearing

¹⁵³ Weber (1984), p. 216

any truly perceptual/visual information to suggest these. Indeed these suggestions or implications would be of a rather intellectual, rational nature. Further, and to come back to my initial question, there would be no relation to movement in phenomena of life and nature other than the experienced and learned knowledge of what will happen next.

c) The solution presented here is linked to perceptual processes in other visual, dynamic phenomena. It is crucial that not only one single moment is depicted in the pose or form of the image, but rather a minute sequence of it, its stages being distributed throughout the figure. This sequence, in combination with the movement of the beholder's eyes or head creates an apparent movement and a lively effect that is not dissimilar to the animated appearance of modelled portraits. The transitional moment is essentially an apparent movement.

3. Tradition in figurative sculpture

In section 6.5. I have discussed how far the results of geomorphologic processes present the onlooker with visual information on temporality. Goethe, and more explicitly Darwin, developed theories on evolution on the basis of comparison and differentiation, both largely grounded on visual observation. The principle of evolution in nature, for example the gradual development of present states of a species, is also paralleled in cultural history. Within complex environmental, social and economic patterns *traditions* have gradually evolved over long periods of time that, like the evolution of a species, result in their present state. The gradual evolution of sculptural traditions shall be discussed in the following section, followed by two specific examples of such European figurative traditions. A definition of tradition in relevance to the context of this discussion will be addressed first.

The etymological root of the word *tradition* lies in its Latin construction from *trans-dare*, meaning to give or to hand over. In contemporary use, however, its meaning has been corrupted and is understood as the habitual handing down of patterns or beliefs from one generation to another. A tradition necessarily involves more than one person, such as a line of individuals or groups that succeed one another in time. In itself it is an abstract process that produces real outcomes in its course, which I will refer to here as *manifestations* of a tradition. Tradition can be described as a Gestalt in itself: a wholeness that consists of successive parts or stages as well as outcomes that are united under an ephemeral tradition-Gestalt quality. The latest stage is the manifestation of tradition at the present, which has to be seen in relation to past stages of experience and their respective manifestation. An example of a crafts tradition will make this concept clearer.

Skin-covered crafts, currachs, are still widely used around the coastline of Ireland for the purposes of transport, fishing and leisure activities. Present examples (latest manifestation) form the current stage of development of a 9,000 year old tradition (process) of building similar vessels with similar materials and similar form (with different stages and previous manifestations). Yet the present currachs are very different to their predecessors. They are not generally 'better' but are adapted to different, contemporary purposes and local particularities, and even current examples vary from region to region in size, form and construction details. Tradition therefore involves the continuation of similar elements of a central concept, a successive series of developments that contribute to the present state of its manifestation. It is not a repetition of established ideas, standards and values, but on the contrary assumes constant change and the accumulation of experience within the boundaries of the subject: its nature is evolutionary. The present state of a tradition relies on past stages:

together they form a whole. The word tradition is used here in this sense of a living tradition that incorporates elements of change, rather than the common application of the word for established and institutionalised ideas or standards. The latter understanding does not involve reacting to new, present influences and conditions, but relies entirely on established values. A good example of this 'misuse' of the term is its application to social and 'cultural' statements in the political situation in Northern Ireland. Terms like 'Orange tradition', 'traditional marches' etc. do refer to habits and customs that are 'set in stone' and do not bear any reaction to contemporary circumstances. They are rooted in the past, in stagnation where no change is accepted and they are merely repetitions of a custom whose original value is long lost. The unreflected continuation of established patterns is also evident in art, even in the individual work of an artist. Continuous development of work methods is reflected in an artist's style, while mannerism describes stagnation, resulting in a repetitive outcome. Johann Wolfgang von Goethe's *Wilhelm Meister*, reflecting on his early attempts of poetry and performing, comes to this same conclusion stating that *"he sees in his work nothing other than a unspirited imitation of some traditional forms without inner value"*¹⁵⁴.

To this understanding of tradition as a relationship of past and present, I will add some of Achenbach's reflections that have been dealt with in chapter one. Traditional figurative sculpture is in some way regarded as old fashioned, retrospect, un-modern and even mannered. This view has developed in the light of abstract or conceptual sculpture during the 20th century. In a review of Giacomo Manzù's work shortly after his death, John Hale asserts:

*"[...] his loss, as the last major sculptor to work in the unbroken figurative tradition of Europe, merits a moment's thought. For centuries this was the tradition of working from close observation of natural appearances. Often it failed to penetrate the surface of things and could be imitative and trivial, but at its best, was the vehicle for communicating the energy of life and the intuitions of the spirit. Great alternative traditions have done this too, but this was our own peculiarly European language until in our times other sources and other expressive needs have come welling up. Of course there are good sculptors still working with the figure. But they cannot escape the effects of two independent crises of our century: the revolution in art and the fall of man from his heroic pedestal."*¹⁵⁵

Herbert Read openly accuses sculptors in this tradition of 'backwardness' by stating:

¹⁵⁴ Goethe, *Wilhelm Meisters Lehrjahre*, p. 81

¹⁵⁵ Hale, J.; *Giacomo Manzù – The End of a Tradition*; Modern painters. P. 42

"There are several other sculptors of this generation, caught between impressionism and classicism, refusing the challenge of modernism as first revealed in Cubism, who nevertheless, by their very eclecticism, contributed to the revival of sculpture." ¹⁵⁶

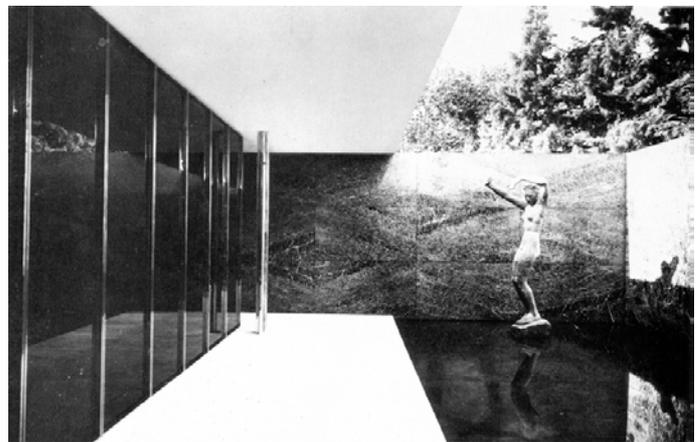
Read is referring to Georg Kolbe, Gerhard Marcks, Wilhelm Lehmbruck and Arturo Martini, who followed European traditions of figurative sculpture. Marcks and Kolbe both belong to the *Berliner Schule* of realist sculptors, which will be explored further in the following section. In Read's view, this group was mannered and hesitant, producing a 'false aesthetic', a view that was often shared by contemporary critics. Was this group of sculptors simply not interested in being contemporary and innovative, in following ever-new artistic concepts? A statement by Marcks supports this assumption:

"It is neither a priority to be contemporary, nor to baffle others with some forced originality. Sculpture is a matter of masses and proportions, of form that has been gained from the chaos of life in a struggle. There is nothing 'new'." ¹⁵⁷

The group worked within a long and recognised tradition of figuration in Germany, being more concerned with different *formal* solutions to intellectual and human problems than being forcefully innovative and clever. They recognised the sculptural achievements of their predecessors, a fact that Read himself does not reject in principle:

"To strive to be uninfluenced by the work of one's predecessors or contemporaries is neither possible nor desirable, all questions of traditionalism apart." ¹⁵⁸

So what led him and other critics to criticise these sculptors so harshly? Even an influential modernist architect like Mies van der Rohe deliberately chose Georg Kolbe's sculpture *Der Morgen* for his Barcelona Pavilion (Figure 62)¹⁵⁹. The soft curves and the movement of Kolbe's sculpture are in stark contrast to the square, modernist



¹⁵⁶ Read (1964), p.23/24

¹⁵⁷ Frenzel (1988), p. 163. *"Es ist gar nicht die Hauptsache, zeitgemäß zu sein, noch, die Mitmenschen mit gesuchter Originalität zu verblüffen. Plastik ist eine Sache der Gewichte und Proportionen, dem Chaos des Lebens abgerungene Form. Da gibts nichts 'Neues'."*

¹⁵⁸ Read, p.167

¹⁵⁹ Schulze (1989), p. 86

building. Van der Rohe recognised that his architecture needed a balance of softness and roundness to work to its full advantage.

The present misconceptions of time that have been explained by Achenbach may help to provide an answer to the question above¹⁶⁰.

Achenbach identified a contemporary misunderstanding of the direction of the flow of time, which is often assumed to point towards the future. I have described the effects of this earlier in chapter one: loss of foundation, uncertainty as well as short-lived trends and fashions. We can identify similar symptoms in the recent history of art. During the 20th century an acceleration and multitude of ‘-isms’ occurred. Rapid innovation and novelty replaced established solutions. Galleries constantly demand new work of the artists that they represent and old, previously exhibited work is only acceptable for retrospectives. The word ‘retrospective’ itself presents a key to the confusion about time directions: we look back to the past from our present situation, consequently we look forwards to the future. This is what Achenbach describes as a significant confusion in our understanding of time. Artists and critics relate to this socially established understanding and are similarly affected by it. Herbert Read, however, seemed to suffer from a dilemma. Writing a book on modern sculpture and avant-garde art, he was forced to question his understanding of time, even subconsciously. On several occasions, he could not help but assert that: "*Rodin was followed by Maillol and Bourdelle*". In another place he states that "*this new art [...] owes little to the art that preceded it.*"¹⁶¹, suggesting that Rodin was obviously ahead of Maillol in time. Both phrases express the notion that time flows from future to past. The idea of ‘being ahead in time’ is evident in yet another artistic term: *avant-garde*. It is an adaptation of the French military expression of *avant Garde*, being advance guards. This meaning has faded altogether and *avant-garde* is nowadays used to describe a relationship in time, as such a spatial term has been changed to a temporal term.

Achenbach points out that modern societies are continually striving, developing and changing rather than being more constant, based on a traditional and 'lasting' system. Traditions and anything that has proven useful over long periods of time through experience was once respected for its durability and validity. Referring to H. Lübke he claims that '*something that is valid, because it is old, cannot age*'¹⁶². Achenbach uses the term *Principle of Preterition (Prinzip der Anciennität)* for the preference of something established and proven over something new. Modern societies have broken with this principle: new methods, inventions and innovations are preferred over the old, regardless of whether they have proven their reliability and durability. This has

¹⁶⁰ It is worth noting that Kolbe was falsely accused of being a member of the National-Socialist party. Although this accusation bears no basis, it strongly affected his career as a sculptor.

¹⁶¹ Ibid, p.10

¹⁶² "*Denn was gilt, weil es alt ist, kann nicht veralten*"

subsequently led to a rule of temporality that finds its expression in many, often short-lived trends and fashions. New trends fall out of fashion and are replaced by even newer ones: their validity is rapidly out of date. Novelty bears the danger of soon being overtaken by something else even more novel, its actuality being defined for only a short period of time: a dogma with a sell-by date. Such values are only the symptoms of a deeper-rooted problem that Achenbach calls *Gegenwartsvorrecht*, the dominance of the present over the past and maintains that many modern societies are based on 'loose foundations'¹⁶³.

Several of Achenbach's assertions are transferable to the artistic environment. The disregard of technical and artistic skills, together with the 'need' for time efficiency have led to fundamental changes in visual art education and practice. It has shifted from spatial representation towards temporal representation with the incorporation of new and rather obscure terminology such as '*time based art*'. The change of spatiality or regionality towards temporality, as described by Achenbach, can also be found in other aspects of art. The integration of regional styles of sculpture, such as Caribbean and African art, has formed temporal phases or periods within the oeuvre of artists like Henry Moore and Picasso.

Temporal misconceptions and confusion of terminology can influence traditional figurative sculpture rather strongly. The contemporary figurative sculptor is part of a tradition that is as old as symbolic representation itself¹⁶⁴ coming in the wake of 30,000 years worth of artefacts and artists, making up a vast pool of experience to learn from. The artist stands on well-established, solid foundations while also having to work within limitations that the subject matter brings with it. The variations within these limits, however, are endless but also relatively subtle. Although the 'human condition' bears some constant characteristics over time, our self-understanding (*Menschenbild*) varies between cultures and constantly changes. Every generation of artists has to react to this change by varying the formal language used to represent the human figure. Like any form of realism, the subject of the figure cannot become outdated. It will and has to remain a central aspect of art and will continue to evolve out of and change with the self-understanding of a culture. Bammes maintains that "*Every era understands man*

¹⁶³ Achenbach could be criticised in this context for justifying fundamentalism, as this term refers to a solid foundation within a society. The term is, however, used with religious connotations, a link that does not seem to be intended by Achenbach, whose focus remains predominantly on temporal values.

¹⁶⁴ John Stein, neurobiologist of The University of Oxford linked a particular mutation in the gene FoxS2 to human creativity. He maintains that a change about 100,000 years ago led to ability to create symbolic representations and led to the development of language. Lecture given at Falmouth College of Arts, September 2003.

anew, every era searches for its own man"¹⁶⁵. This search involves not only experience and understanding of one's predecessors and is carved out with the understanding that any abstraction starts with substantial knowledge of natural form. For a long time art education included studies of 'old' masters, an exercise whose importance was recognised by many artists, such as Moore and Picasso who both 'copied' or interpreted other artists. Such studies are an acknowledgement of the efforts and achievements of other artists and represent an awareness of foundations. For an artist working traditionally with the human figure, the translation of an idea into sculptural material of any kind requires many preceding studies from life and a substantial knowledge of anatomy. This process in itself takes a long time, and the sculptor Gerhard Marcks asserts that:

*"Sculptors mature slowly – they don't fall like ripe fruit from the tree, such as musicians do. The material has to be overcome as a result of hard struggle. [...] By the time one has found his style, he has lost his youth."*¹⁶⁶

Artists are necessarily influenced by the concept and understanding of time in the society in which they live, and these concepts will be expressed to various degrees in their work. It seems that the influence of such concepts finds its expression in a variation of art forms and styles rather than merely in the work of individual artists. Artists like Dalí or Marc Chagall have used symbols or metaphors of time in their work, such as clocks and watches. Iconographic images, however, are not influenced by the discussion above. It is on a rather different level that concepts of time influence the artist: style, tradition and art forms in general. We can find such expression of temporal concepts in the work and statements of artists and movements. Many artists working within a representative tradition or in figurative realism are aware of temporal issues related to their subject matter. In 1990, a number of artists founded the 'Künstlersonderbund' in Germany. This group of realist sculptors, painters and draughtsmen was formed specifically to create a forum for the discussion and promotion of realism in art and has attracted many international members over recent years. Hannes Schwenger states in the exhibition catalogue of their 1996 Berlin show:

*"Realism is not entailed by time, but is able to realise itself again and again in the change of styles, techniques and media. There is no need for recurring legitimation, as it needs to be renewed in artistic practice [...]"*¹⁶⁷

¹⁶⁵ Bammes (1997), p. 39. *"Jede Zeit sieht den Menschen neu, und sie sucht ihren Menschen."*

¹⁶⁶ Marcks, G. on Waldemar Grzimek, 1967. Own translation of: *"Bildhauer reifen langsam – sie fallen nicht als fertige Früchte vom Baum wie die Musiker. Die Materie muß im zähen Kampf überwunden werden. [...] Bis einer 'seine Form' gefunden hat, ist er aus der Jugend heraus."*

¹⁶⁷ *"Realismus ist auch kein zeitbefangener Stil, sondern kann sich im Wandel der Stile, Techniken und Medien immer neu verwirklichen. Er muß nicht immer neu legitimiert, sondern in der künstlerischen Praxis erneuert werden..."* Quotation from the exhibition leaflet for 'The Power of Images', 1996 in Berlin.

It is obvious from this statement that the group does not regard realism as a fixed and static representation of life but as an artistic means that has to react to changes. Neither is it perceived as a temporary, or time-bound style, but instead as a concept evolving out of artistic practice that cannot be regarded as forced, intellectual innovation.

The Egyptian writer and architect Hassan Fathy reflects on this important relationship of time and tradition, defining the latter as follows:

"Some individual problems may be easily solved in a few minutes, others may take a longer period of time, such as a year or even a lifetime, but in each case the task is individual. There are other problems that require a continuous effort of more than one generation. Tradition and an appreciation of another generation's efforts give man the hope to solve such problems." ¹⁶⁸

Fathy discriminates here between traditions that have completed their cycle and those that are will be present for as long as there is human life, using the examples of bread and brick making. The necessity of change for tradition is also pointed out by Fathy, who states that *"cutting off a good tradition deliberately is tantamount to killing national culture intentionally"*¹⁶⁹. Further in the text he points to the importance of tradition for the artist as part of a synergetic effort. As synergy in the creative process enhances and multiplies individual solutions rather than restricting them, so will a lively tradition necessarily support the creative individual, opening up new opportunities in his/her work.

*"An artist should realise that following a tradition will not compromise his talent or block his ingenuity. When he is doing his utmost he can be sustained by the life-force of tradition and his work will reach higher standards. The efforts made within this framework can yield better results. It is the same as adding salts to a saturated liquid of a similar substance; the result is crystallisation. The entire solution is changed into crystals of the kind that are added, with the difference in art, the crystallisation does not take place at once but is a process repeated over and over again, a culminative process experienced over generations."*¹⁷⁰

4. Two European figurative sculpture traditions

¹⁶⁸ Steele (1988), p. 128

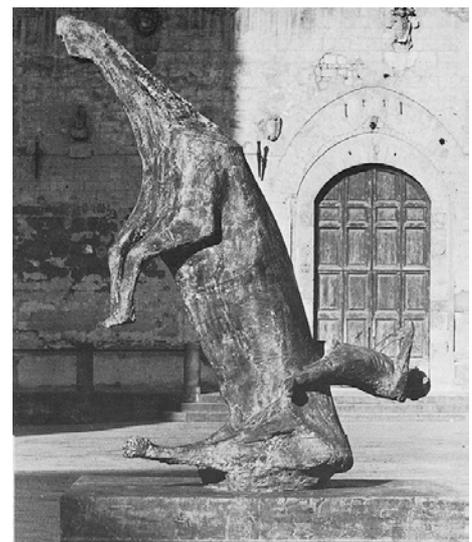
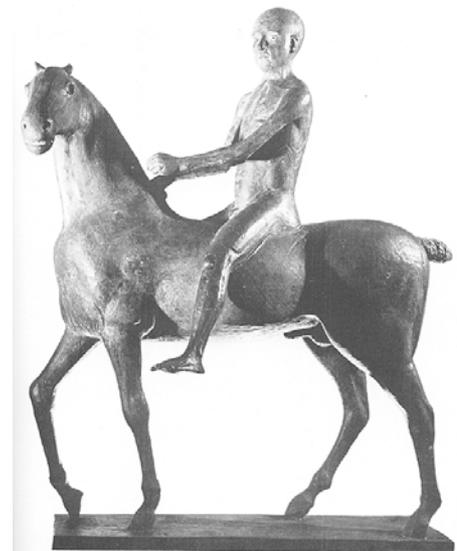
¹⁶⁹ Ibid, p. 128

¹⁷⁰ Ibid, p. 128

I will conclude my investigation of form, material and time in this chapter by exploring two examples of European sculpture traditions that relate to the types of tradition that Fathy defined: the work of the Italian sculptor Marino Marini and the sculptors of the Berlin School. The latter shows a continuous development of style related to the human form and an excellence in manipulating a limited range of materials over a long period of time, 'a *creative process experienced over generations*'. Marini's work is an example of the artistic achievements within one person's lifetime, the concern with a very confined figurative subject, and again the mastering of sculptural material and form. Both examples demonstrate the various issues discussed in the previous chapter.

4.1. Time in the work of Marino Marini

Marino Marini (1901-1980, Viareggio) is one of the most prolific Italian sculptors of the twentieth century. Born in Pistoia, Tuscany, he studied at the Accademia di Belle Arti in Florence under Galileo Chini and Domenico Trentacoste. Early on in his career he met the realist sculptor Arturo Martini, who influenced his artistic development and whose successor he became as the head of sculpture at the art institute of Monza. Throughout his life, Marini maintained friendships with artists, literati and composers, which is evident in a great amount of portraits and busts in his oeuvre. These stand beside other central themes, the Pomona and variations on the acrobat theme in the media of sculpture, painting and print. His work is deeply influenced by the art of the Etruscans, fragments of which are evident all over his native Tuscany. The best known of his work, however, centres around the horse and rider image, a series that he started in 1935 and that ran through to the 1960s. With a vast body of work that is present in many public places all over Europe, Marini has overshadowed many other Italian realists of the twentieth century, amongst



them Giacomo Manzú, Emilio Greco, Lucchesi, Vangi and Menzotti¹⁷¹.

The horse and rider theme of his pre-war period is rooted in the classic equestrian portraits of the Renaissance and Baroque. Marini's take on the subject is indeed classical in terms of the posture and relationship of horse and rider: both are graceful, the horseman upright and in control of the tamed animal, such in the bronze *El Pelegrino*, 1939 (Figure 63). This treatment of the theme barely changed throughout the 1940s, despite the form becoming more abstracted and the use of tools more liberated and uninhibited, as can be seen in the polychrome plaster *Piccolo Cavaliere*, 1946 and the lithograph *Cavaliere*, 1942. In 1952, however, a drastic change becomes evident, which increases throughout this decade: the rider loses control of the horse, which itself struggles or rebels against the rider, like in *Cavaliere*, bronze of 1952/53 (Figure 64). Inevitably this increasing struggle ends in a catastrophe; the last of the series, *Guerriero* of 1959/60 (Figure 65), shows the horse in a collapsed state and the horseman in a last, hopeless attempt at both staying on the animal and in control. This piece concludes Marini's artistic effort that engaged him for more than a quarter of a century; the theme has reached its inevitable and conclusive finale. This last work can also be seen as the key to the message Marini wanted to transmit: the concept of the great warrior and of the human being as controller, not only of domesticated animals but of nature as a whole. Both anthropocentric views of the world were shattered with the Second World War and disturbed with the increasingly obvious detrimental effects of modern technology. As a consequence of this understanding, Marini's work expresses a dualism between extreme angst and deep humanism¹⁷².



Let us take a closer look at the *formal* qualities in this work cycle first. In the composition of the early groups, Marini keeps closely to equestrian portraits of the renaissance, like Cosimo Medici's portrait in Florence. With the exception of *Cavaliere*, 1939, his horses, however, always appear motionless and rested and standing on four legs, generally describe an even rectangle on the plan. They never display the structural virtuosity of his historical forerunners: Renaissance sculptors excelled each

¹⁷¹ Menzotti's major work is the bronze door of Milan cathedral.

¹⁷² In recent newspaper articles (The Guardian Review, July 2003) and in an exhibition at the Henry Moore Foundation in Summer 2003, his work has been linked to a group of Italian fascist artists. This assertion can by no means be supported, either by his statements or as evidenced in his work. Although his work falls partly into this era, his intellectual concern with the subject of war and destructive technology is rooted in humanism.

other by balancing their horses on only two or three legs against great structural problems. Marini's horses also tend to have a somewhat curious, often comical facial expression.

The directions of a multitude of curvatures exaggerate the visual force of the huge volume of the horse's body. The maxima of the transformed cylinders and spheres, which make up the animals, lie towards the lower part of the bodies and as such pull them downwards, reacting visually to gravitational forces with the effect that they look heavier than they are. Balanced on thin and fragile legs, the whole composition appears unstable and somewhat uncomfortable, an early hint towards the catastrophic conclusion Marini reaches a decade later. Only the arrangement of the four legs in an even rectangle reinstates visual stability. Marini's horses are not meant to move or to appear dynamic; they display a motionless, fragile stability. In *Cavaliere*, 1952-53 (Figure 64), the balanced composition has totally collapsed, the barrel-shaped body has given in to gravity and the thin neck, legs, and even the rider have become passive appendices of the overall form. Another striking aspect in some other later compositions is that horse and rider become more of a *formal* unity: form and material of the two penetrate each other - a sculptural means described in chapter two (*L'idea del Cavaliere*, 1955, Figure 66). In *Guerriero*, 1959/60 (Figure 65), the two forms have become indistinguishable, creating one interlocking volume over a large area of their bodies. What is Marini achieving by using this means? Thematically the shared material provides visual support to his idea, that the horse and human share the same fate and form.



Figure 66: Marino Marini, *Cavaliere*, 1955

The composition of *Miracolo*, although described earlier as collapsed, is neither dynamic nor fully stable. The transitional moment or period chosen by Marini is one of transformation between the upright and initial fall of the main volume of the body, yet the rider is still holding on in an almost undisturbed manner¹⁷³. His fall, however, is inevitable: the centre of gravity of the volume has already extended beyond the footprint of the composition, rendering it visually unstable. It is a physical fact that any object will fall when its centre of gravity has extended beyond the outer boundary of its basis. *Miracolo*, however, is not physically falling, as the material of the form is

¹⁷³ *Miracolo* is another example of the depiction of different stages of one movement, a transitional period, rather than a transitional moment.

connected to the material of the base (the ground) - horse and rider are not separate objects as such. To maintain the continuity of the moment of the fall and to prevent a once-only, irreversible artistic event, the sculptor has to overcome the physical law that governs the dynamic movement: he achieves a material unity of object and ground by making them one object. In traditional sculpture, base and object form a continuous simultaneity in time and space allowing the sculptor to express otherwise unstable compositions. Only by casting horse, rider and base together as one sculptural object, can Marini show the transitional moment of the fall and permanently maintain a physically unstable composition. Visually, however, it remains uncomfortable and fragile for the beholder.

Another problem Marini had to resolve, just like many equestrian sculptors before him, was how to achieve a visual unity of the two individual forms of horse and rider. He solves it by leaving similarly clear and rough toolmarks on both figure and horse, such as scratches, chisel marks and colour spots. Such treatment gives the work an aged look, not unlike Etruscan artefacts displayed in the collection of the Villa Giulia in Rome. One form penetrating the other, even only partially, as described above, also helps to achieve unity.

Time and temporality are present in many aspects of Marini's work, they are intrinsic qualities of sculpture. In his horse and rider workcycle as well as his work as a whole, the following manifestations, some of which have been discussed previously, are clearly evident:

1. the choice of the depicted moment, the transitional moment, bearing suggestions of previous and future events; this is reinforced by the position of the individual piece within the oeuvre of the artist
2. developments over time from early compositions and through further exploration of the subject and eventually to the final conclusion
3. the firm placing of Marini's work, style and subject matter within the framework of a long tradition: formally in the tradition of twentieth century Italian realists, notably his mentor Arturo Martini and thematically in the tradition of equestrian portraiture.
4. references to the history of art, particularly Etruscan art
5. simultaneity of form and time: the interlocking forms and volumes of horse, rider and base sharing the same material
6. resemblance of aged artefacts by treatment of the work's surface – patination of bronze and scratching and painting the plaster of Paris masters; most of these originals, held at the Palazzo del Tau in Pistoia, show the deliberate efforts to create an aged appearance.

7. increasingly complex composition of the work, requiring greater effort of the beholder in deciphering it, affecting the beholder's time.
8. reflections on the time of the creation of the work, the creative outfall of an era: the subject matter here reflects on the cultural changes around the Second World War.

The time-element is inseparably connected with issues of material and sculptural form in all these points. Although time has never been Marini's outspoken concern, he dealt with it in all aspects of his sculptural practice, consciously or subconsciously.

During several visits to Tuscany in recent years, I had the opportunity to study Marini's work repeatedly at the Museo Marino Marini in Florence and the Fondazione Marino Marini in Pistoia. The latter houses his drawings, graphic work, maquettes as well as plaster originals and became a centre of regular pilgrimage for me. The intimacy, spontaneity and directness of the modelling of the plaster was what struck me most: it appeared that Marini made use of anything at hand to construct the armature without obvious planning and design; he applied the plaster in hasty lumps and used a variety of simple tools to sketch his idea in the third dimension. No hesitation is obvious in applying colour - and even tar - to the final work. Marini's animals, women and men are very much 'creatures of the moment', a spontaneous expression of a master in a line of tradition that has lasted for millennia.

4.2. The tradition of the ‘Berliner Schule’

At several points of the thesis I have referred to examples of German realist sculptors and I have referred to them as the *Berliner Schule*. I have chosen this group of sculptors for the reason that all of them have established a link between philosophy and art in their practice.

Many of these sculptors attended the Technische Hochschule der Künste (THK) in Berlin as students and subsequently practised as professional sculptors; this group of realists is commonly known as the *Berliner Schule* (The Berlin School)¹⁷⁴. Going back to the painter Gottfried Schadow and Christian Daniel Rauch, the academy in Berlin was the centre of art education during the 19th and 20th centuries, besides Munich (Adolf Hildebrandt) and Hamburg (Gustav Seitz, Mathau and Horst Janssen).

In a discussion with Axel Seyler, himself a former student of the THK Berlin, he explained the characteristics of their style to me¹⁷⁵. Having given a lecture on the school in the 1970s, he pointed out that the members of the THK had developed a distinct figurative realism that at no point had become naturalistic, hyper- or photo-realistic or abstract. Different to figurative expressionists, like Barlach, the body was treated almost symbolistically. While Marcks sees a relation to the work of Lovis Corinth in terms of its “*similar exuberance, same naivety, and the same passionate love for the world before one’s eye*”¹⁷⁶, Ulrich Gertz describes the style of the school in the following way:

*“The soberness of the passion, density of form as the language of creative man, whose constant control of his rationalising and critical spirit dominates the intuitively perceived and realised form”*¹⁷⁷

The tradition has developed out of a strong master-disciple relationship that is evident not only in stylistic characteristics, but also in the spiritual and conceptual relationship between the members: the tutor was also mentor. The work of the school often demonstrates political dissent or social criticism and in many cases tends to contain an element of humour. In technical as well as formal issues the learning process in this relationship, not unlike traditional apprenticeships, was based on demonstrating

¹⁷⁴ The term is often also applied to members of the academy in East Berlin, founded in the 1950s by realists such as Heinz Metzger.

¹⁷⁵ In a discussion at his studio in Dalborn, Lippe on the 27 December 2002.

¹⁷⁶ Marcks, G. on Waldemar Grzimek, 1967. Own translation of: “*Eine gewisse Verwandtschaft mit Corinth etwa ist zu erkennen: dieselbe Üppigkeit, dieselbe Naivität, dieselbe stürmische Verliebtheit in die sich dem Auge darbietende Welt.*”

¹⁷⁷ Gertz, U.; *Zum plastischen Werk von Waldemar Grzimek*; 1967. “*Die Nüchternheit in der Leidenschaft, Formendichte als Sprache des schöpferischen Menschen, der die intuitiv geschaut und realisierte Form der steten Kontrolle des ordnenden, kritischen Geistes unterwirft.*”

and repeating, the student 'went through a master' in Seyler's terms. Subsequently, the work of the school demonstrates a great emphasis on the truly plastic aspects of form, volume and mass sculpture in addition to strong concepts. The main subject of the school is the human figure and many of the artists are good portraitists of both humans and animals, particularly Waldemar Grzimek, Gerhard Marcks and August Gaul. The development of excellent technical skills and understanding of material was enhanced by the proximity of the excellent art foundry of A. Noack in Berlin. Owing to the high quality of its work, Noack cast most of the major works of the 'group' during the second half of the last century and was also the choice foundry for Henry Moore.

Many of the sculptors have become involved with writing about art and research in art theory. Jürgen Weber founded an institute for Gestalt research as part of his lectureship at the Technische Universität Braunschweig and published a series of books related to perception and art. Axel Seyler and Henning Seemann both worked as assistants under Weber and subsequently researched and published in the field themselves. Gerhard Marcks left a great number of essays and letters that give evidence of his deep concern with issues of art theory and history. Seyler listed the following better-known sculptors (and painters) as members of the Berlin School ('-' describes master/student relationship, '/' fellow students, '()' intellectual relation):

Gottfried Shadow, Christian Daniel Rauch, Rietschel, Begas, Adolf Menzel, Max Liebermann, August Gaul, (Käthe Kollwitz). Tonalong, Arno Breker – Bernhard Heiliger^{178/179} / (Gustav Seitz) - Axel Seyler / Richard Hess / Biederbeck / Christian Höpfner / (Henning Seemann) - Richard Scheibe - Gerhard Marcks¹⁸⁰, (Matthias Wimmer)

Hugo Lederer – Wilhelm Gerstel - Waldemar Grzimek,
Constantin Weber (son of Jürgen Weber¹⁸¹), Waldemar Otto (Figure 1), Georg Kolbe, Renée Sintenis

Gustav Barlach and Henning Seemann are often mentioned in connection with the Berlin School but are better characterised as the *Mecklenburgische Tradition*, a group of realists living and working in the east of Germany. Both groups maintained close contact and show similarity in methods and style. Other artists, like the contemporary

¹⁷⁸ This master-student relationship is rarely mentioned in literature on abstract art for political and historical reasons and was 'kept quiet' by Heiliger himself (Weber, 1994, p. 59)

¹⁷⁹ Heiliger adopted an abstract style in his later years, but the majority of his work followed the realist tradition of the school. Some other members also experimented briefly with abstract work, but then returned to a realist style.

¹⁸⁰ Marcks did not attend the THK but trained in the studio of Scheibe and regarded him as his mentor. Frenzel (1988)

¹⁸¹ Jürgen Weber studied under the abstract artist Willi Baumeister at Stuttgart, but worked figuratively from the outset. He is closely related to the Berlin School in style and through contacts with its members.

Austrian sculptor Alfred Hrdlicka studied under Fritz Wotruba in Austria, yet show close stylistic and intellectual relationships with the *Berliner Schule*¹⁸².

Figurative realism is a ‘timeless subject’ and the *Berliner Schule* reflects this statement in its ethos. Knowledge of the subject and its history is passed on from teacher to pupil over several generations. But there is not only a tradition evident in the subject matter alone, as there is also continuity in material and form. Technical knowledge of sculptural processes and skills of modelling in various materials were rigorously taught to allow the artists and students to express their ideas. The sculptural form underwent a continuous development throughout the history of the school. Although reacting to contemporary self-understanding over time, there is a subtle development of the representational style; the THK Berlin left its distinct mark on the students that attended it. Although an artist has to find his own style in dealing with subject matter, material and form, he cannot separate himself from his predecessors. He needs to know what has already been done before him, where he fits into the ‘greater picture’ and what limitations and restrictions there are. Tradition is a helpful framework for the artist; the figurative tradition is the extension of the subject in time, as it were. The *Berliner Schule* with its complex tutor-student relationships is one of the important traditions of European figurative sculpture. Like other traditions in this area, such as the afore-mentioned Italian realists or English sculptors like Moore, Hepworth, Armitage, Chadwick, Butler, etc, it is a temporal network of sculptors that are concerned with specific form and material. Bearing a spiritual or intellectual relationship they are focused on resolving “*problems that require a continuous effort of more than one generation*”, to use Fathy’s words.

Various manifestations of time can be found in the tradition of the *Berliner Schule*:

1. experience and understanding of one’s time are compacted into sculptural form.
2. temporal extension of a successive, historical network of sculptors; tutor-student relationships
3. temporal extension of a simultaneous network of contemporary sculptors, or colleagues
4. different images of the human figure at different times
5. the timelessness of a subject matter
6. simultaneous existence of the works of contemporary and earlier sculptors at the present date

¹⁸² According to Seyler he regards himself as intellectually and stylistically related to the group.

CHAPTER THREE:
FORM, MATERIAL AND TIME

1. Overview

Until the middle of the 20th century, art theory has primarily been concerned with questions of form and material when exploring traditional sculpture. The former is evident in subject matter, style, size, texture, etc, the latter in technique, handling of tools and appearance of the work. The relationship between the two is also evident in many respects: the material physically carries the form; it needs to be manipulated in order to develop the formal appearance of the work. Materials have distinct formal limitations in terms of scale, structural strength and detail that can be expressed. While these issues have been explored in some depth, art theory has remained relatively silent on the question of time, in regarding it as minor and unimportant in the making and contemplation of sculptural objects. Indeed, compared to the performing arts and film, time is not immediately present or of consequence to the beholder. However, it has become obvious in course of the thesis that aspects of time and temporality are present in all processes, stages and formal aspects of sculpture. Temporal issues such as ageing and decay cannot be separated from the materials of sculpture, nor can the sculptor ignore issues of succession and simultaneity when approaching sculptural form. Time, form and material are inseparably related within the sculptural object, they are intrinsic elements thereof.

In the previous chapter I analysed a variety of natural phenomena that contain sensory information relating to temporality and have applied a similar analysis to their equivalent in sculpture. The relationship of time and form or time and material has been investigated in a specific context in each case. This chapter will now relate these findings of the relationship of time, material and form to a wider context. I will first summarise the findings with a particular focus on the form, material and time relationship.

2. Summary

The first chapter dealt with the understanding of time in contemporary society. It explored some aspects of the way we refer to time in our lives and *Bergson's theory of dualism of intellect and intuition* was introduced as a key theory for the investigation. While its importance became evident in the analysis of temporal phenomena in chapter three, its significance for the artist working in a figurative tradition will be explored in this chapter.

Gestalt theory deals with the perception of form amongst other visual issues. Researchers have developed principles of how our vision relates to form and distinguishes formal patterns, such as size, shape, texture, etc. Together with colour and movement they are elementary properties of any material. I have demonstrated throughout the thesis that Gestalt theory can also be applied to issues of time and temporality that are linked to sensory perception, for example to the understanding of events as a Gestalt. To distinguish between the visual nature of waves and clouds as either events or objects, Gestalt has been used to investigate the intrinsic relation of form, material and time in the section on movement expressed through material.

Wabi-sabi was introduced as an aesthetic system that focuses on the temporal and philosophic qualities of materials, which often manifest themselves in the form of objects. In contrast with many contemporary value systems, it regards ageing and decay as an important and integral part of the object's life. In the context of the thesis it is used at several points in relation to the change of form and value throughout the lifetime of a sculptural object.

As the first phenomenon in chapter two, the different experience of duration at sea and on land has been used to describe the beholder's *perception of duration* in a sculptural object. The amount of sensory stimuli, together with retention and pretension influence the beholder's experience of time. The distribution of forms in relief work was discussed in the context of the time the beholder needs to unfold the compositional and contextual relationships between them. A multitude of form and the subsequently more complex relationship between them requires an increase in the time needed to unfold the message of work. This might, however, not necessarily extend the intuitive perception of duration by the beholder, who is kept busy understanding the work, as it were. The role of retention and pretension in this context was also explored. Material issues, however, play only an insignificant role in this phenomenon.

Succession and simultaneity are perceived differently in life and sculpture. Succession in life can only be expressed as simultaneity in the pictorial space. Their analysis in the context of Bergson's theory, however, has shown its particular relevance for sculpture. The issue of impenetrability of matter, a crucial aspect in the development of his theory on time, integrated both time and material, but also form. The ability of more than one solid object to sharing the same material at any given point of time has been shown to be impossible

on the grounds of number. Figurative sculpture, however, as I have demonstrated, is different in this due to the unique relationship of time, material and form. This is not only due to the same consistent material being shared by the objects, for example bronze, but also to the particular temporal condition of the figurative subject matter and its relation to the beholder's experience and perception. The beholder perceives intersecting sculptural form through a consistent material as simultaneous in time and space, while in full understanding of its impossibility in nature. The section revealed how the relationship of time, material and form in figurative sculpture is different to life and other artistic media.

Material movement contributes to the perception of clouds and waves either as objects or as events. A similar distinction of material quality also appears during the modelling stage in sculpture. Soft modelling materials possess a flow or dynamic that is evident in the movement of form in time when handled by the sculptor. This quality changes significantly with the transition into a more permanent material.

Being closely related to this issue, *surface texture* informs the sculptor and beholder alike about time through vision and touch. Smoothness and roughness of the outer form provide information about age, decay or temporality. In nature, as explained with the example of an old apple, this is gathered by the change of material qualities. Surface texture in sculpture is an issue form and temporality but is also affected by material qualities. *Durability and permanence* is indeed a particularly important quality of any chosen medium and is primarily linked to the material of choice. Given that materials like bronze or stone outlast human lifespan the figurative form in these materials is capable of carrying notions of eternity and timelessness.

The use of the right moment, *the transitional moment*, is an important means of describing time and succession in figurative sculpture. It has generally been interpreted as a single moment that carries connotations of past, present and future. I have demonstrated, however, that it actually describes minute changes of successive stages of movement throughout the form of the depicted body, creating apparent movement.

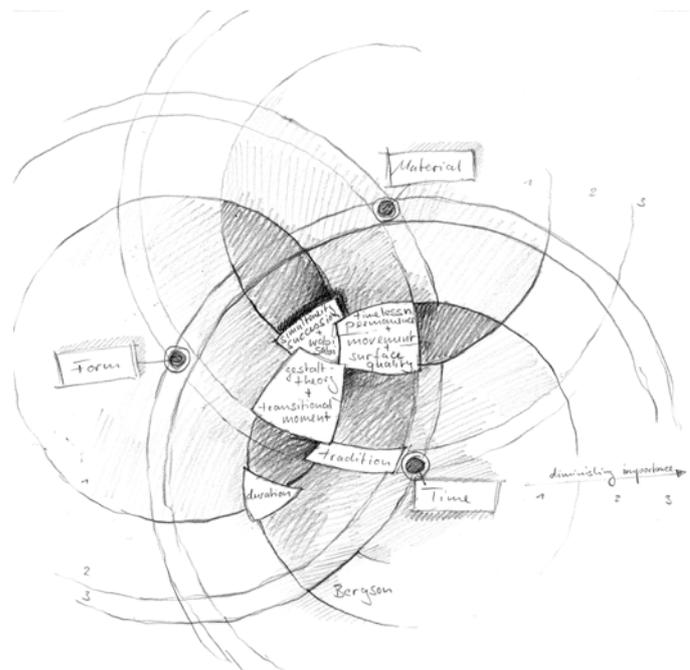
The table below shows the relationship between time, form and material in the different concepts and phenomena that have been used in the thesis. In two of these phenomena all three aspects seem similarly important. In most,

however, primary and secondary relationships are evident. As the focus of the thesis is on temporality in sculpture, time is always a prime element in these relationships.

All these phenomena and concepts can be located within the three poles of form, material and time. Depending on their nature, they may tend more to one or the other of these poles, while only a few show equal weights of all factors involved. There are many phenomena and issues that have not been discussed in the thesis, such as colour, light, creation of work, manufacturing process, etc., all of which would demonstrate a significant relation to form, material and time. Expression, as well as their material presence is perceivable and important for the sculptor and beholder alike. For both of them, the three poles of time, form and material, are significant factors in the perceptual process and as such of central importance in the plastic arts.

Figure 67: Diagram of time, material, form

The diagram (Figure 67) shows the three poles and the area where the discussed phenomena are located on the circumference of the pole. The nucleus of each represents the abstract concept of pure form, pure material, pure time, while all natural phenomena and artificial objects lie on the intersection of these. None of the poles can exist without even the marginal presence of the others, and they can only be dealt with individually in abstract concepts and theories. Issues regarding sculptural objects are located in the centre of their intersection, as such visualising the intrinsic involvement of time, form and material in the medium of sculpture.



3. The sculptural object as temporal object

Form, time and material are present in any sculptural object, regardless of its subject matter. All of the above discussed phenomena will also be evident to varying degrees in

abstract, realist and figurative work, which all possess specific material presence and formal appearance of their own. Can they then be described as temporal objects, even though they may not contain a temporal Ehrenfels quality, i.e. they may not have a defined extension or limitation in time? Their temporality does not seem to match Husserl's understanding of the term, who defines temporal objects as follows:

“Under the term temporal object in a specific sense we understand objects that are not only units of time, but also contain an extension /duration of time. When a sound appears, the sound is object of my objective perception, but not the duration of the sound or the sound in its duration. It is as such a temporal object.”¹⁸³

Husserl, like Ehrenfels, has based the example in this definition on a musical sound, which has a very limited and clearly defined duration of its own. He assumes such a limitation as present in temporal objects. Sculptural objects are located at the other end of the duration scale: most sculptural work in a traditional sense is durable and permanent and their decay may not be evident to our perception. Their imminent duration far exceeds those of musical sounds. However, we need to consider the difference between the time element in visual perception and in other senses. The difference of temporality in visual art and performance art has been explored in the thesis and at one point the term ‘beholder’s time’ was introduced. In film or the performing arts, the beholder’s time is determined by the duration of the performance, just as it is in a musical melody and its parts. In the visual and plastic arts, the beholder has the opportunity to determine and end the period of contemplation or to return to the work at a later stage. The duration of the act of perception is therefore crucial for the definition of temporal objects. The sound in Husserl’s example possesses a defined duration in itself, while with a visual object it is the beholder who freely and willingly defines the duration of perception. Once an immediate impression (the act of sensory perception) of an object has been gained, having walked away from it, so to speak, the impression will be retained in memory and will ‘fade’ in the same way as described by Husserl with the example of a sound. We are able to recall the memory of an object, ‘secondary memory’ as Husserl calls it, just as we can recall the memory of a sound.

But there is also ‘primary memory’ involved in the process of perceiving sculpture. Visual stimuli continuously sink into retention when we surround plastic art, being continuously replaced with new, current information. Motion parallax is together with stereoscopic vision an important visual factor for depth perception, but it also enables us to *understand* form. Perceptual stimuli sink into retention and are replaced with visual

¹⁸³ Husserl (1928), p.18/19; *“Unter Zeitobjekten im speziellen Sinne verstehen wir Objekte, die nicht nur Einheiten in der Zeit sind, sondern die Zeitextension in sich enthalten. Wenn ein Ton erklingt, so kann meine objektivierende Auffassung sich den Ton, welcher da dauert und erklingt, zum Gegenstand machen und doch nicht die Dauer des Tones oder den Ton in seiner Dauer. Dieser ist als solches ein Zeitobjekt.”*

information from a slightly differently positioned view of an object, when the observer moves around it. Ambiguous spatial relationships become clarified as depth information is exposed through these different viewpoints. Arnheim states:

“[...] immobile media such as drawing, painting or photography are quite different from the mobile ones. A projection that, frozen in its momentary aspect, looks compelling, mysterious, absurd, or unrecognisable passes by unnoticed as a mere phase in a sequence of changes when an actor moves on the stage or in a film, or when the camera or a human observer moves around a piece of sculpture. In experiments on the shape and depth perception of infants, a most influential factor proved to be motion parallax, i.e., the changes of spatial appearance caused by the movements of the viewer’s head.”¹⁸⁴

Motion parallax together with retention of past stimuli and present perceptual information allow us to understand sculpture in the round. Through moving around the object, the beholder brings the factor of time to the static image. This is the perceptual basis of apparent or deceptive movement, *Scheinbewegungen* that has been discussed earlier.

Permanent and limited temporal objects behave in the same way, when we look beyond the duration of their physical existence. It is duration of perception that is important and not the duration of the object itself. The beholder brings the temporal quality to an object by determining the time spent in front of a sculpture, for example. Temporal quality of objects is not only fundamental to phenomenology, but is also at the heart of the aesthetic system of wabi-sabi. Both stress the significance of limited duration of the object *or* its perception as well as its retention in memory. The metaphysical basis of wabi-sabi is the devolution of material and non-material objects into nothingness, only leaving minute traces or recollection of their existence. The role of temporality as part of the perception process is central to a phenomenological approach while wabi-sabi is concerned with the temporal as a quality of the object itself. The thesis has demonstrated that there is a wide range of temporal issues involved in the practice of sculpture, which are either intrinsic object qualities together with form and material or metaphysical qualities. Nevertheless, it is valid to describe a sculpture as a temporal object with the understanding that it displays an important and intrinsic quality of time.

It has become clear in course of the thesis, that all theories and philosophical systems referenced here link duration, perception and the physical qualities of an object and that many of them define the ‘temporal object’ in their own way. Bergson linked matter directly to the temporality, an issue that has been explored in depth as part of this thesis; Husserl has given a clear definition, as stated above, that is very similar to the

¹⁸⁴ Arnheim (1974), p. 105

understanding in wabi-sabi. Gestalt theory also stresses the significance of the duration of a stimulus and some researchers point to *Grenze des Gestaltzerfalls*, a limit where a Gestalt ‘decays’ after the perception of the initial stimulus – not unlike Husserl’s description of retention as the tail of a comet.

4. Significance of time for figurative sculpture

Qualities concerning material and time are equally important for all sculptural objects and subjects. Aging and decay, for example, are issues that are relevant to abstract and realist work alike. Certain issues have evolved in the thesis that are particularly significant in relation to realist or figurative sculpture, notably the transitional moment, surface quality and aspects regarding succession and simultaneity. While they are present in other subject matter, they have a particular influence expressing the inherent message of figurative work.

The transitional moment - the choice of a particular moment or time span, expressed through material and form - is an artistic means that is only relevant to realist and figurative art. Its roots are successive processes in life and nature that the sculptor observes and

abstracts in his/her work. Purely abstract (*ungegenständliche Kunst*) work does not necessarily aim to make such connections and so does not apply the transitional moment as an artistic means. The choice of the moment or temporal sequence that is represented in the work is a crucial and an important tool for the figurative sculptor in the translation of an idea. Playing an intrinsic role in the subject of the work, it influences the unfolding of the work’s message by the beholder. Figurative work that shows no choice of moment or time is not possible. Even if it expresses timelessness or restfulness in its subject, a Buddha statue for example, it still shows the sculptor’s choice of a significant moment or period of time and must be considered as a ‘temporal subject’. Time is an intrinsic part of everyday, ‘real’ life and no representation of real objects

Figure 08: Bernini, *Apollo and Daphne*, 1622-23



through sculptural form and material can be stripped of this essential quality. However, it is impossible to imitate or copy 'real time', the sculptor has to find a means to abstract the temporal quality in the work.

In the medium of sculpture, the temporal succession of events in life and nature can only be represented simultaneously in space and different stages of a story need to be integrated into one sculptural composition. This has always been a central problem for representational artists. Bernini (1589-1680) carved Daphne's (Figure 68) beautiful human body and at the same time had to represent her limbs becoming branches with leaves. Taken from Ovid's *Metamorphoses*, the idea of successive change from one state to another suits the sequential nature of the literary medium particularly well. Brought into the realm of the three-dimensional object, the metamorphosis had to be depicted simultaneously in time and space. The visual artist has to resolve such a challenge in a creative way and various, very different solutions have been demonstrated throughout the thesis. Myron and Kolbe depict different stages of movement continuously within one figure, Martini presents multiple images of one person in the pictorial space, Bernini shows two distinct stages of change in one figure and a multitude of sculptures of the stations of the cross throughout the history of art present us with a sequence of objects of one story.

However, there are solutions that are unique to the plastic arts, as the sculptural material is able to hold different form at the same time. In chapter two I have demonstrated that figurative sculpture can carry an even more complex expression of this simultaneity. When dealing with represented objects, the sculptural form is able to express simultaneity in time and space by interlocking form; in abstract form this is either less meaningful or difficult to perceive by the beholder. This artistic means is not a new invention, it is evident in pre-Christian carved stone heads of the Lough Erne area, for example. However, it is a means that is not widely used by contemporary sculptors and is passed over by literature relating to sculptural practice.

Sculptors working with abstract subjects have the same possibilities to manipulate the material's surface as figurative sculptors do. Both can enhance form through the treatment of surface texture, using smooth, rough and polished areas. The meaning that the treatment of these areas evokes in relation to the overall form and theme of the work is, however, different. If used appropriately, such texture is always a visual expression of suggested 'inherent forces' of the work, expressing vitalism, life and internal or external pressure forces. The sculptor has in his hands the opportunity to use these means to emphasise his/her idea, as has been shown with the example of Picasso's *Pregnant Woman*. The beholder on the other hand will, consciously or unconsciously, perceive this detailed information as part of the overall theme or idea of the work. Although he/she will inevitably make similar connections to internal and external forces

when contemplating a piece of abstract work, the relevance to the subject matter may be entirely different. As soon as one element of the work is identified as being representative, the beholder will subconsciously try to identify realism in the whole work and detailed treatment will enhance such an interpretation. This has been demonstrated in connection with the clouds of Mantegna or Seyler in Chapter Two.

The human figure in art is a complex subject matter that requires the sculptor to consider comprehensive interrelations between the means at his/her disposal: material, form and time.

The figurative sculptor needs skill and knowledge of manipulating different materials. When working in the medium of bronze, for example, not only does the process and technique of metal casting need to be understood, but also working with materials such as wax, plaster, clay and moulding materials.

While mastering the material may be sufficient for artisans and technicians, this alone does not make a good figurative artist. Besides creative energy and conceptual ideas, the figurative artist also needs to have a fundamental understanding of anatomical particulars of the human figure, its function, proportions and parts as well as the complex relationship between them. The natural form as perceived and understood by the sculptor, has to be translated and abstracted into sculptural form. The process of form-giving (*Formgebungsprozeß* or *Gestaltungsprozeß*) integrates idea, perception and form, but also goes hand in hand with the manipulation of the material. Surface textures, penetrating forms, and variations in proportion or position, etc. all have a distinct meaning in and influence on the overall composition and cannot be applied in a random and unreflected manner. The slightest of deviations of the sculptural object from the natural form will carry an expression and can change the overall meaning of a piece, as has been shown in the discussion on apparent movement. An alteration of size for compositional purposes may be possible in abstract work without changing the message dramatically, but the slightest alteration of proportion of a body part in a human figure will inevitably alter its interpretation completely. Michelangelo's David with its unusual proportions of head and hands is a clear example of this.

Last, but not least, the sculptor has to deal with the often-neglected issue of time and temporality. He/she has not only to consider the choice of materials and processes in terms of durability and adequacy for the idea, but more importantly, the right moment or period of time that is to be expressed needs careful consideration in view of the overall theme or subject. If dealing with a narrative, decisions have to be made in relation to how successive stages will be represented in the work, either by choosing a series of subsequent pieces or the depiction of simultaneous expression in one piece, such as in Martini's example discussed in chapter two.

From my own experience I know how easily this complex ‘symbiosis’ of time, form and material is disturbed, either by lack of knowledge, ignorance, negligence or error. The consequence is that the work becomes random, ambiguous, even mediocre to the point that the beholder misunderstands a sculptural object or that the intended message cannot be read. It takes years of experience and intense communication with the subject matter, through elaborate studying and drawing, to understand and to manipulate the subject of the human form successfully in the medium of sculpture. The importance of life- and observational drawing in art education cannot be overestimated. It is not only relevant to representational arts, but for all areas of art and design as it trains and sharpens visual thinking, which is the most central process in human cognition in life and for the visual arts.

The fruits of a long and thorough learning process are plentiful, particularly in relation to figurative art. Sculptors have mastered the subject and developed distinct styles of their own - and still do so - even though the subject of the human form has occasionally been branded as having exhausted itself and become irrelevant in contemporary art. With a history of at least 30.000 years and an infinite multitude of relationships between figure, environment and philosophy, the figurative tradition in sculpture appears far from dead. In Chapter two it has become clear that tradition is a fundamental issue for the subject and contains once again the three poles of time, material and form as essential ‘ingredients’.

5. Conclusion

Time and the way we perceive it in sculpture have occupied my thoughts and my studio practice for five years. They have become an integral part of my own work and I cannot help but see more and more evidence of the issue in the work of artists throughout the history of art. At this stage of the project I will now reflect on the importance of this research for the debate in general, its relevance for the practitioner and for my own work as a sculptor.

The thesis set out to explore issues of sensory perception related to time in our environment and compare them to ways they are expressed in sculpture. Owing to the wide area of both time and art, as well as the multitude of facets and research methods in these subjects, I took up several paths that did not lead to a satisfying approach. Eventually I applied a comparative method, integrating observation with studio practice and their subsequent interpretation, a method that successfully increased my understanding and awareness of time in art. A range of temporal phenomena were chosen and compared with their equivalents in visual art, interpreting the findings with the help of Gestalt theory and philosophy. This method produced some surprising insights that strengthen the case for figurative sculpture in recurring debates on the validity of traditional art forms.

The thesis can therefore be understood as a forceful defence of figurative realism, reconnecting sculpture practice with philosophy. I have demonstrated that time consciousness and contemporary figurative sculpture are not incompatible, but are intrinsically linked. By doing so, I have uncovered a previously obscure philosophical grounding of realist art: temporality in art cannot be ignored but must be seen as a primary philosophical context within which sculpture is set. Figurative sculpture is deeply rooted in time.

It appears that realist art, and figurative sculpture in particular, is able to express issues of time and temporality particularly well and differently in comparison with other media. At the centre of this potential lies the way in which material, form and time interrelate in the figurative subject and the media of traditional sculpture. The combination of human form, traditional, permanent and solid material together with our understanding of time creates challenging and inspirational qualities in figurative art.

The investigation questioned established views about the way time is perceived in the medium of sculpture, notably the transitional moment. The argument as a whole made a particular case for understanding and accepting the issue of tradition in realist art as a strong supportive framework over a long period of time. This framework has the

potential to assist the sculptor in achieving new solutions regarding the self-understanding of man in contemporary culture. This is, I hope, where my thesis can be of use for the practitioner: to find his/her own position within a long line of fellow-sculptors, each searching for a contemporary resolution of the human form in art. The thesis demonstrates the multitude of temporal issues that need to be considered when working on a figurative theme, issues that should not be neglected, dismissed or considered irrelevant: they are essential for presenting an idea to the beholder. The awareness and understanding that temporal issues are indeed an integral part of any work of art still needs to be enforced. I fully agree with Götz Pochat's assertion that "*we are dealing with a fundamental, if not the fundamental category of artistic creation, both in painting and sculpture, as well as in architecture.*"¹⁸⁵

Yet a lot of the issues of time in art are still unresolved or needed to be left out of the thesis. Many more phenomena and their relating sculptural expressions need to be explored to give a more comprehensive picture of time in art and many more examples need to be considered to prove their validity for a wider field of artworks. The angle of research also needs to be extended from its narrow focus on figurative sculpture in Europe.

My own work has benefited from the research and gathered a momentum that I could not have achieved without this detailed research. In the beginning, it made evident my inability to work on complex and carefully observed pieces as a sculptor. Realising my lack of understanding of the human form and its functions, I became aware that my work to date had been random and indeed mediocre in terms of resolving issues of form. The techniques I used to produce the work proved inadequate for more complex questions. Although the resolution of such problems is an ongoing task, it appears that through deciding to focus intensively during my first year on anatomy and life studies, I was able to resolve several problems and set a better foundation for the work of the following years. The principle of interlocking form has since become an integral aspect of my sculptural language and still offers me an artistic challenge with the complex forms it can create. Working on the thesis has increased my awareness for thematic subjects that involve time, particularly understanding myths, literature and art of the past as part of a relevant pool of information and inspiration. As a consequence, I am more aware of my own place in the figurative tradition in Europe in terms of what has been resolved already and where I can find challenges and solutions through my own work. The investigation into the *Berliner Schule* was of particular importance here, resulting in a better understanding of the influence that Axel Seyler had on my artistic development and how my work is located in relation to the line of sculptors beforehand.

¹⁸⁵ Pochat (1995), p. 9

This is a solid foundation on which I can intensify my inquiries in material, form and time through sculptural work, taking on new and more complex challenges.

EPILOGUE:

FIVE YEARS OF PRACTICE – A REVIEW

My studio practice as a sculptor over the last five years has resulted in altogether more than 50 different bronze objects, 4 wooden sculptures, 2 temporary ‘installations’ and several hundred drawings and water-colour paintings. Only a small amount of this practical work has found its way into the text of this thesis, either as tools for the research, markers of relevant findings or as examples to illustrate and visualise my ideas. The majority of the work, however, has not appeared in the context of the thesis, which does not mean that this body of work was irrelevant. All the work had a constant and subtle influence on the ideas presented in the theoretical part of the research, either by the gradual development of a relevant finding, or simply as failed experiments, showing a false path taken. Photographs can never do justice to sculpture work and ideally the objects created should be seen in parallel with the written text. Unfortunately, this might only happen once, if at all. Given this I have catalogue the sculpture work here and provide a brief description in chronological order of most of the relevant works of the five years of practice that has accompanied and formed an integral part of my research.

a) Anatomical studies October 1998 - September 1999

Henry Moore once referred to the importance of studying the human figure for the sculptor:

“In my opinion, long and intense study of the human figure is the necessary foundation for a sculptor. The human figure is most complex and subtle and difficult to grasp in form and construction, and so it makes the most exacting form for study and comprehension. A moderate ability to ‘draw’ will pass muster in a landscape or tree, but even the untrained eye is more critical of the human figure- because it is ourselves.”¹⁸⁶

Realising that my work since graduation was formally random and lacking such anatomical understanding and careful observation, I used the first year of my doctoral studies to improve this side of my practice. Intensive use of the life-room for drawing and modelling ran parallel with studying closely Gottfried Bammes’ *Die Gestalt des Menschen*, together with many other less concise and systematic anatomy theories for artists. During this time I also undertook ‘classical’ exercises in the area, such as modelling an ecorché, skulls with layers of the muscles of the head and a functional hand model. Many of these were of utilitarian purpose and, being modelled in non-permanent

¹⁸⁶ Moore (1966), p. 115

material, only survive as photos. More than 700 sketches and studies of this time, were destroyed or lost when moving house in 2002. Many of these, however, had already become obsolete.

Ecorché, 1999, unfired clay, c. 40" high, destroyed (Plate 1)

Musclehead, 1999, plaster, life-size (Plate 2)

Skull Study, 1998, plaster, life-size

Hand Study, 1999, plasticine, life-size (Plate 3)

b) Portraits

As a direct consequence of these studies and being inspired by Marini's portraits seen during a visit to Tuscany in 1998, I started to work on a series of portraits of close friends. Johnny Johnson, a seventy year old local farm labourer who lived at our farm near Newtownards, and my partner at the time, Tara McCauley were patient sitters on long winter evenings. Some of these 'multiple portraits' were the starting point of the inquiry into simultaneity of time and form and proved to be important for the progress of the thesis.

Portrait Kathy De Brun, cement, 1998, life-size

Portrait J. Johnson, 1999, bronze, 3" high, ed. 2 (Plate 4)

Multiple Portrait (J. Johnson), 1999, bronze. 3 1/2" high, ed. 4 (Plate 5)

Double Portrait (Tara), 1999, bronze, 3" high, ed. 2 (Plate 6)

c) Roundstone Arts Week residency, Connemara, June 1999

During a four-week residency at Errisbeg House as part of the Roundstone Arts Festival, I investigated analogies of human and plant form through a series of 50 drawings on the theme of *Metamorphosis*, inspired by the local environment and driftwood. Three sculpture pieces applied sculpture materials with found objects. A female figure in Carrara marble, now in progress again, concluded the residency.

Atlas, 1999, plaster, 26" high, damaged after exhibition

Old Buoy, 1999, plaster, 4" high

Errisbeg Madonna I, 1999, bronze, 2" high, ed. 5 (Plate 7)

Errisbeg Madonna II, 1999, Carrara marble, 24" high (Plate 8)

d) Residency at Verrocchio Art Centre, Tuscany, July/September 1999

Funded by The Juliet Gomperts Trust I had the opportunity to work with the sculptor Nigel Konstam at the Centro del Arte Verrocchio at Casole d'Elsa in Tuscany for the period of four weeks. Himself an excellent figurative sculptor and interested in the history and theory of art, this period offered me insight into new working methods and approaches to the subject. A scholarship allowed me to extend my visit to Italy for another three weeks during which I travelled to Rome, Siena, Florence and Pistoia to study the work of Bernini, as well as Niccola and Giovanni Pisano, filling several sketchbooks. It was also an opportunity to intensify my studies of the work of Marino Marini and the Etruscan artefacts that influenced him.

During the residency I worked on a series of four small wax pieces centred around the human figure and the spiritual/physical burden, initially inspired by the experience of annual hay-making on the farm. Influenced by the artwork that I had studied, this was the point where my style developed towards greater and better-informed realism in treating the human form, but also the point where truly interlocking form first appeared. These waxes were subsequently cast in bronze. A study of Donatello's portrait of Niccolo d'Uzzano completed this residency.

Study of Donatello's Niccolo d'Uzzano, 1999, terracotta, lifesize

Night Moves Triptych, 1999, bronze, 6"x 20", ed. 2 (Plate 9)

Daidalos I, 1999, bronze, 6" high (Plate 10)

Daidalos II, 1999, bronze, 4" high, ed. 4 (Plate 11)

Daidalos III, 1999, bronze, 4" high, ed. 4 (Plate 12)

Daidalos IV, 1999, bronze, 6" high (Plate 13)

Daidalos V, 2001, ash, 30" high (Plate 14)

e) Suleika cycle

Continuing the initial experimentation with intersecting forms resulted in the Suleika cycle, three double-figure groups referring to Goethe's *West-Östlicher Divan*. With the knowledge of the human body gained through ongoing life studies, I was now able to attempt the complex and sculpturally difficult interlocking of human forms. This *formal* development was supported by changes in working practices at the same time. I started to use plasticine as the initial modelling material, a method that enabled me to spend longer on the modelling process, up to a year in the case of *Suleika III*. Investment in studio equipment, such as Vinamould/Gelflex® facilities and a small studio foundry allowed more complicated and sophisticated work in the medium of bronze.

Suleika I, 2000, bronze, 12” high, ed. 5 (Plate 15)

Suleika II, 2000, bronze, 17” high, ed. 2 (plus one proof in cement) (Plate 16)

Suleika III, 2000, 36” high, in process of casting, one proof in cement (Plate 17)

f) Imram Bran cycle

Inspired by the form and proportions of Irish currachs as well as the life-style and mythology surrounding these vessels, I started to introduce the image into my work to further investigate interlocking forms. Two groups of three boats and a series of five small individual boats cast using bronze-age technology, mark the non-figurative side of this series. The 7th century legend of the Voyage of Bran, the *Imram Brain*, was the source for exploring the human side of these early sea travels. Following several drawings, four maquettes for a public commission in Shropshire centred on the figure of Bran at different stages of the voyage. They are part of a collaborative submission for a commission shortlisting with the photographer and writer Anne Burke in the form of a CD-ROM (enclosed with this thesis).

A series of seven imaginary portraits of the fellows of Bran, four of which were cast using ancient lost wax techniques during the Umha Aois symposium, 2003 on Rathlin Island.

Three Currachs, 2002, bronze, 24” long (Plate 18)

Dunfanaghy Currach, 2001/02, bronze, each 3” long, ed. 6 (Plate 19)

Carpait crédumi, 2003, cement and bronze, 20” long (Plate 20)

Bran I (The Lure), 2003, plasticine, 12” high

Bran II (The Journey), 2003, plasticine, 12” high

Bran III (The Discovery), 2003, plasticine, 12” high

Bran IV (The Longing), 2003, plasticine, 12” high

Bran V (The Voyage), 2003, wax, 10” high (Plate 21)

Fellows of Bran, 2003, bronze, 2-3” high, 7 individual busts (Plate 22)

g) Architectural composition

Initiated by studies of buildings in Florence, two architectural composition studies explore concepts of intersecting forms in a more abstract context than the figure. *Architectural Composition I* originated in a whole cube, subsequently cut and reassembled. The temporary installation for a Year of the

Artist Residency at Comber was the starting point for *Parkway Pavilion*, intended as a permanent reminder of the temporary structure.

Architectural Composition I (Via Cavour), 2001, bronze, 2", ed. 3 (Plate 23)

Architectural Composition II (Tower), 2001, bronze, 3" high, ed. 2 (Plate 24)

Parkway Pavilion, 2000, bronze, 1" high, ed. 9 (Plate 25)

h) Individual sculpture pieces

Alongside groups and work-cycles stand a number of single pieces that reflect personal interests at the time. *Ecce Homo* is a critical comment on consumer culture in Britain, investigating forms with dual reading (carrier bags and skulls), while *Caryatid* is a continuation on the burden-theme of the Daidalos series, however, inspired by sketches of travellers at a train station. *The Metamorphosis of St George* is a political piece, commenting on ever increasing recent inhumanities of British politics, involving the mass-culling of hundreds of thousands of sheep and cattle during the BSE crisis and continuous involvement in military aggression over the last years culminating in the recent the invasion of Iraq. Inspired by the events of the 1798 uprising in the Co. Down area, *Betsy Gray* is a piece reflecting passion and hesitation alike. *Oceanos Hands*, strictly a continuation of early hand studies was made to be used as the head of a fountain.

Four large scale wood carvings evolved in 2001: an over-lifesize torso in elmwood, a carving from a railway-sleeper, inspired by images of annunciation scenes in Tuscany and a translation of *Daidalos II* in ash. A group of four interlocking figures in elmwood was changed into a torso-group.

Bird, 1998, aluminium, 3", ed. 3

Excited Golfer, 1999, bronze, 12" high, ed. 3

Angel's Kiss, 1999, bronze, 12" high

Blue Torso, 1999, welded steel, 10" high

Mare, 2000, bronze, 3" high, ed. 3

Cappallini, 2000, bronze, 2-3" high

Oceanos'Hands, 2000, bronze, two over-lifesize hands, ed. 3 (Plate 26)

Betsy Gray, 2000, bronze, 12" high, ed. 3 (Plate 27)

Annunciata, 2000, railway sleeper, 5' high (Plate 28)

Memorial to the Unknown Chicken, 2000, bronze, 12" high

Ecce Homo, 2001, bronze, 14" high, ed. 2 (Plate 29)

Godiva, 2001, bronze, bas-relief, 12"x12", ed. 2

Caryatid, 2001, bronze, 12” high, ed. 7 (Plate 30)
The Metamorphosis of St George, 2003, plasticine, 4” high
Torso, 2001, elmwood, 4-5’ high
Torso Group, 2002, elmwood, 4’ high

i) Commission work

During the period of the thesis I was shortlisted for four public commissions, leading to four specific maquettes, including the Bran cycle described above. The later submissions include intersecting form as a conceptual element.

Cinematic Awards, 1998, bronze and copper, 12” high, ed. 3
Shortlisted for public sculpture commission in Irvinestown, 1998:
Lady of the Lake (maquette), 1998, plaster, 3’ high
Selected for a public sculpture commission in Carrickmore, 2000:
Gaelic Footballers (maquette), 2000, cold cast bronze, 8” high
Shortlisted for public art commission in Navan, Co. Meath, 2001:
Buine (maquette), 2001, snowcrete and bronze, 2’x2’
Shortlisted for sculpture commission at The Hurst, Arvon Foundation, 2003:
CD-ROM and Bran figures mentioned under f) above.
Commission by the Department for the Environment, Dublin:
Maquette for City Neighbourhoods Award, resin, 2003, 5” high (Plate 31)
City Neighbourhoods Award, 2003, bronze, 12” high (Plate 32)

j) Temporary work

Together with the Italian architects Federico Curletto and Paolo Luccatini and the textile artist Tara McCauley, I received the Year Of The Artist (YOTA) residency for Co. Down in 2000, a nationwide residency competition. It took the form of a temporary architectural work, covering a disused building, originally 1950’s changing rooms, with materials reflecting the site’s history. The work developed into the planning of a community centre in accordance with sustainable principles, the design for which was developed out of the concept of the temporary work. See website:
http://web.tiscali.it/skulptark/page2_introduction.html

As a mark of protest and in respect for the victims of the US/British invasion of Iraq, I made traditional St. Bridget’s crosses for one hour per day during the

aggression and assembled them on a small field adjacent to Falmouth College of Arts. This being the only form of protest in the institution, I was joined by many students, staff and members of the public, which resulted in a field of more than 500 straw and willow crosses, named the *Sea of Crosses*. They were subsequently given away for donations to assist humanitarian aid.

Parkway Pavilion, 2001, Comber, grass, wood, carrier bags (Plate 33)

Sea of Crosses, 2003, willow and straw, 10"x6" covering c. 15'x20' (Plate 34)

k) Crafts practice

In 2002 I took up a post as research assistant for a collaborative research project between The Eden Project and Falmouth College of Arts on the use of plant material and form. Through this work I acquired craft skills such as basket making, straw weaving and greenwood working, resulting in a range of objects made to traditional and new patterns and designs.

Having first built a Dunfanaghy currach, the traditional skin-boats from the West coast of Ireland, in 2001, I have since intensified my research in these craft. This has led to workshops, lectures and essays on the subject over the last two years. As part of my research post, the materials, techniques and principles were translated into the design of a garden shed that has since been featured in a publication.

Skibs, sciathogs, creels, lobster pots and line baskets, since 2002, varying sizes (Plate 35)

Currachs and naomhóga, since 2001, skin boats 10'-25' long (Plate 36)

Garden Shed, 2003, currach materials, 6'x8'x8'

l) Umha Aois

Since 1997 I have been member of Umha Aois, a group of International artists and archaeologists concerned with experimental archaeology of bronze-age metal casting techniques. Meeting bi-annually, the aim of the group is to re-create the skills and procedures used for the production of bronze artefacts that are related to the Bronze Age in Ireland. See website:

<http://homepage.eircom.net/~art/umhaaois/>

Socketed Axe, 2001, bronze, 3" long

Axehead, 2001, bronze, 3" long

m) Listing of exhibitions and other professional practice

Group exhibitions

- 1998 *Iontas*, Small Works Exhibition, Sligo, Dublin,
Belfast
Ulster Hospital, Dundonald
Happenstance, Engine Room Gallery, Belfast
Emer Gallery, Belfast
- 1999 Daffodil Gallery, Skerries
Stable Gallery, Roundstone, Connemara
Iontas, Small Works Exhibition, Limerick, Dublin,
Belfast
Barn Gallery, Hillsborough
- 2000 *State-of-the-art*, Engineroom Gallery, Belfast
Art Garden, Bristol
Phoenix Gallery, Belfast
Consequence, Engineroom Gallery, Belfast
- 2001 Linenhall Gallery, Belfast
Grandes et Jeunes d'Aujourd Hui, Paris
From Ritual to Romance, Catalyst Arts, Belfast
Art Garden, Bristol

Solo and two person shows

- 1998 Ards Art Centre, Newtownards
Two Person Show at *Bonnies*, Belfast
- 1999 Engineroom Gallery, Belfast
- 2002 Rood Gallery, Bristol

Symposia and awards

Umha Aois, bronze casting symposia, Omagh, 1997, Ventry 2001, Rathlin Island 2003
Awarded *Year of the Artist* (YOTA) residency, Co. Down, 2001. Parkway Pavillion,
Comber. *Architectural Sculpture/Sculptural Architecture* installation with SculptArk
Aer Lingus Arts Flights, 1999, 2001

Talks, publications and other practice

Public lecture on the Irish currach tradition in Porthleven, June 2003, at The National
Maritime Museum in Cornwall, October 2003 and Lugo (Spain), November 2003.
Articles on contemporary crafts practice published in The Basketmaker's Association
Newsletter, July 2003 and Westcountry Woodsmen Newsletter, September 2003

Inclusion of a design for a gardened in the publication by Gareth Jones, *Shed Men*, London, New Holland, 2004.

Organised and ran a currach-building workshop at Porthleven, June 2003. See website: http://www.saltcellar.fsnet.co.uk/basketry_and_beyond/curragh_courses_more_info.htm

Organised and ran a currach-building workshop at the Yarnier Trust, Welcombe, Bideford, Devon, April 2004. See website: <http://www.yarniertrust.co.uk>

PLATES OF OWN WORK

A CD-ROM with a more comprehensive selection of work is enclosed in the pouch in the back cover of the thesis (for Macintosh and PC; software requirement: OpenOffice or Microsoft PowerPoint)

BIBLIOGRAPHY

- Achenbach, G; Das Kleine Buch der Inneren Ruhe; Freiburg, Herder, 2000
- Arnheim, R.; Art and Visual Perception; London, University of California Press, 1974
- Arnheim, R.; New Essays on the Psychology of Art; London, University of California Press, 1986
- Arnheim, R.; The Power of the Centre; Berkelyey, 1982
- Arnheim, R.; Visual Thinking; London, University of California Press, 1969
- Arnheim, R.; The Rescue of Art : Twentysix essays; London, 1992
- Augustine of Hippo, St.; Confessions; Harmondsworth, Penguin Books, 1961
- Bammes, G.; Die Gestalt des Menschen; Ravensburg, Ravensburger Verlag, 1997, 9th ed.
- Barnes, J.; The Cambridge Companion to Aristotle; Cambridge, Cambridge University Press, 1995
- Bergson, H.; Matter and Memory; London, Allen & Unwin, 1911
- Bergson, H.; Time and Free Will; London, Allen & Unwin, 1910
- Bland, K. and others (ed.); Henry Moore in Bretton Country Park; Henry Moore Foundation, 1998
- Bohm, D. and Peat, F.D.; Science, Order and Creativity; London, Routledge, 1987
- Bohm, D.; Unfolding Meaning; London, Routledge, 1981
- Campen, C. van; Leonardo; Vol. 30, Issue 2, April 1997; p. 133-136
- Carr, D.; Time, Narrative and History; 1986
- Dunne, J.W.; An Experiment with Time; London, Faber and Faber, 3rd edition 1934
- Ehrenzweig, A.; The Hidden Order of Art; London, Weidenfeld, 1967
- Ende, M.; Momo; Stuttgart, Thienemann, 1973
- Elias, Norbert; Time: An Essay; (original: Über die Zeit; Suhrkamp); 1987
- Ellis, W.; A Source Book of Gestalt Psychology; London, Routledge & Kegan, 1938
- Fathy, H.; Hassan Fathy on Architecture; ?
- Flood, R. and Lockwood, M (ed.); The Nature of Time; Oxford, Blackwell, 1986
- Frankfort, H. and H.A. and others; The Intellectual Adventure of Ancient Man; Chicago and London, University of Chicago Press, 1946
- Fraisse, P; The Psychology of Time; 1963 and 1967
- Fraser, J.T. (ed.); The Voices of Time; Amherst, University of Massachusetts Press, 1981; 2nd ed.
- Frenzel, U. (ed.); Gerhard Marcks, Briefe und Werke; München, Prestel Verlag, 1988
- Goethe, J.W.; Farbenlehre, Stuttgart, Verlag Freies Geistesleben, 1979
- Goethe, J.W.; Kunst und Literatur; Werke, Kommentare und Register; Hamburger Ausgabe; Vol. 12; München, Verlag C.H. Beck; 1981, 12th edition (1994)
- Goethe, J.W.; West-Östlicher Divan, Insel, Frankfurt/Main, 1974
- Goethe, J.W.; Wilhelm Meisters Lehrjahre; Köln, Könenmann, 1997

Goethe, J.W.; Wilhelm Meisters Wanderjahre; Köln, Könemann, 1997

Gombrich, E.H.; Art & Illusion - a study in the psychology of pictorial presentation;
London, Phaidon, 1960, 5th ed.

Haenlein, C.; Eduardo Chillida - Skulpturen; Hannover, Kestner Gesellschaft, 1981

Hawking, S.W.; A Brief History of Time; New York, Bantam Books, 1988

Heidegger, M.; The Concept of Time; Oxford, Blackwell, 1992

Herder, J.G. von; Sculpture – Some observations on shape and form from Pygmalions
creative dream; Chicago, 2002

Hickey, H.; Images of Stone; Belfast, Blackstaff, 1976

Hildebrandt, A.; The Problem of Form; London, Garland Publ., 1978

Husserl, E.; The Phenomenology of Internal Time Consciousness, Indiana University
Press, 1964

Janssen, H.; Hokusai's Spaziergang; Büchergilde Gutenberg, 1975

Kant, I.; Critique of Pure Reason (translation Kemp-Smith); London, Macmillan, 1963

Kerényi, K.; Die Mythologie der Griechen, Band 1; München, dtv, 1966

Koffka, K.; Perception: An Introduction to the Gestalt-Theory, Psychological Bulletin,
1922, 19, pp. 521-585

Koffka, K.; Principles of Gestalt Psychology, New York, 1935

Köhler, W.; Gestalt Psychology; New York, Liveright, 1947

Koren, L.; Wabi-Sabi for Artists, Designers, Poets & Philosophers; Berkeley, Stone
Bridge Press, 1994

Krishnamurti, J and Bohm, D.; The Ending of Time; New York, Harper & Row, 1985

Langer, S.; Reflections on Art; Baltimore, The John Hopkins Press, 1958

Leber, H.; Aquarellieren lernen; Köln, Dumont, 1980

Lessing, G.E.; Laokoon; Stuttgart, Reclam, 1964, ed. 1987

Lichtenstern, C.; Henry Moore Liegende; Frankfurt/Main, Insel Verlag, 1994

Matussek, P.; Goethe und die Verzeitlichung der Natur; München; C.H. Beck, 1998

Maurer, E. (ed.); Marino Marini; München, Hatje, 1997

Mayer, R.; A Dictionary of Art Terms and Techniques; London, Adam & Charles Black

Meyer, K.; The Voyage of Bran, Son of Febal; London, Nutt, 1895

Metzger, W. and Brandt, L.; 'Reality', what does it mean?; Psychological Reports, 1969,
25, pp. 127-135

McKeon, R. (ed.); The Basic Works of Aristotle; New York, Random House, 1941

Moore, H.; Henry Moore on Sculpture; London, Macdonald, 1966

Muybridge, E.; The Human Figure in Motion; New York, Dover Publ. Inc., 1955

Okakura, K.; The Book of Tea; New York, Kodansha Int. Ltd., 1989

Penny, N.; The Materials of Sculpture; London, Yale University Press, 1993

Plichta, P.; Gods Secret Formula; Shaftesbury, Element Books Ltd., 1997

Pochat, G.; Zeit/Los, Köln, Dumont, 1999

- Pochat, G; Bild/Zeit-Eine Kunstgeschichte der vierten Dimension, Wien, Böhlau, 1996
- Priestly, J.B.; Man and Time; 1964
- Rasmussen, S.E.; Experiencing Architecture; Cambridge/Mass., MIT, 1959 (ed. 1992)
- Rawson, P.; Seeing through Drawing; London, BBC, 1979
- Rawson, P; Time in Art; lecture script, Exeter College of Art and Design, 1976
- Read, H.; Modern Sculpture - A concise history; London, Thames and Hudson, 1964
- Salvini, R.; Modern Italian Sculpture; Oldbourne Press, 1962
- Schmidt, H.; Philosophisches Wörterbuch (Kröner); Stuttgart, 1991 (21st ed)
- Schulze, F. (ed.); Mies van der Rohe – Critical essays; New York, MIT Press, 1989
- Schwartz, W. (ed.); The Hand and the Eye of the Sculptor; London, Pall Mall Pr., 1969
- Severin, T.; The Brendan Voyage; Book Club Associates, 1978
- Seyler, A.; Gestaltpsychologische Anwendungen auf Neuere Architektur in Detmold; Schriftenreihe der Fh. Lippe, Heft 13, 1995
- Seyler, A.; Wahrnehmung und Falschnehmung - Eine Psychologie des Sehens; Frankfurt/M., Anabas Verlag, 2003 (The book is in process of publication. All references are taken from the manuscript that was kindly provided by the author.)
- Sheldrake, R.; A New Science of Life; London, Paladin Books, 1983
- Smith, B. (ed.); Foundations of Gestalt Theory; Munich, Philosophia Verlag, 1988
- Sorabji, R.; Time, Creation and the Continuum; 1983
- Spengemann, K. L.; Architectur Wahrnehmen; Bielefeld, Kerber Verlag, 1993
- Strachan, W.J.; Towards Sculpture; London, Thames and Hudson, 1976
- Thomsen, C. and Holländer, H. (ed.); Augenblick und Zeitpunkt; Darmstadt, 1984
- Tunmer, W.; Erlebnisintensität und Zeiterleben; Gestalttheorie, Vol. 6 (1984), No. 2
- Wagner, R.W. (ed.); Das Zeitproblem im 20sten Jahrhundert; Bern/München, 1964
- Weber, J.; Das Narrenschiff - Kunst ohne Kompass; München, Universitas, 1994
- Weber, J.; Gestalt, Bewegung, Farbe; Berlin, Henschel, 1975 (3rd ed. 1984)
- Wertheimer, M.; Über Gestalttheorie; Philosophische Zeitschrift für Forschung und Aussprache, 1, 1925, pp. 39-60
- Wertheimer, M.; Laws of Organisation in Perceptual Forms; Psychologische Forschung, 4, 1938, pp. 301-350
- Withrow, G.J.; What is Time?; London, Thames and Hudson, 1972
- Withrow, G.J.; The Natural Philosophy of Time; Oxford, Clarendon Press, 1980
- Wölfflin, H.; Kunstgeschichtliche Grundbegriffe, Basel, Schwabe, 1991, 18th ed.
- Wollheim, R.; Art and its Objects; Harmondsworth, Penguin Books, 1968

Gestalt references cited from the Internet (accessed June 2002):

<http://mitpress.mit.edu/e-journals/Leonardo/isast/articles/arnheim.html>

(Biography and bibliography)

<http://wings.buffalo.edu/academic/department/philosophy/faculty/smith/articles/mach/mach.htm>

(Mach and Ehrenfels: The

Foundations of Gestalt Theory)

<http://www.yorku.ca/dept/psych/classics/Koffka/Perception/perception.htm>

(Perception: An

Introduction to the Gestalt-Theory)

<http://www.yorku.ca/dept/psych/classics/Wertheimer/Forms/forms.htm>

(Laws of Organisation in Perceptual Forms)

<http://werple.net.au/~gaffcam/phil/koffka.htm>

(Principles of Gestalt Psychology)

<http://www.geocities.com/HotSprings/8609/Gestalttheorie.html>

(Max Wertheimer: Über Gestalttheorie)

http://rdz.acor.org/Gestalt%21/gerhards/metz_real1.html

('Reality', what does it mean?)

<http://www.enabling.org/ia/Gestalt/gerhards/links.html>

(Gestalt related sources)

<http://mitpress.mit.edu/e-journals/leonardo/isast/articles/behrens.html>

(Roy Behrens: Art, design and Gestalt theory;

relations to Japanese theories)

Organisations

Gesellschaft für Gestalttheorie und ihre Anwendungen e.V. (Society for Gestalt Theory and its Applications) publishes the quarterly periodical *Gestalt Theory* (Krammer Verlag).

APPENDICES

Appendix 1: History and principles of Gestalt theory

Gestalt theory is a central theory within the psychology of sensory perception. Rooted in the theories of the influential Austrian philosopher Franz von Brentano in the 19th century, his disciples Ehrenfels and Meinong developed a holistic and metaphysical theory of perception. It was conceived as a reaction to the then still widely accepted elementary and atomistic theories of cognition, which were largely based on philosophies of British empiricists like Locke and David Hume. In its focus on the subject and the process of cognition, rather than physical properties of the object, it is closely related to phenomenology, which developed in parallel under Husserl, another Brentano disciple.

The heart of research was Austria and later Germany and the USA where researchers and scientists such as Christian von Ehrenfels, Max Wertheimer, Kurt Koffka, Alexius Meinong, Ernst Mach and Köhler developed a psychological theory that could be proven with experiments that provided scientifically objective and repeatable results. It has the potential to be applied to a wide spectrum of disciplines, such as therapy, diagnosis, but also literary, music and visual studies. In the latter field and its particular focus on art and design, the writings of Rudolf Arnheim are possibly the most renowned in the English-speaking world, while Jürgen Weber and Axel Seyler have contributed to the subject with several publications in German.

The core understanding of the theory is that our visual process of perception, as all other sensory processes, is essentially holistic, involving pre-rational evaluation and decoding of semantics. As such it maintains that the perceptual process is an intrinsic element of cognition, as opposed to the senses being purely information organs for further cognitive processes. It introduces the concept of our vision as dealing with Gestalten, or conformations, a term that expresses an entity that exceeds the multitude of the parts it consists of, in other words, the whole is more than the sum of its parts (principle of supersummativity). Essential to such a Gestalt are ‘Gestalt qualities’ that were defined by Ehrenfels (see glossary). Based on this concept, researchers have developed a series of principles of perception that cover and explain a wide spectrum of phenomena and stimuli. These have been proven by series of experiments that produce objective, repeatable and independent results with a wide spectrum of tested subjects. The results demonstrate that our sensory perception shares basic, universal structures. This contradicts the understanding that vision is purely subjective and individual, by demonstrating clear objective and basic patterns that are, however, culturally influenced to an extent. This fact makes Gestalt theory a valuable and versatile tool for criticism and evaluation in an art and design context. It needs to be stressed, however, that it is

not a tool for producing good design or art: it can only explain how work is perceived by the beholder, but cannot replace intuition in the creative process.

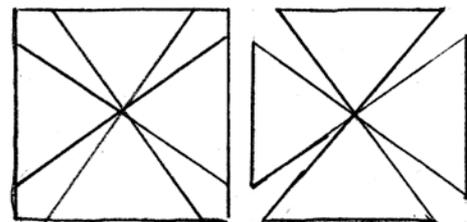
A few selected principles will give the reader an insight into the issues that Gestalt theory is dealing with. They have been chosen on the grounds of their relevance for the issues of form, material and time in sculpture.

a) Principle of simplicity

This central principle of Gestalt achieves order in visually complex stimuli and is of major importance for our perception process. It relates to the understanding that a complicated stimulus is seen as a simple wholeness rather than a complex multitude of summative parts. The law of simplicity is therefore directly related to the Gestalt character of a visual experience. In other words, if a shape is too complex and confusing due to containing a multitude of visual elements, our vision attempts to perceive it in its entirety. The process is necessary in order to create meaning from confusing phenomena and often results in a transformation of a visual stimulus from a □ lower dimension to the next higher one. The two objects in Figure 47 explain this: the first is visually read as a two-dimensional square, divided by its diagonals, while the next object is generally read as an object in the third dimension, as a pyramid. The slight irregularity in the diagonals make the figure a confusing stimulus if seen as two dimensional, subsequently our vision transfers it into the next higher dimension. This principle explains, for example, why hatched lines in a two dimensional drawing contribute to the perception of a three dimensional image, i.e. in Rembrandt's etchings, where the fine etching lines are laid down in bundles to create a plane, while roundness is created by variation in these bundles. The lines on their own do not make any sense and we have to see them as a whole to gain the meaning. Our visual perception needs such irregularities and slight deviations from a standard in order to be satisfied and challenged.

b) Principle of unity or enclosure

□ This refers to the observation that our perception gives preference to objects or patterns that are final or enclosed and have integrity over those that are open, repetitive and endless. The first figure shows a divided square and we are able to perceive two different crosses alternatively within the figure, a standing one and a diagonal one (Figure 69). In



the second figure, however, we are only able to see the horizontal-vertical cross due to its enclosed nature. Being related to the figure-ground relationship, we often find this in classical architecture, where a façade creates a closed 'face' with distinctly finished elements. Some examples of high-rise buildings in the wake of modernism have defied this law with unpleasant visual effects for the beholder.

c) Principle of proximity

Another principle that creates order in a visually complex field. It explains the visual impression that elements that are closer together are perceived as a unity. Objects that are closely positioned to one another are seen as belonging together as a group in relation to distant objects. While the first figure shows a regular, unmodified pattern, forming one group, the same amount of lines in the second figure now creates various groups. In comparison to the first, it also creates an identifiable and recognisable order. This perceptual order is a much stronger entity than an even distribution of elements, which is generally mistaken as order. Varying proximity of elements create groups and subsequently a Gestalt quality that dominates over evenly distributed parts. This principle is particularly obvious in music, where individual notes follow each other in temporal proximity. These individual parts then create groups or themes that have integrity and are easily recognisable. Three sets of four notes can be directly perceived as a Gestalt without the need of counting (intellectual process), but twelve evenly distributed notes cannot. Christian von Ehrenfels first noticed this Gestalt quality in music.

d) Figure-ground relationships

Edgar Rubin has established a series of principles about our perception of figure and ground relationships. They explain our ability to distinguish semantic signifiers from a less meaningful background. Some findings can be expressed in simplified terms as follows:

- convex is dominant to concave as figure,
- dark dominant to light (evident in writing),
- continuous line to interrupted line,
- closed to open form,
- surrounded form to surrounding form (e.g. stars),
- closely located forms to separate ones (rule of similar location),
- red colour to blue colours,
- symmetry to un-symmetrical forms.

Some of these example display dominance more than others and the designer or artist must weigh one against the other.

Many natural objects and most ancient sculpture are space-replacing rather than space-penetrating, a spatio-visual issue that is related to convex-concave figure-ground relationships. Trees, or an open hand, for example are space-penetrating, a stone or a closed fist is space-replacing, as such displaying a more complex unity. Most living creatures consist of space-replacing, convex forms, convexity therefore ex-presses life, a principle of vitalism in art that Auguste Rodin and Henry Moore have referred to.

e) Principles of direction

Forms and shapes have visual directions in which they are read. A tree for example is perceived as upwards rising by most people. Certain visual principles of direction govern such readings and the following can easily be noticed in our visual environment:

- in general from left to right (e.g. writing)¹⁸⁷
- round objects are read from the smaller diameter to the larger (e.g. trees)
- curved objects are read towards their maximum curvature (e.g. vases, balloons)
- wedged shapes are read from large to small (e.g. arrows)
- complex towards simple structures (drapery)
- in general upwards (e.g. house-facades)¹⁸⁸

The first and last rules are consciously applied in the design of the ‘Volvo’ logo in order to create a positive image of the product. Its line rises in a upwards-right direction from the bottom left hand corner; it is read as a rising line, displaying positive connotations.

In this connection it should be pointed out that the horizontal and vertical are important. These directions determine, for example, whether a triangle is read upwards or sideways. Slight deviations from the horizontal or vertical are unconsciously and actively corrected through our perception, a 92° degree angle, for example is always perceived as a right angle. This phenomenon can also be observed when the minute hand is approaching 12 O'clock. In art and architecture there is a regular visual competition between components of different directions.

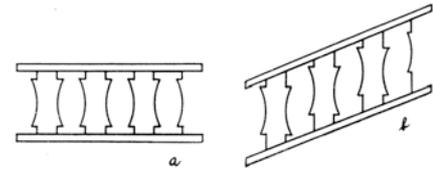
¹⁸⁷ This is not a convention or conditioned through reading as several experiments have shown, but a real natural direction. Most languages follow this pattern.

¹⁸⁸ Our perception has the tendency to overestimate vertical measures by up to 25% (e.g. height of a tower) and the top of a building creates a more important stimulus than lower parts.

f) Symmetry

Symmetry is a means of creating order and meaning from a complex visual stimulus, as well as unity within complex forms. Perception tends to isolate symmetrical figures within a complex and confusing visual field. It is a particularly dominant principle and can easily confuse our perception, as the banister-example (Figure 70) shows.

Complex wallpaper designs can only work as a result of this tendency as their structurally complex forms are ordered by symmetry. Panoramic 'forest' wallpaper designs of the 1970s show that this tendency is so strong that the eye spots the join line between the rolls almost immediately, as this is the point where symmetry becomes obvious. Symmetry can be dangerous in art and design as it tends to create order too easily, removing this ordering process from our visual process. The forceful dominance of symmetry can leave our vision unchallenged, resulting in un-stimulating visual experiences. Strong symmetric patterns, however, can be overcome by variation (Bach, for example, continuously varied the simple recurring theme of a fugue in order to create a stimulating challenge to our ears). Architects use such symmetrical organisation to their advantage with the aim of focusing attention and creating order within visually chaotic surroundings (i.e. Hans Sharoun's Berlin Philharmonic).



g) The Phi-phenomenon

Max Wertheimer first carried out this famous experiment with the assistance of Köhler and Koffka in 1912. Wertheimer first noticed this phenomenon in 1910 on a Dedalum or Zoetrope, a toy named after its Greek inventor, which consists of a drum with slots and internal figures that give the notion of movement when turned. For the experiment, he set up two flashing lights in close distance and the observers noticed a back and forward movement in the rhythmic flashing. As no moving objects were involved, this is an instant of apparent or phenomenal movement and Wertheimer named it the 'phi-phenomenon. He interpreted it from a neurological point of view, realising that no cognitive processes were involved in its perception with the exception of functional connections on the cortical level.

The discovery of the psychological basis of this phenomenal movement is of major importance for art. In sculpture and painting we can perceive movement within a composition without the necessity of actually moving objects.

h) Causality

Albert Michotte, the central figure of the Louvain school, applied the Gestalt theory to our perception of causality. He set up a simple experiment, a slotted plane with two coloured, movable squares behind (Figure 71). These squares were changing direction and speed in different sequences. Observers instantly noticed relationships between them e.g. the red follows the blue or joins it, rejects it, pushes it, etc., processes that Michotte calls 'functional connections'. These connections are not results of cognitive processes and neither conditioned by experience. Slightest changes in direction or speed are interpreted by the beholder as different meaning. Furthermore, Michotte noticed that observer relates the relationship of the squares to experience in real life, like: 'It is as though B was afraid when A approached and ran off' or 'A joins B, then they fall out, have a quarrel, and B goes off himself' [...]"¹⁸⁹. Michotte realised a connection of a Gestalt character and our emotions and feelings, which were later researched in depth by Fritz Heider. Another of Michotte's discoveries about causality is the so called *tunnel effect*, where an observer perceives an even motion of an object that for a short while disappears from sight. Although Michotte's experiments relate to the causality in movement of objects, they are transferable to other areas of perception. As such they are of importance for temporal perception in the course of our argument.

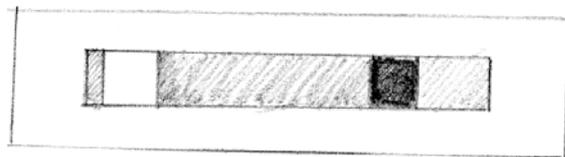


Figure 71: Causality

¹⁸⁹ Michotte (1950), p. 130 quoted after Smith (1988), p. 33

Appendix 2: Glossary

æsthetics, *Gr.* Originally objects that are perceptible by the senses; or material things. Only in the 18th century was it applied to a kind of criticism of taste (in Baumgarten's *Æsthetica* of 1758). Kant, however, defines it as "*the science which treats the conditions of sensuous perception.*" The term is used here in its strict philosophical sense.

apparent movement, *Scheinbewegung*, non-dynamic movement or illusion of movement evoked by the surface texture of an object. Light and shadow distribution and slight depth variations of a rough surface enliven the object through the movement of the beholder (linked to stereometric vision). Weber (1975) uses the term *Bewegungsvorstellung* (imagined movement).

artistic means, *Ger.: künstlerische Mittel*, the means of realising an idea (i.e. material in architecture or sculpture). An old principle of sculpture maintains that a piece should be rich in its measures (angles, dimensions, volumes, etc.), but not in its means, as this could lead to visual confusion.

atemporal, being outside the temporal nature of things; in relation to eternity. A state that is contradictory to natural processes, a violation of the laws of thermodynamics. The term is used in the context of sculpture that does not express a succession of events, representing a 'stand-still' of time.

Bedeutung, German for meaning. The German root *deuten* of the term *Be-deut-ung* implies to hint towards, suggest, signify or interpret. It is less definite and absolute than the English *meaning*. Gestalt theory uses the term in context of *Bedeutungs entzifferung*, decoding of meaning, the form or Gestalt is carrier of a signified or suggested concept or intention.

Bewußtsein, consciousness. This German term carries a rather complex understanding of consciousness. It is a composite word that consists of the elements of knowing (–wußt, passive of *zu wissen*) and being (*sein*). *Bewußt* is a passive form, while being is in an active form contained within the word. As such it expresses active living with a passively obtained knowledge, a state of being conscious of oneself and the universe.

Bildung und Umbildung, generation and transition. A term used by Goethe to describe formation and change of geological structures. The German term *Bild-ung* contains

the noun *Bild* that also describes an image or picture, but in turn is also evident in *bilden* which can mean to make, to picture and foremost, to educate. Education and vision are inseparably related in this term, expressing an understanding of visual thinking.

consciousness, from the Latin *con-sciare*, to know with.

diurnal rhythm, the continuous alternation of day and night, whose periodicity changes within recurring limits over the course of a year

diuturnity, long duration, as opposed to eternity

durée, *Fr.*, often translated as duration, Bergson's concept of time, referring to an extended psychological state of the present. It is an intuitive, very individual concept in opposition to spatial, measurable time or clocktime.

entelechy, (from the Greek *en-telos-echein*, to have an aim, determination in itself or oneself). According to Aristotle, form becoming manifest in substance; an active principle (a form of energy) which differentiates the real from pure ability and which brings the latter into being and to perfection. Goethe refers to it as "*a fragment of eternity that penetrates the body in a vitalising way*".

figurative art refers here specifically to the depiction of the human figure in art. The term 'realism' is used where the depiction of other real objects is included in the discussion.

form, the external three dimensional occurrence of an object as perceived through our sensory perception, particularly the visual and tactile senses. It differs from shape (e.g. in painting) in so far as depth is involved. Only some aspects of depth perception are involved: overlapping of form and stereometry. Meyer states that "*the individual masses, shapes, or groupings in an art work are its form*" (Meyer, p. 152)

Gegenständliche Kunst, representative art. The German term refers to art that derives from the object (*Gegenstand*). Its counterpart, **Ungegenständliche Kunst**, refers specifically to abstract art that has no origin in real objects and bears no resemblance to these.

Gestalt; visual and spatial appearance, con-formation (in the sense of 'forming with or together') of perceived objects. A holistic perception of objects, composed of various

parts and having *Gestalt qualities*. A Gestalt is understood as something that is more than simply the sum of its parts. Complex structures of consciousness, tending to closeness, unity, simplicity, regularity, symmetry and directional organisation. The term has no English equivalent and the German term is widely accepted and used. Etymological origin: derivation of the verb *stellen*, from *Stall*, meaning "to bring to a location" but also meaning "to set, to orientate". The Indo-German root is *stel-, extended from *st[h]a-, to stand, to set.

Gestalt quality, also: Ehrenfels quality. Unifying characteristic of objects that consist of parts and elements and make them superior to the mere sum of the parts. It is disputable if a Gestalt quality is like another part or a totally ephemeral and abstract quality of such objects. It is most obvious in the holistic perception of a musical accord, containing various individual notes. Three Gestalt qualities can be differentiated:

- a) primary quality of structure, composition. All compositional qualities of a work. (*Struktur, Gefüge oder Tektonik*)
- b) secondary qualities of material, texture. (*Beschaffenheit, Ganzbeschaffenheit, Ganzqualität*)
- c) tertiary qualities of character; ethos, habitus, atmosphere (*Wesen*)

Ehrenfels also distinguishes between temporal and non-temporal Gestalt quality, the former is present in phenomena that have a distinct temporal extension, such as a melody. This means that besides perception an element of retention and pretension is present, while the latter is directly perceived in the present.

Gestaltzerfall, disintegration of a Gestalt. Can be caused, for example, by extending sound intervals of a melody over a certain time limit (*Grenze des Gestaltzerfalls*). This limit, which co-incides with the psychological present is widely accepted to range between 6 and 12 seconds, but can be as low as 0.5 seconds under certain conditions.

meaning, used in the sense of the German term *Bedeutung*, from *deuten*: to hint or to point. Moore describes the relationship of meaning and form: "*There is no such thing as empty or meaningless form, if you know how to look at it. I contend that every form, every shape, every little bit of natural object that you pick up, every chip of a sculpture has got a meaning, if you can find it.*"

observation of nature is here understood as the perception of objects, space and events in time (duration) within one's environment. For most phenomena this environment

is understood as the natural, not culturally influenced, animated and unanimated surrounding of man.

perceptual forces. Immaterial relationships or visual links between objects and/or spaces in the visual field that vary with distance, density and individual qualities.

räumlich-anschauliche Gestalt, spatial-visual Gestalt. Term that describes an object or phenomenon in space that can be perceived with the visual sense; the majority of Gestalt phenomena is of this kind.

realism is not defined as a style but an artistic principle that occurs in various forms throughout the history of art. It is a means for the artist to represent or reflect upon the natural world and its phenomena. In the context of the thesis it is not understood as copying nature -a misconception that fuelled debates on abstract versus realist art throughout the last century- but as a reflective and conceptual way of exploring artistic understanding of the world around. Consequently the term is not understood in this thesis in the context of hyperrealism (e.g. lifecasts), photorealism or naturalism, all of which are styles and lay a heavy emphasis on the appearance of the object. Many examples chosen here have in common that their subject matter is the human figure, yet not in a precisely copied way but in a transformed and conceptualised way.

simultaneous representation, in Meyer (?): *'The depiction in a picture of more than one view of the same person or object'*, for example by the means of mirrors (e.g. in the *Arnolfini Wedding*). Meyer refers to Cubism as well as Renaissance art, but surprisingly not to the paintings of Simone Martini.

simultaneous succession, term created and used in this thesis to simultaneously describe the depiction of successive stages of a narrative in the same pictorial space. This artistic device has been used at least since medieval times in European art, but the clearest deliberate use can be found in the work of Simone Martini.

Streuung, *Ger.*: scattering. Composition principle based on natural distribution, for example of peas, which will spread unevenly into denser and less dense areas. Developed and first applied by the sculptor Jürgen Weber in the relief *Krieg oder Frieden* of 1971 for the Kennedy Centre in New York. See also systole-diastole.

systole - diastole, literally inhaling and exhaling, a term used by Goethe (1974), Seyler (1995, 2003) and Weber to describe the metaphoric density and looseness in the distribution of forms, vital elements and parts within a whole.

temporalisation, Ger.: *Verzeitlichung*, a term that describes a significant cultural change in the early 19th century, but already traceable in the mid 18th century, when formerly local, spatial understanding of life and culture shifted towards our present temporal understanding of culture (i.e. fashion became seasonal rather than regional). The term covers significant change in many areas of culture and life. It has been relevant for or has to be seen in relation to the industrial revolution and the change from traditional manufacturing processes towards industrial production. There were also significant socio-political changes, such as the replacement of temporal-hierarchical systems (absolute monarchies) by spatially defined republican systems (i.e. the French revolution). The change has happened largely unnoticed but has been witnessed and described by writers like JW von Goethe (Matussek, 1998).

temporality, Heidegger's definition of the future that includes past and present. In my thesis used synonymously with time when discussing formal expression of temporal phenomena in art, as these also show past and future in the depicted moment.

time, according to Schischkoff, "*form of change as it is internally perceived by the human consciousness: of becoming, being, flow, decay in the world, incl. itself and all related elements*". Time, shares the same Indo-German root as *Zeit*, meaning division.

transitional moment, Ger.: *fruchtbarer Moment*, also *transitorischer Moment*. The depicted moment in a piece of art that contains a foresight of the future but also hints at past events. A term first introduced by Lessing and now widely used by art historians. The depicted moment that is frozen between two states of rest and movement. It gives a hint of the natural movement in life but is still in a state of compositional rest and balance. A state of transition. In this thesis, however, it has become evident that it is actually the depiction of a brief sequence of a movement throughout the image, indeed an apparent movement.

vitalism, from lat. *vita*, life. Philosophical understanding of life, assuming an inherent force of life, the *vis vitalis*, as opposed to elementary concepts of life. Based on some of Aristotle's theories it has been favoured by philosophers and artists like Dumas, Shaw and Moore. Bergson follows the idea of vitalism in his theories.

volume, three dimensional extension of an object or parts of it. It is not equivalent to the scientific definition of matter, air in most cases, replaced by an object and as such quantifiable and measurable. In artistic terms, sculpture in particular, it is a qualitative aspect of the work. Parts of a sculpture are referred to as volumes when they obtain an integrity within the work. They are important aspects as the relationship of volumes define the composition to a great extent.

Wabi-sabi, an aesthetic system that developed out of the Japanese tea ceremony. It focuses on temporal and philosophical qualities of materials.

Wahrnehmung, *Ger.*; perception. The German term is a composite noun of two parts, *wahr-*, and *-nehmen*, meaning to take. The etymolog. origin of the adj. *wahr* is *waren*, from the noun *war*, and the old-German *wara*, meaning attention, care, protection, supervision; *Wahrnehmen* means literally ‘to take into care’.

Zeit, *Ger.*; time. Its origin is the noun *zit* from the Indogerman root *da[i]-, to divide, cut, rip; the meaning is something divided or division. As such, the etymological root implies a divided whole.

Etymological references of German words taken from *Duden - Das Herkunftswörterbuch*, some philosophical definitions from *Kröner - Philosophisches Wörterbuch* in own translations, also *Oxford Concise Dictionary of English Etymology*.

Abbreviations:

Ger. German

Gr. Greek

Lat. Latin

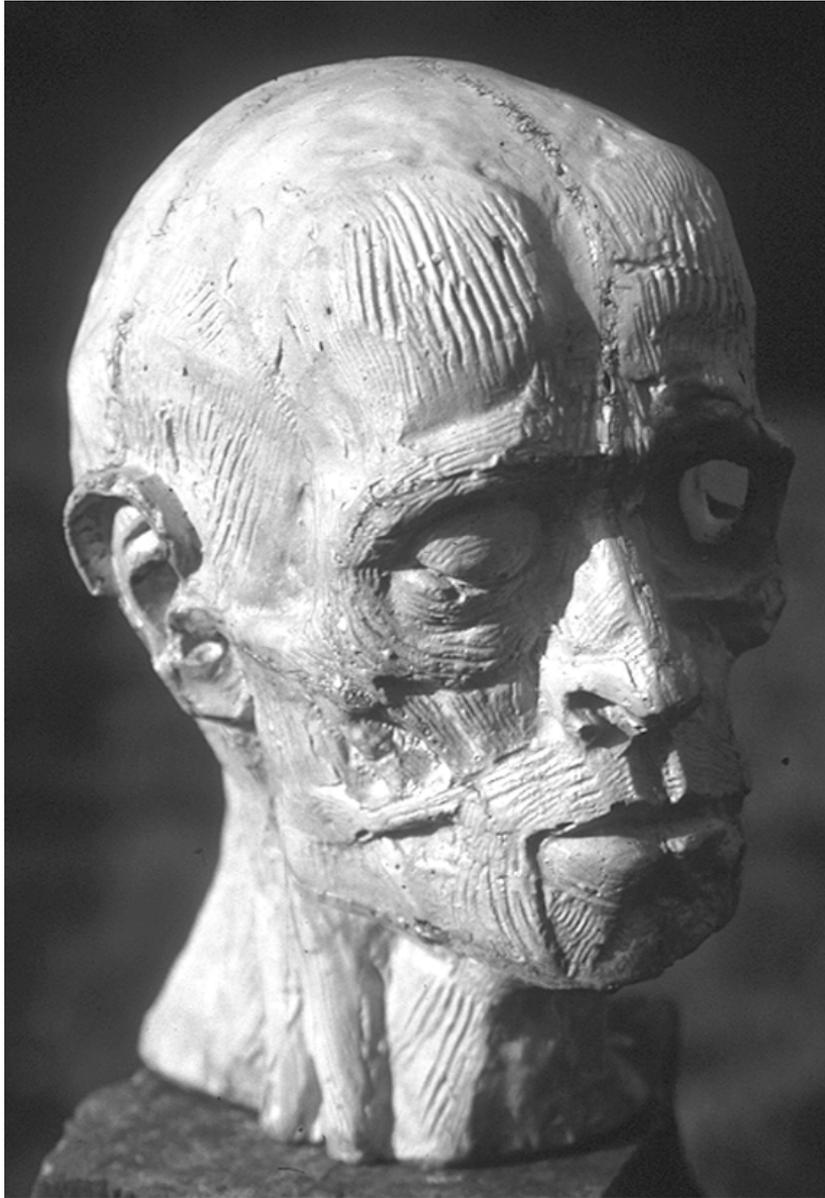


Plate 2: Musclehead, 1999, plaster



Plate 1: Ecorché, 1999, clay



Plate 3: Hand Study, 1999, plasticine



Plate 5: Multiple Portrait (J. Johnson), 1999, bronze



Plate 4: Portrait J. Johnson, 1999, bronze



Plate 6: Double Portrait (Tara), 1999, bronze



Plate 7: Errisbeg Madonna I, 1999, bronze

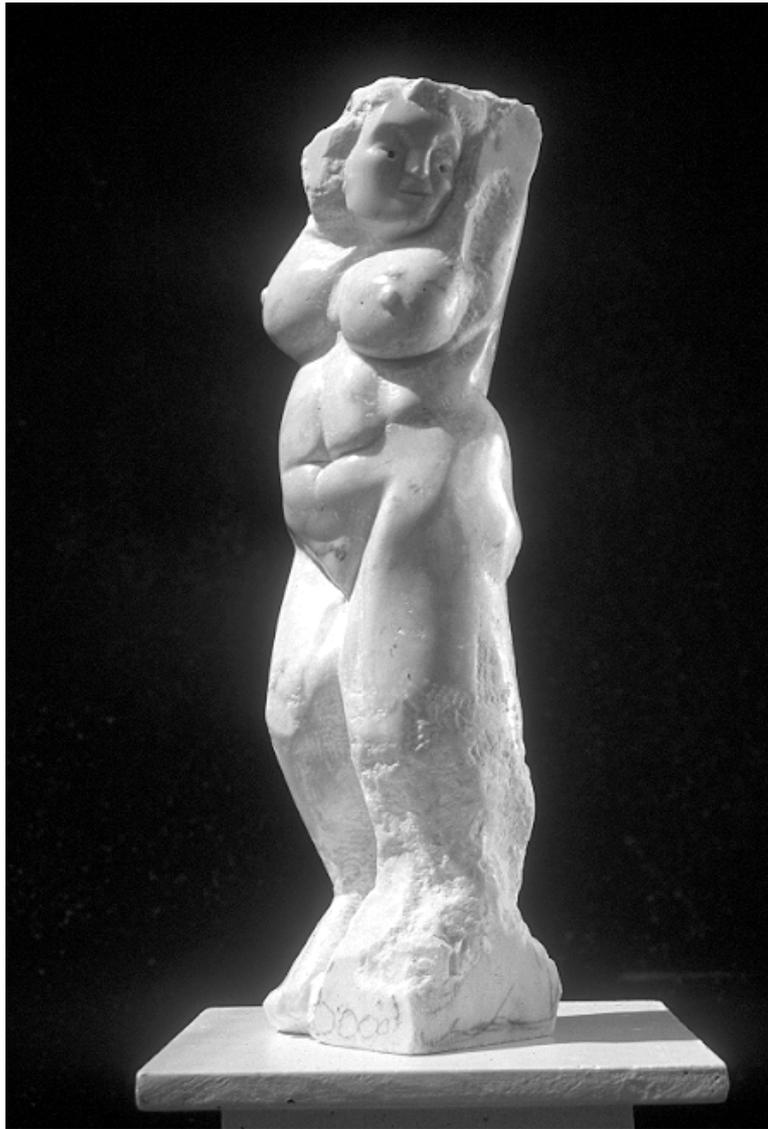


Plate 8: Errisbeg Madonna II, 1999, Carrara marble



Plate 10: Daidalos I, 1999, bronze



Plate 11: Daidalos II, 1999, bronze



Plate 12: Daidalos III, 1999, bronze



Plate 13: Daidalos IV, 1999, bronze



Plate 14: Daidalos V, 2001, ash

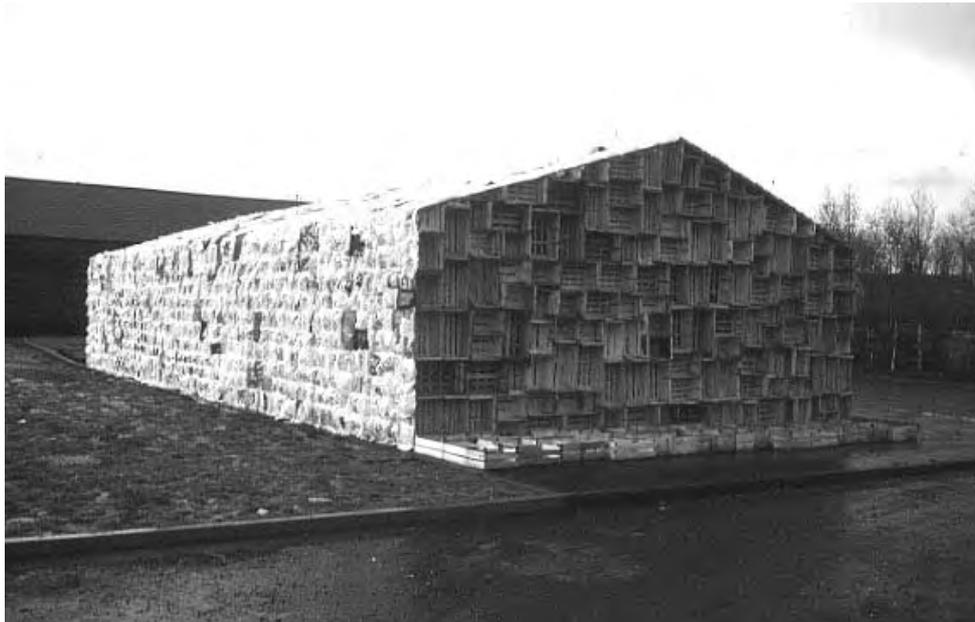


Plate 33: Temporary installation for YOTA residency, 2000



Plate 9: Night Moves, 1999, bronze



Plate 15: Suleika I, 2000, bronze



Plate 16: Suleika II, 2000, bronze



Plate 17: Suleika III, 2000, plasticine for bronze



Plate 18: Three Currachs, 2002, bronze (only two shown)



Plate 19: Dunfanaghy Currachs, 2001/02, bronze



Plate 20: Carpait Crédumi, 2003, bronze



Plate 21: Bran V (The Voyage), 2003, wax for bronze



Plate 22: Fellows of Bran, 2003, wax for bronze



Plate 23: Architectural Composition I (Via Cavour), 2001, bronze



Plate 24: Architectural Composition II (Tower), 2001, bronze



Plate 25: Parkway Pavilion, 2000, bronze



Plate 26: Oceanos' Hands, 2000, bronze



Plate 27: Betsy Gray, 2000, bronze

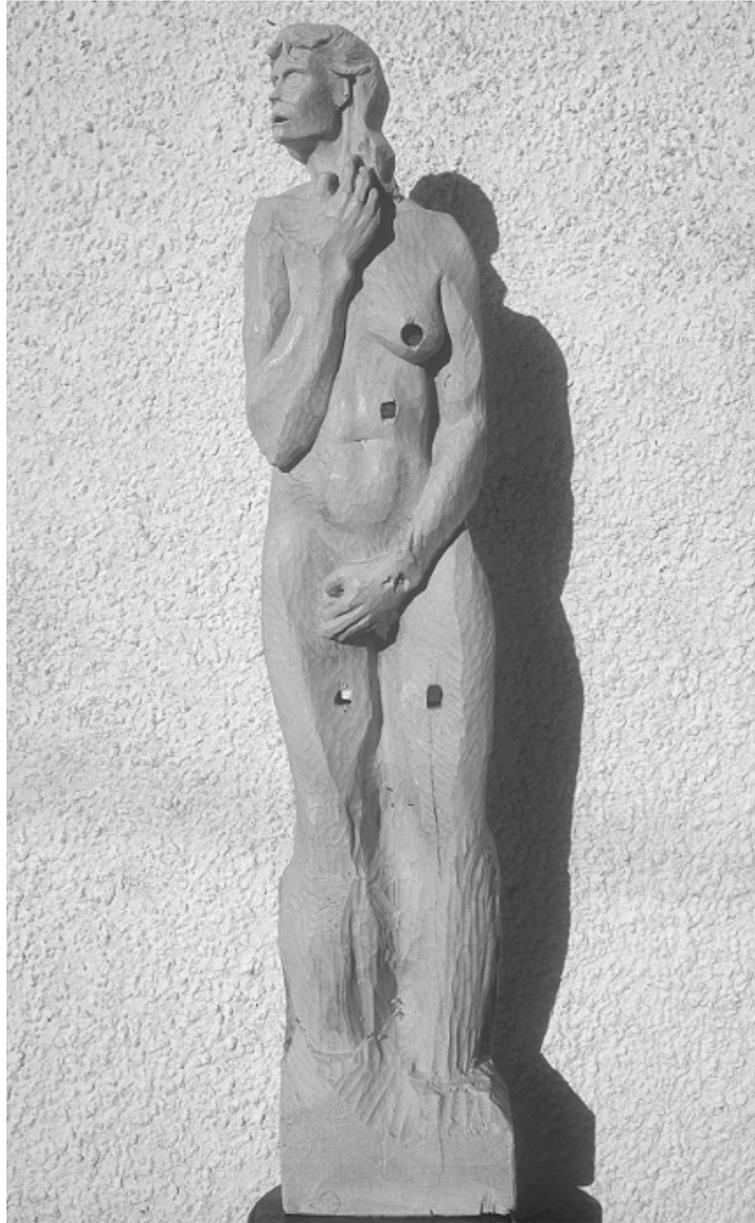


Plate 28: Annunciata, 2000, railway sleeper



Plate 29: Ecce Homo, 2001, bronze



Plate 30: Caryatid, 2001, bronze



Plate 31: Maquette for City Neighbourhoods Award, resin, 2003



Plate 32: City Neighbourhoods Award, 2003, wax for bronze



Plate 35: Skib and sciathog, 2002, willow



Plate 36: Dunfanaghy currach, 2000



Plate 34: Sea of Crosses, 2003



Plate 37: Atlas, 1999, plaster



Plate 38: Torso, 2001, elmwood